UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

North American Electric Reliability Corporation	**)**	**Docket No. _____**
	)	

PETITION OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION FOR APPROVAL OF PROPOSED RELIABILITY STANDARDS FAC-001-4 and FAC-002-4

Lauren A. Perotti
Senior Counsel
North American Electric Reliability Corporation
1325 G Street, N.W., Suite 600
Washington, D.C. 20005
(202) 400-3000
(202) 644-8099 – facsimile
lauren.perotti@nerc.net

Counsel for the North American Electric Reliability Corporation

June 14, 2022

TABLE OF CONTENTS

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

North American Electric Reliability Corporation	**)**	**Docket No. _____**
	)	

PETITION OF THE NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION FOR APPROVAL OF PROPOSED RELIABILITY STANDARDS FAC-001-4 and FAC-002-4

Pursuant to Section 215(d)(1) of the Federal Power Act ("FPA")[1] and Section 39.5[2] of the Federal Energy Regulatory Commission's ("FERC" or "Commission") regulations, the North American Electric Reliability Corporation ("NERC")[3] hereby submits for Commission approval proposed Reliability Standards FAC-001-4 (Facility Interconnection Requirements) and FAC-002-4 (Facility Interconnection Studies).

As discussed more fully herein, the proposed Reliability Standards would advance the reliability of the Bulk-Power System ("BPS")[4] by helping to ensure that changes to existing interconnected Facilities that can have reliability impacts are properly addressed in interconnection requirements and studies. NERC requests that the Commission approve the proposed Reliability Standards, as shown in **Exhibit A**, as just, reasonable, not unduly discriminatory or preferential,

---

1 16 U.S.C. § 824o.

2 18 C.F.R. § 39.5 (2022).

3 The Commission certified NERC as the electric reliability organization ("ERO") in accordance with Section 215 of the FPA on July 20, 2006. *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062 (2006), *order on reh'g & compliance*, 117 FERC ¶ 61,126 (2006), *aff'd sub nom. Alcoa, Inc. v. FERC*, 564 F.3d 1342 (D.C. Cir. 2009).

4 Unless otherwise indicated, all capitalized terms shall have the meaning used in the *Glossary of Terms Used in NERC Reliability Standards*, https://www.nerc.com/files/glossary_of_terms.pdf [hereinafter "NERC Glossary].

and in the public interest. NERC also requests that the Commission approve: (i) the associated Violation Risk Factors ("VRFs") and Violation Severity Levels ("VSLs") (**Exhibit E**); (ii) the retirement of currently effective Reliability Standards FAC-001-3 and FAC-002-3; and (iii) the proposed implementation plan (**Exhibit B**).

As required by Section 39.5(a)[5] of the Commission's regulations, this petition presents the technical basis and purpose of the proposed Reliability Standards, a demonstration that the proposed Reliability Standards meet the criteria identified by the Commission in Order No. 672[6] (**Exhibit D**), and a summary of the standard development history (**Exhibit F**). The NERC Board of Trustees adopted the proposed Reliability Standards on May 12, 2022.

This petition is organized as follows: Section I provides a summary of NERC's petition. Section II provides the individuals to whom notices and communications related to the filing should be provided. Section III provides relevant background regarding: (i) the regulatory structure governing the Reliability Standards approval process; (ii) the history of the FAC-001 and FAC-002 Reliability Standards; and (iii) information on the development process for the proposed Reliability Standards. Section IV provides an overview and justification for the proposed Reliability Standards. Section V petition provides a summary of the proposed implementation plan, and Section VI provides the conclusion.

---

[5] 18 C.F.R. § 39.5(a).

[6] The Commission specified in Order No. 672 certain general factors it would consider when assessing whether a particular Reliability Standard is just and reasonable. *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, 114 FERC ¶ 61,104 at P 262, 321-37 [hereinafter Order No. 672], *order on reh'g*, Order No. 672-A, 114 FERC ¶ 61,328 (2006).

I. OVERVIEW

Currently effective Reliability Standards FAC-001-3 (Facility Interconnection Requirements) and FAC-002-3 (Facility Interconnection Studies) work together to ensure that that the proper coordination and studies are done to evaluate the reliability impacts of newly interconnecting Facilities and existing interconnected Facilities that will undergo certain changes. In the currently effective standards, these changes are referred to as ones that "materially modify"[7] the Facility. As part of a broader project to assess the Reliability Standards for improvements to address the growth of inverters on the BPS, the NERC Inverter-Based Resource Performance Task Force recommended that this "materially modify" language be revised to provide needed clarity to applicable entities on the types of changes that must be addressed.

As discussed more fully in this petition, proposed Reliability Standards FAC-001-4 and FAC-002-4 contain new and revised requirements that would establish the Planning Coordinator as the entity responsible for defining the types of changes to existing interconnected Facilities that would need to be addressed in interconnection procedures and studies for its area. The proposed Reliability Standards would resolve the uncertainty and confusion that has arisen regarding the meaning of "materially modify" under the currently effective standards. The proposed Reliability Standards would advance the reliability of the BPS by helping to ensure that changes to existing interconnected Facilities that can have reliability impacts are properly addressed in interconnection requirements and studies.

NERC respectfully requests that the Commission approve proposed Reliability Standards FAC-001-4 and FAC-002-4 and the associated elements as just, reasonable, not unduly discriminatory or preferential, and in the public interest.

---

[7] The phrases "materially modifying" and "materially modified" are used throughout the two Reliability Standards and are intended to have the same meaning.

II. NOTICES AND COMMUNICATIONS

Notices and communications with respect to this filing may be addressed to the following:

Lauren A. Perotti
Senior Counsel
North American Electric Reliability Corporation
1325 G Street, N.W.
Suite 600
Washington, D.C. 20005
(202) 400-3000
(202) 644-8099 – facsimile
lauren.perotti@nerc.net

Howard Gugel
Vice President and Director of Engineering and Standards
North American Electric Reliability Corporation
3353 Peachtree Road, N.E.
Suite 600, North Tower
Atlanta, GA 30326
(404) 446-2560
(404) 446-2595 – facsimile
howard.gugel@nerc.net

III. BACKGROUND

A. Regulatory Framework

By enacting the Energy Policy Act of 2005,[8] Congress entrusted the Commission with the duties of approving and enforcing rules to ensure the reliability of the BPS, and with the duties of certifying an ERO that would be charged with developing and enforcing mandatory Reliability Standards, subject to Commission approval. Section 215(b)(1)[9] of the FPA states that all users, owners, and operators of the BPS in the United States will be subject to Commission-approved Reliability Standards. Section 215(d)(5)[10] of the FPA authorizes the Commission to order the ERO to submit a new or modified Reliability Standard. Section 39.5(a)[11] of the Commission's regulations requires the ERO to file with the Commission for its approval each new Reliability Standard that the ERO proposes should become mandatory and enforceable in the United States, and each modification to a Reliability Standard that the ERO proposes should be made effective.

---

8 16 U.S.C. § 824o.

9 *Id.* § 824o(b)(1).

10 *Id.* § 824o(d)(5).

11 18 C.F.R. § 39.5(a).

The Commission is vested with the regulatory responsibility to approve Reliability Standards that protect the reliability of the BPS and to ensure that Reliability Standards are just, reasonable, not unduly discriminatory or preferential, and in the public interest. Pursuant to Section 215(d)(2) of the FPA[12] and Section 39.5(c)[13] of the Commission's regulations, the Commission will give due weight to the technical expertise of the ERO with respect to the content of a Reliability Standard.

B. NERC Reliability Standards Development Procedure

The proposed Reliability Standards were developed in an open and fair manner and in accordance with the Commission-approved Reliability Standard development process. NERC develops Reliability Standards in accordance with Section 300 (Reliability Standards Development) of its Rules of Procedure and the NERC Standard Processes Manual.[14]

In its order certifying NERC as the Commission's ERO, the Commission found that NERC's rules provide for reasonable notice and opportunity for public comment, due process, openness, and a balance of interests in developing Reliability Standards,[15] and thus satisfy several of the Commission's criteria for approving Reliability Standards.[16] The development process is open to any person or entity with a legitimate interest in the reliability of the BPS. NERC considers the comments of all stakeholders. Stakeholders must approve, and the NERC Board of Trustees

---

12 16 U.S.C. § 824o(d)(2).

13 18 C.F.R. § 39.5(c)(1).

14 The NERC Rules of Procedure, including Appendix 3A, NERC Standard Processes Manual, are available at https://www.nerc.com/AboutNERC/Pages/Rules-of-Procedure.aspx.

15 *N. Am. Elec. Reliability Corp.*, 116 FERC ¶ 61,062 at P 250 (2006).

16 Order No. 672*, supra*, at PP 268, 270.

must adopt, a new or revised Reliability Standard before NERC submits the Reliability Standard to the Commission for approval.

C. History of the FAC-001 and FAC-002 Reliability Standards

In Order No. 693, the Commission approved the first set of Facilities Design, Connections, Maintenance, and Transfer Capabilities (FAC) Reliability Standards, including "version zero" of the FAC-001 and FAC-002 Reliability Standards.[17] The standards have been revised several times since they received initial approval by the Commission in 2007, including revisions approved in 2011 (FAC-002-1)[18] and in 2013 (FAC-001-1).[19]

In 2014, the Commission approved an additional set of revisions in Reliability Standards FAC-001-2 and FAC-002-2.[20] Relevant to this petition, Reliability Standards FAC-001-2 and FAC-002-2 introduced the term "materially modify" to refer to the changes to existing interconnections that would need to be addressed in interconnection procedures and studies.

In 2017, the Commission approved currently effective Reliability Standard FAC-001-3 as part of a broader project to clarify and consolidate then-existing requirements related to frequency control.[21] Relevant to this petition, Reliability Standard FAC-001-3 added Requirement R3 Part 3.3 and Requirement R4 Part 4.4 to require the inclusion of procedures for confirming with those

---

17 *Mandatory Reliability Standards for the Bulk-Power System*, Order No. 693, 118 FERC ¶ 61,218 at P 680 (approving FAC-001-0) and P 693 (approving FAC-002-0 and directing revisions).

18 *N. Am. Elec. Reliability Corp.*, 134 FERC ¶ 61,015 (Jan. 10, 2011).

19 *Generator Requirements at the Transmission Interface*, Order No. 785, 144 FERC ¶ 61,221 (2013).

20 *N. Am. Elec. Reliability Corp.*, Docket No. RD14-12-000 (Nov. 6, 2014) (delegated letter order).

21 Order No. 836, *Balancing Authority Control, Inadvertent Interchange, and Facility Interconnection Reliability Standards*, 160 FERC ¶ 61,070 (2017) (approving revisions to clarify and consolidate then-existing requirements related to frequency control).

responsible for the reliability of affected systems of new or materially modified transmission or generation Facilities are "within a Balancing Authority Area's metered boundaries."

In 2020, the Commission approved currently effective Reliability Standard FAC-002-3, which was developed as part of a broader effort to align the standards with compliance registry changes that were previously approved by the Commission.[22]

D. Project 2020-05 Modifications to FAC-001 and FAC-002

In its March 2020 white paper, the NERC Inverter-Based Resource Performance Task Force ("IRPTF") identified potential gaps and areas for improvements in several Reliability Standards to address the growth of inverters on the BPS.[23] With respect to Reliability Standards FAC-001 and FAC-002, the IRPTF recommended revisions to address industry confusion and potential reliability issues arising from the use of the undefined phrase "materially modify" to refer to the changes to existing interconnected Facilities that must be addressed as part of interconnection studies.[24] NERC initiated Project 2020-05 Modifications to FAC-001 and FAC-002 in late 2020 to address the IRPTF's recommendations.

The Project 2020-05 standard drafting team developed proposed Reliability Standards FAC-001-4 and FAC-002-4 to provide needed clarity to applicable entities regarding the changes to existing Facilities that must be studied for interconnection purposes. The proposed Reliability Standards and implementation plan were posted for formal comment period and ballot from December 7, 2021 through January 31, 2022. The proposed Reliability Standards, balloted together, received 85.19% approval, with 93.33% quorum. The proposed implementation plan

---

22 *N. Am. Elec. Reliability Corp.*, Docket No. RD20-4-000 (Oct. 30, 2020) (delegated letter order).

23 NERC IRPTF, *IRPTF Review of NERC Reliability Standards* (Mar. 2020), https://www.nerc.com/comm/PC/InverterBased%20Resource%20Performance%20Task%20Force%20IRPT/Review_of_NERC_Reliability_Standards_White_Paper.pdf [hereinafter IRPTF White Paper].

24 *Id.* at 1.

received 78.97% approval with 93.31% quorum. The proposed Reliability Standards were posted for final ballot from April 13, 2022 through April 22, 2022. The proposed Reliability Standards, balloted together, received 85.64% approval, with 94.86% quorum. The proposed implementation plan received 88.29% approval, with 94.84% quorum.

The NERC Board of Trustees adopted the proposed Reliability Standards on May 12, 2022. A summary of the development history and the complete record of development is attached to this petition as **Exhibit F**.

IV. JUSTIFICATION FOR APPROVAL

In this petition, NERC submits for Commission approval proposed Reliability Standards FAC-001-4 (Facility Interconnection Requirements) and FAC-002-4 (Facility Interconnection Studies). The purpose of proposed FAC-001-4, which remains unchanged from the currently effective version, is to ensure that Transmission Owners and applicable Generators document Facility interconnection requirements and make them available so entities seeking to interconnect will have the necessary information.[25] The purpose of proposed FAC-002-4 is "to study the impact of interconnecting new or changed Facilities on the Bulk Electric System." The two standards work together to ensure that that the proper coordination and studies are done to evaluate the reliability impacts of new interconnecting Facilities and changes at existing interconnecting Facilities.

The proposed Reliability Standards would advance the reliability of the BPS by helping to ensure that changes to existing interconnected Facilities that can have reliability impacts are properly addressed in interconnection requirements and studies. The proposed Reliability

[25] The purpose statement provides, "To avoid adverse impacts on the reliability of the Bulk Electric System, Transmission Owners and applicable Generator Owners must document and make Facility interconnection requirements available so that entities seeking to interconnect will have the necessary information."

Standards improve upon the currently effective versions by eliminating reference to the undefined phrase "materially modify," a phrase which entities have found to be confusing and potentially inadequate for identifying the types of changes to existing Facilities that must be studied for reliability. Instead, the proposed Reliability Standards would identify the Planning Coordinator as the entity responsible for developing a uniform definition of what types of changes to existing interconnected Facilities must be addressed in interconnection requirements and studies for its area. Applicable entities in the Planning Coordinator's Area would then be required to adhere to this uniform definition in their interconnection procedures and studies.

As discussed in **Exhibit D**, the proposed Reliability Standards meet the Commission's criteria for approval in Order No. 672 and are just, reasonable, not unduly discriminatory, and in the public interest. NERC respectfully requests that the Commission approve the proposed Reliability Standards to become effective in accordance with the proposed implementation plan discussed in Section V.

A. The Need to Revise Currently Effective Reliability Standards FAC-001-3 and FAC-002-3

NERC established the IRPTF in 2017 to explore the performance characteristics of utility-scale inverter-based resources and address recommendations from NERC's analysis of the 2016 Blue Cut Fire event.[26] As part of its work, the IRPTF performed a comprehensive review of all NERC Reliability Standards to identify areas where the current standards may not be sufficient to

[26] During this event, nearly 1,200 MW of solar capacity went offline unexpectedly. NERC, *1,200 MW Fault Induced Solar Photovoltaic Resource Interruption Disturbance Report: Southern California 8/16/2016 Event* (Jun. 2017), https://www.nerc.com/pa/rrm/ea/1200_MW_Fault_Induced_Solar_Photovoltaic_Resource_/1200_MW_Fault_Induced_Solar_Photovoltaic_Resource_Interruption_Final.pdf.

address the growth in the use of inverter-based resources on the BPS. In March 2020, the IRPTF published a white paper providing Reliability Standards recommendations.[27] The IRPTF recommended, among other things, that the FAC-001 and FAC-002 Reliability Standards be revised to provide clarity to the term "materially modify" in the standards. The IPRTF noted that both standards imply that the term "materially modify" should be used to distinguish between Facility changes that are required to be studied and those that are not, but the lack of responsibility for any one entity to define what constitutes a "materially modifying" change has led to confusion and could potentially lead to reliability issues if changes that affect the electrical performance of an inverter-based resource are not studied. As an example of such a situation, the IRPTF stated that a planning entity may consider a change to an inverter-based resource's control system software to be a "materially modifying" change requiring study, but the owner of that resource may not and therefore would not provide any notification it is making the change. The change would therefore go unstudied, and its potential reliability impacts unassessed. As another example, the IRPTF cited the potential for confusion regarding the circumstances under which a re-power of a wind plant would need to be studied.[28]

Additionally, the IRPTF identified that the undefined phrase "materially modify" is similar to the defined term "material modification" used in FERC interconnection procedures, and this similarity has led to confusion among entities responsible for complying with the FAC-001 and FAC-002 Reliability Standards. In the FERC interconnection context, the term "material modification" refers to a change that has impacts on other generators in the interconnection

---

27 IRPTF White Paper, *supra*, at 2-3.

28 *See id.* at 2-3.

queue.[29] The IRPTF noted that the confusion regarding the apparent similarities of the NERC phrase and the FERC defined term could result in Facility changes that are potentially significant for reliability not being studied under the FAC standards because the changes would not have a "material impact" on other generators in the interconnection queue.[30] The IRPTF cited the situation of a solar plant changing its inverters as an example where the change may not be considered a "material modification" for FERC interconnection purposes, but could have reliability impacts on the system that should be studied.[31]

To address these issues, the IRPTF recommended that NERC revise the FAC-001 and FAC-002 Reliability Standards to: (i) clarify which entity is responsible for determining which facility changes are "materially modifying," and therefore require study under the standards; (ii) clarify that a Generator Owner should notify the affected entities before making a change that is considered "materially modifying"; and (iii) revise the term "materially modifying" so as not to cause confusion between the FAC standards and the FERC interconnection process.[32] In November 2020, NERC initiated Project 2020-05 to revise the FAC-001 and FAC-002 Reliability Standards to address the IRPTF's recommendations. The proposed revisions are discussed in detail in the following two sections.

B. New Requirement to Develop a Definition of "Qualified Change" for Facility Interconnection (FAC-002-4 Requirement R6)

The proposed Reliability Standards would resolve the uncertainty associated with the use of the undefined phrase "materially modify" by requiring that interconnection procedures and

---

29 *See* FERC, *Pro Forma* Large Generator Interconnection Procedures at Section 1 (defining Material Modification as "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."); *see also Pro Forma* Small Generator Interconnection Procedures at Section 1 (same).

30 *See* IRPTF White Paper, *supra*, at 3.

31 *See id.* at 3.

32 *Id.* at 1.

studies address all changes to existing interconnected Facilities that meet the Planning Coordinator's definition of "qualified change." To that end, proposed Reliability Standard FAC-002-4 contains a new requirement, Requirement R6, which would require the Planning Coordinator to develop a definition of "qualified change" for the purposes of the FAC-001 and FAC-002 Reliability Standards, and to make the definition publicly available. The proposed requirement reads as follows:

> **R6.** Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection.

Other requirements in proposed FAC-001-4 and FAC-002-4, discussed in the following sections of this petition, would require applicable entities to include procedures for coordinating the impacts of qualified changes in their interconnection requirements (FAC-001-4), and would require applicable entities seeking to make qualified changes to coordinate and cooperate in the necessary interconnection studies (FAC-002-4).

In developing proposed Reliability Standard FAC-002-4 Requirement R6, the standard drafting team determined that it was appropriate to replace the undefined phrase "materially modify" with a new phrase "qualified change." The term "materially modify" is confusingly similar to the FERC-defined term "material modification" that addresses generator interconnection and impacts on other generators in the interconnection queue, but does not address either the transmission or end-user interconnections that must be addressed under Requirement R1 of the FAC-001 Reliability Standard or reliability more generally. The new phrase "qualified change" is not used in any other relevant document and refers to the types of changes to an existing interconnected Facility that, in the judgment of the Planning Coordinator, must be addressed in interconnection requirements and studied under the FAC-001 and FAC-002 Reliability Standards.

Under proposed Requirement R6, the Planning Coordinator must make its definition of "qualified change" publicly available to ensure that all potentially affected entities would have access to it.

The standard drafting team determined that the Planning Coordinator should be the sole entity responsible for defining what "qualified change" means for its Planning Coordinator Area, as the Planning Coordinator is "the responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems."[33] As such, the Planning Coordinator is in the best position to identify the kinds of changes to existing interconnected Facilities that could have adverse reliability impacts in the Planning Coordinator Area (as well as neighboring areas), and should therefore be studied.

In developing proposed Requirement R6, the standard drafting team determined that the most reasonable approach for a continent-wide standard was one that provided flexibility to the Planning Coordinator to develop an appropriate definition of "qualified change" for its area, taking into account the Planning Coordinator's unique system characteristics. Planning Coordinator Areas vary in size, generation amount, generation mix, transmission or short circuit strength, and load patterns. Further, each of the North American interconnections in which they are contained has distinct physical and operational characteristics. The variability in characteristics across Planning Coordinator Areas across North America presents substantial challenges to developing a single "qualified change" definition or a list of minimum requirements for such definitions that would be appropriate and sufficiently complete for each Planning Coordinator Area. In developing its own definition of "qualified change," the Planning Coordinator should consider how Facility

[33] *See* definition of "Planning Coordinator," NERC Glossary, *supra*.

changes affect the steady-state, short circuit, and dynamic performance of that Facility, and that advancements in technology (particularly for inverter-based resources) may call for additional consideration.[34]

It is possible that there may be some generator Facility changes that are required to be studied as both "qualified changes" for purposes of the FAC-001 and FAC-002 Reliability Standards and "material modifications" under FERC interconnection requirements. For example, a significant change at one generator Facility meeting the Planning Coordinator's definition of "qualified change" may also materially impact a nearby generator Facility's position in the interconnection queue and thus require analysis under that measure.

To aid Planning Coordinators in developing their own definitions of "qualified change," the standard drafting team developed a non-exhaustive list of examples of Facility changes that may be considered "qualified changes" depending on the specific facts and circumstances present in an area. Several of these examples are provided for illustration purposes below; please refer to Exhibit F (item 36) for additional examples of potential "qualified changes" for generator, end-user, and transmission Facilities.[35]

Generation Facilities. For generation, the standard drafting team provided examples of "qualified changes" that would apply regardless of resource type, as well as examples of changes

---

[34] *See* Technical Rationale, Exhibit C, at 8.

[35] *See* Exhibit F (Record of Development) at item 36, Draft Implementation Guidance for FAC-002-4. In this filing, NERC includes the Draft Implementation Guidance for FAC-002-4 as it was prepared by the standard drafting team and posted to the project page during the final ballot of the proposed Reliability Standards. The ERO Enterprise reviews draft implementation guidance prepared by standard drafting teams and other organizations for potential endorsement in accordance with its established policies for such reviews. If endorsed, the ERO Enterprise would give deference to the approach during Compliance Monitoring and Enforcement Activities with consideration of the specific facts and circumstances for each applicable entity. *See* NERC, *Compliance Guidance Policy* (Nov. 5, 2015), available at https://www.nerc.com/pa/comp/guidance/Pages/default.aspx.

As the Draft Implementation Guidance for FAC-002-4 proceeds through the ERO Enterprise endorsement process, it may be further revised or clarified to conform to the requirements of this process or to provide further guidance to applicable entities on examples of "qualified changes." If endorsed, the final version would be posted to the NERC Compliance Guidance page at the link provided above.

that would apply specifically to inverter-based resources and specifically to synchronous generators. One example of a generator "qualified change" could be a change in generator output, such as one that affects the generator's seasonal Real Power or Reactive Power capability by more than 10% of the last reported or verified capability and the change is expected to last more than six months, or a change in power factor capability. Another example of a "qualified change," specific to an inverter-based resource, could be a change in inverters or inverter settings, such as a change of 10% or more of the inverter units that are not replacement in kind, or a change in any inverter control setting that results in a difference in frequency or voltage support or in how the resource injects current into the grid. A third example of a "qualified change," specific to a synchronous resource, could be a change to the inertia of the generator by more than 10%.

End-user Facilities. An example of a "qualified change" for an end-user Facility could be an increase in demand, such as an annual increase exceeding 10%, an increase of 75 MW or greater within the next two years, or an increase of 20 MW or greater within the next two years for a third-party Facility interconnected to a Generator Owner's facility.

Transmission Facilities: An example of a "qualified change" for a transmission Facility could include a change in rating, such as a change in thermal rating or impedance by more than 5% or a change in voltage class.

It is the expectation of the ERO Enterprise that, regardless of the specific approach taken, each Planning Coordinator would develop and make available a definition of "qualified change" that reflects and is supported by its sound engineering judgment about the types of Facility changes that may have reliability impacts within its area and should be addressed in interconnection procedures and studies.

Having one entity responsible for defining the types of "qualified changes" to existing interconnected Facilities that must be studied in a given area, as compared to an entity-by-entity determination of what constitutes a "materially modifying" change,[36] would promote consistency as well as certainty for applicable entities in the application of the standards. In so doing, it would help ensure that the types of changes that could impact reliability are studied. The standard drafting team considered whether proposed Requirement R6 should require coordination with other entities and determined that the Planning Coordinator should be the sole entity responsible for defining "qualified change" for its area. Planning Coordinators, however, are encouraged to coordinate with other entities in developing their definitions.

C. Revised Requirements to Address "Qualified Changes" in Facility Interconnection Requirements and Interconnection Studies

Proposed Reliability Standards FAC-001-4 and FAC-002-4 contain a number of revisions intended to implement the "qualified change" definition established in proposed Reliability Standard FAC-002-4 Requirement R6, which is discussed in the previous section of this petition. These revisions are discussed below.

1. Proposed FAC-001-4 Requirements R3 and R4

Proposed Reliability Standard FAC-001-4 would revise the currently effective standard by removing reference to the undefined phrase "materially modified" in Requirement R3 Parts 3.1-3.3 and Requirement R4 Part 4.3, and replacing it with reference to the definition of "qualified change" as developed by the Planning Coordinator under proposed Reliability Standard FAC-002-4 Requirement R6.

[36] *See* Reliability Standards FAC-001-3 and FAC-002-3, Guidelines and Technical Basis ("Entities should have documentation to support the technical rationale for determining whether an existing interconnection was 'materially modified.' Recognizing that what constitutes a 'material modification' will vary from entity to entity, the intent is for this determination to be based on engineering judgment.")

The proposed changes to Requirements R3 and R4 are shown below and in Exhibit A-2 (redline):

R3. Each Transmission Owner shall address the following items in its Facility interconnection requirements:

3.1. Procedures for coordinated studies ~~of~~ for new interconnections or ~~materially modified~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator and their impacts on affected systems.

3.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or ~~materially modified~~ existing interconnections seeking to make a qualified change.

3.3. Procedures for confirming with those responsible for the reliability of affected systems that new ~~or materially modified~~ Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority Area~~'s metered boundaries~~.

R4. Each applicable Generator Owner shall address the following items in its Facility interconnection requirements:

4.1. Procedures for coordinated studies of new interconnections and their impacts on affected system(s).

4.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.

4.3. Procedures for confirming with those responsible for the reliability of affected systems that new ~~or materially modified~~ Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator are within a Balancing Authority Area~~'s metered boundaries~~.

As shown above, each Transmission Owner and applicable Generator Owner shall address in its Facility interconnection requirements procedures that address Facilities seeking to make a qualified change as defined by the Planning Coordinator.

In addition to the above-described revisions, language regarding the Balancing Authority Area's "metered boundaries" is struck from Requirement R3 Part 3.3 and Requirement R4 Part 4.3 as it is redundant with the NERC Glossary definition of Balancing Authority Area. The NERC Glossary defines Balancing Authority Area as "the collection of generation, transmission, and

loads within the *metered boundaries* of the Balancing Authority. The Balancing Authority maintains load-resource balance within this area" (emphasis added). These revisions do not change the substance or meaning of the underlying Requirement Parts.

2. Proposed FAC-002-4 Requirements R1, R2, and R4

Proposed Reliability Standard FAC-002-4 would revise the currently effective version of the standard by removing reference to the undefined phrases "materially modified" and "materially modify" in Requirement R1 Part 1.1; Requirement R2, Requirement R3, and Requirement R4. These references are replaced with references to the definition of "qualified change" as developed by the Planning Coordinator under proposed Requirement R6. The proposed changes to these requirements are shown below and in Exhibit A-4 (redline).

R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6. The following shall be studied:

1.1. The reliability impact of the new interconnection, or ~~materially modified~~ existing interconnection seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, on affected system(s);

1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;

1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and

1.4. Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.

R2. Each Generator Owner seeking to interconnect new generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or

Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to materially modify~~ existing interconnections of transmission Facilities or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or ~~materially modified interconnections~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4.

These changes are intended to implement new Requirement R6, which is addressed in Section IV.B., *supra*. No further changes are proposed to the currently effective standard.

V. EFFECTIVE DATE

NERC respectfully requests that the Commission approve the implementation plan attached to this petition as **Exhibit B**. The proposed implementation plan provides that the proposed Reliability Standards would become effective on the first day of the first calendar quarter that is twelve (12) months after applicable regulatory approval. The currently effective versions of the standards would be retired immediately prior to the effective date of the revised Reliability Standards. This implementation timeline reflects consideration that Planning Coordinators will need a reasonable period of time to develop a definition of "qualified change" for their respective areas under proposed Reliability Standard FAC-002-4 Requirement R6 and to make that definition publicly available. The proposed implementation plan also provides that, where the Planning Coordinator's definition of "qualified change" differs from what an applicable entity may have considered a "materially modifying" change in Facility Interconnection requirements or studies

under the current standards, those entities will have an additional twelve months from the Effective Date to come into compliance with the revised standard. The proposed implementation plan provides a reasonable period of time for entities to comply, considering the new work that would be required, and thus strikes an appropriate balance against the urgency in the need to implement the proposed Reliability Standards.[37]

[37] *See* Order No. 672 at P 333 ("In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability.")

VI. CONCLUSION

For the reasons set forth above, NERC respectfully requests that the Commission approve, as just, reasonable, not unduly discriminatory, and in the public interest:

- Proposed Reliability Standards FAC-001-4 and FAC-002-4, and the associated elements, as shown in **Exhibit A;**
- the retirement of currently effective Reliability Standards FAC-001-3 and FAC-002-3; and
- The implementation plan included in **Exhibit B**.

Respectfully submitted,

/s/ Lauren A. Perotti

Lauren A. Perotti
Senior Counsel
North American Electric Reliability Corporation
1325 G Street, N.W., Suite 600
Washington, D.C. 20005
(202) 400-3000
(202) 644-8099 – facsimile
lauren.perotti@nerc.net

Counsel for the North American Electric Reliability Corporation

June 14, 2022

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit A

The Proposed Reliability Standards

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit A-1

FAC-001-4
Clean

A. Introduction

1. **Title:** **Facility Interconnection Requirements**

2. **Number:** FAC-001-4

3. **Purpose:** To avoid adverse impacts on the reliability of the Bulk Electric System, Transmission Owners and applicable Generator Owners must document and make Facility interconnection requirements available so that entities seeking to interconnect will have the necessary information.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Transmission Owner

   4.1.2. Applicable Generator Owner

   4.1.2.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Owner shall document Facility interconnection requirements, update them as needed, and make them available upon request. Each Transmission Owner's Facility interconnection requirements shall address interconnection requirements for: *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

1.1. generation Facilities;

1.2. transmission Facilities; and

1.3. end-user Facilities.

M1. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R1.

R2. Each applicable Generator Owner shall document Facility interconnection requirements and make them available upon request within 45 calendar days of full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M2. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R2.

R3. Each Transmission Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. Procedures for coordinated studies for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator and their impacts on affected systems.

3.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change.

3.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority Area.

M3. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R3.

R4. Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. Procedures for coordinated studies of new interconnections and their impacts on affected system(s).

4.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.

4.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator are within a Balancing Authority Area.

M4. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R4.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The responsible entities shall retain documentation as evidence for three years.
- If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.
- The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Lower	N/A	The Transmission Owner documented Facility interconnection requirements and updated them as needed, but failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements and made them available upon request, but failed to update them as needed. OR The Transmission Owner documented Facility interconnection requirements,	The Transmission Owner documented Facility interconnection requirements, but failed to update them as needed and failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements, updated them as needed, and made them available upon request, but failed to address interconnection requirements for two of the Facilities as	The Transmission Owner did not document Facility interconnection requirements.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
				updated them as needed, and made them available upon request, but failed to address interconnection requirements for one of the Facilities as specified in R1, Parts 1.1, 1.2, or 1.3.	specified in R1, Parts 1.1, 1.2, or 1.3.	
R2.	Long-term Planning	Lower	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 45 calendar days but less than or equal to 60 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 60 calendar days but less than or equal to 70 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 70 calendar days but less than or equal to 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	existing Facility that is used to interconnect to the Transmission system.
R3.	Long-term Planning	Lower	N/A	The Transmission Owner failed to address one part of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address two parts of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address three parts of Requirement R3 (Part 3.1 through Part 3.3).
R4.	Long-term Planning	Lower	N/A	The Generator Owner failed to address one part of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address two parts of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address three parts of Requirement R4 (Part 4.1 through Part 4.3).

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1		Added requirements for Generator Owner and brought overall standard format up to date.	Revision under Project 2010-07
1	February 9, 2012	Adopted by the Board of Trustees	
1	September 19, 2013	A FERC order was issued on September 19, 2013, approving FAC-001-1. This standard became enforceable on November 25, 2013 for Transmission Owners. For Generator Owners, the standard becomes enforceable on January 1, 2015.	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees	
2	November 6, 2014	FERC letter order issued approving FAC-001-2.	
3	February 11, 2016	Adopted by the Board of Trustees	Moved BAL-005-0.2b Requirement R1 into FAC-001-3 Requirements R3 and R4
3	September 20, 2017	FERC Order No. 836 issued approving FAC-001-3	
3	February 19, 2021	FERC letter Order issued approving FAC-001-3 Errata	
4	TBD	Adopted by the Board of Trustees	Revisions under Project 2020-05

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit A-2

FAC-001-4
Redline to Last Approved

A. Introduction

1. **Title:** **Facility Interconnection Requirements**

2. **Number:** FAC-001-34

3. **Purpose:** To avoid adverse impacts on the reliability of the Bulk Electric System, Transmission Owners and applicable Generator Owners must document and make Facility interconnection requirements available so that entities seeking to interconnect will have the necessary information.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Transmission Owner

   4.1.2. Applicable Generator Owner

   4.1.2.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for FAC-001-3. Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Owner shall document Facility interconnection requirements, update them as needed, and make them available upon request. Each Transmission Owner's Facility interconnection requirements shall address interconnection requirements for: *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

1.1. generation Facilities;

1.2. transmission Facilities; and

1.3. end-user Facilities.

M1. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R1.

R2. Each applicable Generator Owner shall document Facility interconnection requirements and make them available upon request within 45 calendar days of full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M2. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R2.

R3. Each Transmission Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. Procedures for coordinated studies ~~of~~for new interconnections or ~~materially modified~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator and their impacts on affected systems.

3.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or ~~materially modified~~ existing interconnections~~.~~ seeking to make a qualified change.

3.3. Procedures for confirming with those responsible for the reliability of affected systems that new ~~or materially modified~~ Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority ~~Area's metered boundaries.~~ Area.

M3. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R3.

R4. Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. Procedures for coordinated studies of new interconnections and their impacts on affected system(s).

4.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.

4.3. Procedures for confirming with those responsible for the reliability of affected systems that new ~~or materially modified~~ Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator are within a Balancing Authority ~~Area's metered boundaries~~Area.

M4. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R4.

C. Compliance

1. **Compliance Monitoring Process**

~~1.1.~~ **Compliance Enforcement Authority**

~~1.2.~~1.1. ~~As defined in the NERC Rules of Procedure,~~: "Compliance Enforcement Authority" ~~(CEA)~~ means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with ~~the NERC~~mandatory and enforceable Reliability Standards in their respective jurisdictions.

~~1.3.~~ **Evidence Retention**

~~1.4.~~1.2. : The following evidence retention ~~periods~~period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the ~~CEA~~Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full ~~-~~time period since the last audit.

The applicable ~~Functional Entity~~entity shall keep data or evidence to show compliance as identified below unless directed by its ~~CEA~~Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation~~:~~.

- The responsible entities shall retain documentation as evidence for three years.
- If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.
- The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

~~**1.5. Compliance Monitoring and Assessment Processes:**~~

~~Compliance Audit~~

~~Self Certification~~

~~Spot Check~~

~~Compliance Investigation~~

~~Self Reporting~~

~~Complaint~~

~~**1.6. Additional Compliance Information**~~

1.3. **Compliance Monitoring and Enforcement Program:** As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or

information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

~~None~~

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Lower	N/A	The Transmission Owner documented Facility interconnection requirements and updated them as needed, but failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements and made them available upon request, but failed to update them as needed. OR The Transmission Owner documented Facility interconnection requirements,	The Transmission Owner documented Facility interconnection requirements, but failed to update them as needed and failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements, updated them as needed, and made them available upon request, but failed to address interconnection requirements for two of the Facilities as specified in R1, Parts 1.1, 1.2, or 1.3.	The Transmission Owner did not document Facility interconnection requirements.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
				updated them as needed, and made them available upon request, but failed to address interconnection requirements for one of the Facilities as specified in R1, Parts 1.1, 1.2, or 1.3.		
R2.	Long-term Planning	Lower	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 45 calendar days but less than or equal to 60 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 60 calendar days but less than or equal to 70 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 70 calendar days but less than or equal to 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	existing Facility that is used to interconnect to the Transmission system.
R3.	Long-term Planning	Lower	N/A	The Transmission Owner failed to address one part of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address two parts of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address three parts of Requirement R3 (Part 3.1 through Part 3.3).
R4.	Long-term Planning	Lower	N/A	The Generator Owner failed to address one part of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address two parts of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address three parts of Requirement R4 (Part 4.1 through Part 4.3).

D. Regional Variances

None.

~~E. Interpretations~~

~~None.~~

~~F.~~E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1		Added requirements for Generator Owner and brought overall standard format up to date.	Revision under Project 2010-07
1	February 9, 2012	Adopted by the Board of Trustees	
1	September 19, 2013	A FERC order was issued on September 19, 2013, approving FAC-001-1. This standard became enforceable on November 25, 2013 for Transmission Owners. For Generator Owners, the standard becomes enforceable on January 1, 2015.	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees	
2	November 6, 2014	FERC letter order issued approving FAC-001-2.	
3	February 11, 2016	Adopted by the Board of Trustees	Moved BAL-005-0.2b Requirement R1 into FAC-001-3 Requirements R3 and R4
3	September 20, 2017	FERC Order No. 836 issued approving FAC-001-3	
3	February 19, 2021	FERC letter Order issued approving FAC-001-3 Errata	
4	TBD	Adopted by the Board of Trustees	Revisions under Project 2020-05

Guidelines and Technical Basis

Entities should have documentation to support the technical rationale for determining whether an existing interconnection was "materially modified." Recognizing that what constitutes a "material modification" will vary from entity to entity, the intent is for this determination to be based on engineering judgment.

Requirement R3:

Originally the Parts of R3, with the exception of the first two bullets, which were added by the Project 2010-02 drafting team, this list has been moved to the Guidelines and Technical Basis section to provide entities with the flexibility to determine the Facility interconnection requirements that are technically appropriate for their respective Facilities. Including them as Parts of R3 was deemed too prescriptive, as frequently some items in the list do not apply to all applicable entities — and some applicable entities will have requirements that are not included in this list.

Each Transmission Owner and applicable Generator Owner should consider the following items in the development of Facility interconnection requirements:

- Procedures for requesting a new Facility interconnection or material modification to an existing interconnection
- Data required to properly study the interconnection
- Voltage level and MW and MVAR capacity or demand at the point of interconnection
- Breaker duty and surge protection
- System protection and coordination
- Metering and telecommunications
- Grounding and safety issues
- Insulation and insulation coordination
- Voltage, Reactive Power (including specifications for minimum static and dynamic reactive power requirements), and power factor control
- Power quality impacts
- Equipment ratings
- Synchronizing of Facilities
- Maintenance coordination
- Operational issues (abnormal frequency and voltages)
- Inspection requirements for new or materially modified existing interconnections
- Communications and procedures during normal and emergency operating conditions

Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon Board approval, the text from the rationale boxes will be moved to this section.

Rationale for Requirement R3.3: Consistent with the Functional Model, there cannot be an assumption that the entity owning the transmission will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate arrangements with a Balancing Authority to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 3.3, the Transmission Owner is responsible for confirming that the party interconnecting has made appropriate provisions with a Balancing Authority to operate within its metered boundaries.

Rationale for Requirement R4.3: Consistent with the Functional Model, there cannot be an assumption that the entity owning the generation will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate arrangements with a Balancing Authority to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 4.3, the Generator Owner is responsible for confirming that the party interconnecting has made appropriate provisions with a Balancing Authority to operate within its metered boundaries.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit A-3

FAC-002-4
Clean

A. Introduction

1. **Title:** **Facility Interconnection Studies**

2. **Number:** FAC-002-4

3. **Purpose:** To study the impact of interconnecting new or changed Facilities on the Bulk Electric System.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Planning Coordinator

   4.1.2. Transmission Planner

   4.1.3. Transmission Owner

   4.1.4. Distribution Provider

   4.1.5. Generator Owner

   4.1.6. Applicable Generator Owner

   4.1.6.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

1.1. The reliability impact of the new interconnection, or existing interconnection seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, on affected system(s);

1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;

1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and

1.4. Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.

M1. Each Transmission Planner or each Planning Coordinator shall have evidence (such as study reports, including documentation of reliability issues) that it met all requirements in Requirement R1.

R2. Each Generator Owner seeking to interconnect new generation Facilities, or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Each Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R2.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Owner and each Distribution Provider shall have evidence (such as documents containing the data provided in response to the requests of the

Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R3.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M4. Each Transmission Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R4.

R5. Each applicable Generator Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M5. Each applicable Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R5.

R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M6. Each Planning Coordinator shall have evidence that it has maintained a publicly available definition of qualified change.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner and applicable Generator Owner shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:

The responsible entities shall retain documentation as evidence for three years.

If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.

The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Medium	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study one of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.
R2.	Long-term Planning	Medium	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R3.	Long-term Planning	Medium	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R4.	Long-term Planning	Medium	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities.
R5.	Long-term Planning	Medium	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R6.	Long-term Planning	Lower	N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	January 13, 2006	Removed duplication of "Regional Reliability Organizations(s).	Errata
1	August 5, 2010	Modified to address Order No. 693 Directives contained in paragraph 693. Adopted by the NERC Board of Trustees.	Revised
1	February 7, 2013	R2 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
1	November 21, 2013	R2 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees.	
2	November 6, 2014	FERC letter order issued approving FAC-002-2.	
3	February 6, 2020	Adopted by NERC Board of Trustees.	Revisions under Project 2017-07
4	TBD	Adopted by NERC Board of Trustees.	Revisions under Project 2020-05

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit A-4

FAC-002-4
Redline to Last Approved

A. Introduction

1. **Title:** **Facility Interconnection Studies**

2. **Number:** FAC-002-~~3~~4

3. **Purpose:** To study the impact of interconnecting new or ~~materially modified~~changed Facilities on the Bulk Electric System.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Planning Coordinator

   4.1.2. Transmission Planner

   4.1.3. Transmission Owner

   4.1.4. Distribution Provider

   4.1.5. Generator Owner

   4.1.6. Applicable Generator Owner

   4.1.6.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

1.1. The reliability impact of the new interconnection, or ~~materially modified~~ existing interconnection seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, on affected system(s);

1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;

1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and

1.4. Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.

M1. Each Transmission Planner or each Planning Coordinator shall have evidence (such as study reports, including documentation of reliability issues) that it met all requirements in Requirement R1.

R2. Each Generator Owner seeking to interconnect new generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Each Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R2.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to materially modify~~ existing interconnections of transmission Facilities or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Owner and each Distribution Provider shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R3.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or ~~materially modified interconnections~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M4. Each Transmission Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R4.

R5. Each applicable Generator Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M5. Each applicable Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R5.

R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M6. Each Planning Coordinator shall have evidence that it has maintained a publicly available definition of qualified change.

C. Compliance

1. Compliance Monitoring Process

~~1.1.~~ Compliance Enforcement Authority

~~1.2.~~1.1. ~~As defined in the NERC Rules of Procedure,~~: "Compliance Enforcement Authority" ~~(CEA)~~ means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with ~~the NERC~~mandatory and enforceable Reliability Standards in their respective jurisdictions.

~~1.3.~~ Evidence Retention

1.2. : The following evidence retention ~~periods~~period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the ~~CEA~~Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full ~~-~~ time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner and applicable Generator Owner shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:

The responsible entities shall retain documentation as evidence for three years.

If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.

The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

~~1.4. Compliance Monitoring and Assessment Processes:~~

~~Compliance Audit~~

~~Self-Certification~~

~~Spot Check~~

~~Compliance Investigation~~

~~Self-Reporting~~

~~Complaint~~

~~**1.5. Additional Compliance Information**~~

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

~~None~~

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Medium	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study one of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.
R2.	Long-term Planning	Medium	The Generator Owner seeking to interconnect new	The Generator Owner seeking to interconnect new	The Generator Owner seeking to interconnect new	The Generator Owner seeking to interconnect new

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R3.	Long-term Planning	Medium	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to~~	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to~~	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to~~	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			~~materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	~~materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	~~materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	~~materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R4.	Long-term Planning	Medium	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			Coordinator regarding requested new or ~~materially modified~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	Coordinator regarding requested new or ~~materially modified~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	Coordinator regarding requested new or ~~materially modified~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	Coordinator regarding requested new or ~~materially modified~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities.
R5.	Long-term Planning	Medium	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary	The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			to perform studies as described in one of the Parts (R1, 1.1-1.4).	to perform studies as described in two of the Parts (R1, 1.1-1.4).	to perform studies as described in three of the Parts (R1, 1.1-1.4).	
R6.	Long-term Planning	Lower	N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

D. Regional Variances

None.

~~E. Interpretations~~

~~None.~~

~~F.~~E. Associated Documents

None

~~Guidelines and Technical Basis~~

~~Entities should have documentation to support the technical rationale for determining whether an existing interconnection was "materially modified." Recognizing that what constitutes a "material modification" will vary from entity to entity, the intent is for this determination to be based on engineering judgment.~~

.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	January 13, 2006	Removed duplication of "Regional Reliability Organizations(s).	Errata
1	August 5, 2010	Modified to address Order No. 693 Directives contained in paragraph 693. Adopted by the NERC Board of Trustees.	Revised
1	February 7, 2013	R2 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
1	November 21, 2013	R2 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees.	
2	November 6, 2014	FERC letter order issued approving FAC-002-2.	
3	February 6, 2020	Adopted by NERC Board of Trustees.	Revisions under Project 2017-07
4	TBD	Adopted by NERC Board of Trustees.	Revisions under Project 2020-05

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit B

Implementation Plan

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan

Project 2020-05 Modifications to FAC-001-3 and FAC-002-3

Applicable Standards

- FAC-001-4 Facility Interconnection Requirements
- FAC-002-4 Facility Interconnection Studies

Requested Retirements

- FAC-001-3 Facility Interconnection Requirements
- FAC-002-3 Facility Interconnection Studies

Prerequisite Standard

None

Applicable Entities for FAC-001-4

- Transmission Owner;
- Applicable Generation Owner;
- Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

Applicable Entities for FAC-002-4

- Planning Coordinator;
- Transmission Planner;
- Transmission Owner
- Distribution Provider;
- Generation Owner;
- Applicable Generation Owner;
- Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

Terms in the NERC Glossary of Terms

There are no new, modified, or retired terms.

Background

Proposed Reliability Standards FAC-001-4 and FAC-002-4 revise Reliability Standards FAC-001-3 and FAC-002-3 to provide clarity and specificity regarding which changes to existing Facility interconnections require study under the standards.

Currently effective Reliability Standards FAC-001-3 and FAC-002-3 require coordination and cooperation between a Facility owner and the Transmission Planner or Planning Coordinator when a new or materially modified interconnection Facility is connected to their system. These standards imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied; however, neither standard specifies what entity is responsible for determining what is considered to be a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility. Additionally, in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[1] This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements.

Proposed Reliability Standards FAC-001-4 and FAC-002-4 address these issues by clarifying that the changes to existing Facilities that will need to be studied under the standards are those meeting the definition of "qualified change" developed by the Planning Coordinator under new Requirement R6 of proposed FAC-002-4.

Effective Date and Phased-In Compliance Dates

The effective date for the proposed Reliability Standards FAC-001-4 and FAC-002-4 are provided below. Where the standard drafting team identified the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must begin to comply with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

Standards FAC-001-4 and FAC-002-4

Where approval by an applicable governmental authority is required, the standards shall become effective on the first day of the first calendar quarter that is twelve (12) months after the effective date of the applicable governmental authority's order approving the standards, or as otherwise provided for by the applicable governmental authority.

[1] LGIA-agreement.pdf (ferc.gov)

Where approval by an applicable governmental authority is not required, the standards shall become effective on the first day of the first calendar quarter that is twelve (12) months after the date the standards are adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Compliance Date for FAC-001-4 Requirements R3 and R4 and FAC-002-4 Requirement R1, R2, R3 and R4

To the extent a change is considered a "qualified change" under the definition developed by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6 but was not considered a "material modification" under FAC-001-3 or FAC-002-3, the entity shall not be required to comply with Reliability Standard FAC-001-4 Requirement R3 and R4 or Reliability Standard FAC-002-4 Requirements R1, R2, R3 and R4 until 12 months after the effective date of the standards.

Retirement Date

Reliability Standards FAC-001-3 and FAC-002-3 shall be retired immediately prior to the effective date of FAC-001-4 and FAC-002-4 in the particular jurisdiction in which the revised standard is becoming effective.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit C

Technical Rationale

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Facility Interconnection Studies and Requirements

Technical Rationale and Justification for Reliability Standards FAC-001 and FAC-002

April 2022

RELIABILITY | RESILIENCE | SECURITY




3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Table of Contents

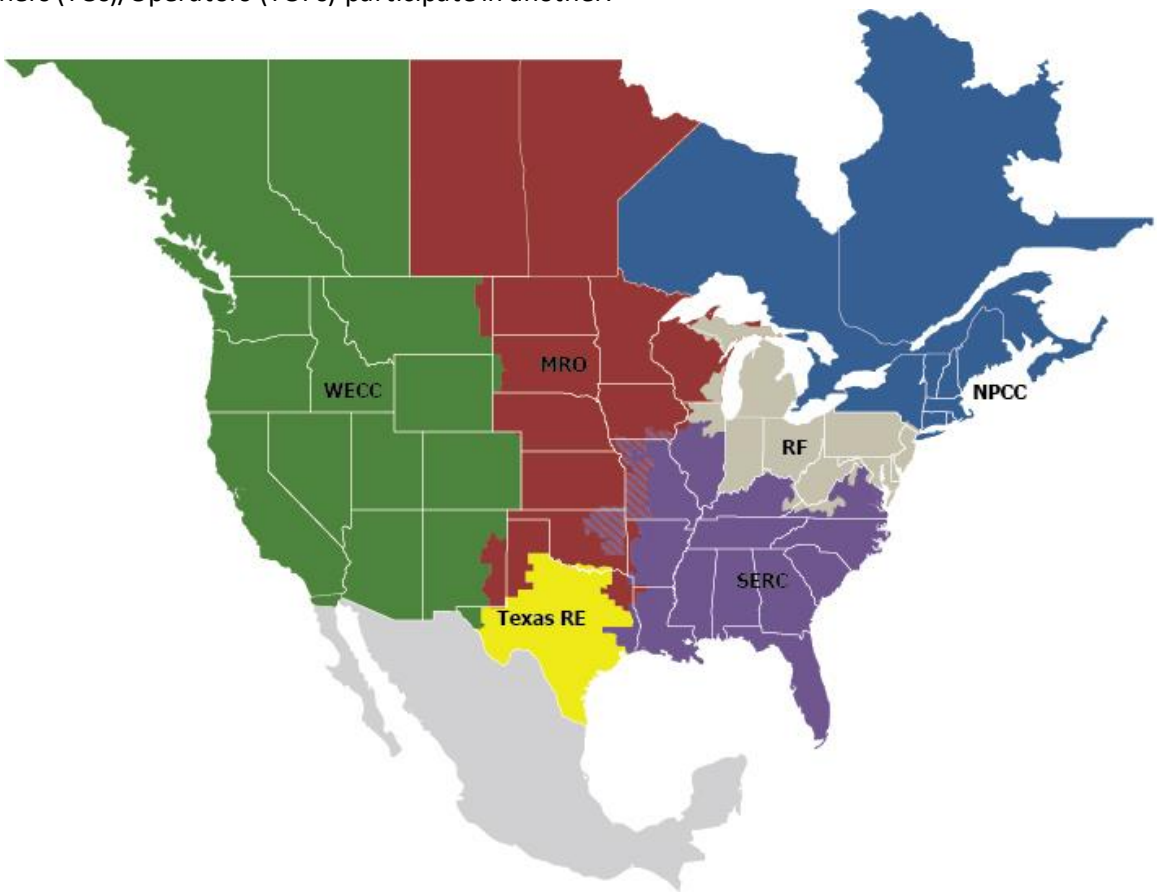
Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security

Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one RE while associated Transmission Owners (TOs)/Operators (TOPs) participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standards FAC-001-4 and FAC-002-4. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justifications document is not a Reliability Standard and should not be considered mandatory and enforceable.

Updates to this document now include the Project 2020-05 Modifications to FAC-001 and FAC-002 standard drafting team's (SDT's) intent in the requirement changes.

Background

This project modifies FAC-001-3 and FAC-002-3 to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.

FAC-001-3 and FAC-002-3 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner (TP) or Planning Coordinator (PC) when a new or materially modified interconnection Facility is connected to their system, neither standard specifies what entity is responsible for determining what is considered a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility.

Additionally, in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[1] This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements.

[1] LGIA-agreement.pdf (ferc.gov)

General Considerations

Qualified Change

The NERC Inverter-Based Resource Performance Task Force (IRPTF) identified several issues, which are documented in the white paper "IRPTF Review of NERC Reliability Standards" approved by the NERC Operating and Planning Committees in March 2020. The white paper identified issues in the FAC-001 and FAC-002 NERC Reliability Standards when using the term "materially modified". The IRPTF white paper points out that the term "materially modifying" in the FAC standards may cause confusion because of the FERC pro forma OATT using the same "materially modifying" term. in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[2] Also quoting from the IRPTF white paper "Both standards *(i.e. FAC-001 and FAC-002)* imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied."[3] Per the white paper, "This has led to confusion and potential reliability issues within industry. For example, a TP may consider an Inverter Based Resource (IBR) control system software change to be materially modifying, but if the Generator Owner (GO) does not consider such a change to be materially modifying they will not notify the TP of the change."[3]

The IRPTF White Paper recommends:

"FAC-001-3 and FAC-002-2 should be revised to: (a) clarify which entity is responsible for determining which facility changes are materially modifying, and therefore require study, (b) clarify that a Generator Owner should notify the affected entities before making a change that is considered materially modifying and (c) revise the term "materially modifying" so as to not cause confusion between the FAC standards and the FERC interconnection process:"[4]

The Project 2020-05 SDT researched existing language in current NERC standards and FERC pro forma language and concluded that the term "qualified change" was not used. Therefore, changing the term in FAC-001 and FAC-002 to "qualified change" should not cause confusion in the industry. The SDT proposes that the terms "materially modified", "material modification" and "materially modifying" in FAC-001 and FAC-002 be changed to "qualified change". As discussed below, the PC shall be required to post a publicly available definition of "qualified change" for the purposes of facility interconnection.

[2] LGIA-agreement.pdf (ferc.gov)

[3] IRPTF White Paper, dated March 2020: page 3 second paragraph (italics added)

Requirement R3

R3. *Each Transmission Owner shall address the following items in its Facility interconnection requirements: [Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. *Procedures for coordinated studies for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator and their impacts on affected systems.*

3.2. *Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change.*

3.3. *Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority Area.*

General Considerations for Requirement R3

Each TO and applicable GO should consider the following items in the development of Facility interconnection requirements:

- Procedures for requesting a new Facility interconnection or an existing interconnection seeking to make a qualified change
- Data required to properly study the interconnection
- Voltage level and MW and MVAR capacity or demand at the point of interconnection
- Breaker duty and surge protection
- System protection and coordination
- Metering and telecommunications
- Grounding and safety issues
- Insulation and insulation coordination
- Voltage, Reactive Power (including specifications for minimum static and dynamic reactive power requirements), and power factor control
- Power quality impacts
- Equipment ratings
- Synchronizing of Facilities
- Maintenance coordination
- Operational issues (abnormal frequency and voltages)
- Inspection requirements for new or existing interconnections seeking to make a qualified change
- Communications and procedures during normal and emergency operating conditions

Requirement R3, Part 3.3

Consistent with the Functional Model, there cannot be an assumption that the entity owning the transmission will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate

arrangements with a Balancing Authority (BA) to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 3.3, the TO is responsible for confirming that the party interconnecting has made appropriate provisions with a BA to operate within its metered boundaries.

Requirement R4

R4. *Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: [Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. *Procedures for coordinated studies of new interconnections and their impacts on affected system(s).*

4.2. *Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.*

4.3. *Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator are within a Balancing Authority Area.*

Requirement R4, Part 4.3

Consistent with the Functional Model, there cannot be an assumption that the entity owning the generation will be the same entity providing the BA function. It is the responsibility of the interconnecting party to make appropriate arrangements with a BA to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 4.3, the GO is responsible for confirming that the interconnecting party has made appropriate provisions with a BA to operate within its metered boundaries.

Requirement R6

R6. *Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

General Considerations for Requirement R6

The Project 2020-05 SDT drafted Requirement R6. The PC coordinates regional planning activities. *See, e.g.*, Glossary of Terms used in NERC Reliability Standards, which defines the Planning Authority/PC as "the responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems." Since the PC is responsible for this coordination, the PC is in the best position to ensure that changes to existing interconnections do not have adverse reliability impacts to the PC area as well as the neighboring areas. The PC is the appropriate party to define qualified change and make that definition publicly available. The PC is encouraged to coordinate the definition of qualified change with affected entities in their region, which could include TPs, GOs or others. Much of the same justifications for the PC to develop and make that definition publicly available are also applicable for this standard. This will provide consistency and clarity for entities to understand how changes to their interconnections may or may not have adverse reliability impacts.

If an entity is requesting a qualified change of an interconnection, the entity should determine whom the PC is. Entities requesting a qualified change should contact their TO to ascertain the relevant PC. Often the TO and PC are the same entity, or the TO can provide information on contacting the PC.

Factors the PC should consider in developing its definition of "qualified change" for purposes of required studies include how interconnection facility changes affect the steady-state short circuit and dynamic performance of that facility. Not all interconnection changes will necessarily result in changes on steady state, dynamic, or short circuit characteristics of a facility. The PC should also remember that potential qualified changes can have substantially different levels of performance as technology evolves or new technologies become available. Defining adverse reliability impacts calls for careful consideration.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit D

Order No. 672 Criteria

Exhibit D — Order No. 672 Criteria

Order No. 672 Criteria

In Order No. 672,[1] the Commission identified a number of criteria it will use to analyze Reliability Standards proposed for approval to ensure they are just, reasonable, not unduly discriminatory or preferential, and in the public interest. The discussion below identifies these factors and explains how the proposed Reliability Standards have met or exceeded the criteria.

1. Proposed Reliability Standards must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve that goal.[2]

Currently effective Reliability Standards FAC-001-3 (Facility Interconnection Requirements) and FAC-002-3 (Facility Interconnection Studies) work together to ensure that that the proper coordination and studies are done to evaluate the reliability impacts of newly interconnecting Facilities and existing interconnected Facilities that will undergo certain changes. Proposed Reliability Standards FAC-001-4 and FAC-002-4 revise the currently effective versions to provide clarity regarding the types of Facility changes that must be addressed in interconnection studies. Under the proposed standards, the Planning Coordinator would be the entity responsible

---

[1] *Rules Concerning Certification of the Electric Reliability Organization; and Procedures for the Establishment, Approval, and Enforcement of Electric Reliability Standards*, Order No. 672, 114 FERC ¶ 61,104, *order on reh'g*, Order No. 672-A, 114 FERC ¶ 61,328 (2006) [hereinafter Order No. 672].

[2] *See id.* at P 321 ("The proposed Reliability Standard must address a reliability concern that falls within the requirements of section 215 of the FPA. That is, it must provide for the reliable operation of Bulk-Power System facilities. It may not extend beyond reliable operation of such facilities or apply to other facilities. Such facilities include all those necessary for operating an interconnected electric energy transmission network, or any portion of that network, including control systems. The proposed Reliability Standard may apply to any design of planned additions or modifications of such facilities that is necessary to provide for reliable operation. It may also apply to Cybersecurity protection.").

See id. at P 324 ("The proposed Reliability Standard must be designed to achieve a specified reliability goal and must contain a technically sound means to achieve this goal. Although any person may propose a topic for a Reliability Standard to the ERO, in the ERO's process, the specific proposed Reliability Standard should be developed initially by persons within the electric power industry and community with a high level of technical expertise and be based on sound technical and engineering criteria. It should be based on actual data and lessons learned from past operating incidents, where appropriate. The process for ERO approval of a proposed Reliability Standard should be fair and open to all interested persons.").

for defining the types of changes to existing interconnected Facilities that would need to be addressed in interconnection procedures and studies for its area and for making that information publicly available so all affected entities will have access to it. The Planning Coordinator is in the best position to identify which Facility changes could have reliability impacts for its area. The proposed Reliability Standards would advance the reliability of the BPS by helping to ensure that changes to existing interconnected Facilities that can have reliability impacts are properly addressed in interconnection requirements and studies. As such, the proposed Reliability Standards are designed to achieve a specified reliability goal and contain a technically sound means to achieve that goal.

2. Proposed Reliability Standards must be applicable only to users, owners, and operators of the bulk power system, and must be clear and unambiguous as to what is required and who is required to comply.[3]

The proposed Reliability Standards are applicable only to users, owners, and operators of the BPS and are clear and unambiguous as to what is required and who is required to comply, in accordance with Order No. 672. The revisions reflected in the proposed standards would promote consistency and clarity regarding the types of Facility changes that must be addressed in interconnection procedures and studies in a given Planning Coordinator Area.

3. A proposed Reliability Standard must include clear and understandable consequences and a range of penalties (monetary and/or non-monetary) for a violation.[4]

The Violation Risk Factors ("VRFs") and Violation Severity Levels ("VSLs") for the proposed Reliability Standards comport with NERC and Commission guidelines related to their

---

[3] *See id.* at P 322 ("The proposed Reliability Standard may impose a requirement on any user, owner, or operator of such facilities, but not on others.").

See id. at P 325 ("The proposed Reliability Standard should be clear and unambiguous regarding what is required and who is required to comply. Users, owners, and operators of the Bulk-Power System must know what they are required to do to maintain reliability.").

[4] *See id.* at P 326 ("The possible consequences, including range of possible penalties, for violating a proposed Reliability Standard should be clear and understandable by those who must comply.").

assignment. The assignment of the severity level for each VSL is consistent with the corresponding requirement and the VSLs should ensure uniformity and consistency in the determination of penalties. The VSLs do not use any ambiguous terminology, thereby supporting uniformity and consistency in the determination of similar penalties for similar violations. For these reasons, the proposed Reliability Standards include clear and understandable consequences in accordance with Order No. 672.

4. A proposed Reliability Standard must identify clear and objective criteria or measures for compliance, so that it can be enforced in a consistent and non-preferential manner.[5]

The proposed Reliability Standards contain measures that support each requirement by clearly identifying what is required and how the requirement will be enforced. These measures help provide clarity regarding how the requirements will be enforced and help ensure that the requirements will be enforced in a clear, consistent, and non-preferential manner and without prejudice to any party.

5. Proposed Reliability Standards should achieve a reliability goal effectively and efficiently, but do not necessarily have to reflect "best practices" without regard to implementation cost or historical regional infrastructure design.[6]

The proposed Reliability Standards achieve their reliability goals effectively and efficiently in accordance with Order No. 672. The proposed Reliability Standards provide the Planning Coordinator with flexibility to develop an appropriate definition of "qualified change" for interconnection purposes, taking into account the unique characteristics of its system. Such "qualified changes" must then be addressed in interconnection procedures and studies. The

---

[5] *See id.* at P 327 ("There should be a clear criterion or measure of whether an entity is in compliance with a proposed Reliability Standard. It should contain or be accompanied by an objective measure of compliance so that it can be enforced and so that enforcement can be applied in a consistent and non-preferential manner.").

[6] *See id.* at P 328 ("The proposed Reliability Standard does not necessarily have to reflect the optimal method, or 'best practice,' for achieving its reliability goal without regard to implementation cost or historical regional infrastructure design. It should however achieve its reliability goal effectively and efficiently.").

proposed Reliability Standards achieve their reliability goal by having the Planning Coordinator establish the types of Facility changes that must be addressed in studies in a given Planning Coordinator Area and thereby resolve an ambiguity relating to the term "materially modify" in the currently effective standards.

6. Proposed Reliability Standards cannot be "lowest common denominator," i.e., cannot reflect a compromise that does not adequately protect Bulk-Power System reliability. Proposed Reliability Standards can consider costs to implement for smaller entities, but not at consequences of less than excellence in operating system reliability.[7]

The proposed Reliability Standards do not reflect a "lowest common denominator" approach. To the contrary, the proposed Reliability Standards provide flexibility to the Planning Coordinator to define the types of Facility changes that must be studied in its area, based on the unique system characteristics of the area.

7. Proposed Reliability Standards must be designed to apply throughout North America to the maximum extent achievable with a single Reliability Standard while not favoring one geographic area or regional model. It should take into account regional variations in the organization and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.[8]

---

[7] *See id.* at P 329 ("The proposed Reliability Standard must not simply reflect a compromise in the ERO's Reliability Standard development process based on the least effective North American practice—the so-called 'lowest common denominator'—if such practice does not adequately protect Bulk-Power System reliability. Although the Commission will give due weight to the technical expertise of the ERO, we will not hesitate to remand a proposed Reliability Standard if we are convinced it is not adequate to protect reliability.").

See id. at P 330 ("A proposed Reliability Standard may take into account the size of the entity that must comply with the Reliability Standard and the cost to those entities of implementing the proposed Reliability Standard. However, the ERO should not propose a 'lowest common denominator' Reliability Standard that would achieve less than excellence in operating system reliability solely to protect against reasonable expenses for supporting this vital national infrastructure. For example, a small owner or operator of the Bulk-Power System must bear the cost of complying with each Reliability Standard that applies to it.").

[8] *See id.* at P 331 ("A proposed Reliability Standard should be designed to apply throughout the interconnected North American Bulk-Power System, to the maximum extent this is achievable with a single Reliability Standard. The proposed Reliability Standard should not be based on a single geographic or regional model but should take into account geographic variations in grid characteristics, terrain, weather, and other such factors; it should also take into account regional variations in the organizational and corporate structures of transmission owners and operators, variations in generation fuel type and ownership patterns, and regional variations in market design if these affect the proposed Reliability Standard.").

The proposed Reliability Standards continue to apply consistently throughout North America and do not favor one geographic area or regional model. The proposed Reliability Standards provide flexibility to the Planning Coordinator to define the types of Facility changes that must be studied in its area, based on the unique system characteristics of the area.

8. Proposed Reliability Standards should cause no undue negative effect on competition or restriction of the grid beyond any restriction necessary for reliability.[9]

The proposed Reliability Standards have no undue negative effect on competition and do not unreasonably restrict the available transmission capacity or limit the use of the BPS in a preferential manner. The proposed Reliability Standards simply clarify the types of Facility changes that must be studied for interconnection purposes.

9. The implementation time for the proposed Reliability Standard is reasonable.[10]

The proposed effective date for the proposed Reliability Standards is just and reasonable and appropriately balances the urgency in the need to implement the standards against the reasonableness of the time allowed for those who must comply to develop necessary procedures, software, facilities, staffing, or other relevant capability. The proposed implementation plan provides that the proposed Reliability Standards would become effective on the first day of the first calendar quarter that is twelve (12) months after applicable regulatory approval; this is the date by which Planning Coordinators must have a publicly available definition of "qualified change." Where the Planning Coordinator's definition of "qualified change" differs from what an

---

[9] *See id.* at P 332 ("As directed by section 215 of the FPA, FERC itself will give special attention to the effect of a proposed Reliability Standard on competition. The ERO should attempt to develop a proposed Reliability Standard that has no undue negative effect on competition. Among other possible considerations, a proposed Reliability Standard should not unreasonably restrict available transmission capability on the Bulk-Power System beyond any restriction necessary for reliability and should not limit use of the Bulk-Power System in an unduly preferential manner. It should not create an undue advantage for one competitor over another.").

[10] *See id.* at P 333 ("In considering whether a proposed Reliability Standard is just and reasonable, the Commission will consider also the timetable for implementation of the new requirements, including how the proposal balances any urgency in the need to implement it against the reasonableness of the time allowed for those who must comply to develop the necessary procedures, software, facilities, staffing or other relevant capability.").

applicable entity may have considered "materially modified" in Facility Interconnection requirements or studies under the current standards, those entities will have an additional twelve months from the Effective Date to come into compliance with the revised standard (i.e. to reflect the Planning Coordinator's definition of "qualified change"). The currently effective versions of the standards would be retired immediately prior to the effective date of the revised Reliability Standards. This implementation timeline reflects consideration that Planning Coordinators will need time to develop and make publicly available a definition of "qualified change" for purposes of Facility interconnection. This implementation timeline also reflects consideration that, to the extent the Planning Coordinator's definition of "qualified change" is different from what an entity may have considered a "materially modifying" change, they will need time to reflect that new definition in its interconnection procedures or studies. The proposed implementation plan is attached as **Exhibit B** to this petition.

10. The Reliability Standard was developed in an open and fair manner and in accordance with the Commission-approved Reliability Standard development process.[11]

The proposed Reliability Standards were developed in accordance with NERC's Commission-approved, ANSI-accredited processes for developing and approving Reliability Standards. **Exhibit F** includes a summary of the Reliability Standard development proceedings, and details the processes followed to develop the proposed Reliability Standards. These processes included, among other things, comment periods, pre-ballot review periods, and balloting periods.

[11] *See id.* at P 334 ("Further, in considering whether a proposed Reliability Standard meets the legal standard of review, we will entertain comments about whether the ERO implemented its Commission-approved Reliability Standard development process for the development of the particular proposed Reliability Standard in a proper manner, especially whether the process was open and fair. However, we caution that we will not be sympathetic to arguments by interested parties that choose, for whatever reason, not to participate in the ERO's Reliability Standard development process if it is conducted in good faith in accordance with the procedures approved by the Commission.").

Additionally, all meetings of the standard drafting team were properly noticed and open to the public.

11. NERC must explain any balancing of vital public interests in the development of proposed Reliability Standards.[12]

NERC has identified no competing public interests regarding the request for approval of the proposed Reliability Standards. No comments were received that indicated that one or more of the proposed Reliability Standards conflicts with other vital public interests.

12. Proposed Reliability Standards must consider any other appropriate factors.[13]

No other negative factors relevant to whether the proposed Reliability Standards are just and reasonable were identified.

[12] *See id.* at P 335 ("Finally, we understand that at times development of a proposed Reliability Standard may require that a particular reliability goal must be balanced against other vital public interests, such as environmental, social and other goals. We expect the ERO to explain any such balancing in its application for approval of a proposed Reliability Standard.").

[13] *See id.* at P 323 ("In considering whether a proposed Reliability Standard is just and reasonable, we will consider the following general factors, as well as other factors that are appropriate for the particular Reliability Standard proposed.").

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit E

Analysis of Violation Risk Factors and Violation Severity Levels

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Violation Risk Factor and Violation Severity Level Justifications

Project 2020-05 Modifications to FAC-001 and FAC-002

This document provides the standard drafting team's (SDT's) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in FAC-001 and FAC-002. Each requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the Electric Reliability Organizations (ERO) Sanction Guidelines. The SDT applied the following NERC criteria and FERC Guidelines when developing the VRFs and VSLs for the requirements.

NERC Criteria for Violation Risk Factors

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System. However, violation of a medium risk requirement is unlikely to lead to Bulk Electric System instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to Bulk Electric System instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement
A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System.

FERC Guidelines for Violation Risk Factors

Guideline (1) – Consistency with the Conclusions of the Final Blackout Report

FERC seeks to ensure that VRFs assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System. In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the Bulk-Power System:

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

Guideline (2) – Consistency within a Reliability Standard
FERC expects a rational connection between the sub-Requirement VRF assignments and the main Requirement VRF assignment.

Guideline (3) – Consistency among Reliability Standards
FERC expects the assignment of VRFs corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) – Consistency with NERC's Definition of the Violation Risk Factor Level
Guideline (4) was developed to evaluate whether the assignment of a particular VRF level conforms to NERC's definition of that risk level.

Guideline (5) – Treatment of Requirements that Co-mingle More Than One Obligation
Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

NERC Criteria for Violation Severity Levels

VSLs define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple "degrees" of noncompliant performance and may have only one, two, or three VSLs.

VSLs should be based on NERC's overarching criteria shown in the table below:

Lower VSL	Moderate VSL	High VSL	Severe VSL
The performance or product measured almost meets the full intent of the requirement.	The performance or product measured meets the majority of the intent of the requirement.	The performance or product measured does not meet the majority of the intent of the requirement, but does meet some of the intent.	The performance or product measured does not substantively meet the intent of the requirement.

FERC Order of Violation Severity Levels

The FERC VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in the standard meet the FERC Guidelines for assessing VSLs:

Guideline (1) – Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance

Compare the VSLs to any prior levels of non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when levels of non-compliance were used.

Guideline (2) – Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties

A violation of a "binary" type requirement must be a "Severe" VSL.
Do not use ambiguous terms such as "minor" and "significant" to describe noncompliant performance.

Guideline (3) – Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement

VSLs should not expand on what is required in the requirement.

Guideline (4) – Violation Severity Level Assignment Should Be Based on a Single Violation, Not on a Cumulative Number of Violations

Unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the "default" for penalty calculations.

VRF Justification for FAC-001, Requirement R1

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R1

The VSL did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VRF Justification for FAC-001, Requirement R2

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R2

The VSL did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VRF Justification for FAC-001, Requirement R3

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R3

The VSL did not substantially change from the previously FERC approved FAC-001-3 Reliability Standard. The VSL has been revised to reflect clarification in the severe VSL language. The High and Moderate VSL did not change.

VRF Justification for FAC-001, Requirement R4

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R4

The VSL did not substantially change from the previously FERC approved FAC-001-3 Reliability Standard. The VSL has been revised to reflect clarification in the severe VSL language. The High and Moderate VSL did not change.

VSLs for FAC-001, Requirement R3			
Lower	**Moderate**	**High**	**Severe**
N/A	The Transmission Owner failed to address one part of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address two parts of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address three parts of Requirement R3 (Part 3.1 through Part 3.3).

VSL Justifications for FAC-001 Requirement R3	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, only reflect the update to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The requirement is for the Responsible Entity to address items in its Facility interconnection requirements as specified in Requirement R3. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language. The moderate VSL addresses where the Responsible Entity failed to include one of the applicable parts of the plan as specified in Requirement R3. The high VSL addresses where the Responsible Entity failed to include two of the applicable parts of the plan as specified in Requirement R3. The severe VSL addresses where the Responsible Entity but failed to include three of the applicable parts of the plan as specified in Requirement R3.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-001, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
N/A	The Generator Owner failed to address one part of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address two parts of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address three parts of Requirement R4 (Part 4.1 through Part 4.3).

VSL Justifications for FAC-001 Requirements R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, only reflect the update to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The requirement is for the Generator Owner to address items in its Facility interconnection requirements as specified in Requirement R4. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language. The moderate VSL addresses where the Generator Owner failed to include one of the applicable parts of the plan as specified in Requirement R4. The high VSL addresses where the Generator Owner failed to include two of the applicable parts of the plan as specified in Requirement R4. The severe VSL addresses where the Generator Owner to include three of the applicable parts of the plan as specified in Requirement R4.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for FAC-002, Requirement R1
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R1
The VSL has been revised to reflect modified standards language.

VRF Justification for FAC-002, Requirement R2
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R2
The VSL has been revised to reflect modified standards language.

VRF Justification for FAC-002, Requirement R3
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R3
The VSL has been revised to reflect clarification in the Severe, High, Moderate, and Lower VSL language.

VRF Justification for FAC-002, Requirement R4
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R4
The VSL has been revised to reflect clarification in the Severe, High, Moderate, and Lower VSL language.

VRF Justification for FAC-002, Requirement R5
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R5
The VSL did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VRF Justification for FAC-002, Requirement R6
Requirement R6 is a proposed new requirement. The proposed VRF is Lower and is consistent with other requirements in the standard.

VSL Justification for FAC-002, Requirement R6
Requirement R6 is a purposed new requirement, with only a severe VSL.

VSLs for FAC-002, Requirement R1			
Lower	**Moderate**	**High**	**Severe**
The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.

study one of the Parts (R1, 1.1-1.4).			

VSL Justifications for FAC-002 Requirement R1	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-002, Requirement R2			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6,~~,~~ coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.

VSL Justifications for FAC-002 Requirement R2	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

VSLs for FAC-002, Requirement R3			
Lower	**Moderate**	**High**	**Severe**
The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.

VSL Justifications for FAC-002 Requirement R3	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-002, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities.

VSL Justifications for FAC-002 Requirement R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-002, Requirement R6			
Lower	**Moderate**	**High**	**Severe**
N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

VSL Justifications for FAC-002 Requirement R6	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The severe level VSL is the only new proposed VSL for this new requirement; therefore, the purposed VSL does not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	"Severe" is the only level of noncompliance for this "binary" requirement, consistent with this Guideline. The VSL does not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The serve VSL is based on a single violation and not cumulative violations.

Exhibit F

Summary of Development and Complete Record of Development

Summary of Development History

The following is a summary of the development record for Project 2020-05 Modifications to FAC-001 and FAC-002.

I. Overview of the Standard Drafting Team

When evaluating a proposed Reliability Standard, the Commission is expected to give "due weight" to the technical expertise of the ERO.[1] The technical expertise of the ERO is derived from the standard drafting team ("SDT") selected to lead each project in accordance with Section 4.3 of the NERC Standard Processes Manual.[2] For this project, the SDT consisted of industry experts, all with a diverse set of experiences. A roster of the Project 2020-05 SDT members is included in **Exhibit G**.

II. Standard Development History

A. Standard Authorization Request Development and Posting

In its March 2020 white paper, the NERC Inverter-Based Resource Performance Task Force ("IRPTF") identified potential gaps and areas for improvements in several Reliability Standards to address the growth of inverters on the Bulk-Power System. With respect to Reliability Standards FAC-001 and FAC-002, the IRPTF recommended revisions to address industry confusion and potential reliability issues arising from the use of the undefined phrase "materially modified" to refer to the changes to existing interconnected Facilities that must be addressed as part of interconnection studies.

---

[1] Section 215(d)(2) of the Federal Power Act; 16 U.S.C. § 824(d)(2) (2020).

[2] The NERC *Standard Processes Manual* is available at https://www.nerc.com/FilingsOrders/us/RuleOfProcedureDL/SPM_Clean_Mar2019.pdf.

On June 10, 2020, NERC received a Standard Authorization Request ("SAR") from the IRPTF, and the NERC Standards Committee ("SC") initiated Project 2020-05 Modifications to FAC-001 and FAC-002 in late 2020 to address the IRPTF's recommendations.

At its September 24, 2020 meeting, the Standards Committee accepted the SAR and authorized posting the SAR for a 30-day informal comment period and for soliciting SAR Drafting Team members.[3] The SAR was posted for informal comment along with solicitations for SAR drafting team nominations from November 12, 2020 through December 11, 2020. On January 17, 2021, the SC appointed the SAR Drafting Team as the Standard Drafting Team.

Based on comments received from the SAR's initial posting, the SDT revised the SAR. On May 19, 2021, the Standards Committee ("SC") accepted the revised Project 2020-05 SAR, authorized drafting revisions to the Reliability Standards identified in the SAR and appointed the Project 2020-05 SAR Drafting team as the Standard Drafting Team.[4]

B. First Posting – Draft One of Reliability Standards and Initial Ballot

At its November 17, 2021 meeting, the SC authorized posting for a 45-day formal comment period and initial ballot.[5] The SDT posted draft one of proposed Reliability Standards FAC-001-4, FAC-002-4, an implementation plan, and other supporting materials for formal comment period

[3] Minutes, Standards Committee Conference Call, Agenda Item 6 (Standards Authorization Request – Facility Interconnection Requirements and Studies), https://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/SC_Agenda_Package_September_24_2020.pdf.

[4] Minutes, Standards Committee Conference Call, Agenda Item 5 (Project 2020-05 Modifications to FAC-001-3 and FAC-002-2), https://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/SC_May_Meeting_Minutes_Approved_June_16_%202021.pdf.

[5] Minutes, Standards Committee Meeting, Agenda Item 8 (Project 2020-05 Modifications to FAC-001 and FAC-002), https://www.nerc.com/comm/SC/Agenda%20Highlights%20and%20Minutes/SC%20November%20Meeting%20%20Minutes%20-%20Approved%20December%2015,%202021.pdf.

from December 7, 2021 through January 31, 2022,[6] with an initial ballot and non-binding poll during the last 10 days from January 21, 2022 through January 31, 2022.

This posting received 58 sets of responses, including comments from approximately 129 different people from approximately 83 companies representing 7 of the Industry Segments. Results of the initial ballot are summarized in the table below:

	Ballot	VRF/VSL Non-binding Poll
Standard	**Quorum / Approval**	**Quorum / Supportive Opinions**
FAC-001-4	93.33% / 85.19%	89.58% / 82.63%
FAC-002-4	93.33% / 85.19%	89.54% / 80.72%
Implementation Plan	93.31% / 78.97%	

C. Final Ballot

Final drafts of FAC-001-4, FAC-002-4, the implementation plan, and other associated documents were posted for a 10-day final ballot from April 13, 2022 through April 22, 2022. Results of the final ballot are summarized in the table below:

	Ballot
Standard	**Quorum / Approval**
FAC-001-4	94.86 % / 85.64%
FAC-002-4	94.86 % / 85.64%
Implementation Plan	94.84 % / 88.29%

[6] The duration of the comment period was extended past the minimum required 45 days on account of the December holidays.

D. Board of Trustees Adoption

The NERC Board of Trustees adopted proposed Reliability Standards FAC-001-4, FAC-002-4, and approved the implementation plan, the VRFs and VSLs, and the retirement of FAC-001-3 and FAC-002-3at its quarterly meeting on May 12, 2022.[7]

[7] NERC, *Board of Trustees Agenda Package*, Agenda Item 5a (Project 2020-05 Modifications to FAC-001 and FAC-002), https://www.nerc.com/gov/bot/Agenda%20highlights%20and%20Mintues%202013/Board_Open_Meeting_Agenda_Package_May_12_2022.pdf.

Complete Record of Development

Project 2020-05 Modifications to FAC-001 and FAC-002

Related Files

Status
Final ballots concluded at **8 p.m. Eastern, Friday, April 22, 2022** for the following:

- FAC-001-4 – Facility Interconnection Requirements
- FAC-002-4 – Facility Interconnection Studies
- Implementation Plan

Background
The NERC Inverter-based Resource Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements based on the work and findings of the IRPTF. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in a white paper. The "IRPTF Review of NERC Reliability Standards White Paper" was approved by the Operating Committee and the Planning Committee in March 2020. Among the findings noted in the white paper, the IRPTF identified issues with FAC-001-3 and FAC-002-2 that should be addressed.

Standard(s) Affected – FAC-001-3 and FAC-002-3

Purpose/Industry Need
FAC-001-3 and FAC-002-3 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner or Planning Coordinator when a new or materially modified interconnection Facility is connected to their system, neither standard specifies what entity is responsible for determining what is considered to be a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility.

Additionally, in FERC-jurisdictional areas, the term "Materially Modification" refers to a new generation project's impact on other generators in the interconnection queue. This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements. The application of these terms is different between the FERC process and the NERC Reliability Standards (specifically FAC-001-3 and FAC-002-3). This project will modify FAC-001-3 and FAC-002-3 to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.

Subscribe to this project's observer mailing list
Select "NERC Email Distribution Lists" from the "Service" drop-down menu and specify "Project 2020-05 Modifications to FAC-001 and FAC-002 Observer List" in the Description Box.

Draft	Actions	Dates	Results	Consideration of Comments
Final Draft **FAC-001-4** Clean **(26)** | Redline to Last Posted **(27)**| Redline to Last Approved **(28)** **FAC-002-4** Clean **(29)**| Redline to Last Posted **(30)**| Redline to Last Approved **(31)** **Implementation Plan** Clean **(32)** | Redline **(33)** **Supporting Materials** **Technical Rationale** Clean **(34)** | Redline **(35)** Implementation Guidance **(36)** VRF/VSL Justifications **(37)**	**Final Ballot** Info **(38)** Vote	04/13/22 - 04/22/22	Ballot Results Standards**(39)** Implementation Plan **(40)**	
Draft 1 FAC-001-4 Clean **(9)** | Redline **(10)** FAC-002-4 Clean **(11)** | Redline **(12)** Implementation Plan **(13)** **Supporting Materials** Unofficial Comment Form (Word) **(14)** Technical Rationale **(15)**	Initial ballots and Non-binding Polls Updated Info **(20)** Info **(21)** Vote	01/21/22 - 01/31/22	Ballot Results Standards**(22)** Implementation Plan **(23)** Non-binding Poll Results FAC-001-4 **(24)** FAC-002-4 **(25)**	

VRF/VSL Justifications **(16)**	Join Ballot Pools	12/07/21 - 01/10/22		Consideration of Comments **(19)**
	Comment Period Info **(17)** Submit Comments	12/07/21 - 01/31/22	Comments Received **(18)**	
Standard Authorization Request (SAR) Clean **(7)** | Redline **(8)**	The Standards Committee Accepted the SAR on May 19, 2021			
Drafting Team Nominations **Supporting Materials** Unofficial Nomination Form (Word) **(5)**	Nomination Period Info **(6)** Submit Nominations	11/12/20 - 12/11/20		
Standard Authorization Request (1) **Supporting Materials** Unofficial Comment Form (Word) **(2)**	Comment Period Info **(3)** Submit Comments	11/12/20 - 12/11/20	Comments Received **(4)**	

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standard Authorization Request (SAR)

Complete and submit this form, with attachment(s) to the NERC Help Desk. Upon entering the Captcha, please type in your contact information, and attach the SAR to your ticket. Once submitted, you will receive a confirmation number which you can use to track your request.

The North American Electric Reliability Corporation (NERC) welcomes suggestions to improve the reliability of the bulk power system through improved Reliability Standards.

Requested information			
SAR Title:	FAC-001-3 Facility Interconnection Requirements; FAC-002-2, Facility Interconnection Studies		
Date Submitted:	June 10, 2020		
SAR Requester			
Name:	Allen Shriver, Chair Jeffery Billo, Vice Chair		
Organization:	Inverter-Based Resource Performance Task Force (IRPTF)		
Telephone:	Allen: 561-904-3234 Jeffery: 512-248-6334	Email:	Allen.Schriver@NextEraEnergy.com Jeff.Billo@ercot.com

SAR Type (Check as many as apply)	
☐ New Standard	☐ Imminent Action/ Confidential Issue (SPM Section 10)
☒ Revision to Existing Standard	☐ Variance development or revision
☐ Add, Modify or Retire a Glossary Term	☐ Other (Please specify)
☐ Withdraw/retire an Existing Standard	

Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)	
☐ Regulatory Initiation	☒ NERC Standing Committee Identified
☐ Emerging Risk (Reliability Issues Steering Committee) Identified	☐ Enhanced Periodic Review Initiated
☐ Reliability Standard Development Plan	☒ Industry Stakeholder Identified

Industry Need (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):

The NERC Inverter-based Resource Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements based on the work and findings of the IRPTF. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in a white paper. The "IRPTF Review of NERC Reliability Standards White Paper" was approved by the Operating Committee and the Planning Committee in March 2020. Among the findings noted in the white paper, the IRPTF identified issues with FAC-001-3 and FAC-002-2 that should be addressed.

The purpose of FAC-001-3 is to ensure that Facility interconnection requirements exist for Transmission Owners and Generator Owners when connecting new or materially modified facilities. The purpose of FAC-002-2 is to ensure studies are performed to analyze the impact of interconnecting new or materially

Requested information
modified facilities on the Bulk Electric System (BES). An ambiguity exists in these standards in regards to the term "materially modified" and which entity is responsible for making such a determination. Hence, these standards need to be modified to address this issue.
Purpose or Goal (How does this proposed project provide the reliability-related benefit described above?):
This SAR proposes to revise FAC-001-3 and FAC-002-2 to clarify requirements related to material modifications of Facilities.
Project Scope (Define the parameters of the proposed project):
The proposed scope of this project is as follows: a. Consider ways to clarify which entity is responsible for making the determination of what is considered to be a material modification to a Facility. b. Consider requiring Facility owners to notify affected entities when making a material modification to a Facility. c. Consider changing the term "materially modifying" to avoid confusion with similar terminology that is used for a different purpose in the FERC Open Access Transmission Tariff. d. Consider other manners in which to clarify existing requirements to ensure new or materially modified Facilities on the Bulk Electric System (BES) are adequately accounted for to ensure reliability.
Detailed Description (Describe the proposed deliverable(s) with sufficient detail for a drafting team to execute the project. If you propose a new or substantially revised Reliability Standard or definition, provide: (1) a technical justification[1] which includes a discussion of the reliability-related benefits of developing a new or revised Reliability Standard or definition, and (2) a technical foundation document (*e.g.,* research paper) to guide development of the Standard or definition):
Both FAC-001-3 and FAC-002-2 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. However, there is not a requirement for any entity to determine what changes are to be considered materially modifying and Facility owners are not required to notify potentially affected entities of these changes. This has led to confusion and potential reliability issues within industry. For example, a Transmission Planner may consider an inverter-based resource (IBR) control system software change to be materially modifying, but if the Generator Owner does not consider such a change to be materially modifying they will not notify the Transmission Planner of the change. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner or Planning Coordinator when a new or materially modified interconnection Facility is connected to their system, for example FAC-002-2 Requirement R5, neither standard specifies what entity is responsible for determining what is considered to be a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility.

[1] The NERC Rules of Procedure require a technical justification for new or substantially revised Reliability Standards. Please attach pertinent information to this form before submittal to NERC.

Requested information
Additionally, in FERC-jurisdictional areas, the term "Materially Modification" refers to a new generation project's impact on other generators in the interconnection queue. This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements. The application of these terms is different between the FERC process and the NERC Reliability Standards (specifically FAC-001-3 and FAC-002-2). For example, if a Generator Owner changes out the inverters on an existing solar PV resource, the change may have no impact on other generators in the interconnection queue, and thus would not be considered a Material Modification under the FERC OATT rules. But such a change could have reliability impacts on the system that should be studied in accordance with FAC-002-2. The Standards Drafting Team should consider changing the term to avoid this confusion. FAC-001-3 and FAC-002-2 should be modified to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.
Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):
The SAR proposes to clarify and address gaps in the requirements in FAC-001-3 and FAC-002-2. The cost impact is unknown.
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (*e.g.*, Dispersed Generation Resources):
The frequency of change of components could be higher for IBRs and the magnitude of such changes could vary. For example, due to a rapid change in wind turbine generator (WTG) technology, it is a common practice to re-power an existing wind power plant with bigger blades while keeping the same electrical generator and converter systems (for both Type 3 and Type 4 WTGs). This may be considered a material modification since a new set of bigger blades (e.g., 93 m to 208 m) can produce more power at a lower wind speed. However, the nameplate rating of the plant will remain unchanged. From an interconnection requirements' perspective, it is the electrical generator and converter system that impacts the majority of the steady-state, short-circuit, and dynamic characteristics and therefore will be mostly unchanged. Therefore, the question remains if these sort of repowering projects should be studied under FAC-002-2 R1 and which entity should make that determination.
To assist the NERC Standards Committee in appointing a drafting team with the appropriate members, please indicate to which Functional Entities the proposed standard(s) should apply (*e.g.*, Transmission Operator, Reliability Coordinator, etc. See the most recent version of the NERC Functional Model for definitions):
Planning Coordinator, Transmission Planner, Generator Owner, Transmission Owner, Distribution Provider
Do you know of any consensus building activities[2] in connection with this SAR? If so, please provide any recommendations or findings resulting from the consensus building activity.
This issue was captured in the "IRPTF Review of NERC Reliability Standards White Paper" which was approved by the Operating Committee and the Planning Committee.

[2] Consensus building activities are occasionally conducted by NERC and/or project review teams. They typically are conducted to obtain industry inputs prior to proposing any standard development project to revise, or develop a standard or definition.

Requested information
Are there any related standards or SARs that should be assessed for impact as a result of this proposed project? If so, which standard(s) or project number(s)?
N/A
Are there alternatives (e.g., guidelines, white paper, alerts, etc.) that have been considered or could meet the objectives? If so, please list the alternatives.
The IRPTF did not identify any alternatives since there are ambiguities in the existing language for FAC-001-3 and FAC-002-2 that need to be clarified.

Reliability Principles	
Does this proposed standard development project support at least one of the following Reliability Principles (Reliability Interface Principles)? Please check all those that apply.	
☒	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☐	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☒	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
☐	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
☐	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☐	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☐	8. Bulk power systems shall be protected from malicious physical or cyber attacks.

Market Interface Principles	
Does the proposed standard development project comply with all of the following Market Interface Principles?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	Yes
4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.	Yes

Identified Existing or Potential Regional or Interconnection Variances	
Region(s)/ Interconnection	Explanation
None	N/A

For Use by NERC Only

SAR Status Tracking (Check off as appropriate).	
☐ Draft SAR reviewed by NERC Staff ☐ Draft SAR presented to SC for acceptance ☐ DRAFT SAR approved for posting by the SC	☐ Final SAR endorsed by the SC ☐ SAR assigned a Standards Project by NERC ☐ SAR denied or proposed as Guidance document

Version History

Version	Date	Owner	Change Tracking
1	June 3, 2013		Revised
1	August 29, 2014	Standards Information Staff	Updated template
2	January 18, 2017	Standards Information Staff	Revised
2	June 28, 2017	Standards Information Staff	Updated template
3	February 22, 2019	Standards Information Staff	Added instructions to submit via Help Desk
4	February 25, 2020	Standards Information Staff	Updated template footer

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Unofficial Comment Form

Project 2020-05 Modifications to FAC-001-3 and FAC-002-2

Do not use this form for submitting comments. Use the Standards Balloting and Commenting System (SBS) to submit comments on **Project 2020-05 Modifications to FAC-001-3 and FAC-002-2 Standard Authorization Request (SAR).** Comments must be submitted by **8 p.m. Eastern, Friday, December 11, 2020.**

Additional information is available on the project page. If you have questions, contact Senior Standards Developer, Alison Oswald (via email), or at 404-446-9668.

Background Information

The NERC Inverter-based Resource Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in the "IRPTF Review of NERC Reliability Standards White Paper," which was approved by the Operating Committee and the Planning Committee (now part of the Reliability and Security Technical Committee (RSTC)) in March 2020. Among the findings noted in the white paper, the IRPTF identified issues with FAC-001-3 and FAC-002-2 that should be addressed.

Consistent with the IRPTF recommendations, the scope of the proposed SAR includes revisions to FAC-001-3 and FAC-002-2 to clarify requirements related to material modifications of Facilities. The purpose of FAC-001-3 is to ensure that Facility interconnection requirements exist for Transmission Owners and Generator Owners when connecting new or materially modified facilities. The purpose of FAC-002-2 is to ensure studies are performed to analyze the impact of interconnecting new or materially modified facilities on the Bulk Electric System (BES). The IRPTF identified an opportunity to clarify the term "materially modified" within these standards and to specify which entity is responsible for determining what is considered a material modification. The RSTC endorsed the SAR on June 10, 2020.

Questions

1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.

   ☐ Yes
   ☐ No

   Comments:

2. Provide any additional comments for the SAR drafting team to consider, if desired.

   Comments:

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2020-05 Modifications to FAC-001-3 and FAC-002-2 Standard Authorization Request

Informal Comment Period Open through December 11, 2020

Now Available

An informal comment period for the **Project 2020-05 Modifications to FAC-001-3 and FAC-002-2 Standard Authorization Request** is open through **8 p.m. Eastern, Friday, December 11, 2020.**

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. Contact Wendy Muller regarding issues with the SBS. An unofficial Word version of the comment form is posted on the project page.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

The drafting team will review all responses received during the comment period and determine the next steps of the project**.**

For information on the Standards Development Process, refer to the Standard Processes Manual**.**

Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2020-03 Supply Chain Low Impact Revisions Observer List” in the Description Box. For more information or assistance, contact Senior Standards Developer, Alison Oswald (via email) or at 404-446-9668.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Comment Report

Project Name:	2020-05 Modifications to FAC-001-3 and FAC-002-2 | Standard Authorization Request
Comment Period Start Date:	11/12/2020
Comment Period End Date:	12/11/2020
Associated Ballots:	

There were 26 sets of responses, including comments from approximately 89 different people from approximately 72 companies representing 10 of the Industry Segments as shown in the table on the following pages.

Questions

1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.

2. Provide any additional comments for the SAR drafting team to consider, if desired.

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
MRO	Dana Klem	1,2,3,4,5,6	MRO	MRO NSRF	Joseph DePoorter	Madison Gas & Electric	3,4,5,6	MRO
					Larry Heckert	Alliant Energy	4	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					Jodi Jensen	Western Area Power Administration	1,6	MRO
					Andy Crooks	SaskPower Corporation	1	MRO
					Bryan Sherrow	Kansas City Board of Public Utilities	1	MRO
					Bobbi Welch	Omaha Public Power District	1,3,5,6	MRO
					Jeremy Voll	Basin Electric Power Cooperative	1	MRO
					Bobbi Welch	Midcontinent ISO	2	MRO
					Douglas Webb	Kansas City Power & Light	1,3,5,6	MRO
					Fred Meyer	Algonquin Power Co.	1	MRO
					John Chang	Manitoba Hydro	1,3,6	MRO
					James Williams	Southwest Power Pool, Inc.	2	MRO
					Jamie Monette	Minnesota Power / ALLETE	1	MRO
					Jamison Cawley	Nebraska Public Power	1,3,5	MRO
					Sing Tay	Oklahoma Gas & Electric	1,3,5,6	MRO
					Terry Harbour	MidAmerican Energy	1,3	MRO

					Troy Brumfield	American Transmission Company	1	MRO
Entergy	Julie Hall	5,6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
Duke Energy	Kim Thomas	1,3,5,6	FRCC,RF,SERC	Duke Energy	Laura Lee	Duke Energy	1	SERC
					Dale Goodwine	Duke Energy	5	SERC
					Greg Cecil	Duke Energy	6	RF
FirstEnergy - FirstEnergy Corporation	Mark Garza	1,3,4,5,6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Robert Loy	FirstEnergy - FirstEnergy Solutions	5	RF
					Ann Carey	FirstEnergy - FirstEnergy Solutions	6	RF
					Mark Garza	FirstEnergy- FirstEnergy	4	RF
Southern Company - Southern Company Services, Inc.	Marsha Morgan	1,3,5,6	SERC	Southern Company	Katherine Prewitt	Southern Company Services, Inc	1	SERC
					Jennifer Sykes	Southern Company Generation and Energy Marketing	6	SERC
					R Scott Moore	Alabama Power Company	3	SERC
					William Shultz	Southern Company Generation	5	SERC
Northeast Power Coordinating Council	Ruida Shu	1,2,3,4,5,6,7,8,9,10	NPCC	NPCC Regional Standards Committee no HQ	Guy V. Zito	Northeast Power Coordinating Council	10	NPCC
					Randy MacDonald	New Brunswick Power	2	NPCC

Glen Smith	Entergy Services	4	NPCC
Alan Adamson	New York State Reliability Council	7	NPCC
David Burke	Orange & Rockland Utilities	3	NPCC
Michele Tondalo	UI	1	NPCC
Helen Lainis	IESO	2	NPCC
David Kiguel	Independent	7	NPCC
Paul Malozewski	Hydro One Networks, Inc.	3	NPCC
Nick Kowalczyk	Orange and Rockland	1	NPCC
Joel Charlebois	AESI - Acumen Engineered Solutions International Inc.	5	NPCC
Mike Cooke	Ontario Power Generation, Inc.	4	NPCC
Salvatore Spagnolo	New York Power Authority	1	NPCC
Shivaz Chopra	New York Power Authority	5	NPCC
Deidre Altobell	Con Ed - Consolidated Edison	4	NPCC
Dermot Smyth	Con Ed - Consolidated Edison Co. of New York	1	NPCC
Peter Yost	Con Ed - Consolidated Edison Co. of New York	3	NPCC
Cristhian Godoy	Con Ed - Consolidated	6	NPCC

						Edison Co. of New York		
					Sean Bodkin	Dominion - Dominion Resources, Inc.	6	NPCC
					Nurul Abser	NB Power Corporation	1	NPCC
					Randy MacDonald	NB Power Corporation	2	NPCC
					Michael Ridolfino	Central Hudson Gas and Electric	1	NPCC
					Vijay Puran	NYSPS	6	NPCC
					ALAN ADAMSON	New York State Reliability Council	10	NPCC
					Sean Cavote	PSEG - Public Service Electric and Gas Co.	1	NPCC
					Brian Robinson	Utility Services	5	NPCC
					Quintin Lee	Eversource Energy	1	NPCC
					Jim Grant	NYISO	2	NPCC
					John Pearson	ISONE	2	NPCC
					John Hastings	National Grid USA	1	NPCC
					Michael Jones	National Grid USA	1	NPCC

1. Do you agree with the proposed scope as described in the SAR? If you do not agree, or if you agree but have comments or suggestions for the project scope please provide your recommendation and explanation.

Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy

Answer	No
Document Name	

Comment

SAR proposed scope should be limited to changing the term "materially modifying". If this term is updated to effectively describe applicable changes, there is no need to consider the rest of the proposed scope as the rest of the standard requirements are sufficiently written as-is.

Likes 0	
Dislikes 0	

Response

Thomas Foltz - AEP - 3,5,6

Answer	No
Document Name	

Comment

While we appreciate the concerns expressed within the SAR, AEP recommends against pursuing any effort to develop a definition of material modification that is prescriptive, and which would prevent a Transmission Owner from making this determination for themselves. While AEP agrees that there may be a benefit in providing additional insight into what may or may-not be considered materially modified, we believe each Transmission Owner should continue to be allowed the discretion and flexibility to use proper engineering judgement in determining this for themselves. Regulatory rules and technology changes constantly, and flexibility in identifying which assets have been materially modified needs to remain in hands of the Transmission Owner who best understands the system, its configuration, and what any potential impacts might be. As just one example, system changes might impact a load delivery point, changing it from one-way to bi-directional flow. In such a case as this one, a prescriptive, inflexible definition of materially modified might result in a number of negative impacts. For example, such a definition it might not trigger the connected entity to engage the Transmission Owner. Or, if the connected entity does not engage the Transmission Owner, it could result in inaccurate models and assumptions being made in the design of assets and facilities. This could potentially result in misoperations, leading to improper investing, improper study results, customer outages or tripping due to poor communication, and possibly losing a circuit.

It needs to be recognized that Transmission Owners across the system have existing interconnection agreements with their interconnecting entities. In addition, the Interconnection Requirement document, posted on our company’s website, specifies the exact meaning of “materially modified.” Any potential prescriptive definition of material modification outside of interconnection agreements or requirements could unintentionally impact and jeopardize these existing interconnection agreements.

While AEP disagrees with pursuing a prescriptive definition of materially modified, we do recognize the importance of communicating the

importance that connecting entities learn and understand that Transmission Owners may have different definitions of what constitutes materially modified (within any Interconnection Agreement or Requirement) and to understand that changes on the connecting entity's side may need to be communicated to Transmission Owners. While obligations in this regard might be one possible strategy, a future Reliability Guideline could perhaps prove equally effective.

Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	No
Document Name	

Comment

EEI offers the following suggested modifications to the proposed SAR:

SAR Type – To address the concerns related to the term "materially modifying", the SAR should be modified to give enough latitude to the SDT to best determine how to address the ambiguity in the term by also including the SAR type "Add, Modify or Retire a Glossary Term."

Purpose or Goal – The purpose of this SAR should be to remove existing ambiguity surrounding the use of the term "materially modifying" given its similarity to the defined FERC defined term "Material Modification".

Project Scope – The project scope should not include a term that has been identified within that SAR as confusing. Additionally, EEI recommends that the project scope should be modified as follows:

a. Consider ways **to more clearly define entity responsibilities within FAC-001 and FAC-002.**

b. Consider requiring Facility owners to notify **responsible entities whenever changes are made to their facility that might impact the Reliable Operation of the BES**.

c. Consider **the use of another** term **other than** "materially modifying" to avoid confusion with similar terminology that is used for a different purpose in the FERC Open Access Transmission Tariff **and whether that term should be formally defined.**

d. Consider **other modifications to existing requirements within FAC-001 and FAC-002 that might better define when TOs and GOs are to notify responsible entities and/or other impacted registered entities as a result of facility modifications** to ensure new or modified Facilities on the Bulk Electric System (BES) are adequately accounted for to ensure **the Reliable Operation of the BES**.

Cost Impacts – While EEI agrees that exact cost impacts of the proposed changes are unknown, additional costs will be incurred by both TOs and GOs as a result of these changes. There may also be delays associated with these changes impacting any planned material modification to existing interconnected resources. EEI recommends these cost impacts be recognized.

Likes 0	
Dislikes 0	

Response

Marsha Morgan - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	No
Document Name	
Comment	

Southern Company supports the suggested modifications to the proposed SAR offered by EEI:

SAR Type – To address the concerns related to the term “materially modifying”, the SAR should be modified to give enough latitude to the SDT to best determine how to address the ambiguity in the term by also including the SAR type “Add, Modify or Retire a Glossary Term.”

Purpose or Goal – The purpose of this SAR should be to remove existing ambiguity surrounding the use of the term “materially modifying” and not to clarify the meaning of the term given its similarity to the defined FERC defined term “Material Modification”.

Project Scope – The project scope should not include a term that has been identified within that SAR as confusing. Additionally, EEI recommends that the project scope should be modified as follows:

a. Consider ways **to more clearly define entity responsibilities within FAC-001 and FAC-002.**

*b. Consider requiring Facility owners to notify **responsible entities whenever changes are made to their facility that modifies the physical operating characteristics**.

c. Consider **the use of another term other than** “materially modifying” to avoid confusion with similar terminology that is used for a different purpose in the FERC Open Access Transmission Tariff **and whether that term should be formally defined.**

d. Consider **other modifications to existing requirements within FAC-001 and FAC-002 that might better define when TOs and GOs are to notify responsible entities and/or other impacted registered entities as a result of facility modifications** to ensure new or modified Facilities on the Bulk Electric System (BES) are adequately accounted for to ensure **the Reliable Operation of the BES**.

*e. With any modifications or additions to FAC-001 and FAC-002, be mindful of **other standards to avoid duplication or conflict with existing requirements**

Cost Impacts – While EEI agrees that exact cost impacts of the proposed changes are unknown, additional costs will be incurred by both TOs and GOs as a result of these changes. There may also be delays associated with these changes impacting any planned material modification to existing interconnected resources. EEI recommends these cost impacts be recognized.

Likes 0	
Dislikes 0	
Response	

John Allen - City Utilities of Springfield, Missouri - 1,3,4	
Answer	Yes
Document Name	
Comment	

City Utilities agrees with the scope and purpose of the SAR, but would like to know if consideration was given to incorporating with the TPL-001 standard and making necessary updates. It appears that TPL-001 already requires the models to include *New planned Facilities and changes to existing Facilities* to determine the impact on the BES. Therefore, would it not be redundant or unnecessary to keep FAC-002 as a separate standard? If FAC-002 is addressing a different reliability risk, then please let us know. If it's for business/tariff or conceptual purposes, then we question the applicability or need as a Reliability Standard.

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1,5

Answer	Yes
Document Name	

Comment

Reclamation recommends the scope of this project include updating the NERC Glossary of Terms to contain the definition(s) of “materially modified,” “material modification,” and any other new terms as appropriate.

Likes 0	
Dislikes 0	

Response

Andrea Jessup - Bonneville Power Administration - 1,3,5,6 - WECC

Answer	Yes
Document Name	

Comment

BPA believes that the gaps have been identified. BPA agrees with the premise that the term “materially modified” is a little vague and it would be helpful to understand exactly what is meant by this terminology.

Likes 0	
Dislikes 0	

Response

Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC Regional Standards Committee no HQ

Answer	Yes
Document Name	

Comment
We suggest revising the project scope to be more definitive, instead of having several “consider’ statements. In addition, we suggest revising the SAR to allow the drafting team to Add, Modify, or Retire a Glossary Term if the drafting team decides a Glossary Term is needed for resolving ambiguity involving material modifications.

Likes 0	
Dislikes 0	

Response

Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	Yes
Document Name	

Comment
MISO is supportive of the SAR as written and is responding on behalf of its registered functions under FAC-002-2 only.

Likes 0	
Dislikes 0	

Response

Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	Yes
Document Name	

Comment
APS agrees with the proposed scope of the SAR as it will provide clarification of what is considered materially modifying for all applicable entities and will identify the functional entities responsible for declaring such modifications to the applicable functional entities. The example described within IRPTF’s White paper, specific to wind turbine generator modifications, poses impacts/changes to the electrical characteristics. APS agrees clarifying the term “materially modified” would remove ambiguity and identifies what is considered materially modified. APS recommends identifying the modification or changes that impact electrical characteristics, such as impedance changes to step up transformers, changes to frequency response, or new inverters (list not all inclusive).

Likes 0	
Dislikes 0	

Response

Daniel Gacek - Exelon - 1,3,5,6

Answer	Yes
Document Name	
Comment	
Exelon agrees with the proposed scope, and also supports the EEI comments to improve the language of the SAR to provide additional latitude to the SDT.	
Likes 0	
Dislikes 0	
Response	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	Yes
Document Name	
Comment	
OPG supports the comments from NPCC Regional Standards Committee no HQ.	
Likes 0	
Dislikes 0	
Response	
Anthony Jablonski - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Laura Nelson - IDACORP - Idaho Power Company - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Kjersti Drott - Tri-State G and T Association, Inc. - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Karen Weaver - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Scott Langston - Tallahassee Electric (City of Tallahassee, FL) - 1,3,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Colleen Campbell - AES - Indianapolis Power and Light Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bruce Reimer - Manitoba Hydro - 1,3,5,6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Jennie Wike - Tacoma Public Utilities (Tacoma, WA) - 1,3,4,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 5,6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Teresa Cantwell - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
James Baldwin - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

2. Provide any additional comments for the SAR drafting team to consider, if desired.	
Constantin Chitescu - Ontario Power Generation Inc. - 5	
Answer	
Document Name	
Comment	
OPG supports the comments from NPCC Regional Standards Committee no HQ.	
Likes 0	
Dislikes 0	
Response	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1,3,5,6	
Answer	
Document Name	
Comment	
APS offers the following proposals for the SAR drafting team to consider: • Specifying criteria for what is considered “Materially Modifying” for a Generator Operator and Transmission Operator • Specify criteria that would identify when it is required for a Generator Operator to inform/declare changes to the Transmission Operator. • As there are multiple scenarios that could be considered “materially modifying”, a proposal would be that the Transmission Operator shall have the final decision to determine if changes are applicable • Consider including the Generator Operator and Transmission Operator within SDT to determine what each role considers “materially modifying”.	
Likes 0	
Dislikes 0	
Response	
Bobbi Welch - Midcontinent ISO, Inc. - 2	
Answer	
Document Name	
Comment	
MISO agrees with comments submitted by the MRO NSRF in support of a Results-Based Standards approach.	
Likes 0	

Dislikes 0	
Response	
Teresa Cantwell - Lower Colorado River Authority - 1,5	
Answer	
Document Name	
Comment	
LCRA believes that the term “materially modified” should be defined at a regional level. This would give the Planning Coordinators and Transmission Planners the ability to define the boundaries of what modifications could impact the reliability of their portion of the BES.	
Likes 0	
Dislikes 0	
Response	
Ruida Shu - Northeast Power Coordinating Council - 1,2,3,4,5,6,7,8,9,10 - NPCC, Group Name NPCC Regional Standards Committee no HQ	
Answer	
Document Name	
Comment	
Please update the SAR regarding references to FAC-002-2. FAC-002-3 was approved by FERC as part of the Standards Alignment with Registration Project (Project 2017-07). While we appreciate focusing on ensuring that new technologies are adequately addressed in standards FAC-001 and FAC-002. We recommend against pursuing any effort to develop a prescriptive definition of material modification or assign the responsibility of making materiality modification determination to any other entities beyond those that already are assigned in FERC-approved Open Access Transmission Tariffs (OATTs). The processes of materiality modification determination are well defined in the OATTs and account for regional differences as it relates to the entities performing such determinations. These processes provide adequate flexibility necessary to incorporate and thoroughly study any new or existing technology. Moreover, the OATTs and their supplemental documents (manuals, guidelines, etc.) clearly identify the roles and responsibilities of the entities involved in the materiality modification determinations. We recommend that NERC may want to change the title of this project since there is now an approved FAC-002-3 (SAR project 2017-07). Maybe they need to call it “Project 2020-05 Modifications to FAC-001-3 and FAC-002-3”.	
Likes 0	
Dislikes 0	
Response	

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
Please consider changing the SAR reference from FAC-002-2 to FAC-002-3. While FAC-002-2 is the currently enforceable Reliability Standard, Project 2017-07 (Standards Alignment with Registration) modified this Reliability Standard to align it with current NERC registration practices. Additionally, NERC petitioned FERC to approve this modification (et. al.) through Docket No. RD20-04-000, which was subsequently approved by FERC through a Letter Order dated October 30, 2020.	
Likes 0	
Dislikes 0	
Response	
Mark Garza - FirstEnergy - FirstEnergy Corporation - 1,3,4,5,6, Group Name FE Voter	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 5,6, Group Name Entergy	
Answer	
Document Name	
Comment	
Following are two questions for the SDT's consideration: 1. Will GOs have access to updated dynamic models for the proposed changes to either synchronous or inverter-based resources prior to actual implementation and MOD-026/027 testing of these changes? The updated dynamic models reflecting the proposed changes may be needed by the TP or PC to assess the impact of the changes for Material Modification determinations.	

2. Would Material Modification determinations be limited to a change in generator facility equipment? It seems that routine MOD-025/026/027 testing for which changes in modeling parameters occur (due to age for example) would not constitute a Material Modification.

Likes 0	
Dislikes 0	

Response

Dana Klem - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF

Answer	
Document Name	

Comment

For these Standards not to be reviewed again in the future (based on new technologies) the NSRF requests that the Requirements be Results-Based by stating a clear objective within all Requirements. Results-Based Standards clearly set an objective that all applicable Entities can understand what the “materially modified” term (or future term) means to support system reliability.

Likes 0	
Dislikes 0	

Response

Bruce Reimer - Manitoba Hydro - 1,3,5,6

Answer	
Document Name	

Comment

In Manitoba Hydro Transmission Service Interconnection Requirement, the material modifications (which is referred as “Substantial Modifications”) are defined as modifications to a Generator facility(ies) as determined by Manitoba Hydro, results in a change in:

- Real power output greater than 1.0 MW, or
- Reactive power output greater than 1.0 Mvar, or
- The steady state, transient and sub-transient reactance of the Generator or the

Generator Interconnection Facilities by more than 10% of the as-built values, or

- The inertia of the Generator by more than 10% of the as-built values, or
- The protection system of the GENERATOR FACILITY(IES) or GENERATOR

INTERCONNECTION FACILITY(IES), or

- The generator voltage, frequency, rotor angle and field current dynamic response by more than 10% of the as-build values following a step change in frequency set-point or voltage set-point.
- A modification to a GENERATOR FACILITY(IES) resulting from the addition of facilities or the interconnection of a third party GENERATOR FACILITY(IES) to the GENERATOR OWNER'S existing GENERATOR FACILITY(IES) or GENERATOR INTERCONNECTION FACILITY(IES).

Please follow the link below to access the currently effective Manitoba Hydro Transmission System Interconnection Requirements document.

http://www.oasis.oati.com/woa/docs/MHEB/MHEBdocs/MH_transmission_interconnection_requirements_July2016-final.pd

Likes 0	
Dislikes 0	

Response

Colleen Campbell - AES - Indianapolis Power and Light Co. - 3

Answer	
Document Name	

Comment

No additional comments

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1,5

Answer	
Document Name	

Comment

None	
Likes 0	
Dislikes 0	
Response	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Unofficial Nomination Form

Project 2020-05 Modifications to FAC-001-3 and FAC-002-2

Do not use this form for submitting nominations. Use the electronic form to submit nominations by **8 p.m. Eastern, Friday, December 11, 2020.** This unofficial version is provided to assist nominees in compiling the information necessary to submit the electronic form.

Additional information is available on the project page. If you have questions, contact Senior Standards Developer, Alison Oswald (via email), or at 404-446-9668.

By submitting a nomination form, you are indicating your willingness and agreement to actively participate in face-to-face meetings and conference calls.

Previous drafting or review team experience is beneficial, but not required. A brief description of the desired qualifications, expected commitment, and other pertinent information is included below.

Modifications to FAC-001-3 and FAC-002-2

The NERC Inverter-based Resource Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements based on the work and findings of the IRPTF. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in a white paper. The "IRPTF Review of NERC Reliability Standards White Paper"[1] was approved by the Operating Committee and the Planning Committee in March 2020. Among the findings noted in the white paper, the IRPTF identified issues with FAC-001-3 and FAC-002-2 that should be addressed.

FAC-001-3 and FAC-002-2 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner or Planning Coordinator when a new or materially modified interconnection Facility is connected to their system, neither standard specifies what entity is responsible for determining what is considered to be a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility.

Additionally, in FERC-jurisdictional areas, the term "Materially Modification" refers to a new generation project's impact on other generators in the interconnection queue. This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements. The

[1] https://www.nerc.com/comm/PC/InverterBased%20Resource%20Performance%20Task%20Force%20IRPT/Review_of_NERC_Reliability_Standards_White_Paper.pdf

application of these terms is different between the FERC process and the NERC Reliability Standards (specifically FAC-001-3 and FAC-002-2). This project will modify FAC-001-3 and FAC-002-2 to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.

Standards affected: FAC-001-3 and FAC-002-2

The time commitment for this project is expected to be one meeting per quarter (on average two and a half full working days each meeting) with calls scheduled as needed to meet the agreed-upon timeline the review or drafting team sets forth. Team members may also have side projects, either individually or by subgroup, to present to the larger team for discussion and review. Lastly, an important component of the review and drafting team effort is outreach. Members of the team will be expected to conduct industry outreach during the development process to support a successful project outcome. NERC is seeking individuals who have significant subject matter expertise with facility interconnection requirements and studies. Expertise with FERC Open Access Transmission Tariff (OATT) implementation is also needed.

Name:	
Organization:	
Address:	
Telephone:	
E-mail:	
Please briefly describe your experience and qualifications to serve on the requested Standard Drafting Team (Bio):	
If you are currently a member of any NERC drafting team, please list each team here: ☐ Not currently on any active SAR or standard drafting team. ☐ Currently a member of the following SAR or standard drafting team(s):	
If you previously worked on any NERC drafting team please identify the team(s): ☐ No prior NERC SAR or standard drafting team. ☐ Prior experience on the following team(s):	

Acknowledgement that the nominee has read and understands both the *NERC Participant Conduct Policy* and the *Standard Drafting Team Scope* documents, available on NERC Standards Resources.
☐ Yes, the nominee has read and understands these documents.

Select each NERC Region in which you have experience relevant to the Project for which you are volunteering:		
☐ MRO ☐ NPCC ☐ RF	☐ SERC ☐ Texas RE ☐ WECC	☐ NA – Not Applicable

Select each Industry Segment that you represent:	
☐	1 — Transmission Owners
☐	2 — RTOs, ISOs
☐	3 — Load-serving Entities
☐	4 — Transmission-dependent Utilities
☐	5 — Electric Generators
☐	6 — Electricity Brokers, Aggregators, and Marketers
☐	7 — Large Electricity End Users
☐	8 — Small Electricity End Users
☐	9 — Federal, State, and Provincial Regulatory or other Government Entities
☐	10 — Regional Reliability Organizations and Regional Entities
☐	NA – Not Applicable

Select each Function[2] in which you have current or prior expertise:	
☐ Balancing Authority	☐ Transmission Operator
☐ Compliance Enforcement Authority	☐ Transmission Owner
☐ Distribution Provider	☐ Transmission Planner
☐ Generator Operator	☐ Transmission Service Provider
☐ Generator Owner	☐ Purchasing-selling Entity
☐ Interchange Authority	☐ Reliability Coordinator
☐ Load-serving Entity	☐ Reliability Assurer
☐ Market Operator	☐ Resource Planner
☐ Planning Coordinator	

Provide the names and contact information for two references who could attest to your technical qualifications and your ability to work well in a group:			
Name:		Telephone:	
Organization:		E-mail:	
Name:		Telephone:	
Organization:		E-mail:	

Provide the name and contact information of your immediate supervisor or a member of your management who can confirm your organization's willingness to support your active participation.			
Name:		Telephone:	
Title:		Email:	

[2] These functions are defined in the NERC Functional Model, which is available on the NERC web site.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2020-05 Modifications to FAC-001-3 and FAC-002-2

Nomination Period Open through December 11, 2020

Now Available

Nominations are being sought for **Project 2020-05 Modifications to FAC-001-3 and FAC-002-2** drafting team members through **8 p.m. Eastern, Friday, December 11, 2020**.

Use the electronic form to submit a nomination. Contact Wendy Muller regarding issues using the electronic form. An unofficial Word version of the nomination form is posted on the Standard Drafting Team Vacancies page and the project page.

By submitting a nomination form, you are indicating your willingness and agreement to actively participate in face-to-face meetings and conference calls. Previous drafting team experience is beneficial but not required.

See the project page and nomination form (linked above) for additional information.

Next Steps

The Standards Committee is expected to appoint members to the drafting team in February 2021. Nominees will be notified shortly after they have been appointed.

For information on the Standards Development Process, refer to the Standard Processes Manual.

Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2020-03 Supply Chain Low Impact Revisions Observer List” in the Description Box. For more information or assistance, contact Senior Standards Developer, Alison Oswald (via email) or at 404-446-9668.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standard Authorization Request (SAR)

Complete and submit this form, with attachment(s) to the NERC Help Desk. Upon entering the Captcha, please type in your contact information, and attach the SAR to your ticket. Once submitted, you will receive a confirmation number which you can use to track your request.

The North American Electric Reliability Corporation (NERC) welcomes suggestions to improve the reliability of the bulk power system through improved Reliability Standards.

Requested information			
SAR Title:	FAC-001-3 Facility Interconnection Requirements; FAC-002-3, Facility Interconnection Studies		
Date Submitted:	June 10, 2020		
SAR Requester			
Name:	Allen Shriver, Chair Jeffery Billo, Vice Chair		
Organization:	Inverter-Based Resource Performance Task Force (IRPTF)		
Telephone:	Allen: 561-904-3234 Jeffery: 512-248-6334	Email:	Allen.Schriver@NextEraEnergy.com Jeff.Billo@ercot.com

SAR Type (Check as many as apply)	
☐ New Standard	☐ Imminent Action/ Confidential Issue (SPM Section 10)
☒ Revision to Existing Standard	☐ Variance development or revision
☒ Add, Modify or Retire a Glossary Term	☐ Other (Please specify)
☐ Withdraw/retire an Existing Standard	

Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)	
☐ Regulatory Initiation	☒ NERC Standing Committee Identified
☐ Emerging Risk (Reliability Issues Steering Committee) Identified	☐ Enhanced Periodic Review Initiated
☐ Reliability Standard Development Plan	☒ Industry Stakeholder Identified

Industry Need (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):

The NERC Inverter-based Resource Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements based on the work and findings of the IRPTF. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in a white paper. The "IRPTF Review of NERC Reliability Standards White Paper" was approved by the Operating Committee and the Planning Committee in March 2020. Among the findings noted in the white paper, the IRPTF identified issues with FAC-001-3 and FAC-002-3 that should be addressed.

The purpose of FAC-001-3 is to ensure that Facility interconnection requirements exist for Transmission Owners and Generator Owners when connecting new or "materially modified" facilities. The purpose of FAC-002-3 is to ensure studies are performed to analyze the impact of interconnecting new or "materially

Requested information
modified" facilities on the Bulk Electric System (BES). An ambiguity exists in these standards in regards to the term "materially modified" and which entity is responsible for making such a determination. Hence, these standards need to be modified to address this issue.
Purpose or Goal (How does this proposed project provide the reliability-related benefit described above?):
This SAR proposes to revise FAC-001-3 and FAC-002-3 to clarify requirements related to "material modifications" of Facilities.
Project Scope (Define the parameters of the proposed project):
The proposed scope of this project is as follows: a. Consider ways to clarify which entity (entities) are responsible for making the determination of what is considered to be a "material modification" to a Facility, including but not limited to a planned or existing Facility. b. Consider requiring Facility owners to notify affected entities when making a "material modification" to a Facility, including but not limited to a planned or existing Facility. c. Consider changing or defining the "materially modifying" term or consider a new defined glossary term, to avoid confusion with similar terminology that is used for a different purpose in the FERC Open Access Transmission Tariff. d. Consider other manners in which to clarify existing requirements to ensure new or "materially modified" Facilities on the Bulk Electric System (BES) are adequately accounted for to ensure reliability.
Detailed Description (Describe the proposed deliverable(s) with sufficient detail for a drafting team to execute the project. If you propose a new or substantially revised Reliability Standard or definition, provide: (1) a technical justification[1] which includes a discussion of the reliability-related benefits of developing a new or revised Reliability Standard or definition, and (2) a technical foundation document (*e.g.,* research paper) to guide development of the Standard or definition):
Both FAC-001-3 and FAC-002-3 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. However, there is not a requirement for any entity to determine what changes are to be considered "materially modifying" and Facility owners are not required to notify potentially affected entities of these changes. This has led to confusion and potential reliability issues within industry. For example, a Transmission Planner may consider an inverter-based resource (IBR) control system software change to be "materially modifying", but if the Generator Owner does not consider such a change to be "materially modifying" they will not notify the Transmission Planner of the change. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner or Planning Coordinator when a new or "materially modified" interconnection Facility is being studied, it should be made clear what entity is responsible for making the determination of what is considered "materially modified". For example FAC-002-3 Requirement R5, does not specify what entity is responsible for determining what is considered to be a "material modification". Further,

[1] The NERC Rules of Procedure require a technical justification for new or substantially revised Reliability Standards. Please attach pertinent information to this form before submittal to NERC.

Requested information
the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect, or has already interconnected to a Facility owner's Facility, or if they also apply to the Facility owner's new or modified Facility. Additionally, the FERC-defined term Material Modification refers to a new generation project's impact on other generators in the interconnection queue. This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements. The application of these terms is different between the FERC process and the NERC Reliability Standards (specifically FAC-001-3 and FAC-002-3). For example, if a Generator Owner changes out the inverters on an existing solar PV resource, the change may have no impact on other generators in the interconnection queue, and thus would not be considered a Material Modification under the FERC OATT rules. But such a change could have reliability impacts on the system that should be studied in accordance with FAC-002-3. The Standards Drafting Team should consider changing the term, defining the term, or consider a new defined glossary term, to avoid this confusion. FAC-001-3 and FAC-002-3 should be modified to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.
Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):
The SAR proposes to clarify and address gaps in the requirements in FAC-001-3 and FAC-002-3. The cost impact is unknown.
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (*e.g.*, Dispersed Generation Resources):
The frequency of change of components could be higher for IBRs and the magnitude of such changes could vary. For example, due to a rapid change in wind turbine generator (WTG) technology, it is a common practice to re-power an existing wind power plant with bigger blades while keeping the same electrical generator and converter systems (for both Type 3 and Type 4 WTGs). This may be considered a "material modification" since a new set of bigger blades can produce more power at a lower wind speed. However, the nameplate rating of the plant will remain unchanged. From an interconnection requirements' perspective, it is the electrical generator and converter system that impacts the majority of the steady-state, short-circuit, and dynamic characteristics and therefore will be mostly unchanged. Therefore, the question remains if these sort of repowering projects should be studied under FAC-002-3 R1 and which entity should make that determination.
To assist the NERC Standards Committee in appointing a drafting team with the appropriate members, please indicate to which Functional Entities the proposed standard(s) should apply (*e.g.*, Transmission Operator, Reliability Coordinator, etc. See the most recent version of the NERC Functional Model for definitions):
Planning Coordinator, Transmission Planner, Generator Owner, Transmission Owner, Distribution Provider

Requested information
Do you know of any consensus building activities[2] in connection with this SAR? If so, please provide any recommendations or findings resulting from the consensus building activity.
This issue was captured in the "IRPTF Review of NERC Reliability Standards White Paper" which was approved by the Operating Committee and the Planning Committee.
Are there any related standards or SARs that should be assessed for impact as a result of this proposed project? If so, which standard(s) or project number(s)?
N/A
Are there alternatives (e.g., guidelines, white paper, alerts, etc.) that have been considered or could meet the objectives? If so, please list the alternatives.
The IRPTF did not identify any alternatives since there are ambiguities in the existing language for FAC-001-3 and FAC-002-3 that need to be clarified.

Reliability Principles	
Does this proposed standard development project support at least one of the following Reliability Principles (Reliability Interface Principles)? Please check all those that apply.	
☒	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☐	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☒	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
☐	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
☐	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☐	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☐	8. Bulk power systems shall be protected from malicious physical or cyber attacks.

Market Interface Principles	
Does the proposed standard development project comply with all of the following Market Interface Principles?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes

[2] Consensus building activities are occasionally conducted by NERC and/or project review teams. They typically are conducted to obtain industry inputs prior to proposing any standard development project to revise, or develop a standard or definition.

Market Interface Principles	
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	Yes
4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.	Yes

Identified Existing or Potential Regional or Interconnection Variances	
Region(s)/ Interconnection	Explanation
None	N/A

For Use by NERC Only

SAR Status Tracking (Check off as appropriate).	
☐ Draft SAR reviewed by NERC Staff ☐ Draft SAR presented to SC for acceptance ☐ DRAFT SAR approved for posting by the SC	☐ Final SAR endorsed by the SC ☐ SAR assigned a Standards Project by NERC ☐ SAR denied or proposed as Guidance document

Version History

Version	Date	Owner	Change Tracking
1	June 3, 2013		Revised
1	August 29, 2014	Standards Information Staff	Updated template
2	January 18, 2017	Standards Information Staff	Revised
2	June 28, 2017	Standards Information Staff	Updated template
3	February 22, 2019	Standards Information Staff	Added instructions to submit via Help Desk
4	February 25, 2020	Standards Information Staff	Updated template footer

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standard Authorization Request (SAR)

Complete and submit this form, with attachment(s) to the NERC Help Desk. Upon entering the Captcha, please type in your contact information, and attach the SAR to your ticket. Once submitted, you will receive a confirmation number which you can use to track your request.

The North American Electric Reliability Corporation (NERC) welcomes suggestions to improve the reliability of the bulk power system through improved Reliability Standards.

Requested information			
SAR Title:	FAC-001-3 Facility Interconnection Requirements; FAC-002-3~~2~~, Facility Interconnection Studies		
Date Submitted:	June 10, 2020		
SAR Requester			
Name:	Allen Shriver, Chair Jeffery Billo, Vice Chair		
Organization:	Inverter-Based Resource Performance Task Force (IRPTF)		
Telephone:	Allen: 561-904-3234 Jeffery: 512-248-6334	Email:	Allen.Schriver@NextEraEnergy.com Jeff.Billo@ercot.com
SAR Type (Check as many as apply)			
☐ New Standard ☒ Revision to Existing Standard ☒ Add, Modify or Retire a Glossary Term ☐ Withdraw/retire an Existing Standard		☐ Imminent Action/ Confidential Issue (SPM Section 10) ☐ Variance development or revision ☐ Other (Please specify)	
Justification for this proposed standard development project (Check all that apply to help NERC prioritize development)			
☐ Regulatory Initiation ☐ Emerging Risk (Reliability Issues Steering Committee) Identified ☐ Reliability Standard Development Plan		☒ NERC Standing Committee Identified ☐ Enhanced Periodic Review Initiated ☒ Industry Stakeholder Identified	
Industry Need (What Bulk Electric System (BES) reliability benefit does the proposed project provide?):			
The NERC Inverter-based Resource Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements based on the work and findings of the IRPTF. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in a white paper. The "IRPTF Review of NERC Reliability Standards White Paper" was approved by the Operating Committee and the Planning Committee in March 2020. Among the findings noted in the white paper, the IRPTF identified issues with FAC-001-3 and FAC-002-3~~2~~ that should be addressed. The purpose of FAC-001-3 is to ensure that Facility interconnection requirements exist for Transmission Owners and Generator Owners when connecting new or "materially modified" facilities. The purpose of FAC-002-3~~2~~ is to ensure studies are performed to analyze the impact of interconnecting new or			

Requested information
"materially modified" facilities on the Bulk Electric System (BES). An ambiguity exists in these standards in regards to the term "materially modified" and which entity is responsible for making such a determination. Hence, these standards need to be modified to address this issue.
Purpose or Goal (How does this proposed project provide the reliability-related benefit described above?):
This SAR proposes to revise FAC-001-3 and FAC-002-32 to clarify requirements related to "material modifications" of Facilities.
Project Scope (Define the parameters of the proposed project):
The proposed scope of this project is as follows: a. Consider ways to clarify which entity (entities) is are responsible for making the determination of what is considered to be a "material modification" to a Facility, including but not limited to a planned or existing a Facility. b. Consider requiring Facility owners to notify affected entities when making a "material modification" to a Facility, including but not limited to a planned or existing a Facility. c. Consider changing or defining the "materially modifying" term "materially modifying", or consider a new defined glossary term, to avoid confusion with similar terminology that is used for a different purpose in the FERC Open Access Transmission Tariff. d. Consider other manners in which to clarify existing requirements to ensure new or "materially modified" Facilities on the Bulk Electric System (BES) are adequately accounted for to ensure reliability.
Detailed Description (Describe the proposed deliverable(s) with sufficient detail for a drafting team to execute the project. If you propose a new or substantially revised Reliability Standard or definition, provide: (1) a technical justification[1] which includes a discussion of the reliability-related benefits of developing a new or revised Reliability Standard or definition, and (2) a technical foundation document (*e.g.,* research paper) to guide development of the Standard or definition):
Both FAC-001-3 and FAC-002-32 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. However, there is not a requirement for any entity to determine what changes are to be considered "materially modifying" and Facility owners are not required to notify potentially affected entities of these changes. This has led to confusion and potential reliability issues within industry. For example, a Transmission Planner may consider an inverter-based resource (IBR) control system software change to be "materially modifying", but if the Generator Owner does not consider such a change to be "materially modifying" they will not notify the Transmission Planner of the change. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner or Planning Coordinator when a new or "materially modified" interconnection Facility is being studied, it should be made clear what entity is responsible for making the determination of what is considered "materially modified". connected to their system, fFor example FAC-002-32 Requirement R5, does not neither standard specifies specify what entity is responsible for determining

[1] The NERC Rules of Procedure require a technical justification for new or substantially revised Reliability Standards. Please attach pertinent information to this form before submittal to NERC.

Requested information
what is considered to be a "material modification". Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect, or has already interconnected to a Facility owner's Facility, or if they also apply to the Facility owner's new or modified Facility. Additionally, the FERC-defined ~~in FERC-jurisdictional areas, the~~ term "Material~~ly~~ Modification~~"~~ refers to a new generation project's impact on other generators in the interconnection queue. This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements. The application of these terms is different between the FERC process and the NERC Reliability Standards (specifically FAC-001-3 and FAC-002-3~~2~~). For example, if a Generator Owner changes out the inverters on an existing solar PV resource, the change may have no impact on other generators in the interconnection queue, and thus would not be considered a Material Modification under the FERC OATT rules. But such a change could have reliability impacts on the system that should be studied in accordance with FAC-002-3~~2~~. The Standards Drafting Team should consider changing the term, defining the term, or consider a new defined glossary term, to avoid this confusion. FAC-001-3 and FAC-002-3~~2~~ should be modified to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.
Cost Impact Assessment, if known (Provide a paragraph describing the potential cost impacts associated with the proposed project):
The SAR proposes to clarify and address gaps in the requirements in FAC-001-3 and FAC-002-3~~2~~. The cost impact is unknown.
Please describe any unique characteristics of the BES facilities that may be impacted by this proposed standard development project (*e.g.*, Dispersed Generation Resources):
The frequency of change of components could be higher for IBRs and the magnitude of such changes could vary. For example, due to a rapid change in wind turbine generator (WTG) technology, it is a common practice to re-power an existing wind power plant with bigger blades while keeping the same electrical generator and converter systems (for both Type 3 and Type 4 WTGs). This may be considered a "material modification" since a new set of bigger blades ~~(e.g., 93 m to 208 m)~~ can produce more power at a lower wind speed. However, the nameplate rating of the plant will remain unchanged. From an interconnection requirements' perspective, it is the electrical generator and converter system that impacts the majority of the steady-state, short-circuit, and dynamic characteristics and therefore will be mostly unchanged. Therefore, the question remains if these sort of repowering projects should be studied under FAC-002-3~~2~~ R1 and which entity should make that determination.
To assist the NERC Standards Committee in appointing a drafting team with the appropriate members, please indicate to which Functional Entities the proposed standard(s) should apply (*e.g.*, Transmission Operator, Reliability Coordinator, etc. See the most recent version of the NERC Functional Model for definitions):
Planning Coordinator, Transmission Planner, Generator Owner, Transmission Owner, Distribution Provider

Requested information
Do you know of any consensus building activities[2] in connection with this SAR? If so, please provide any recommendations or findings resulting from the consensus building activity.
This issue was captured in the "IRPTF Review of NERC Reliability Standards White Paper" which was approved by the Operating Committee and the Planning Committee.
Are there any related standards or SARs that should be assessed for impact as a result of this proposed project? If so, which standard(s) or project number(s)?
N/A
Are there alternatives (e.g., guidelines, white paper, alerts, etc.) that have been considered or could meet the objectives? If so, please list the alternatives.
The IRPTF did not identify any alternatives since there are ambiguities in the existing language for FAC-001-3 and FAC-002-3~~2~~ that need to be clarified.

Reliability Principles	
Does this proposed standard development project support at least one of the following Reliability Principles (Reliability Interface Principles)? Please check all those that apply.	
☒	1. Interconnected bulk power systems shall be planned and operated in a coordinated manner to perform reliably under normal and abnormal conditions as defined in the NERC Standards.
☐	2. The frequency and voltage of interconnected bulk power systems shall be controlled within defined limits through the balancing of real and reactive power supply and demand.
☒	3. Information necessary for the planning and operation of interconnected bulk power systems shall be made available to those entities responsible for planning and operating the systems reliably.
☐	4. Plans for emergency operation and system restoration of interconnected bulk power systems shall be developed, coordinated, maintained and implemented.
☐	5. Facilities for communication, monitoring and control shall be provided, used and maintained for the reliability of interconnected bulk power systems.
☐	6. Personnel responsible for planning and operating interconnected bulk power systems shall be trained, qualified, and have the responsibility and authority to implement actions.
☐	7. The security of the interconnected bulk power systems shall be assessed, monitored and maintained on a wide area basis.
☐	8. Bulk power systems shall be protected from malicious physical or cyber attacks.

Market Interface Principles	
Does the proposed standard development project comply with all of the following Market Interface Principles?	Enter (yes/no)
1. A reliability standard shall not give any market participant an unfair competitive advantage.	Yes

[2] Consensus building activities are occasionally conducted by NERC and/or project review teams. They typically are conducted to obtain industry inputs prior to proposing any standard development project to revise, or develop a standard or definition.

Market Interface Principles	
2. A reliability standard shall neither mandate nor prohibit any specific market structure.	Yes
3. A reliability standard shall not preclude market solutions to achieving compliance with that standard.	Yes
4. A reliability standard shall not require the public disclosure of commercially sensitive information. All market participants shall have equal opportunity to access commercially non-sensitive information that is required for compliance with reliability standards.	Yes

Identified Existing or Potential Regional or Interconnection Variances	
Region(s)/ Interconnection	Explanation
None	N/A

For Use by NERC Only

SAR Status Tracking (Check off as appropriate).	
☐ Draft SAR reviewed by NERC Staff ☐ Draft SAR presented to SC for acceptance ☐ DRAFT SAR approved for posting by the SC	☐ Final SAR endorsed by the SC ☐ SAR assigned a Standards Project by NERC ☐ SAR denied or proposed as Guidance document

Version History

Version	Date	Owner	Change Tracking
1	June 3, 2013		Revised
1	August 29, 2014	Standards Information Staff	Updated template
2	January 18, 2017	Standards Information Staff	Revised
2	June 28, 2017	Standards Information Staff	Updated template
3	February 22, 2019	Standards Information Staff	Added instructions to submit via Help Desk
4	February 25, 2020	Standards Information Staff	Updated template footer

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

Initial posting of 45-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020

Anticipated Actions	Date
45-day formal or informal comment period with ballot	December 2021
45-day formal or informal comment period with additional ballot	March 2022
45-day formal or informal comment period with additional ballot	June 2022
10-day final ballot	August 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

None

A. Introduction

1. **Title:** **Facility Interconnection Requirements**

2. **Number:** FAC-001-4

3. **Purpose:** To avoid adverse impacts on the reliability of the Bulk Electric System, Transmission Owners and applicable Generator Owners must document and make Facility interconnection requirements available so that entities seeking to interconnect will have the necessary information.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Transmission Owner

   4.1.2. Applicable Generator Owner

   4.1.2.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Owner shall document Facility interconnection requirements, update them as needed, and make them available upon request. Each Transmission Owner's Facility interconnection requirements shall address interconnection requirements for: *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

1.1. generation Facilities;

1.2. transmission Facilities; and

1.3. end-user Facilities.

M1. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R1.

R2. Each applicable Generator Owner shall document Facility interconnection requirements and make them available upon request within 45 calendar days of full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M2. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R2.

R3. Each Transmission Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6.

3.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change.

3.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority Area's metered boundaries.

M3. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R3.

R4. Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. Procedures for coordinated studies of new interconnections and their impacts on affected system(s).

4.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.

4.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6 are within a Balancing Authority Area's metered boundaries.

M4. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R4.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The responsible entities shall retain documentation as evidence for three years.
- If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.
- The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Lower	N/A	The Transmission Owner documented Facility interconnection requirements and updated them as needed, but failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements and made them available upon request, but failed to update them as needed. OR The Transmission Owner documented Facility interconnection requirements,	The Transmission Owner documented Facility interconnection requirements, but failed to update them as needed and failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements, updated them as needed, and made them available upon request, but failed to address interconnection requirements for two of the Facilities as	The Transmission Owner did not document Facility interconnection requirements.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
				updated them as needed, and made them available upon request, but failed to address interconnection requirements for one of the Facilities as specified in R1, Parts 1.1, 1.2, or 1.3.	specified in R1, Parts 1.1, 1.2, or 1.3.	
R2.	Long-term Planning	Lower	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 45 calendar days but less than or equal to 60 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 60 calendar days but less than or equal to 70 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 70 calendar days but less than or equal to 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	existing Facility that is used to interconnect to the Transmission system.
R3.	Long-term Planning	Lower	N/A	The Transmission Owner failed to address one part of Requirement R3 Part 3.1 through Part 3.3.	The Transmission Owner failed to address two parts of Requirement R3 Part 3.1 through Part 3.3.	The Transmission Owner failed to address three parts of Requirement R3 Part 3.1 through Part 3.3.
R4.	Long-term Planning	Lower	N/A	The Generator Owner failed to address one part of Requirement R4 Part 4.1 through Part 4.3.	The Generator Owner failed to address two parts of Requirement R4 Part 4.1 through Part 4.3.	The Generator Owner failed to address three parts of Requirement R4 Part 4.1 through Part 4.3.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1		Added requirements for Generator Owner and brought overall standard format up to date.	Revision under Project 2010-07
1	February 9, 2012	Adopted by the Board of Trustees	
1	September 19, 2013	A FERC order was issued on September 19, 2013, approving FAC-001-1. This standard became enforceable on November 25, 2013 for Transmission Owners. For Generator Owners, the standard becomes enforceable on January 1, 2015.	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees	
2	November 6, 2014	FERC letter order issued approving FAC-001-2.	
3	February 11, 2016	Adopted by the Board of Trustees	Moved BAL-005-0.2b Requirement R1 into FAC-001-3 Requirements R3 and R4
3	September 20, 2017	FERC Order No. 836 issued approving FAC-001-3	
3	February 19, 2021	FERC letter Order issued approving FAC-001-3 Errata	
4	TBD	Adopted by the Board of Trustees	Revisions under Project 2020-05

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

Initial posting of 45-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020

Anticipated Actions	Date
45-day formal or informal comment period with ballot	December 2021
45-day formal or informal comment period with additional ballot	March 2022
45-day formal or informal comment period with additional ballot	June 2022
10-day final ballot	August 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

~~Text~~None

A. Introduction

1. **Title:** **Facility Interconnection Requirements**

2. **Number:** FAC-001-~~3~~4

3. **Purpose:** To avoid adverse impacts on the reliability of the Bulk Electric System, Transmission Owners and applicable Generator Owners must document and make Facility interconnection requirements available so that entities seeking to interconnect will have the necessary information.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Transmission Owner

   4.1.2. Applicable Generator Owner

   4.1.2.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05 ~~FAC-001-3~~.

B. Requirements and Measures

R1. Each Transmission Owner shall document Facility interconnection requirements, update them as needed, and make them available upon request. Each Transmission Owner's Facility interconnection requirements shall address interconnection requirements for: *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

1.1. generation Facilities;

1.2. transmission Facilities; and

1.3. end-user Facilities.

M1. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R1.

R2. Each applicable Generator Owner shall document Facility interconnection requirements and make them available upon request within 45 calendar days of full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M2. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R2.

R3. Each Transmission Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. Procedures for coordinated studies and identifying the impacts on affected systems for ~~of~~ new interconnections~~,~~ or ~~materially modified~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6~~, and their impacts on affected system(s)~~.

3.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or ~~materially modified~~ existing interconnections seeking to make a qualified change.

3.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or ~~materially modified~~existing ~~-~~Facilities seeking to make a qualified change are within a Balancing Authority Area's metered boundaries.

M3. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R3.

R4. Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. Procedures for coordinated studies of new interconnections and their impacts on affected system(s).

4.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.

4.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or ~~materially modified~~existing Facilities seeking to make a qualified change as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6 are within a Balancing Authority Area's metered boundaries.

M4. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R4.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The responsible entities shall retain documentation as evidence for three years.
- If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.
- The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Lower	N/A	The Transmission Owner documented Facility interconnection requirements and updated them as needed, but failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements and made them available upon request, but failed to update them as needed. OR The Transmission Owner documented Facility interconnection requirements,	The Transmission Owner documented Facility interconnection requirements, but failed to update them as needed and failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements, updated them as needed, and made them available upon request, but failed to address interconnection requirements for two of the Facilities as	The Transmission Owner did not document Facility interconnection requirements.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
				updated them as needed, and made them available upon request, but failed to address interconnection requirements for one of the Facilities as specified in R1, Parts 1.1, 1.2, or 1.3.	specified in R1, Parts 1.1, 1.2, or 1.3.	
R2.	Long-term Planning	Lower	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 45 calendar days but less than or equal to 60 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 60 calendar days but less than or equal to 70 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 70 calendar days but less than or equal to 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	existing Facility that is used to interconnect to the Transmission system.
R3.	Long-term Planning	Lower	N/A	The Transmission Owner failed to address one part of Requirement R3 Part 3.1 through Part 3.3.	The Transmission Owner failed to address two parts of Requirement R3 Part 3.1 through Part 3.3.	The Transmission Owner failed to address~~-~~ three parts of Requirement R3 Part 3.1 through Part 3.3.
R4.	Long-term Planning	Lower	N/A	The Generator Owner failed to address one part of Requirement R4 Part 4.1 through Part 4.3.	The Generator Owner failed to address two parts of Requirement R4 Part 4.1 through Part 4.3.	The Generator Owner failed to address three parts of Requirement R4 Part 4.1 through Part 4.3.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1		Added requirements for Generator Owner and brought overall standard format up to date.	Revision under Project 2010-07
1	February 9, 2012	Adopted by the Board of Trustees	
1	September 19, 2013	A FERC order was issued on September 19, 2013, approving FAC-001-1. This standard became enforceable on November 25, 2013 for Transmission Owners. For Generator Owners, the standard becomes enforceable on January 1, 2015.	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees	
2	November 6, 2014	FERC letter order issued approving FAC-001-2.	
3	February 11, 2016	Adopted by the Board of Trustees	Moved BAL-005-0.2b Requirement R1 into FAC-001-3 Requirements R3 and R4
3	September 20, 2017	FERC Order No. 836 issued approving FAC-001-3	
3	February 19, 2021	FERC letter Order issued approving FAC-001-3 Errata	
4	TBD	Adopted by the Board of Trustees	Revisions under Project 2020-05

~~Guidelines and Technical Basis~~

~~Entities should have documentation to support the technical rationale for determining whether an existing interconnection was "materially modified." Recognizing that what constitutes a "material modification" will vary from entity to entity, the intent is for this determination to be based on engineering judgment.~~

~~Requirement R3:~~

~~Originally the Parts of R3, with the exception of the first two bullets, which were added by the Project 2010-02 drafting team, this list has been moved to the Guidelines and Technical Basis section to provide entities with the flexibility to determine the Facility interconnection requirements that are technically appropriate for their respective Facilities. Including them as Parts of R3 was deemed too prescriptive, as frequently some items in the list do not apply to all applicable entities – and some applicable entities will have requirements that are not included in this list.~~

~~Each Transmission Owner and applicable Generator Owner should consider the following items in the development of Facility interconnection requirements:~~

- ~~Procedures for requesting a new Facility interconnection or material modification to an existing interconnection~~
- ~~Data required to properly study the interconnection~~
- ~~Voltage level and MW and MVAR capacity or demand at the point of interconnection~~
- ~~Breaker duty and surge protection~~
- ~~System protection and coordination~~
- ~~Metering and telecommunications~~
- ~~Grounding and safety issues~~
- ~~Insulation and insulation coordination~~
- ~~Voltage, Reactive Power (including specifications for minimum static and dynamic reactive power requirements), and power factor control~~
- ~~Power quality impacts~~
- ~~Equipment ratings~~
- ~~Synchronizing of Facilities~~
- ~~Maintenance coordination~~
- ~~Operational issues (abnormal frequency and voltages)~~
- ~~Inspection requirements for new or materially modified existing interconnections~~
- ~~Communications and procedures during normal and emergency operating conditions~~

Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon Board approval, the text from the rationale boxes will be moved to this section.

Rationale for Requirement R3.3: Consistent with the Functional Model, there cannot be an assumption that the entity owning the transmission will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate arrangements with a Balancing Authority to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 3.3, the Transmission Owner is responsible for confirming that the party interconnecting has made appropriate provisions with a Balancing Authority to operate within its metered boundaries.

Rationale for Requirement R4.3: Consistent with the Functional Model, there cannot be an assumption that the entity owning the generation will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate arrangements with a Balancing Authority to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 4.3, the Generator Owner is responsible for confirming that the party interconnecting has made appropriate provisions with a Balancing Authority to operate within its metered boundaries.

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

Initial posting for 45-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020

Anticipated Actions	Date
45-day formal or informal comment period with ballot	December 2021
45-day formal or informal comment period with additional ballot	March 2022
45-day formal or informal comment period with additional ballot	June 2022
10-day final ballot	August 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

None

A. Introduction

1. **Title:** **Facility Interconnection Studies**

2. **Number:** FAC-002-4

3. **Purpose:** To study the impact of interconnecting new or changed Facilities on the Bulk Electric System.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Planning Coordinator

   4.1.2. Transmission Planner

   4.1.3. Transmission Owner

   4.1.4. Distribution Provider

   4.1.5. Generator Owner

   4.1.6. Applicable Generator Owner

   4.1.6.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

1.1. The reliability impact of the new interconnection, or existing interconnection seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, on affected system(s);

1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;

1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and

1.4. Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.

M1. Each Transmission Planner or each Planning Coordinator shall have evidence (such as study reports, including documentation of reliability issues) that it met all requirements in Requirement R1.

R2. Each Generator Owner seeking to interconnect new generation Facilities, or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Each Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R2.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Owner and each Distribution Provider shall have evidence (such as documents containing the data provided in response to the requests of the

Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R3.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M4. Each Transmission Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R4.

R5. Each applicable Generator Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M5. Each applicable Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R5.

R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M6. Each Planning Coordinator shall have evidence that it has maintained a publicly available definition of qualified change

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner and applicable Generator Owner shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:

The responsible entities shall retain documentation as evidence for three years.

If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.

The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Medium	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study one of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.
R2.	Long-term Planning	Medium	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R3.	Long-term Planning	Medium	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R4.	Long-term Planning	Medium	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities.
R5.	Long-term Planning	Medium	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R6.	Long-term Planning	Lower	N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	January 13, 2006	Removed duplication of "Regional Reliability Organizations(s).	Errata
1	August 5, 2010	Modified to address Order No. 693 Directives contained in paragraph 693. Adopted by the NERC Board of Trustees.	Revised
1	February 7, 2013	R2 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
1	November 21, 2013	R2 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees.	
2	November 6, 2014	FERC letter order issued approving FAC-002-2.	
3	February 6, 2020	Adopted by NERC Board of Trustees.	Revisions under Project 2017-07
4	TBD	Adopted by NERC Board of Trustees.	Revisions under Project 2020-05

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

Initial posting for 45-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020

Anticipated Actions	Date
45-day formal or informal comment period with ballot	December 2021
45-day formal or informal comment period with additional ballot	March 2022
45-day formal or informal comment period with additional ballot	June 2022
10-day final ballot	August 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

~~Text~~None

A. Introduction

1. **Title:** **Facility Interconnection Studies**

2. **Number:** FAC-002-34

3. **Purpose:** To study the impact of interconnecting new or materially modifiedchanged Facilities on the Bulk Electric System.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Planning Coordinator

   4.1.2. Transmission PowerPlanner

   4.1.3. Transmission Owner

   4.1.4. Distribution Provider

   4.1.5. Generator Owner

   4.1.6. Applicable Generator Owner

   4.1.6.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

1.1. The reliability impact of the new interconnection, or ~~materially modified~~ existing interconnection seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, on affected system(s);

1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;

1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and

1.4. Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.

M1. Each Transmission Planner or each Planning Coordinator shall have evidence (such as study reports, including documentation of reliability issues) that it met all requirements in Requirement R1.

R2. Each Generator Owner seeking to interconnect new generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Each Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R2.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to materially modify~~ existing interconnections of transmission Facilities~~,~~ seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Owner and each Distribution Provider shall have evidence (such as documents containing the data provided in response to the requests of the

Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R3.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or ~~materially modified~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M4. Each Transmission Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R4.

R5. Each applicable Generator Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M5. Each applicable Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R5.

R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M6. Each Planning Coordinator shall have evidence that it has maintained a publicly available definition of qualified change

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner and applicable Generator Owner shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:

The responsible entities shall retain documentation as evidence for three years.

If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.

The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Medium	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study one of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R2.	Long-term Planning	Medium	The Generator Owner seeking to interconnect new generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R3.	Long-term Planning	Medium	The Transmission Owner or Distribution Provider seeking to interconnect new	The Transmission Owner, or Distribution Provider seeking to interconnect new	The Transmission Owner or Distribution Provider seeking to interconnect new	The Transmission Owner, or Distribution Provider seeking to interconnect new

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			transmission Facilities or electricity end-user Facilities, or ~~to materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	transmission Facilities or electricity end-user Facilities, or ~~to materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	transmission Facilities or electricity end-user Facilities, or ~~to materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	transmission Facilities or electricity end-user Facilities, or ~~to materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R4.	Long-term Planning	Medium	The Transmission Owner coordinated and cooperated on	The Transmission Owner coordinated and cooperated on	The Transmission Owner coordinated and cooperated on	The Transmission Owner failed to coordinate and

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modified~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modified~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modified~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modified~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities.
R5.	Long-term Planning	Medium	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested	The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	requested interconnections to its Facilities.
R6.	Long-term Planning	Lower	N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	January 13, 2006	Removed duplication of "Regional Reliability Organizations(s).	Errata
1	August 5, 2010	Modified to address Order No. 693 Directives contained in paragraph 693. Adopted by the NERC Board of Trustees.	Revised
1	February 7, 2013	R2 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
1	November 21, 2013	R2 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees.	
2	November 6, 2014	FERC letter order issued approving FAC-002-2.	
3	February 6, 2020	Adopted by NERC Board of Trustees.	Revisions under Project 2017-07
4	TBD	Adopted by NERC Board of Trustees.	Revisions under Project 2020-05

~~Guidelines and Technical Basis~~

~~Entities should have documentation to support the technical rationale for determining whether an existing interconnection was "materially modified." Recognizing that what constitutes a "material modification" will vary from entity to entity, the intent is for this determination to be based on engineering judgment.~~

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan

Project 2020-05 Modifications to FAC-001-3 and FAC-002-3

Applicable Standards

- FAC-001-4 Facility Interconnection Requirements
- FAC-002-4 Facility Interconnection Studies

Requested Retirements

- FAC-001-3 Facility Interconnection Requirements
- FAC-002-3 Facility Interconnection Studies

Prerequisite Standard

None

Applicable Entities for FAC-001-4

- Transmission Owner;
- Applicable Generation Owner;
- Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

Applicable Entities for FAC-002-4

- Planning Coordinator;
- Transmission Planner;
- Transmission Owner
- Distribution Provider;
- Generation Owner;
- Applicable Generation Owner;
- Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

Terms in the NERC Glossary of Terms

There are no new, modified, or retired terms.

Background

Proposed Reliability Standards FAC-001-4 and FAC-002-4 revise Reliability Standards FAC-001-3 and FAC-002-3 to provide clarity and specificity regarding which changes to existing Facility interconnections require study under the standards.

Currently effective Reliability Standards FAC-001-3 and FAC-002-3 require coordination and cooperation between a Facility owner and the Transmission Planner or Planning Coordinator when a new or materially modified interconnection Facility is connected to their system. These standards imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied; however, neither standard specifies what entity is responsible for determining what is considered to be a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility. Additionally, in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[1] This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements.

Proposed Reliability Standards FAC-001-4 and FAC-002-4 will address these issues by clarifying that the changes to existing Facilities that will need to be studied under the standards are those meeting the definition of "qualified change" developed by the Planning Coordinator under new Requirement R6 of proposed FAC-002-4.

Effective Date

The effective date for proposed Reliability Standards FAC-001-4 and FAC-002-4 is provided below.

Where approval by an applicable governmental authority is required, the standards shall become effective on the first day of the first calendar quarter that is twelve (12) months after the effective date of the applicable governmental authority's order approving the standards, or as otherwise provided for by the applicable governmental authority.

Where approval by an applicable governmental authority is not required, the standards shall become effective on the first day of the first calendar quarter that is twelve (12) months after the date the standards are adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Retirement Date

Reliability Standards FAC-001-3 and FAC-002-3 shall be retired immediately prior to the effective date of FAC-001-4 and FAC-002-4 in the particular jurisdiction in which the revised standard is becoming effective.

[1] LGIA-agreement.pdf (ferc.gov)

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Unofficial Comment Form

Project 2020-05 Modifications to FAC-001 and FAC-002

Do not use this form for submitting comments. Use the Standards Balloting and Commenting System (SBS) to submit comments on Reliability Standards **FAC-001-4 – Facility Interconnection Requirements and FAC-002-4 – Facility Interconnection Studies** by **8 p.m. Eastern, Monday, January 31, 2022.**

Additional information is available on the project page. If you have questions, contact Senior Standards Developer, Alison Oswald (via email), or at 404-446-9668.

Background Information

The NERC Inverter-based Resource Performance Task Force (IRPTF) undertook an effort to perform a comprehensive review of all NERC Reliability Standards to determine if there were any potential gaps or improvements based on the work and findings of the IRPTF. The IRPTF identified several issues as part of this effort and documented its findings and recommendations in a white paper. The "IRPTF Review of NERC Reliability Standards White Paper" was approved by the Operating Committee and the Planning Committee in March 2020. Among the findings noted in the white paper, the IRPTF identified issues with FAC-001-3 and FAC-002-2 that should be addressed.

Questions

1. The SDT proposes "qualified change" to replace "material modification". Do you agree that this is an appropriate change, eliminating confusion with the FERC defined term? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

   ☐ Yes
   ☐ No

   Comments:

2. The SDT proposes the Planning Coordinator (PC), in FAC-002-4 Requirement R6, as the entity to define what a qualified change is. Do you agree that the PC is the appropriate entity? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

   ☐ Yes
   ☐ No

   Comments:

3. The SDT proposes the new requirement R6 in FAC-002-4 and associated VRF and VSL. Do you agree that the associate VRF and VSL levels are appropriate? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

   ☐ Yes
   ☐ No

   Comments:

4. The SDT proposes that the modifications in FAC-001-4 and FAC-002-4 meet the SAR in a cost effective manner. Do you agree? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification.

   ☐ Yes
   ☐ No

   Comments:

5. The SDT is proposing a 12-month implementation plan. If you think an alternate timeframe is needed, please propose an alternate implementation plan and time period, and provide a detailed explanation of actions planned to meet the implementation deadline.

   ☐ Yes
   ☐ No

   Comments:

6. Provide any additional comments for the standard drafting team to consider, including the provided technical rationale document, if desired.

   Comments:

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Facility Interconnection Studies and Requirements

Technical Rationale and Justification for Reliability Standards FAC-001 and FAC-002

December 2021

RELIABILITY | RESILIENCE | SECURITY




3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

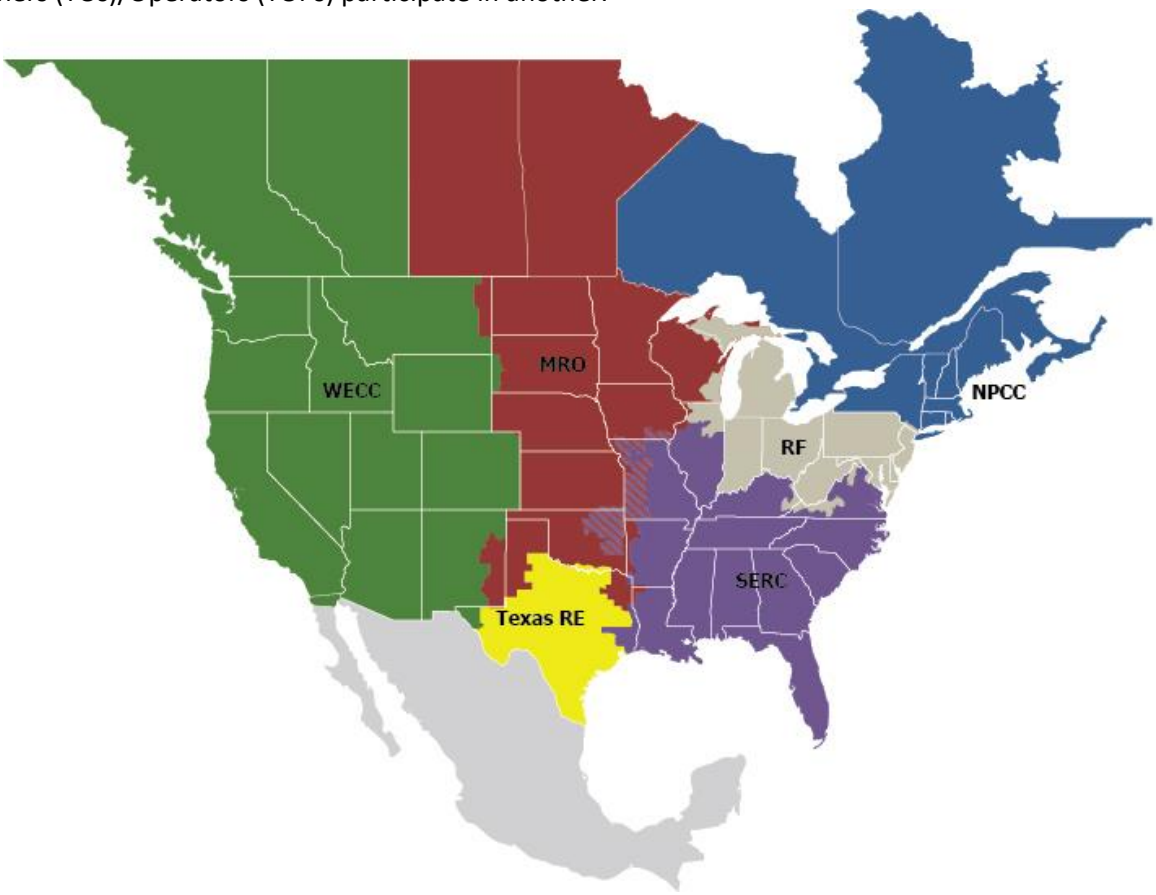
Table of Contents

Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one RE while associated Transmission Owners (TOs)/Operators (TOPs) participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standards FAC-001-4 and FAC-002-4. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justifications document is not a Reliability Standard and should not be considered mandatory and enforceable.

Updates to this document now include the Project 2020-05 Modifications to FAC-001 and FAC-002 standard drafting team's (SDT's) intent in the requirement changes.

Background

This project modifies FAC-001-3 and FAC-002-3 to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.

FAC-001-3 and FAC-002-3 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner (TP) or Planning Coordinator (PC) when a new or materially modified interconnection Facility is connected to their system, neither standard specifies what entity is responsible for determining what is considered a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility.

Additionally, in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[1] This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements.

[1] LGIA-agreement.pdf (ferc.gov)

General Considerations

Qualified Change

The NERC Inverter-Based Resource Performance Task Force (IRPTF) identified several issues, which are documented in the white paper "IRPTF Review of NERC Reliability Standards" approved by the NERC Operating and Planning Committees in March 2020. The white paper identified issues in the FAC-001 and FAC-002 NERC Reliability Standards when using the term "materially modified". The IRPTF white paper points out that the term "materially modifying" in the FAC standards may cause confusion because of the FERC pro forma OATT using the same "materially modifying" term. in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[2] Also quoting from the IRPTF white paper "Both standards *(i.e. FAC-001 and FAC-002)* imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied."[3] Per the white paper, "This has led to confusion and potential reliability issues within industry. For example, a TP may consider an Inverter Based Resource (IBR) control system software change to be materially modifying, but if the Generator Owner (GO) does not consider such a change to be materially modifying they will not notify the TP of the change."[3]

The IRPTF White Paper recommends:

"FAC-001-3 and FAC-002-2 should be revised to: (a) clarify which entity is responsible for determining which facility changes are materially modifying, and therefore require study, (b) clarify that a Generator Owner should notify the affected entities before making a change that is considered materially modifying and (c) revise the term "materially modifying" so as to not cause confusion between the FAC standards and the FERC interconnection process:"[4]

The Project 2020-05 SDT researched existing language in current NERC standards and FERC pro forma language and concluded that the term "qualified change" was not used. Therefore, changing the term in FAC-001 and FAC-002 to "qualified change" should not cause confusion in the industry. The SDT proposes that the terms "materially modified", "material modification" and "materially modifying" in FAC-001 and FAC-002 be changed to "qualified change". As discussed below, the PC shall be required to post a publicly available definition of "qualified change" for the purposes of facility interconnection.

[2] LGIA-agreement.pdf (ferc.gov)

[3] IRPTF White Paper, dated March 2020: page 3 second paragraph (italics added)

Requirement R3

R3. *Each Transmission Owner shall address the following items in its Facility interconnection requirements: [Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. *Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6.*

3.2. *Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change.*

3.3. *Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority Area's metered boundaries.*

General Considerations for Requirement R3

Originally the Parts of R3, with the exception of the first two bullets, which were added by the Project 2010-02 drafting team, this list has been moved to the Guidelines and Technical Basis section to provide entities with the flexibility to determine the Facility interconnection requirements that are technically appropriate for their respective Facilities. Including them as Parts of R3 was deemed too prescriptive, as frequently some items in the list do not apply to all applicable entities – and some applicable entities will have requirements that are not included in this list.

Each TO and applicable GO should consider the following items in the development of Facility interconnection requirements:

- Procedures for requesting a new Facility interconnection or an existing interconnection seeking to make a qualified change
- Data required to properly study the interconnection
- Voltage level and MW and MVAR capacity or demand at the point of interconnection
- Breaker duty and surge protection
- System protection and coordination
- Metering and telecommunications
- Grounding and safety issues
- Insulation and insulation coordination
- Voltage, Reactive Power (including specifications for minimum static and dynamic reactive power requirements), and power factor control
- Power quality impacts
- Equipment ratings
- Synchronizing of Facilities
- Maintenance coordination
- Operational issues (abnormal frequency and voltages)
- Inspection requirements for new or existing interconnections seeking to make a qualified change

- Communications and procedures during normal and emergency operating conditions

Requirement R3, Part 3.3

Consistent with the Functional Model, there cannot be an assumption that the entity owning the transmission will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate arrangements with a Balancing Authority (BA) to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 3.3, the TO is responsible for confirming that the party interconnecting has made appropriate provisions with a BA to operate within its metered boundaries.

Requirement R4

R4. *Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: [Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. *Procedures for coordinated studies of new interconnections and their impacts on affected system(s).*

4.2. *Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.*

4.3. *Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6 are within a Balancing Authority Area's metered boundaries.*

Requirement R4, Part 4.3

Consistent with the Functional Model, there cannot be an assumption that the entity owning the generation will be the same entity providing the BA function. It is the responsibility of the interconnecting party to make appropriate arrangements with a BA to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 4.3, the GO is responsible for confirming that the interconnecting party has made appropriate provisions with a BA to operate within its metered boundaries.

Requirement R6

R6. *Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

General Considerations for Requirement R6

The Project 2020-05 SDT drafted Requirement R6. The PC coordinates regional planning activities. *See, e.g.*, Glossary of Terms used in NERC Reliability Standards, which defines the Planning Authority/PC as "the responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems." Since the PC is responsible for this coordination, the PC is in the best position to ensure that changes to existing interconnections do not have adverse reliability impacts to the PC area as well as the neighboring areas. The PC is the appropriate party to define qualified change and make that definition publicly available. Much of the same justifications for the PC to develop and make that definition publicly available are also applicable for this standard. This will provide consistency and clarity for entities to understand how changes to their interconnections may or may not have adverse reliability impacts.

If an entity is requesting a qualified change of an interconnection, the entity should determine whom the PC is. Entities requesting a qualified change should contact their TO to ascertain the relevant PC. Often the TO and PC are the same entity, or the TO can provide information on contacting the PC.

Factors the PC should consider in developing its definition of "qualified change" for purposes of required studies include how interconnection facility changes affect the steady-state short circuit and dynamic performance of that facility. Not all interconnection changes will necessarily result in changes on steady state, dynamic, or short circuit characteristics of a facility. The PC should also remember that potential qualified changes can have substantially different levels of performance as technology evolves or new technologies become available. Defining adverse reliability impacts calls for careful consideration.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Violation Risk Factor and Violation Severity Level Justifications

Project 2020-05 Modifications to FAC-001 and FAC-002

This document provides the standard drafting team's (SDT's) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in FAC-001 and FAC-002. Each requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the Electric Reliability Organizations (ERO) Sanction Guidelines. The SDT applied the following NERC criteria and FERC Guidelines when developing the VRFs and VSLs for the requirements.

NERC Criteria for Violation Risk Factors

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System. However, violation of a medium risk requirement is unlikely to lead to Bulk Electric System instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to Bulk Electric System instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement
A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System.

FERC Guidelines for Violation Risk Factors

Guideline (1) – Consistency with the Conclusions of the Final Blackout Report

FERC seeks to ensure that VRFs assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System. In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the Bulk-Power System:

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

Guideline (2) – Consistency within a Reliability Standard
FERC expects a rational connection between the sub-Requirement VRF assignments and the main Requirement VRF assignment.

Guideline (3) – Consistency among Reliability Standards
FERC expects the assignment of VRFs corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) – Consistency with NERC's Definition of the Violation Risk Factor Level
Guideline (4) was developed to evaluate whether the assignment of a particular VRF level conforms to NERC's definition of that risk level.

Guideline (5) – Treatment of Requirements that Co-mingle More Than One Obligation
Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

NERC Criteria for Violation Severity Levels

VSLs define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple "degrees" of noncompliant performance and may have only one, two, or three VSLs.

VSLs should be based on NERC's overarching criteria shown in the table below:

Lower VSL	Moderate VSL	High VSL	Severe VSL
The performance or product measured almost meets the full intent of the requirement.	The performance or product measured meets the majority of the intent of the requirement.	The performance or product measured does not meet the majority of the intent of the requirement, but does meet some of the intent.	The performance or product measured does not substantively meet the intent of the requirement.

FERC Order of Violation Severity Levels

The FERC VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in the standard meet the FERC Guidelines for assessing VSLs:

Guideline (1) – Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance

Compare the VSLs to any prior levels of non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when levels of non-compliance were used.

Guideline (2) – Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties

A violation of a "binary" type requirement must be a "Severe" VSL.
Do not use ambiguous terms such as "minor" and "significant" to describe noncompliant performance.

Guideline (3) – Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement

VSLs should not expand on what is required in the requirement.

Guideline (4) – Violation Severity Level Assignment Should Be Based on a Single Violation, Not on a Cumulative Number of Violations

Unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the "default" for penalty calculations.

VRF Justification for FAC-001, Requirement R1

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R1

The VSL did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VRF Justification for FAC-001, Requirement R2

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R2

The VSL did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VRF Justification for FAC-001, Requirement R3

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R3

The VSL did not substantially change from the previously FERC approved FAC-001-3 Reliability Standard. The VSL has been revised to reflect clarification in the severe VSL language. The High and Moderate VSL did not change.

VRF Justification for FAC-001, Requirement R4

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R4

The VSL did not substantially change from the previously FERC approved FAC-001-3 Reliability Standard. The VSL has been revised to reflect clarification in the severe VSL language. The High and Moderate VSL did not change.

VSLs for FAC-001, Requirement R3			
Lower	**Moderate**	**High**	**Severe**
N/A	The Transmission Owner failed to address one part of Requirement R3 Part 3.1 through Part 3.3.	The Transmission Owner failed to address two parts of Requirement R3 Part 3.1 through Part 3.3.	The Transmission Owner failed to address three parts of Requirement R3 Part 3.1 through Part 3.3.

VSL Justifications for FAC-001 Requirement R3	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, only reflect the update to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The requirement is for the Responsible Entity to address items in its Facility interconnection requirements as specified in Requirement R3. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language. The moderate VSL addresses where the Responsible Entity failed to include one of the applicable parts of the plan as specified in Requirement R3. The high VSL addresses where the Responsible Entity failed to include two of the applicable parts of the plan as specified in Requirement R3. The severe VSL addresses where the Responsible Entity but failed to include three of the applicable parts of the plan as specified in Requirement R3.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-001, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
N/A	The Generator Owner failed to address one part of Requirement R4 Part 4.1 through Part 4.3.	The Generator Owner failed to address two parts of Requirement R4 Part 4.1 through Part 4.3.	The Generator Owner failed to address three parts of Requirement R4 Part 4.1 through Part 4.3.

VSL Justifications for FAC-001 Requirements R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, only reflect the update to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The requirement is for the Generator Owner to address items in its Facility interconnection requirements as specified in Requirement R4. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language. The moderate VSL addresses where the Generator Owner failed to include one of the applicable parts of the plan as specified in Requirement R4. The high VSL addresses where the Generator Owner failed to include two of the applicable parts of the plan as specified in Requirement R4. The severe VSL addresses where the Generator Owner to include three of the applicable parts of the plan as specified in Requirement R4.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for FAC-002, Requirement R1
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R1
The VSL has been revised to reflect modify standards VSL language.

VRF Justification for FAC-002, Requirement R2
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R2
The VSL has been revised to reflect modify standards VSL language.

VRF Justification for FAC-002, Requirement R3
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R3
The VSL has been revised to reflect clarification in the Severe, High, Moderate, and Lower VSL language.

VRF Justification for FAC-002, Requirement R4
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R4
The VSL has been revised to reflect clarification in the Severe, High, Moderate, and Lower VSL language.

VRF Justification for FAC-002, Requirement R5
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R5
The VSL did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VRF Justification for FAC-002, Requirement R6
Requirement R6 is a proposed new requirement, the proposed VRF is consistent with other requirements in the standard.

VSL Justification for FAC-002, Requirement R6
Requirement R6 is a purposed new requirement, with only a severe VSL.

VSLs for FAC-002, Requirement R1			
Lower	**Moderate**	**High**	**Severe**
The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.

study one of the Parts (R1, 1.1-1.4).			

VSL Justifications for FAC-002 Requirement R1	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-002, Requirement R2			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6,~~,~~ coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.

VSL Justifications for FAC-002 Requirement R2	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

VSLs for FAC-002, Requirement R3			
Lower	**Moderate**	**High**	**Severe**
The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6,, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.

VSL Justifications for FAC-002 Requirement R3	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-002, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities.

VSL Justifications for FAC-002 Requirement R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-002, Requirement R6			
Lower	**Moderate**	**High**	**Severe**
N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

VSL Justifications for FAC-002 Requirement R6	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The severe level VSL is the only new proposed VSL for this new requirement; therefore, the purposed VSL does not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	"Severe" is the only level of noncompliance for this "binary" requirement, consistent with this Guideline. The VSL does not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The serve VSL is based on a single violation and not cumulative violations.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2020-05 Modifications to FAC-001 and FAC-002

Formal Comment Period Open through January 31, 2022
Ballot Pools Forming through January 10, 2022

Now Available

A formal comment period for Reliability Standards **FAC-001-4 — Facility Interconnection Requirements** and **FAC-002-4 – Facility Interconnection Studies**, is open through **8 p.m. Eastern, Monday, January 31, 2022**.

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the project page.

Ballot Pools

Ballot pools are being formed through **8 p.m. Eastern, Monday, January 10, 2022.** Registered Ballot Body members can join the ballot pools here.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

Initial ballots for the standards and implementation plan, as well as non-binding polls of the associated Violation Risk Factors and Violation Severity Levels will be conducted **January 21-31, 2022**.

For more information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Alison Oswald (via email) or at 404-446-9668. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2020-05 Modifications to FAC-001 and FAC-002 Observer List” in the Description Box.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Comment Report

Project Name:	2020-05 Modifications to FAC-001 and FAC-002 | Draft 1
Comment Period Start Date:	12/7/2021
Comment Period End Date:	1/31/2022
Associated Ballots:	2020-05 Modifications to FAC-001 and FAC-002 FAC-001-4 and FAC-002-4 IN 1 ST 2020-05 Modifications to FAC-001 and FAC-002 Implementation Plan IN 1 OT

There were 58 sets of responses, including comments from approximately 129 different people from approximately 83 companies representing 7 of the Industry Segments as shown in the table on the following pages.

Questions

1. The SDT proposes "qualified change" to replace "material modification". Do you agree that this is an appropriate change, eliminating confusion with the FERC defined term? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

2. The SDT proposes the Planning Coordinator (PC), in FAC-002-4 Requirement R6, as the entity to define what a qualified change is. Do you agree that the PC is the appropriate entity? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

3. The SDT proposes the new requirement R6 in FAC-002-4 and associated VRF and VSL. Do you agree that the associate VRF and VSL levels are appropriate? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

4. The SDT proposes that the modifications in FAC-001-4 and FAC-002-4 meet the SAR in a cost effective manner. Do you agree? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification.

5. The SDT is proposing a 12-month implementation plan. If you think an alternate timeframe is needed, please propose an alternate implementation plan and time period, and provide a detailed explanation of actions planned to meet the implementation deadline.

6. Provide any additional comments for the standard drafting team to consider, including the provided technical rationale document, if desired.

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
Portland General Electric Co.	Daniel Mason	6		PGE FCD	Ryan Olson	Portland General Electric Co.	5	WECC
					Nathaniel Clague	Portland General Electric Co.	1	WECC
					Angela Gaines	Portland General Electric Co.	3	WECC
					Daniel Mason	Portland General Electric	6	WECC
Public Utility District No. 1 of Chelan County	Diane Landry	1		CHPD	Meaghan Connell	Public Utility District No. 1 of Chelan County	5	WECC
					Joyce Gundry	Public Utility District No. 1 of Chelan County	3	WECC
					Glen Pruitt	Public Utility District No. 1 of Chelan County	6	WECC
Elizabeth Davis	Elizabeth Davis		RF	ISO/RTO Council (IRC) Standards Review Committee (SRC)	Mike Del Viscio	PJM	2	RF
					Becky Davis	PJM	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC

					Charles Yeung	Southwest Power Pool, Inc. (RTO)	2	MRO
					Helen Lainis	IESO	2	NPCC
					Bobbi Welch	Midcontinent ISO, Inc.	2	RF
					Al Miremadi	CAISO	2	WECC
					Al Miremadi	CAISO	2	WECC
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NA - Not Applicable,RF,SERC,Texas RE,WECC	ACES Standard Collaborations	Bob Solomon	Hoosier Energy Rural Electric Cooperative, Inc.	1	SERC
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Bill Hutchison	Southern Illinois Power Cooperative	1	SERC
					Susan Sosbe	Wabash Valley Power Association	3	RF
					Amber Skillern	East Kentucky Power Cooperative	1	SERC
					Jennifer Bray	Arizona Electric Power Cooperative, Inc.	1	WECC
					Nick Fogleman	Prairie Power, Inc.	1	SERC
Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
DTE Energy - Detroit Edison Company	Karie Barczak	3		DTE Energy - DTE Electric	Adrian Raducea	DTE Energy - Detroit Edison Company	5	RF
					Patricia Ireland	DTE Energy - DTE Electric	4	RF
					Karie Barczak	DTE Energy - DTE Electric	3	RF
MRO	Kendra Buesgens	1,2,3,4,5,6	MRO	MRO NSRF	Bobbi Welch	Midcontinent ISO, Inc.	2	MRO

					Christopher Bills	City of Independence Power & Light	3,5	MRO
					Fred Meyer	Algonquin Power Co.	3	MRO
					Jamie Monette	Allete - Minnesota Power, Inc.	1	MRO
					Larry Heckert	Alliant Energy Corporation Services, Inc.	4	MRO
					Marc Gomez	Southwestern Power Administration	1	MRO
					Matthew Harward	Southwest Power Pool, Inc.	2	MRO
					LaTroy Brumfield	American Transmission Company, LLC	1	MRO
					Bryan Sherrow	Kansas City Board Of Public Utilities	1	MRO
					Terry Harbour	MidAmerican Energy	1,3	MRO
					Jamison Cawley	Nebraska Public Power	1,3,5	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					David Heins	Omaha Public Power District	1,3,5,6	MRO
					George Brown	Acciona Energy North America	5	MRO
Duke Energy	Kim Thomas	1,3,5,6	FRCC,RF,SERC,Texas RE	Duke Energy	Laura Lee	Duke Energy	1	SERC
					Dale Goodwine	Duke Energy	5	SERC
					Greg Cecil	Duke Energy	6	RF
Michael Johnson	Michael Johnson		WECC	PG&E All Segments	Marco Rios	Pacific Gas and Electric Company	1	WECC

					Sandra Ellis	Pacific Gas and Electric Company	3	WECC
					James Mearns	Pacific Gas and Electric Company	5	WECC
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Jim Howell	Southern Company - Southern Company Services, Inc. - Gen	5	SERC
Eversource Energy	Quintin Lee	1		Eversource Group	Quintin Lee	Eversource Energy	1	NPCC
					Christopher McKinnon	Eversource Energy	3	NPCC
Southwest Power Pool, Inc. (RTO)	Shannon Mickens	2	MRO,SPP RE,WECC	SPP RTO	Shannon Mickens	Southwest Power Pool Inc.	2	MRO
					Matt Harward	Southwest Power Pool Inc.	2	MRO
					Nathan Bean	Southwest Power Pool Inc.	2	MRO
					Mason Favazza	Southwest Power Pool Inc.	2	MRO
					Chris Jamieson	Southwest Power Pool Inc.	2	MRO

					Melanie Hill	Southwest Power Pool Inc.	2	MRO
					Scott Jordan	Southwest Power Pool Inc.	2	MRO
					Jonathan Hayes	Southwest Power Pool Inc.	2	MRO
					Jason Davis	Southwest Power Pool Inc.	2	MRO
					Juliano Freitas	Southwest Power Pool Inc.	2	MRO
					Ellen Cook	Southwest Power Pool Inc.	2	MRO
					Jeff McDiarmid	Southwest Power Pool Inc.	2	MRO
					Charles Hendrix	Southwest Power Pool Inc.	2	MRO
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Entity Monitoring	Steve Rueckert	WECC	10	WECC
					Phil O'Donnell	WECC	10	WECC
FirstEnergy - FirstEnergy Corporation	Tricia Bynum	6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Mark Garza	FirstEnergy - FirstEnergy Corporation	4	RF
					Robert Loy	FirstEnergy - FirstEnergy Corporation	5	RF

1. The SDT proposes "qualified change" to replace "material modification". Do you agree that this is an appropriate change, eliminating confusion with the FERC defined term? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD

Answer	No
Document Name	

Comment

Use of the word "change" in the new definition is potentially misleading. For any "modification" of an interconnection, there is both a change in the physical system (topology, technology, etc.) as well as a change in system performance. The new term "qualified change" could be interpreted to include performance criteria as opposed to changes in topology or technology. In other words, the intent of the new definition isn't to require the PC to define system performance criteria for which to evaluate modified/changed interconnections, but rather to define what modifications/changes will require (trigger) system studies prior to placing them in service. An alternate term could be "Qualified System Modification (QSM)" to help cue the reader that this deals with the modification of the system (as was the term originally), not the subsequent change in impact to the system (i.e. not the performance criteria to evaluate against).

Likes 0	
Dislikes 0	

Response

Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6

Answer	No
Document Name	

Comment

No, this will continue to add confusion and result in inconsistent results based on a Planning Coordinator's definition. Entities that have multiple Planning Coordinators may have significant trouble in managing consistency, especially when these are in different Regions. This will also be problematic during compliance audits where the burden will be on the entity to show it met each PC definition, no matter how badly the definition is written and how ambiguous it may be.

Likes 0	
Dislikes 0	

Response

Thomas Foltz - AEP - 5

Answer	No

Document Name	

Comment

While the proposed strategy itself may be sound overall, we are concerned by what the exact definition of “qualified change” might be after being developed by each Planning Coordinator. Transmission Planners may or may-not agree with a PC’s definition, and those entities would need to be provided an opportunity for the PC to hear their concerns, and be provided an opportunity to help shape the Planning Coordinator’s definition. In addition, the TP should have the ability to perform a determination as to whether they believe a system impact has occurred via a reliability impact study within FAC-002.

AEP appreciates the efforts of the Standard Drafting Team. We would like them to know that AEP‘s Negative votes on the proposed revisions for FAC-001 and FAC-002 are soley driven by the concerns expressed in our response to Question 1 (above). We hope these concerns might be addressed in a way that allows us to support this effort with our Affirmative votes.

Likes 0	
Dislikes 0	

Response

Robert Hirchak - Cleco Corporation - 6	
Answer	No
Document Name	

Comment

Has there been issues of non-compliance due to the current terms? If so, please provide examples.

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	

Comment

Reclamation does not support replacing the term “materially modified.” As stated in the NERC Rules of Procedure, terms that are not specifically defined are to be used in their ordinary and commonly understood meaning. The ordinary and commonly understood meaning of “materially” is “substantially” or “considerably.” The ordinary and commonly understood meaning of “modified” is “changed.” Reclamation acknowledges that FERC’s Standardization of Generator Interconnection Agreements and Procedures uses the term “Material Modification” and that it is this similarity with “materially modified” that is the basis for the FAC-001 and FAC-002 SAR, but Reclamation observes two problems with conflating these terms.

First, a defined term like “Material Modification” in one situation should not be interpreted via conjugation to impose confusion upon a different situation. That is, although “Material Modification” and “materially modified” are similar, it is not reasonable to imply that they are related or connected. Second,

the FERC definition of “Material Modification” is essentially circular, i.e., “modifications that have a material impact….” Reclamation observes it is likely that FERC relies on the plain meanings of both “modification” and “material,” as well as discussions between the Transmission Provider and the Interconnection Customer to determine the appropriate outcome on the queue. Reclamation recommends the procedures addressed by FAC-001 and FAC-002 are no different. Facility owners should coordinate with the appropriate entities that perform the Planning Coordinator, Transmission Operator, and/or Balancing Authority functions to identify the significance of changes and meet the pertinent interconnection requirements.

Likewise, Reclamation observes it is confusing to not define “qualified change” in FAC-001 and FAC-002 or in the NERC Glossary of Terms. This term is critical to a substantial portion of the activities necessary to comply with FAC-001 and FAC-002 and should not be contained externally or buried at the end of all the requirements that rely on it. Reclamation observes that entities with multiple different Planning Coordinators could be subject to multiple different definitions of “qualified change” if the definition is left up to each Planning Coordinator.

Reclamation also observes there are grammatical inconsistencies in the FAC-001 R3 and R4 subparts, as well as problems with the implementation of the proposed language “seeking to make a qualified change….” It is the entities that own the Facilities that are seeking to make the changes, not the Facilities (i.e., equipment) seeking to make the changes. To correct these problems, Reclamation offers the following language:

FAC-001 R3.1 “Procedures for coordinating studies and identifying the impacts on affected systems for new interconnections or existing interconnections sought to be changed in accordance with the definition of Qualified Change.”

FAC-001 R3.2 “Procedures for notifying those responsible for the reliability of affected systems of new interconnections or existing interconnections sought to be changed in accordance with the definition of Qualified Change.”

FAC-001 R3.3 “Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities sought to be changed in accordance with the definition of Qualified Change are within a Balancing Authority Area’s metered boundaries.”

FAC-001 R4.1 “Procedures for coordinating studies of new interconnections and their impacts on affected systems.”

FAC-001 R4.3 “Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities sought to be changed in accordance with the definition of Qualified Change are within a Balancing Authority Area’s metered boundaries.”

Likes 0	
Dislikes 0	

Response

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford

Answer	No
Document Name	

Comment

Modifying the language in FAC-001 & FAC-002 to remove potential ambiguity between the referenced FERC definition and that which is relevant in NERC Reliability Standards is appropriate and prudent. However, Requirement R6 in the proposed revision to FAC-002 may not provide the clarity intended. As proposed, R6 will allow each Planning Coordinator to have its own definition of “qualified change” in its procedures and criteria, which would likely lead to significant differences in this interpretation across the system. This will make collaborating between various Planning Coordinators, Transmission Planners, and Facility owners difficult and confusing when determining impacts to System Reliability due to a “qualified change”. It is recommended that the SDT mitigate this issue by proposing a NERC glossary term for “qualified change”, or that the proposed edits to FAC-002 include the establishment of criteria for what does and does not constitute as a “qualified change.” This should provide the appropriate consistency in interpretation across industry.

Likes 0	
Dislikes 0	

Response

Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy

Answer	No
Document Name	

Comment

Duke Energy agrees with the concept presented in the SAR, however, it doesn't agree with the phrase "qualified change". A suggested alternative is "technically substantive change" to distinguish it from FERC terminology "material modification" that relates to cost of projects. By "technically substantive", Duke Energy is referring to project changes that would significantly impact the electrical behavior of the transmission system.

Likes 0	
Dislikes 0	

Response

Daniel Gacek - Exelon - 1

Answer	No
Document Name	

Comment

Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6

The difference in term may be appropriate, but additional clarity is needed to ensure the new term addresses the confusion with the FERC defined term. See comments to question 2 for more detail on suggested changes to address.

Likes 0	
Dislikes 0	

Response

John Pearson - ISO New England, Inc. - 2

Answer	No
Document Name	2020-05_Mod_to_FAC-001_and_FAC-002_Unofficial_Comment_Form_12072021 FINAL.docx

Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	Yes
Document Name	
Comment	
BHC agrees that “material modification” should be replaced. However, additional clarification to the term “qualified change” would be helpful for consistent application across ERO enterprise. A guideline providing additional specification and examples would be value-add.	
Likes 0	
Dislikes 0	
Response	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	Yes
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	

None	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Entergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports the use of the term “Qualified Change” as it adds a clear distinction from “material modification” used in the pro forma Open Access Transmission Tariff.	
Likes 0	
Dislikes 0	
Response	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
BC Hydro appreciates the drafting teams efforts and opportunity to comment.	

The proposed Requirement R6 of FAC-002-4 Draft 1 requires the Planning Coordinator to define "qualified change". This seems to imply that the determination of what constitutes a "qualified change" is to be made in one pass, based on the R6-established definition, without an opportunity to conduct a technical analysis. BC Hydro believes that developing a robust definition will be technically challenging, and recommends that a determination process for a "qualified change" be included as part of 2020-05 FAC-001 and FAC-002 revisions.	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
This change can reduce on identified ambiguity.	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
The North American Generator Forum (NAGF) has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	
Answer	Yes
Document Name	
Comment	

Generally it is helpful avoid conflating terms between standards and tariffs, but this cannot be answered until the PC defines ‘qualified change.’

Likes 0	
Dislikes 0	

Response

Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster

Answer	Yes
Document Name	

Comment

Evergy supports and incorporates by reference Edison Electric Institute’s (EEI) response to Question 1.

Likes 0	
Dislikes 0	

Response

Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli

Answer	Yes
Document Name	

Comment

Xcel Energy supports the comments of EEI.

Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	Yes
Document Name	

Comment

EEI agrees that the proposed term “qualified change” addresses the concerns and confusion identified with the use of the term “material modification”.

Likes 0	
Dislikes 0	
Response	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with and supports the comments provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Recommendation to the SDT: The NERC Glossary of Terms does not have a definition for “material modification” and the SDT does not intend to add “qualified change” to the glossary. Without the addition of “qualified change” to the NERC Glossary of Terms, the ambiguity that exists with the “material modification” will continue to exist with the revised standards. Recommend the SDT utilize FAC-002-4, requirement R6 and measure M6, to develop the intent of “qualified change” and incorporate it into the NERC Glossary of Terms. (NERC Glossary of Terms Example for the SDT: “Qualified Change - For the purpose of studying the impact of interconnecting new or changed facilities on the Bulk Electric System, each Planning Coordinator is required to maintain a publicly available definition of “qualified change” for the purposes of facility interconnection.”)	
Likes 0	
Dislikes 0	
Response	
Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes
Document Name	
Comment	

SDG&E proposes the insertion of the phrase “in coordination with the Transmission Planner” as follows (see bolded and italicized statement):

FAC-001-4, R3-3.1:

Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections, or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, ***in coordination with the Transmission Planner***, under Reliability Standard FAC-002-4 Requirement R6

FAC-002-4, R6:

Each Planning Coordinator, ***in coordination with the Transmission Planner***, shall maintain a publicly available definition of qualified change for the purposes of facility interconnection.

Likes 0	
Dislikes 0	

Response

Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments

Answer	Yes
Document Name	

Comment

PG&E supports the comments provided by the Edison Electric Institute (EEI) that the proposed term “qualified change” addresses the concerns and confusion with the term “material modification”.

Likes 0	
Dislikes 0	

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations

Answer	Yes
Document Name	

Comment

No additional suggestions for improvement.

Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bradley Collard - Pedernales Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Jang - Seattle City Light - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Daniel Mason - Portland General Electric Co. - 6, Group Name PGE FCD	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Darcy O'Connell - California ISO - 2	
Answer	
Document Name	
Comment	
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	
Dislikes 0	
Response	

2. The SDT proposes the Planning Coordinator (PC), in FAC-002-4 Requirement R6, as the entity to define what a qualified change is. Do you agree that the PC is the appropriate entity? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

Daniel Gacek - Exelon - 1	
Answer	No
Document Name	

Comment

Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6

While we agree the PC can perform the role of defining “qualified change”, more can be done by the SDT to clarify requirements related to “material modifications” of Facilities. The currently proposed changes to FAC-001 and FAC-002 do not provide requirements for the PC to define “qualified change” with any more clarity than “material modification” has at this time. The SDT should consider outlining minimum requirements for a PC defined “qualified change”. This could be commonly agreed to circumstances that would require study by all PCs. From this minimum set of requirements PCs could then add additional requirements relevant to their planning areas. If left open ended for PCs to define, there is a chance that the difference in terms “qualified change” and “materially modified” would not address the issue the Project is trying to address. Adding minimum requirements provides more certainty and consistency across PCs.

The revised standards should also include guidance for change management by allowing the impacted entities to have some period of time to align with modifications to the PC’s definition of “qualified change” – perhaps 180 days from the time the change is posted. As written, if the PC makes changes to its definition of “qualified change”, there is no period of time for entities to revise their internal procedures to match.

Consider requiring the PCs to work with the TPs and other stakeholders to create and modify the definition of “qualified change”.

Likes 0	
Dislikes 0	

Response

LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	No
Document Name	

Comment

There is a difference between a definition for impacts to the BES system only and to a TP’s system, which could be more expansive.

- ATC is not vertically integrated, so we need the ability to receive appropriate information from our customers when a request to modify a connection (D-T, T-T, or G-T) to our transmission system occurs.

- If the PC is the definer, then the PC needs to closely coordinate the definition with TPs, especially if the TP is not vertically integrated.

- ATC would differentiate between generation (PC definition of qualified change may be ok) and distribution (ATC needs to have more control over definition) connections.

- ATC has a Generating Facilities Modification Notification (GFMN) process that defines applicable changes ATC needs to receive regardless of FAC-002 applicability (gives us the most up to date information on units connected to our system).

- ATC has our own connection change modifcation criteria for determining FAC-002 applicability documented in a Criteria document.

Likes 0	
Dislikes 0	

Response

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford

Answer	No
Document Name	

Comment

It also seems appropriate that the TP have a role in determining what a “qualified change” is, but that is not provided for in the R6 proposal. A NERC glossary term for “qualified change” is preferred and would make this more of a moot point but, in the absence of that, wording similar to the MOD-032 standard where the criteria/definition is jointly developed (by the PC and its TPs) would be more appropriate.

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer	No
Document Name	

Comment

Reclamation recommends the definition of “Qualified Change” be contained within the NERC Glossary of Terms. As stated in the response to Question 1, Reclamation does not support a process that would allow the definition of “qualified change” to vary by entity or to change with little notice. Such ambiguity does not resolve the confusing situation that allegedly exists with FAC-001 and FAC-002 using the term “materially modified;” it merely replaces one ambiguous term with another.

Likes 0	
Dislikes 0	

Response

Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	No
Document Name	
Comment	
The primary argument behind the PC as the appropriate entity is "one size fits all". The TO is best situated and best capable to determine what "qualified change" is as it applies to and how it impacts the TO's delivery system.	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
Entities may use multiple Planning Coordinators, some may be in different Regions. For consistency, there should be one definition, not a patchwork of poorly written and ambiguous definitions. This will put added burden and risk on the entities from the compliance staff who may disagree with the interpretations of the PC definitions.	
Likes 0	
Dislikes 0	
Response	
Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	No
Document Name	
Comment	
The Planning Coordinator may be the appropriate entity for this definition, however more clarification is needed to ensure the definition is being applied correctly. It is easy to see how in areas where there are multiple TO's under a common PC that FAC-002-4 R6 would be useful, but what about circumstances where PC to PC coordination is required? There are many vertically integrated entities whereby the PC is the Tranmission Planner as well as the Tranmission Owner and adjacent systems (i.e. "affected systems") are in another PC (see comments for #6 below regarding use of the term "affected systems"). For an interconnection request in one PC's area, would that PC apply their own definition of a "qualified change" when evaluating impacts on a neighboring PC's systems? It would be onerous to attempt to apply neighboring criteria when performing system studies. If the intent to apply internal criteria to external systems, it should be clearly stated.	

Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
No additional suggestions for improvement.	
Likes 0	
Dislikes 0	
Response	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E supports the comments provided by the Edison Electric Institute (EEI) that the Planning Coordinator (PC) is the appropriate entity to define what is a qualified change. PG&E also agrees with the EEI input that the SDT consider adding language to Requirement R6 that would ensure the PCs coordinate with Transmission Planners (TP) when defining the term	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	

As recognized in the Project 2020-05 SAR, FERC provides a definition for “Material Modification” in its pro forma Large Generator Interconnection Procedures (LGIP) and Small Generator Interconnection Procedures (SGIP). For the purpose of these procedures, FERC defines a Material Modification as “a modification that has a material impact on the cost or timing of any Interconnection Request with a later queue priority date.” FAC-001 requires Transmission Owners to have documented Facility interconnection requirements. It is likely that many registered Transmission Owners (within the U.S. at least) consider their LGIP as supporting evidence for R1, part 1.1 (generation Facilities). With the proposed addition of Requirement R6 to FAC-002-4, the Planning Coordinator will have the responsibility to define what a “qualified change” is. How will a “qualified change” definition developed by the PC be reconciled with the TO’s responsibility to maintain Facility interconnection requirements for generators seeking to interconnect new generation (or modify existing generation connected) to their facilities? Will the TO (or FERC “Transmission Provider”) need to incorporate the PC’s definition of a “qualified change” into their LGIP? Would this need to be approved by FERC and perhaps incorporated into FERC’s pro forma LGIP and SGIP as well?

Likes 0	
Dislikes 0	

Response

David Jendras - Ameren - Ameren Services - 3

Answer	Yes
Document Name	

Comment

Ameren agrees with and supports the comments provided by EEI.

Likes 0	
Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable

Answer	Yes
Document Name	

Comment

EEI agrees that the Planning Coordinator(PC) is the appropriate entity to define what a qualified change is, however, we also recommend that the SDT consider adding language to Requirement R6 that would ensure PCs coordinate with Transmission Planners when defining this term.

Likes 0	
Dislikes 0	

Response

Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Daniel Mason - Portland General Electric Co. - 6, Group Name PGE FCD	
Answer	Yes
Document Name	
Comment	
PGE agrees that standardization of the definition at the PC level removes ambiguity due to an auditors interpretation. PGE has some some concern about the lack of a formalized process to address disputes during the process to define the term.	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 2.	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	

Answer	Yes
Document Name	
Comment	
The PC should be involved but should not be solely responsible for the definition. Instead R6 should direct the PC to develop and maintain the definition in consultation with Transmission Planner(s) as applicable.	
Likes 0	
Dislikes 0	
Response	
Michael Jang - Seattle City Light - 1	
Answer	Yes
Document Name	
Comment	
City Light requests that the SDT propose some examples on how “qualified change” can be defined by PCs	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
The NAGF agrees that the Planning Coordinator (PC) is the appropriate entity to define what a qualified change is. However, the NAGF is concerned that there will be large variations of the “qualified change” definition/threshold adopted by the various PCs across the ERO. The NAGF recommends PCs coordinate efforts to define the “qualified change” definition/threshold so as to enable consistency across the ERO to the extent possible.	
Likes 0	
Dislikes 0	
Response	

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
While the PC would appear to be the most appropriate entity to define “qualified change” the new requirement is incomplete in that it provides no guidance or reference whatever to what should be considered when defining a qualified change. Since this is completely arbitrary and can change from one PC to another. It can be defined as broadly as any change at all or as narrowly as only a complete removal of a facility. Without some specification of what should be considered as a qualified change this revision does not support consistency and cannot be considered necessary for the reliability of the Bulk Electric System.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	Yes
Document Name	
Comment	
What if Planning Coordinators, in different regions define a differing definition of qualified change? How will you ensure consistency of definition of qualified change? Is it OK to have a differing definition of qualified change?	
Likes 0	
Dislikes 0	
Response	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
The Duke Energy YES response is predicated on the assumption that the PC will have sole discretion in defining “technically substantive change”.	
Likes 0	
Dislikes 0	

Response	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
While assigning each Planning Coordinator to create its definition of “qualified change” does match the status quo, there may be value in publishing application guidelines or another type of NERC guidance documenting best practices in defining a “qualified change” and/or encouraging collaboration and standardization between PCs. Minimizing unnecessary differences in definitions and to promoting clear identification of any differences deemed necessary would help to avoid potential confusion in the industry, especially for facility owners with a presence in more than one PC footprint.	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Entergy agrees with the North American Generator Forum (NAGF) comment as follows: *“The NAGF agrees that the Planning Coordinator (PC) is the appropriate entity to define what a qualified change is. However, the NAGF is concerned that there will be large variations of the “qualified change” definition/threshold adopted by the various PCs across the ERO. The NAGF recommends PCs coordinate efforts to define the “qualified change” definition/threshold so as to enable consistency across the ERO to the extent possible.”* Entergy also recommends that the definition of “qualified change” should be agreed upon through a stakeholder review process and align with the end user facilities.	
Likes 0	
Dislikes 0	
Response	
Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	

Comment
Southern Indiana Gas & Electric Company (SIGE) agrees that the PC is the appropriate entity to define what a qualified change is but proposes to include the PC's coordination with its Transmission Planner(s) in defining what a qualified change is. See SIGE's comment for Question #6 for suggested changes.

Likes 0	
Dislikes 0	

Response

Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	

Comment
CenterPoint Energy Houston Electric, LLC (CEHE) agrees that the PC is the appropriate entity to define what a qualified change is but proposes to include the PC's coordination with its Transmission Planner(s) in defining what a qualified change is. See CEHE's comment for Question #6 for suggested changes.

Likes 0	
Dislikes 0	

Response

Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	

Comment
AZPS agrees that the Planning Coordinator is the correct entity to define what a qualified change is. AZPS further proposes that Planning Coordinators should be required to provide their definition of "qualified changes" to all Transmission Planners and Transmission Owners within their Planning Coordinator area because both entities are required to study the reliability impacts per R1 . In addition, if there are future modifications to their definition of "qualified changes" the Planning Coordinator should provide the updated version to to all Transmission Planners and Transmission Owners within their Planning Coordinator area prior to the effective date of the change. AZPS also proposes that the Transmission Planner and Transmission Owner should post the Planning Coordinators' definition of "qualified changes" as they are likely to be the initial point of contact for the interconnection customer.

Likes 0	
Dislikes 0	

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	Yes
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Robert Hirchak - Cleco Corporation - 6	
Answer	Yes
Document Name	
Comment	
The PC is the correct entity, but different PCs may have different ideas for what is a "qualified change." This could lead to various interpretations across the BES.	
Likes 0	
Dislikes 0	
Response	
Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
DTEE agrees that the Planning Coordinator (PC) is the appropriate entity to define a ”qualified change.” Consitent with the NAGF recommendations, DTEE requests a consistent “qualified change” definition be developed.	
Likes 0	
Dislikes 0	
Response	

Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
AEP has no objections to the PC being tasked with defining what a qualified change is, however please see our concerns regarding a) the Transmission Planner being given opportunity to help shape a definition as provided above in Response #1 and b) the importance of pursuing a phased implementation plan as provided below in Response #5.	
Likes 0	
Dislikes 0	
Response	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	Yes
Document Name	
Comment	
Yes, the PC is the appropriate entity. A guideline providing additional specification and examples would be value-add.	
Likes 0	
Dislikes 0	
Response	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
John Pearson - ISO New England, Inc. - 2	
Answer	Yes
Document Name	2020-05_Mod_to_FAC-001_and_FAC-002_Unofficial_Comment_Form_12072021 FINAL.docx
Comment	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bradley Collard - Pedernales Electric Cooperative, Inc. - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

3. The SDT proposes the new requirement R6 in FAC-002-4 and associated VRF and VSL. Do you agree that the associate VRF and VSL levels are appropriate? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6

Answer	No
Document Name	

Comment

If you are asking the Planning Coordinators to make the definitions, then the PCs should determine how severe the violation should be. The Drafting team is asking for us to approve a standard with a definition that is yet to be determined. This puts the entities in a high risk situation with no recourse to debate the definition or the severity of the penalty.

Likes 0	
Dislikes 0	

Response

Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon

Answer	No
Document Name	

Comment

BHC does not agree with the singular Severe VSL rating. The ratings should be provided in a tiered structure, similar to the suggestion below.

- Severe – PC did not have a definition and did no not maintain a publicly available definition…
- High – PC had a definition, but did not make the public
- Moderate – PC had a definition, but was not public for an extended duration
- Lower – PC had a definition, but not public for a small duration

Likes 0	
Dislikes 0	

Response

Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric

Answer	No
Document Name	

Comment

DTEE disgrees that a Lower Violation Risk Factor is aligned with a Severe Vioaltion Severity Level.

Likes 0	
Dislikes 0	

Response

Robert Hirchak - Cleco Corporation - 6

Answer	No
Document Name	

Comment

Medium risk should be low since the study is based on human judgement which for reliability planning is very conservative.

Likes 0	
Dislikes 0	

Response

Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC

Answer	No
Document Name	

Comment

The Risk Factor in the Requirement (Page5) should be “Low”, it does not correlate with the VRF in Column R6 in the Violation Severity Level table on Page 11. The verbiage should be “Low” rather than “Lower” for both locations.

Likes 0	
Dislikes 0	

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1

Answer	No
Document Name	

Comment

MEC supports the MRO NSRF comments.

Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
As discussed in the response to Question 2, Reclamation recommends that Requirement R6 is not necessary when the definition is properly contained in the NERC Glossary of Terms. If R6 is left in the standard, Reclamation recommends language to correct the grammatical mishaps in the VSLs similar to the proposed language stated in the response to Question 1.	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	
Entergy agrees with the NAGF comment as follows: *"The NAGF believes that the proposed VRF = Lower is not aligned with a VSL that is proposed as being severe."* Entergy also recommends that the Table and Requirement 6 should be consistent.	
Likes 0	
Dislikes 0	
Response	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	No
Document Name	
Comment	

Duke Energy agrees with the VRF classification. However, the stated Violation Severity Level should be delineated with multiple classifications. For example, additional classifications should be considered for Developing/Establishing, Posting/Publishing, etc.	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	No
Document Name	
Comment	
R6 can be categorized under 'High VSL'.	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	No
Document Name	
Comment	
A VRF of “Medium” is listed in the text of the requirement while a VSL of Lower is listed in the VSL Tables. Because there is no minimum or stated guidance for what constitutes a qualified change and that there are multiple ways an interested entity could communicate and coordinate with its PC the requirement to publicly post is administrative in nature and represents only one way information could be communicated. A VRF of “Lower” should be the maximum considered. Similarly, while a non-compliance with the requirement would be binary since this is a simple posting requirement the maximum severity level should be Lower VSL	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	

Comment	
The NAGF believes that the proposed VRF = Lower is not aligned with a VSL that is proposed as being severe per the table on page 11 of FAC-002-4. Note that there is a disconnect between the VRF = Medium defined under R6 on page 5 compared to the table on page 11.	
Likes 0	
Dislikes 0	
Response	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	
Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6 Exelon concurs with the NAGF comment to review and align the VRF and VSL	
Likes 0	
Dislikes 0	
Response	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	

Comment
The VRF identified in the VSL table on Page 11 of 13 indicates this VRF is Lower. This is in conflict with the identified VRF stated in the actual Requirement on Page 5 of 13. Additionally, the NSRF supports a Lower VRF.

Likes 0	
Dislikes 0	

Response

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	Yes
Document Name	

Comment
A NERC glossary term for “qualified change” is preferred and would make this more of a moot point but, in the absence of that, consider allowing for a VSL accounting for the maintaining of the definition but failure to make it public.

Likes 0	
Dislikes 0	

Response

Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	Yes
Document Name	

Comment
Evergy supports and incorporates by reference Edison Electric Institute’s (EEI) response to Question 3.

Likes 0	
Dislikes 0	

Response

Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli	
Answer	Yes
Document Name	

Comment	
Xcel Energy supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
The IRC SRC is supportive of the Lower VRF. We note that there appears to be a discrepancy between the VRF noted in the text of the requirement (i.e. Medium) and the VRF in the table (i.e. Lower). We ask the SDT to ensure these are aligned to a “Lower” VRF. The revised language would read: R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. [Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI agrees with the SDT that the VRF and VSL developed for FAC-002-4, R6.	
Likes 0	
Dislikes 0	
Response	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	

Answer	Yes
Document Name	
Comment	
ERCOT supports the comments of the IRS SRC.	
Likes 0	
Dislikes 0	
Response	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with and supports the comments provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E agrees with the SDT on the VRF and VSL developed for FAC-002-4, R6.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	

Comment	
No additional suggestions for improvement.	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Yes, we agree with the proposed VRF and VSL levels. However, please ensure the VRF in R6 is corrected to reflect Lower, instead of Medium.	
Likes 0	
Dislikes 0	
Response	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Alliant Energy supports comments submitted by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bradley Collard - Pedernales Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Jang - Seattle City Light - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	
Answer	
Document Name	
Comment	
No comment since this is a PC responsibility.	
Likes 0	
Dislikes 0	
Response	

4. The SDT proposes that the modifications in FAC-001-4 and FAC-002-4 meet the SAR in a cost effective manner. Do you agree? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification.

Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments

Answer	No
Document Name	

Comment

PG&E at this time cannot determine if the modifications are cost effective.

Likes 0	
Dislikes 0	

Response

Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO

Answer	No
Document Name	

Comment

SPP believes reliability requirements should not merely be cost effective but are commensurate with the risks they seek to mitigate. There is not a simple approach to assess cost impacts of standards. Therefore, we suggest that NERC develop a pilot program to introduce parameters that would help industry gauge the cost effectiveness of new or revised standards. From our perspective, the parameters for cost are best developed by the standards drafting team. As an example, standards that are more administrative in nature such as in this Project, the SDT could provide a range based on implementation of the FAC-001 and FAC-002 from their respective team members' companies. For standard projects that are more involved and may require equipment reconfigurations/purchases a broader approach to gathering cost data from the industry might be necessary.

Likes 0	
Dislikes 0	

Response

Daniel Gacek - Exelon - 1

Answer	No
Document Name	

Comment

Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6

The proposed changes to the standards do not define “qualified change” which creates concern that routine maintenance activities such as cleaning condenser tubes or calibrating instrumentation that may cause nominal changes to generator output power could trigger the need for expensive studies.	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
GO/GOPs will need more information to adequately assess the cost effectiveness of the proposed approach.	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	
Entergy agrees with the NAGF comment as follows: *“GO/GOPs will need more information to adequately assess the cost effectiveness of the proposed approach.”*	
Likes 0	
Dislikes 0	
Response	
Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	No
Document Name	
Comment	

A NERC glossary term for “qualified change” is preferred and would make this more of a moot point but, the proposed action would have little cost benefit to industry. If the SDT were to consider condensing the requirements included in both the FAC-001-4 and FAC-002-3 Reliability Standards into one streamlined FAC Facility Interconnection Studies and Requirements Standard, industry may see some benefit in accomplishing and demonstrating compliance.

Likes 0	
Dislikes 0	

Response

Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter

Answer	No
Document Name	

Comment

We ask for clarification of terms to be used and how PCs may interpret these terms before cost effectiveness can be determined.

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer	No
Document Name	

Comment

Reclamation observes that the primary modifications to FAC-001 and FAC-002 are grammatical and do not materially affect the compliance obligations or activities of applicable entities. Project 2020-05 could have been accomplished with errata rather than the expensive and resource-intensive standards development process.

Likes 0	
Dislikes 0	

Response

Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric

Answer	No
Document Name	

Comment	
A position on cost effectiveness of the proposed approach cannot be conducted until futher information is provided.	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
I do not see a cost/benefit analysis of this standard, how was cost effectiveness established? What metrics were used? How much did the problem cost, and how much will the solution cost?	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
No additional suggestions for improvement.	
Likes 0	
Dislikes 0	
Response	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	

Change appears cost effective in relation to implementation of the processes necessary to identify the potential impacts to the system, and our response is not in relation to potential future upgrades that may result from those reviews.

Likes 0	
Dislikes 0	

Response

Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli

Answer	Yes
Document Name	

Comment

Xcel Energy supports the comments of EEI.

Likes 0	
Dislikes 0	

Response

Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy

Answer	Yes
Document Name	

Comment

None.

Likes 0	
Dislikes 0	

Response

Daniela Atanasovski - APS - Arizona Public Service Co. - 1

Answer	Yes
Document Name	

Comment

None	
Likes 0	
Dislikes 0	
Response	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	Yes
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
The proposed modifications appear to be cost effective, as they would continue to utilize the existing stakeholder planning and processes that are valued and have proven beneficial.	
Likes 0	
Dislikes 0	
Response	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	Yes
Document Name	
Comment	

BHC believes it would be cost effective with a guideline providing additional specification and examples.	
Likes 0	
Dislikes 0	
Response	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Michael Jang - Seattle City Light - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bradley Collard - Pedernales Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Robert Hirchak - Cleco Corporation - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
David Jendras - Ameren - Ameren Services - 3	
Answer	
Document Name	
Comment	
No comment.	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	

Answer	
Document Name	
Comment	
No comment on cost	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	
Texas RE does not have comments on this question.	
Likes 0	
Dislikes 0	
Response	

5. The SDT is proposing a 12-month implementation plan. If you think an alternate timeframe is needed, please propose an alternate implementation plan and time period, and provide a detailed explanation of actions planned to meet the implementation deadline.

Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
A 12 month implementation is not sufficient, since we don't know how long it will take a PC to negotiate a definition for qualified change, when that will hit our planning process, and how it may impact our facilities.	
Likes 1	Pedernales Electric Cooperative, Inc., 1, Collard Bradley
Dislikes 0	
Response	

Thomas Foltz - AEP - 5	
Answer	No
Document Name	
Comment	
While the proposed implementation period for the revised FAC-002 may be sufficient, 12 months would *not* be sufficient for what has been proposed for the revised FAC-001. The PC's will first require time of their own to develop their definitions through their list of stakeholders. Following that, the Transmission Planners would then need ample opportunity to update their appropriate procedures based on those new definitions. As a result, we believe a phased implementation approach for FAC-001 would be appropriate, one that allows the PC's 12 months to both develop their definitions and potentially collaborate with their stakeholders on them, and a subsequent (i.e. not "concurrent") 12 months for the Transmission Planners to update their procedures as needed.	
Likes 0	
Dislikes 0	
Response	

Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	

Consistent with the NAGF's comments, DTEE is concerned with a 12 month implementation plan. It may not provide enough time or clarity to ensure that entities within a Planning Coordinator area will have enough time to respond to the Planning Coordinator's definition of a "qualiied change." We recommend a longer implementation plan for Generator Owners, perhaps eighteen (18) to twenty-four (24) months.

Likes 0	
Dislikes 0	

Response

Robert Hirchak - Cleco Corporation - 6

Answer	No
Document Name	

Comment

Transmission and generation projects are usually planned two to five years ahead. Twelve months may cause a gap in projects that have completed the studies and approval processes and may need to be re-evaluated with the new PC criteria. Two years would give enough time to re-evaluate and re-study projects.

Likes 0	
Dislikes 0	

Response

Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC

Answer	No
Document Name	

Comment

In the Western Interconnection the Large Generator Interconnection Procedures (LGIP) is sometimes used for Joint Ownership projects. Getting these amended takes longer than 12 months.

Likes 0	
Dislikes 0	

Response

Bradley Collard - Pedernales Electric Cooperative, Inc. - 1

Answer	No
Document Name	

Comment
PEC recommends a two step implementation plan: - Step one would define the timeline for adoption of the definition of the qualified change by the Planning Coordinator. - Step two would define the timeline for adoption of the study requirements for “qualified changes” when the change did not require study before the adoption of the new definition of a “qualified change” (suggest a minimum of two years). PEC believes the initial requirement of the PC to identify what constitutes a “qualified change,” depending when that occurs, should have a delayed implementation of FAC-001-4 R1 and R2 that will allow some time to change any of the TOs’ or applicable GOs’ terms taking into account what may constitute a “qualified change.” PEC desires a minimum of a six month delay between FAC-002-4 R6 and FAC-001-4 R3 for the same reasons mentioned above.

Likes 0	
Dislikes 0	

Response

Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	No
Document Name	

Comment
We suggest the Drafting Team add an additional 12-month timeframe so that affected entities may implement changes stemming from work PCs will undertake to comply with the standard (i.e., additional time is needed to provide affected responsible entities to develop processes and procedures internally).

Likes 0	
Dislikes 0	

Response

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	No
Document Name	

Comment
A 24 month implementation period would better ensure a sufficient transitional period.

Likes 0	
Dislikes 0	

Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	

Entergy agrees with the NAGF comment as follows:

"The NAGF is concerned that a 12 month implementation plan will not provide enough time or clarity to ensure that entities within a Planning Coordinator area will have enough time to respond to the Planning Coordinator's definition of a "qualified change." For instance, if a Planning Coordinator were to develop and publish their "qualified change" 11 months within the implementation plan, this would only give entities within their footprint one month to develop a compliance plan. The NAGF supports an implementation plan that would give Planning Coordinators twelve months to develop their definition of a "qualified change" as required within FAC-002-4 R6. Compliance with FAC-001-4 R3 and R4 will take time based upon the Planning Coordinator's definition of a "qualified change." As such, twenty-four calendar months to comply with FAC-001-4 R3 and 4 would be prudent for Generator Owners. Additionally, a current challenge is that "publicly available" information can be challenging to locate. Planning Coordinators need to directly communicate with their Generator Owners on where the information required within FAC-002-4 R6 is located."

Entergy agrees with a Phased Implementation approach whereas the 1st phase would allow the PC to define and set the threshold of a qualified change and the 2nd phase would begin after qualified change had been defined and approved.

Another option would be for projects that start after standard implementation date but before definition of qualified change would be excluded from qualified change definition.

Likes 0	
Dislikes 0	

Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	

The NAGF is concerned that a 12 month implementation plan will not provide enough time or clarity to ensure that entities within a Planning Coordinator area will have enough time to respond to the Planning Coordinator's definition of a "qualified change." For instance, if a Planning Coordinator were to develop and publish their "qualified change" 11 months within the implementation plan, this would only give entities within their footprint one month to develop a compliance plan. The NAGF supports an implementation plan that would give Planning Coordinators twelve months to develop their definition of a "qualified change" as required within FAC-002-4 R6. Compliance with FAC-001-4 R3 and R4 will take additional time based upon the Planning Coordinator's definition of a "qualified change." As such, twenty-four calendar months to comply with FAC-001-4 R3 and R4 would be prudent.

Additionally, a concern is that "publicly available" information can be challenging to locate. Planning Coordinators need to directly communicate with their Generator Owners on where the information required within FAC-002-4 R6 is located.	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 5.	
Likes 0	
Dislikes 0	
Response	
Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli	
Answer	No
Document Name	
Comment	
Xcel Energy supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	
Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6	

Exelon does not support a 12-month implementation plan and concurs with the comments and suggestions submitted by the NAGF and EEI.	
Likes 0	
Dislikes 0	
Response	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
Although EEI agrees a 12-month implementation plan would be sufficient for the PC to implement the changes proposed under FAC-002, an additional 12-months will be necessary for other affected entities to implement changes stemming from work PCs will undertake to comply with the standard (i.e., additional time is needed to provide affected responsible entities to develop processes and procedures internally).	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
Additional time is necessary to not only develop the qualified change definition but to then educate the stakeholders. We suggest an implementation period of 24 months. The proposed revision to FAC-002-3 would have the Planning Coordinators maintain a definition of “qualified change” for the purposes of Facility interconnection. There are currently 73 registered PCs reflected in the NERC Compliance Registry. We suggest that PCs within each of the four Interconnections be provided an opportunity to develop a definition at the Interconnection level, and if that cannot be achieved, allow PCs within each of the NERC Regions to consider a common definition at the Region level. Otherwise, entities seeking to interconnect generation, transmission or end-user Facilities could have multiple definitions to keep track of. Also to be considered, the PCs will need to coordinate with their associated Transmission Owners and possibly Transmission Planners in developing this definition. The Transmission Owners are required to maintain Facility interconnection requirements under FAC-001, R1. Incorporation of their PC’s definition of a qualified change into those Facility interconnection requirements would likely be needed, so those seeking to interconnect a generation, transmission or end-user Facility to the TO’s facilities would have a better understanding of the associated study expectations. Cooperation and communication among the TO, PC and TP seems to be an assumed given between FAC-001 and FAC-002.	
Likes 0	
Dislikes 0	
Response	

Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
PG&E agrees with the Edison Electric Institute (EEI) input that a 12-month implementation plan for the PC is sufficient, but an additional 12-months may be necessary for TP entities affected by the change to implement those changes.	
Likes 0	
Dislikes 0	
Response	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	Yes
Document Name	
Comment	
BHC agrees with the 12-month implementation plan, but would recommend providing a guideline with additional specification and examples.	
Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
12 months is OK	
Likes 0	
Dislikes 0	
Response	

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	Yes
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
CEHE agrees with a 12-month implementation timeframe.	
Likes 0	
Dislikes 0	
Response	
Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes

Document Name	
Comment	
SIGE agrees with a 12-month implementation timeframe.	
Likes 0	
Dislikes 0	
Response	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports EEI's comments to Project 2020-05 Modifications to FAC-001 and FAC-002 for the comment period closing January 31, 2022. A 12-month implementation plan would be sufficient for the PC to implement the changes proposed under FAC-002 however, an additional 12-months may be necessary for other affected entities to implement changes stemming from work PCs will undertake to comply with the standard (i.e., additional time is needed to provide affected responsible entities to develop processes and procedures internally).	
Likes 0	
Dislikes 0	
Response	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	

Answer	Yes
Document Name	
Comment	
12 months should be adequate.	
Likes 0	
Dislikes 0	
Response	
Daniel Mason - Portland General Electric Co. - 6, Group Name PGE FCD	
Answer	Yes
Document Name	
Comment	
There should be a set timeline for defining the term "qualified change" so that entities have a predictable timeline to implement the applicable changes.	
Likes 0	
Dislikes 0	
Response	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with and supports the comments provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	

Comment	
No additional suggestions for improvement.	
Likes 0	
Dislikes 0	
Response	
Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Michael Jang - Seattle City Light - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	
Answer	
Document Name	
Comment	
This cannot be answered until the PC defines ‘qualified change.’	
Likes 0	
Dislikes 0	
Response	

6. Provide any additional comments for the standard drafting team to consider, including the provided technical rationale document, if desired.

Larry Heckert - Alliant Energy Corporation Services, Inc. - 4

Answer	
Document Name	

Comment

No additional comments.

Likes 0	
Dislikes 0	

Response

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations

Answer	
Document Name	

Comment

While ACES agrees with all of the proposed changes, the adequacy of the “qualified change” definition the Planning Coordinator (PC) develops is not addressed. Proposed changes to FAC-001 and FAC-002 are meant to address confusion and potential reliability issues within the industry stemming from potential differences to what is considered “materially modifying”. While the proposed changes should eliminate potential confusion amongst coordinating entities, it does not ensure the definition is adequate.

Likes 0	
Dislikes 0	

Response

Jose Avendano Mora - Edison International - Southern California Edison Company - 1,3,5,6

Answer	
Document Name	

Comment

See comments submitted by the Edison Electric Institute.

Likes 0	
Dislikes 0	

Response

Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	
Document Name	
Comment	
PG&E supports the comments provided by the Edison Electric Institute (EEI) related to the suggested modification to FAC-001-4, Requirement R3, Part 3.1 on the removal of the reference to FAC-002-4, Requirement R6. PG&E is voting “negative” on approval of the modifications to allow the SDT to address the comments provided in Q2 (PC/TOP coordination) and Q5 (additional time for the TP).	
Likes 0	
Dislikes 0	

Response

David Jendras - Ameren - Ameren Services - 3	
Answer	
Document Name	
Comment	
Ameren agrees with and supports the comments provided by EEI.	
Likes 0	
Dislikes 0	

Response

Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	
Document Name	
Comment	
ERCOT supports the comments of the IRS SRC.	
Likes 0	

Dislikes 0	

Response

Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	

Comment
EEI offers the following additional input: **FAC-001-4** **Requirement R3, subpart 3.1** EEI suggest removing the reference to FAC-002 because aligning requirements within one Reliability Standard to another Reliability Standard can create problems when the standard is changed in the future. (see suggested input below) 3.1 Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator. (**Delete:** *under Reliability Standard FAC-002-4 Requirement R6*)

Likes 0	
Dislikes 0	

Response

Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	
Document Name	

Comment
It would seem clearer and more precise if in FAC-001, under R3.1 and R3.2, instead of the wordings “… new interconnections…” and “… existing interconnections seeking…”, we had “… new interconnections of Facilities…” and “… existing interconnected Facilities seeking… ”(or“… existing interconnections of Facilities seeking… ”). It seems to me that this would better and advantageously link the text to the notion of facilities rather than to their connection, especially in the case where we are talking about modifications (qualified change). This could also be applied in FAC-002, under R1.1.1, and under R4 (R1, R2 and R3 do include the term “Facilities”). M6 of FAC-002-4 should appear as a redline in the Redline version of the standard in question.

Likes 0	
Dislikes 0	

Response

Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	
Document Name	
Comment	
The IRC SRC supports the substance of these standards, as drafted. However, if the SDT proposes a second draft of these standards, the IRC SRC proposes the following editorial changes: Change “seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6” to “for which a qualified change, as defined by the PC under Requirement R6, is proposed” and change “seeking to make a qualified change” to “for which a qualified change is proposed” in all instances where these or similar phrases are used.	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	
Document Name	
Comment	
Sunflower supports the following ACES comment. While ACES agrees with all of the proposed changes, the adequacy of the “qualified change” definition the Planning Coordinator (PC) develops is not addressed. Proposed changes to FAC-001 and FAC-002 are meant to address confusion and potential reliability issues within the industry stemming from potential differences to what is considered “materially modifying”. While the proposed changes should eliminate potential confusion amongst coordinating entities, it does not ensure the definition is adequate.	
Likes 0	
Dislikes 0	
Response	
Daniel Gacek - Exelon - 1	
Answer	
Document Name	
Comment	
Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6 Exelon concurs with the additional comments submitted by the EEI.	

Likes 0	
Dislikes 0	
Response	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	
Document Name	
Comment	
Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 6.	
Likes 0	
Dislikes 0	
Response	
Michael Jang - Seattle City Light - 1	
Answer	
Document Name	
Comment	
SCL suggests the team should consider adding the definition of qualified change to the items to include in Facility interconnection requirements under R3 of FAC-001	
Likes 0	
Dislikes 0	
Response	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	
The NAGF has no additional comments.	
Likes 0	

Dislikes 0	

Response

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	

Comment
The language in FAC-001-4 R3 was modified which changed the meaning. In previous versions of the standard, the language stated “Procedures for coordinated studies of new or materially modified existing interconnections and their impacts on the affected system(s)” whereas the new version 4 moved the wording regarding “impacts”. The new standard now states in 3.1 that the TO shall address “Procedures for coordinated studies and identifying the impacts for affected systems…”. The change to the requirement makes it sound as though the TO should itself, identify impacts instead of simply coordinating impacts. Southern Company recommends the SDT discuss if this was the intent. ***Additional comments for consideration:*** *NERC should consider whether the reliability objectives for FAC-001 and FAC-002 are met through existing FERC rules and/or existing enforceable Reliability Standards, especially with regard to Generator Interconnection Facilities. Several comments to this effect were submitted by registered entities during the Standards Efficiency Review (Phase I) effort. Perhaps a review of the applicability of these Standards to Generator Owners or to Generator Interconnection Facilities could be included in the next periodic review of these Standards.*

Likes 0	
Dislikes 0	

Response

Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	
Document Name	

Comment
N/A

Likes 0	
Dislikes 0	

Response

Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	
Document Name	

Comment
None.

Likes 0	
Dislikes 0	

Response

Lindsey Mannion - ReliabilityFirst - 10

Answer	
Document Name	

Comment
Throughout the proposed changes to FAC-001 and FAC-002, the grammatical use of “interconnection” is confusing. “Interconnections” do not seek to make changes; owners of interconnected Facilities seek make changes. In FAC-001 R3, the proposed text reads “existing interconnections seeking to make a qualified change” but language such as “owners of existing interconnected Facilities seeking to make a qualified change” is more accurate. An interconnection can be modified or changed, but a Facility owner would seek to make a modification or change. Similarly, in FAC-002 R2, a Facility owner is either seeking to interconnect new generation Facilities or seeking to make a qualified change, but the proposed text of R2 reads that the “existing interconnection of generation Facilities [is] seeking to make a qualified change.”

Likes 0	
Dislikes 0	

Response

Julie Hall - Entergy - 6, Group Name Entergy

Answer	
Document Name	

Comment
NA

Likes 0	
Dislikes 0	

Response

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	

Comment

Texas RE has the following additional comments on FAC-001:

- Texas RE recommends not referencing the FAC-002-4 standard directly in Requirements R3.1 and R4.3 If changes are made to one or the other standard at a later date, both would need to be part of the project. The SDT could leave the language as “seeking to make a qualified change as defined by the Planning Coordinator.”
- In Requirements R3.3 and R4.3, Texas RE recommends removing the term “metered” since the definition of Balancing Authority Area includes metered boundaries.
- Texas RE recommends adding “when” in front of “seeking to make a qualified change” in Requirements R3.1, R3.2, and R3.3 since the TO would need the procedures when seeking a qualified change.

Texas RE has the following comments on FAC-002:

- In Requirement R3, the phrase “electricity end-user Facilities” appears twice. Texas RE suggest removing the second one.
- Texas RE recommend including “end-user Facilities” in Requirement R4 to be consistent with Requirement R3.

Texas RE has the following additional comments:

- The VSL for Requirement R4 needs a space after between “R6to”

Likes 0	
Dislikes 0	

Response

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	
Document Name	

Comment

- It appears the primary impetus for the suggested changes to FAC-001 & FAC-002 is (inverter-based) generation related. Consideration should be given to providing distinguishinsment between generation interconnections and interconnection of transmission and electricity end-user Facilities. It should also be considered if the inclusion of transmission and electricity end-user Facilities in FAC-001 and FAC-002 has become redundant with currently effective TPL and PRC requirements.
- Overall, bringing clarity to “qualified changes” is appropriate, and distinguishing it from FERC’s “materially modified” term is prudent. The currentl proposal for FAC-001 and FAC-002 would not effectively accomplish that however. Varying definitions of “qualified change” between

PCs and the lack of input into this definition from TPs would almost certainly lead to industry confusion on these types of modifications. A NERC glossary term (preferably), or an enumeration of specific criteria within the standards would provide for a more consistent definition.

- The wording "…seeking to make a qualified change…" should be preceded by a subject, such as the word "entities". For Example, the proposed FAC-001-4, R3.1 would be more appropriately written in the following manner. This suggestion also applies to parts R3.2 – R3.4 in FAC-001-4 and in the Purpose, R1, R1.1, R2, R3, R4, & R6 in FAC-002-4.
- "Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections, or entities seeking to a make a qualified change to an existing interconnection as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6."

Likes 0	
Dislikes 0	

Response

Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF

Answer	
Document Name	

Comment

SIGE commends the efforts of the SDT and believes that the proposal to replace the vague term, "materially modified," with the defined term, "qualified change," should bring clarity to what should be included in the Facility Interconnection Requirements and what should be studied in the Transmission Planning Assessment.

SIGE believes that successful collaboration between the Planning Coordinator and its Transmission Planners will be beneficial in developing what a "qualified change" is. SIGE recommends that the following updates be considered for the proposed FAC-001-4:

R3.1: Update the sub-requirement to include "in conjunction with its Transmission Planner(s)". The updated sub-requirement would read:

(R3.1) "Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6."

R3.2 and R3.3: Update the sub-requirements to include "as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6" and "in conjunction with its Transmission Planner(s)".

The updated sub-requirements would read:

(R3.2) "Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6."

(R3.3) Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6 are within a Balancing Authority Area's metered boundaries.

These changes will provide consistency and clarity as the term "qualified change" is not defined within the Standard but by the Planning Coordinator per FAC-002-4 R6.

SIGE recommends that the following updates be considered for the proposed FAC-002-4:

R1, R1.1, R2, R3, R4: Update the requirement/sub-requirements to include "in conjunction with its Transmission Planner(s)". The updated requirement/sub-requirements would read:

(R1) Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6. The following shall be studied:…

(R1.1) The reliability impact of the new interconnection, or existing interconnection seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6, on affected system(s).

R2. Each Generator Owner seeking to interconnect new generation Facilities, or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6, or electricity end-user Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4

Likes 0	
Dislikes 0	

Response

Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	
Document Name	
Comment	
n/a	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	
Document Name	
Comment	

CEHE commends the efforts of the SDT and believes that the proposal to replace the vague term, “materially modified,” with the defined term, “qualified change,” should bring clarity to what should be included in the Facility Interconnection Requirements and what should be studied in the Transmission Planning Assessment.

CEHE believes that successful collaboration between the Planning Coordinator and its Transmission Planners will be beneficial in developing what a “qualified change” is. CEHE recommends that the following updates be considered for the proposed FAC-001-4:

R3.1: Update the sub-requirement to include “in conjunction with its Transmission Planner(s)”. The updated sub-requirement would read:

(R3.1) “Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Reliability Standard FAC-002-4 Requirement R6.”

R3.2 and R3.3: Update the sub-requirements to include “as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6” and “in conjunction with its Transmission Planner(s)”.

The updated sub-requirements would read:

(R3.2) “Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change **as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6**.”

(R3.3) Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change **as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6** are within a Balancing Authority Area’s metered boundaries.

These changes will provide consistency and clarity as the term “qualified change” is not defined within the Standard but by the Planning Coordinator per FAC-002-4 R6.

CEHE recommends that the following updates be considered for the proposed FAC-002-4:

R1, R1.1, R2, R3, R4: Update the requirement/sub-requirements to include “in conjunction with its Transmission Planner(s)”. The updated requirement/sub-requirements would read:

(R1) Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Requirement R6. The following shall be studied:…

(R1.1) The reliability impact of the new interconnection, or existing interconnection seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Requirement R6, on affected system(s).

R2. Each Generator Owner seeking to interconnect new generation Facilities, or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Requirement R6, or electricity end-user Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s)**, under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4

Likes 0	
Dislikes 0	

Response

Daniela Atanasovski - APS - Arizona Public Service Co. - 1

Answer	
Document Name	

Comment

None

Likes 0	
Dislikes 0	

Response

Richard Jackson - U.S. Bureau of Reclamation - 1

Answer	

Document Name	

Comment

Reclamation recommends FAC-001 R3.1 be revised as follows:

From

Procedures for coordinated studies and identifying the impacts on affected systems …

To

Procedures for coordinating studies and identifying the impacts on affected systems …

Reclamation also recommends FAC-001 R4.1 be revised as follows:

From

Procedures for coordinated studies of new interconnections …

To

Procedures for coordinating studies of new interconnections …

Reclamation disagrees with the change to the Severe VSLs for FAC-001 R3 and R4. The VSLs already specify “Part 3.1 through Part 3.3” and “Part 4.1 through Part 4.3.” The addition of “three parts of” is redundant. To fix this problem and apply consistency for all VSLs for both R3 and R4, Reclamation recommends changing the VSLs by adding parentheses as follows:

R3. Moderate

From

The Transmission Owner failed to address one part of Requirement R3 Part 3.1 through Part 3.3.

To

The Transmission Owner failed to address one part of Requirement R3 (Part 3.1 through Part 3.3.)

R3. High

From

The Transmission Owner failed to address two parts of Requirement R3 Part 3.1 through Part 3.3.

To

The Transmission Owner failed to address two parts of Requirement R3 (Part 3.1 through Part 3.3.)

R3. Severe

From

The Transmission Owner failed to address three parts of Requirement R3 Part 3.1 through Part 3.3.

To

The Transmission Owner failed to address three parts of Requirement R3 (Part 3.1 through Part 3.3.)

R4. Moderate

From

The Generator Owner failed to address one part of Requirement R4 Part 4.1 through Part 4.3.

To

The Generator Owner failed to address one part of Requirement R4 (Part 4.1 through Part 4.3.)

R4. High

From

The Generator Owner failed to address two parts of Requirement R4 Part 4.1 through Part 4.3.

To

The Generator Owner failed to address two parts of Requirement R4 (Part 4.1 through Part 4.3.)

R4. Severe

From

The Generator Owner failed to address three parts of Requirement R4 Part 4.1 through Part 4.3.

To

The Generator Owner failed to address three parts of Requirement R4 (Part 4.1 through Part 4.3.)

Likes 0	
Dislikes 0	

Response

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	

Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	
Document Name	
Comment	
AEPCO signed on with ACES comments below: While ACES agrees with all of the proposed changes, the adequacy of the “qualified change” definition the Planning Coordinator (PC) develops is not addressed. Proposed changes to FAC-001 and FAC-002 are meant to address confusion and potential reliability issues within the industry stemming from potential differences to what is considered “materially modifying”. While the proposed changes should eliminate potential confusion amongst coordinating entities, it does not ensure the definition is adequate.	
Likes 0	
Dislikes 0	
Response	

Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	
Document Name	
Comment	
No additional comments.	
Likes 0	
Dislikes 0	
Response	

Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	
Document Name	
Comment	
Nothing futher, thank you.	
Likes 0	
Dislikes 0	
Response	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	
Document Name	
Comment	
BHC would recommend eliminating the “make publicly available” verbiage as it has not been utilized within other Reliability Standards. Recommendations for replacement may include “make available the current definition” as identified in MOD-001-1a R5.	
Likes 0	
Dislikes 0	
Response	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	
Document Name	
Comment	
These changes seem to punt the problem to the Planning Coordinators, do not promote consistency throughout the industry, and will add risk to the facility owners who may have to show compliance to multiple definitions of multiple PCs.	
Likes 0	
Dislikes 0	
Response	

Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	
Document Name	
Comment	

The term “affected systems” is also a FERC defined term which refers to “an electric system other than the Transmission Provider’s Transmission System that may be affected by the proposed interconnection.” Use of the term “affected systems” is confusing in a similar way as the term “materially modified” is confusing. Is it the intent of both FAC-001-4 and FAC-002-4 that wherever the term “affected system” is used it is in reference specifically to systems outside of the system to which the interconnection request is made? Because of industry familiarity with the FERC definition, it is inferred that NERC’s meaning of the term affected system is not in reference to a utility’s own system but rather to any impacted neighboring system. However, it appears that the use of the term “affected systems” in FAC-002-4 is meant to cover *both* the system being interconnected to *as well as* other surrounding systems, although it’s not clear. For example, is the intention of FAC-002-4 R1.1 to only evaluate “the reliability impact… on affected systems,” meaning those systems outside of the the interconnection request, or is the intent to evaluate the reliability impact to all systems that may be impacted, both the interconnecting system as well as surrounding systems? Use of the term in FAC-001-4 R3 and R4 appears to be more consistent with the FERC definition, but clarification of the intent of the term “affected system” would help ensure consistent interpretation.

Likes 0	
Dislikes 0	
Response	

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project Name:	2020-05 Modifications to FAC-001 and FAC-002 | Draft 1
Comment Period Start Date:	12/7/2021
Comment Period End Date:	1/31/2022
Associated Ballots:	2020-05 Modifications to FAC-001 and FAC-002 FAC-001-4 and FAC-002-4 IN 1 ST 2020-05 Modifications to FAC-001 and FAC-002 Implementation Plan IN 1 OT

There were 58 sets of responses, including comments from approximately 129 different people from approximately 83 companies representing 7 of the Industry Segments as shown in the table on the following pages.

All comments submitted can be reviewed in their original format on the project page.

If you feel that your comment has been overlooked, let us know immediately. Our goal is to give every comment serious consideration in this process. If you feel there has been an error or omission, contact Vice President of Engineering and Standards Howard Gugel (via email) or at (404) 446-9693.

Questions

1. The SDT proposes "qualified change" to replace "material modification". Do you agree that this is an appropriate change, eliminating confusion with the FERC defined term? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

2. The SDT proposes the Planning Coordinator (PC), in FAC-002-4 Requirement R6, as the entity to define what a qualified change is. Do you agree that the PC is the appropriate entity? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

3. The SDT proposes the new requirement R6 in FAC-002-4 and associated VRF and VSL. Do you agree that the associate VRF and VSL levels are appropriate? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.

4. The SDT proposes that the modifications in FAC-001-4 and FAC-002-4 meet the SAR in a cost effective manner. Do you agree? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification.

5. The SDT is proposing a 12-month implementation plan. If you think an alternate timeframe is needed, please propose an alternate implementation plan and time period, and provide a detailed explanation of actions planned to meet the implementation deadline.

6. Provide any additional comments for the standard drafting team to consider, including the provided technical rationale document, if desired.

The Industry Segments are:

1 — Transmission Owners
2 — RTOs, ISOs
3 — Load-serving Entities
4 — Transmission-dependent Utilities
5 — Electric Generators
6 — Electricity Brokers, Aggregators, and Marketers
7 — Large Electricity End Users
8 — Small Electricity End Users
9 — Federal, State, Provincial Regulatory or other Government Entities
10 — Regional Reliability Organizations, Regional Entities

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
BC Hydro and Power Authority	Adrian Andreoiu	1	WECC	BC Hydro	Hootan Jarollahi	BC Hydro and Power Authority	3	WECC
					Helen Hamilton Harding	BC Hydro and Power Authority	5	WECC
					Adrian Andreoiu	BC Hydro and Power Authority	1	WECC
Portland General Electric Co.	Daniel Mason	6		PGE FCD	Ryan Olson	Portland General Electric Co.	5	WECC
					Nathaniel Clague	Portland General Electric Co.	1	WECC
					Angela Gaines	Portland General Electric Co.	3	WECC
					Daniel Mason	Portland General Electric	6	WECC
Public Utility District No. 1	Diane Landry	1		CHPD	Meaghan Connell	Public Utility District No. 1	5	WECC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
of Chelan County						of Chelan County		
					Joyce Gundry	Public Utility District No. 1 of Chelan County	3	WECC
					Glen Pruitt	Public Utility District No. 1 of Chelan County	6	WECC
Elizabeth Davis	Elizabeth Davis		RF	ISO/RTO Council (IRC) Standards Review Committee (SRC)	Mike Del Viscio	PJM	2	RF
					Becky Davis	PJM	2	RF
					Gregory Campoli	New York Independent System Operator	2	NPCC
					Charles Yeung	Southwest Power Pool, Inc. (RTO)	2	MRO
					Helen Lainis	IESO	2	NPCC
					Bobbi Welch	Midcontinent ISO, Inc.	2	RF
					Al Miremadi	CAISO	2	WECC
					Al Miremadi	CAISO	2	WECC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
ACES Power Marketing	Jodirah Green	1,3,4,5,6	MRO,NA - Not Applicable,RF,SERC,Texas RE,WECC	ACES Standard Collaborations	Bob Solomon	Hoosier Energy Rural Electric Cooperative, Inc.	1	SERC
					Kevin Lyons	Central Iowa Power Cooperative	1	MRO
					Bill Hutchison	Southern Illinois Power Cooperative	1	SERC
					Susan Sosbe	Wabash Valley Power Association	3	RF
					Amber Skillern	East Kentucky Power Cooperative	1	SERC
					Jennifer Bray	Arizona Electric Power Cooperative, Inc.	1	WECC
					Nick Fogleman	Prairie Power, Inc.	1	SERC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
Entergy	Julie Hall	6		Entergy	Oliver Burke	Entergy - Entergy Services, Inc.	1	SERC
					Jamie Prater	Entergy	5	SERC
DTE Energy - Detroit Edison Company	Karie Barczak	3		DTE Energy - DTE Electric	Adrian Raducea	DTE Energy - Detroit Edison Company	5	RF
					Patricia Ireland	DTE Energy - DTE Electric	4	RF
					Karie Barczak	DTE Energy - DTE Electric	3	RF
MRO	Kendra Buesgens	1,2,3,4,5,6	MRO	MRO NSRF	Bobbi Welch	Midcontinent ISO, Inc.	2	MRO
					Christopher Bills	City of Independence Power & Light	3,5	MRO
					Fred Meyer	Algonquin Power Co.	3	MRO
					Jamie Monette	Allete - Minnesota Power, Inc.	1	MRO
					Larry Heckert	Alliant Energy Corporation Services, Inc.	4	MRO

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Marc Gomez	Southwestern Power Administration	1	MRO
					Matthew Harward	Southwest Power Pool, Inc.	2	MRO
					LaTroy Brumfield	American Transmission Company, LLC	1	MRO
					Bryan Sherrow	Kansas City Board Of Public Utilities	1	MRO
					Terry Harbour	MidAmerican Energy	1,3	MRO
					Jamison Cawley	Nebraska Public Power	1,3,5	MRO
					Seth Shoemaker	Muscatine Power & Water	1,3,5,6	MRO
					Michael Brytowski	Great River Energy	1,3,5,6	MRO
					David Heins	Omaha Public Power District	1,3,5,6	MRO

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					George Brown	Acciona Energy North America	5	MRO
Duke Energy	Kim Thomas	1,3,5,6	FRCC,RF,SERC,Texas RE	Duke Energy	Laura Lee	Duke Energy	1	SERC
					Dale Goodwine	Duke Energy	5	SERC
					Greg Cecil	Duke Energy	6	RF
Michael Johnson	Michael Johnson		WECC	PG&E All Segments	Marco Rios	Pacific Gas and Electric Company	1	WECC
					Sandra Ellis	Pacific Gas and Electric Company	3	WECC
					James Mearns	Pacific Gas and Electric Company	5	WECC
Southern Company - Southern Company Services, Inc.	Pamela Hunter	1,3,5,6	SERC	Southern Company	Matt Carden	Southern Company - Southern Company Services, Inc.	1	SERC
					Joel Dembowski	Southern Company - Alabama Power Company	3	SERC

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Ron Carlsen	Southern Company - Southern Company Generation	6	SERC
					Jim Howell	Southern Company - Southern Company Services, Inc. - Gen	5	SERC
Eversource Energy	Quintin Lee	1		Eversource Group	Quintin Lee	Eversource Energy	1	NPCC
					Christopher McKinnon	Eversource Energy	3	NPCC
Southwest Power Pool, Inc. (RTO)	Shannon Mickens	2	MRO,SPP RE,WECC	SPP RTO	Shannon Mickens	Southwest Power Pool Inc.	2	MRO
					Matt Harward	Southwest Power Pool Inc.	2	MRO
					Nathan Bean	Southwest Power Pool Inc.	2	MRO

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Mason Favazza	Southwest Power Pool Inc.	2	MRO
					Chris Jamieson	Southwest Power Pool Inc.	2	MRO
					Melanie Hill	Southwest Power Pool Inc.	2	MRO
					Scott Jordan	Southwest Power Pool Inc.	2	MRO
					Jonathan Hayes	Southwest Power Pool Inc.	2	MRO
					Jason Davis	Southwest Power Pool Inc.	2	MRO
					Juliano Freitas	Southwest Power Pool Inc.	2	MRO
					Ellen Cook	Southwest Power Pool Inc.	2	MRO

Organization Name	Name	Segment(s)	Region	Group Name	Group Member Name	Group Member Organization	Group Member Segment(s)	Group Member Region
					Jeff McDiarmid	Southwest Power Pool Inc.	2	MRO
					Charles Hendrix	Southwest Power Pool Inc.	2	MRO
Western Electricity Coordinating Council	Steven Rueckert	10		WECC Entity Monitoring	Steve Rueckert	WECC	10	WECC
					Phil O'Donnell	WECC	10	WECC
FirstEnergy - FirstEnergy Corporation	Tricia Bynum	6		FE Voter	Julie Severino	FirstEnergy - FirstEnergy Corporation	1	RF
					Aaron Ghodooshim	FirstEnergy - FirstEnergy Corporation	3	RF
					Mark Garza	FirstEnergy - FirstEnergy Corporation	4	RF
					Robert Loy	FirstEnergy - FirstEnergy Corporation	5	RF

1. *The SDT proposes "qualified change" to replace "material modification". Do you agree that this is an appropriate change, eliminating confusion with the FERC defined term? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification*.

Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	No
Document Name	
Comment	
Use of the word "change" in the new definition is potentially misleading. For any "modification" of an interconnection, there is both a change in the physical system (topology, technology, etc.) as well as a change in system performance. The new term "qualified change" could be interpreted to include performance criteria as opposed to changes in topology or technology. In other words, the intent of the new definition isn't to require the PC to define system performance criteria for which to evaluate modified/changed interconn ections, but rather to define what modifications/changes will require (trigger) system studies prior to placing them in service. An alternate term could be "Qualified System Modification (QSM)" to help cue the reader that this deals with the modification of the system (as was the term originally), not the subsequent change in impact to the system (i.e. not the performance criteri a to evaluate against).	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and providing comments. The SDT will address this concern by providing an example of a PC definition in the implementation guidance or technical paper included in the release of the revised standard.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	

Comment
No, this will continue to add confusion and result in inconsistent results based on a Planning Coordinator's definition. Entities that have multiple Planning Coordinators may have significant trouble in managing consistency, especially when these are in different Regions. This will also be problematic during compliance audits where the burden will be on the entity to show it met each PC definition, no matter how badly the definition is written and how ambiguous it may be.

Likes 0	
Dislikes 0	

Response
The SDT appreciates your review and providing comments. The SDT understands the issue that could be present when an entity is working with more than one Planning Coordinator. If a NERC Glossary term were developed, the SDT sees issues with attempting to determine what constitutes a "change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area.

Thomas Foltz - AEP - 5	
Answer	No
Document Name	

Comment
While the proposed strategy itself may be sound overall, we are concerned by what the exact definition of "qualified change" might be after being developed by each Planning Coordinator. Transmission Planners may or may-not agree with a PC's definition, and those entities would need to be provided an opportunity for the PC to hear their concerns, and be provided an opportunity to help shape the Planning Coordinator's definition. In addition, the TP should have the ability to perform a determination as to whether they believe a system impact has occurred via a reliability impact study within FAC-002. AEP appreciates the efforts of the Standard Drafting Team. We would like them to know that AEP's Negative votes on the proposed

revisions for FAC-001 and FAC-002 are soley driven by the concerns expressed in our response to Question 1 (above). We hope these concerns might be addressed in a way that allows us to support this effort with our Affirmative votes.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and provided comments. The SDT is doing two things that will address your concern: 1) adding time in the implementation plan to allow TPs to be compliant after the PC has posted the definition for the "qualified change" and 2) strongly encourage the PC to collaborate with their TPs in the development of the definition of "qualified change".	
Robert Hirchak - Cleco Corporation - 6	
Answer	No
Document Name	
Comment	
Has there been issues of non-compliance due to the current terms? If so, please provide examples.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and providing comments. The SDT believes that the proof of the need for this change was the responsibility of the SAR drafting team. There exists a similar process of getting industry feedback on SARs which is the process for proving the need for the NERC standard change. During the standard drafting team process, we cannot go back and remove or change the SAR.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	

Comment
Reclamation does not support replacing the term "materially modified." As stated in the NERC Rules of Procedure, terms that are not specifically defined are to be used in their ordinary and commonly understood meaning. The ordinary and commonly understood meaning of "materially" is "substantially" or "considerably." The ordinary and commonly understood meaning of "modified" is "changed." Reclamation acknowledges that FERC's Standardization of Generator Interconnection Agreements and Procedures uses the term "Material Modification" and that it is this similarity with "materially modified" that is the basis for the FAC-001 and FAC-002 SAR, but Reclamation observes two problems with conflating these terms. First, a defined term like "Material Modification" in one situation should not be interpreted via conjugation to impose confusion upon a different situation. That is, although "Material Modification" and "materially modified" are similar, it is not reasonable to imply that they are related or connected. Second, the FERC definition of "Material Modification" is essentially circular, i.e., "modifications that have a material impact…." Reclamation observes it is likely that FERC relies on the plain meanings of both "modification" and "material," as well as discussions between the Transmission Provider and the Interconnection Customer to determine the appropriate outcome on the queue. Reclamation recommends the procedures addressed by FAC-001 and FAC-002 are no different. Facility owners should coordinate with the appropriate entities that perform the Planning Coordinator, Transmission Operator, and/or Balancing Authority functions to identify the significance of changes and meet the pertinent interconnection requirements. Likewise, Reclamation observes it is confusing to not define "qualified change" in FAC-001 and FAC-002 or in the NERC Glossary of Terms. This term is critical to a substantial portion of the activities necessary to comply with FAC-001 and FAC-002 and should not be contained externally or buried at the end of all the requirements that rely on it. Reclamation observes that entities with multiple different Planning Coordinators could be subject to multiple different definitions of "qualified change" if the definition is left up to each Planning Coordinator. Reclamation also observes there are grammatical inconsistencies in the FAC-001 R3 and R4 subparts, as well as problems with the implementation of the proposed language "seeking to make a qualified change…." It is the entities that own the Facilities that are seeking to make the changes, not the Facilities (i.e., equipment) seeking to make the changes. To correct these problems, Reclamation offers the following language: FAC-001 R3.1 "Procedures for coordinating studies and identifying the impacts on affected systems for new interconnections or existing interconnections sought to be changed in accordance with the definition of Qualified Change."

FAC-001 R3.2 "Procedures for notifying those responsible for the reliability of affected systems of new interconnections or existing interconnections sought to be changed in accordance with the definition of Qualified Change."

FAC-001 R3.3 "Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities sought to be changed in accordance with the definition of Qualified Change are within a Balancing Authority Area's metered boundaries."

FAC-001 R4.1 "Procedures for coordinating studies of new interconnections and their impacts on affected systems."

FAC-001 R4.3 "Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities sought to be changed in accordance with the definition of Qualified Change are within a Balancing Authority Area's metered boundaries."

Likes 0	
Dislikes 0	

Response

The SDT appreciates your review and providing comments. Specifically, we looked at the grammatical inconsistencies and attempted to mitigate these in the next release of the standard.

Additionally, your comment related to confusion of material modification and materially modified: This confusion was used to justify the SAR and your concern needed to be addressed in the SAR process. Therefore, the comment that there should not be confusion should have been corrected in the SAR approval process. Once the SAR is approved, the SDT is required to mitigate the issues identified in the SAR. This SDT does not have the authority to either remove or revise the SAR that was previously approved in the already NERC defined processes for standards development.

Related to your comment about created a NERC Glossary term: If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast and Texas. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator

area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area.

The SDT understands the issue that could be present when an entity is working with more than one Planning Coordinator. The SDT hopes that by adding the following, your concern will be alleviated: 1) adding time in the implementation plan to allow entities to be compliant after the PC has posted the definition for the "qualified change", 2) strongly encourage the PC to collaborate with their TPs in the development of the definition of "qualified change".

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford

Answer	No
Document Name	

Comment

Modifying the language in FAC-001 & FAC-002 to remove potential ambiguity between the referenced FERC definition and that which is relevant in NERC Reliability Standards is appropriate and prudent. However, Requirement R6 in the proposed revision to FAC-002 may not provide the clarity intended. As proposed, R6 will allow each Planning Coordinator to have its own definition of "qualified change" in its procedures and criteria, which would likely lead to significant differences in this interpretation across the system. This will make collaborating between various Planning Coordinators, Transmission Planners, and Facility owners difficult and confusing when determining impacts to System Reliability due to a "qualified change". It is recommended that the SDT mitigate this issue by proposing a NERC glossary term for "qualified change", or that the proposed edits to FAC-002 include the establishment of criteria for what does and does not constitute as a "qualified change." This should provide the appropriate consistency in interpretation across industry.

Likes 0	
Dislikes 0	

Response

If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast and Texas. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a

list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. Additionally, the SDT is providing examples in the implementation guidance for a "Qualified Change" definition which is intended to provide clarity for the PC in the development of their definition.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	No
Document Name	
Comment	
Duke Energy agrees with the concept presented in the SAR, however, it doesn't agree with the phrase "qualified change". A suggested alternative is "technically substantive change" to distinguish it from FERC terminology "material modification" that relates to cost of projects. By "technically substantive", Duke Energy is referring to project changes that would significantly impact the electrical behavior of the transmission system.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates the review and providing comments. Unfortunately, the SDT does not agree with this suggestion, since it is a significant deviation from language that was approved during the initial ballot period. If the standard is not approved, we may consider this suggestion.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	

Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6 The difference in term may be appropriate, but additional clarity is needed to ensure the new term addresses the confusion with the FERC defined term. See comments to question 2 for more detail on suggested changes to address.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and provided comments. The SDT is providing examples in the implementation guidance for a "Qualified Change" definition which is intended to provide clarity for the PC in the development of their definition.	
John Pearson - ISO New England, Inc. - 2	
Answer	No
Document Name	2020-05_Mod_to_FAC-001_and_FAC-002_Unofficial_Comment_Form_12072021 FINAL.docx
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	Yes
Document Name	
Comment	

BHC agrees that "material modification" should be replaced. However, additional clarification to the term "qualified change" would be helpful for consistent application across ERO enterprise. A guideline providing additional specification and examples would be value-add.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and providing comments. The SDT will be providing examples of things that the Planning Coordinator may use in their definition to provide clarity on what constitutes a "qualified change" from the SDT perspective. These examples will be documented in the implementation guidance and/or technical paper included in the release of the revised standard. The SDT believes that these examples will address your concern.	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	Yes
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Thanks for your review and comments. Please see the SDT responses to the MRO NSRF comments.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	

Comment	
None	
Likes 0	
Dislikes 0	
Response	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Entergy has no additional comments.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	

Southern Company supports the use of the term “Qualified Change” as it adds a clear distinction from “material modification” used in the pro forma Open Access Transmission Tariff.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and comment.	
Adrian Andreoiu - BC Hydro and Power Authority - 1, Group Name BC Hydro	
Answer	Yes
Document Name	
Comment	
BC Hydro appreciates the drafting teams efforts and opportunity to comment. The proposed Requirement R6 of FAC-002-4 Draft 1 requires the Planning Coordinator to define "qualified change". This seems to imply that the determination of what constitutes a "qualified change" is to be made in one pass, based on the R6-established definition, without an opportunity to conduct a technical analysis. BC Hydro believes that developing a robust definition will be technically challenging, and recommends that a determination process for a "qualified change" be included as part of 2020-05 FAC-001 and FAC-002 revisions.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and providing comments. The SDT has provided examples as to what a “qualified change” definition could entail to the implementation guidance. The SDT believes that these examples will help address your concern.	

Additionally, the SDT will be adding language to the implementation guidance that strongly encourages the PC to collaborate with the other entities in the development of the definition of "qualified change".	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
This change can reduce on identified ambiguity.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and comment.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
The North American Generator Forum (NAGF) has no additional comments.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	

Answer	Yes
Document Name	
Comment	
Generally it is helpful avoid conflating terms between standards and tariffs, but this cannot be answered until the PC define s 'qualified change.'	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and comment. The SDT will be adding language to the implementation guidance that strongly encourages the PC to collaborate with the other entities in the development of the definition of "qualified change".	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 1.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli	
Answer	Yes

Document Name	
Comment	
Xcel Energy supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review. For your information, please review the responses to the EEI comments.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI agrees that the proposed term "qualified change" addresses the concerns and confusion identified with the use of the term "material modification".	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review.	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	

Ameren agrees with and supports the comments provided by EEI.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review. For your information, please review the responses to the EEI comments.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
Recommendation to the SDT: The NERC Glossary of Terms does not have a definition for "material modification" and the SDT does not intend to add "qualified change" to the glossary. Without the addition of "qualified change" to the NERC Glossary of Terms, the ambiguity that exists with the "material modification" will continue to exist with the revised standards. Recommend the SDT utilize FAC-002-4, requirement R6 and measure M6, to develop the intent of "qualified change" and incorporate it into the NERC Glossary of Terms. (NERC Glossary of Terms Example for the SDT: "Qualified Change - For the purpose of studying the impact of interconnecting new or changed facilities on the Bulk Electric System, each Planning Coordinator is required to maintain a publicly available definition of "qualified change" for the purposes of facility interconnection.")	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and comment. If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast and Texas. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area.	

Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. Additionally, the SDT hopes that by adding the following, your concern will be reduced: 1) adding time in the implementation plan to allow entities to be compliant after the PC has posted the definition for the "qualified change", 2) strongly encourage the PC to collaborate with other affected entities in the development of the definition of "qualified change".	
Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes
Document Name	
Comment	
SDG&E proposes the insertion of the phrase "in coordination with the Transmission Planner" as follows (see bolded and italicized statement): FAC-001-4, R3-3.1: Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections, or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, ***in coordination with the Transmission Planner***, under Reliability Standard FAC-002-4 Requirement R6 FAC-002-4, R6: Each Planning Coordinator, ***in coordination with the Transmission Planner***, shall maintain a publicly available definition of qualified change for the purposes of facility interconnection.	
Likes 0	
Dislikes 0	
Response	

The SDT appreciates your review and provided comments. The SDT is doing two things that will address your concern: 1) adding time in the implementation plan to allow entities to be compliant after the PC has posted the definition for the "qualified change" and 2) strongly encourage the PC to collaborate with the other entities in the development of the definition of "qualified change" in the implementation guidance document.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E supports the comments provided by the Edison Electric Institute (EEI) that the proposed term "qualified change" addresses the concerns and confusion with the term "material modification".	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review. For your information, please review the responses to the EEI comments.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
No additional suggestions for improvement.	
Likes 0	

Dislikes 0	
Response	
The SDT appreciates your review.	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bradley Collard - Pedernales Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Jang - Seattle City Light - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Daniel Mason - Portland General Electric Co. - 6, Group Name PGE FCD	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Darcy O'Connell - California ISO - 2	

Answer	
Document Name	
Comment	
CAISO agrees with comments submitted by the ISO/RTO Counsel (IRC) Standards Review Committee	
Likes 0	
Dislikes 0	
Response	

2. The SDT proposes the Planning Coordinator (PC), in FAC-002-4 Requirement R6, as the entity to define what a qualified change is. Do you agree that the PC is the appropriate entity? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	

Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6

While we agree the PC can perform the role of defining "qualified change", more can be done by the SDT to clarify requirements related to "material modifications" of Facilities. The currently proposed changes to FAC-001 and FAC-002 do not provide requirements for the PC to define "qualified change" with any more clarity than "material modification" has at this time. The SDT should consider outlining minimum requirements for a PC defined "qualified change". This could be commonly agreed to circumstances that would require study by all PCs. From this minimum set of requirements PCs could then add additional requirements relevant to their planning areas. If left open ended for PCs to define, there is a chance that the difference in terms "qualified change" and "materially modified" would not address the issue the Project is trying to address. Adding minimum requirements provides more certainty and consistency across PCs.

The revised standards should also include guidance for change management by allowing the impacted entities to have some period of time to align with modifications to the PC's definition of "qualified change" – perhaps 180 days from the time the change is posted. As written, if the PC makes changes to its definition of "qualified change", there is no period of time for entities to revise their internal procedures to match.

Consider requiring the PCs to work with the TPs and other stakeholders to create and modify the definition of "qualified change".

Likes 0	
Dislikes 0	

Response
Thank you for your comment. The SDT maintains that the planning coordinator is the correct entity to define the minimum requirements for this definition which may vary broadly across regions. For this reason, the SDT does not believe writing minimum requirements into the standard language is appropriate. The SDT has provided examples as to what a "qualified change" definition could entail to the implementation guidance. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.

LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	No
Document Name	

Comment
There is a difference between a definition for impacts to the BES system only and to a TP's system, which could be more expansive. - ATC is not vertically integrated, so we need the ability to receive appropriate information from our customers when a request to modify a connection (D-T, T-T, or G-T) to our transmission system occurs. - If the PC is the definer, then the PC needs to closely coordinate the definition with TPs, especially if the TP is not vertically integrated. - ATC would differentiate between generation (PC definition of qualified change may be ok) and distribution (ATC needs to have more control over definition) connections. - ATC has a Generating Facilities Modification Notification (GFMN) process that defines applicable changes ATC needs to receive regardless of FAC-002 applicability (gives us the most up to date information on units connected to our system). - ATC has our own connection change modifcation criteria for determining FAC-002 applicability documented in a Criteria document.

Likes 0	
Dislikes 0	

Response	
Thank you for your comment. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	No
Document Name	
Comment	
It also seems appropriate that the TP have a role in determining what a "qualified change" is, but that is not provided for in the R6 proposal. A NERC glossary term for "qualified change" is preferred and would make this more of a moot point but, in the absence of that, wording similar to the MOD-032 standard where the criteria/definition is jointly developed (by the PC and its TPs) would be more appropriate.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast and Texas. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	

Comment	
Reclamation recommends the definition of "Qualified Change" be contained within the NERC Glossary of Terms. As stated in the response to Question 1, Reclamation does not support a process that would allow the definition of "qualified change" to vary by entity or to change with little notice. Such ambiguity does not resolve the confusing situation that allegedly exists with FAC-001 and FAC-002 using the term "materially modified;" it merely replaces one ambiguous term with another.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast and Texas. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area.	
Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	No
Document Name	
Comment	
The primary argument behind the PC as the appropriate entity is "one size fits all". The TO is best situated and best capable to determine what "qualified change" is as it applies to and how it impacts the TO's delivery system.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Although the TO is substantially affected by this definition, the SDT maintains that the PC is in a position to take a broader overview of what the requirements of interconnections should be. The number of entities registered as TO is an order of magnitude larger than those registered as PCs and could lead to more varied definitions, more definitions each entity has to track, and difficulty in complying with those definitions.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
Entities may use multiple Planning Coordinators, some may be in different Regions. For consistency, there should be one definition, not a patchwork of poorly written and ambiguous definitions. This will put added burden and risk on the entities from the compliance staff who may disagree with the interpretations of the PC definitions.	
Likes 0	
Dislikes 0	
Response	
The SDT understands the issue that could be present when an entity is working with more than one Planning Coordinator. The SDT hopes that by adding the following, your concern will be alleviated: 1) adding time in the implementation plan to allow entities to be compliant after the PC has posted the definition for the "qualified change", 2) strongly encourage the PC to collaborate with their TPs in the development of the definition of "qualified change".	
Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	No
Document Name	
Comment	

The Planning Coordinator may be the appropriate entity for this definition, however more clarification is needed to ensure th e definition is being applied correctly. It is easy to see how in areas where there are multiple TO's under a common PC that FAC-002-4 R6 would be useful, but what about circumstances where PC to PC coordination is required? There are many vertically integrated entities w hereby the PC is the Tranmission Planner as well as the Tranmission Owner and adjacent systems (i.e. "affected syst ems") are in another PC (see comments for #6 below regarding use of the term "affected systems"). For an interconnection request in one PC's area, would t hat PC apply their own definition of a "qualified change" when evaluating impacts on a neighboring PC' s systems? It would be onerous to attempt to apply neighboring criteria when performing system studies. If the intent to apply internal criteria to external sy stems, it should be clearly stated.

Likes 0	
Dislikes 0	

Response

The SDT understands the issue that could be present when an entity is working with more than one Planning Coordinator. The SDT hopes that by adding the following, your concern will be alleviated: 1) adding time in the implementation plan to allow entities to be compliant after the PC has posted the definition for the "qualified change", 2) strongly encourage the PC to collaborate with other affected entities in the development of the definition of "qualified change".

Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	

Comment

No additional suggestions for improvement.

Likes 0	
Dislikes 0	

Response

Thank you for your response.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E supports the comments provided by the Edison Electric Institute (EEI) that the Planning Coordinator (PC) is the appropriate entity to define what is a qualified change. PG&E also agrees with the EEI input that the SDT consider adding language to Requirement R6 that would ensure the PCs coordinate with Transmission Planners (TP) when defining the term	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	
Comment	
As recognized in the Project 2020-05 SAR, FERC provides a definition for "Material Modification" in its pro forma Large Generator Interconnection Procedures (LGIP) and Small Generator Interconnection Procedures (SGIP). For the purpose of these procedures, FERC defines a Material Modification as "a modification that has a material impact on the cost or timing of any Interconnection Request with a later queue priority date." FAC-001 requires Transmission Owners to have documented Facility interconnection requirements. It is likely	

that many registered Transmission Owners (within the U.S. at least) consider their LGIP as supporting evidence for R1, part 1.1 (generation Facilities). With the proposed addition of Requirement R6 to FAC-002-4, the Planning Coordinator will have the responsibility to define what a "qualified change" is. How will a "qualified change" definition developed by the PC be reconciled with the TO's responsibility to maintain Facility interconnection requirements for generators seeking to interconnect new generation (or modify existing generation connected) to their facilities? Will the TO (or FERC "Transmission Provider") need to incorporate the PC's definition of a "qualified change" into their LGIP? Would this need to be approved by FERC and perhaps incorporated into FERC's pro forma LGIP and SGIP as well?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. FAC-001 and FAC-002 do not cover generators only, but also include transmission interconnections and end user facilities. The FERC generation interconnection process ends with the generator interconnection agreement and FAC-001 and FAC-002 follow the interconnections through the live of the interconnection. The SDT does not believe that FAC-001 and FAC-002 are linked to the LGIP and SGIP as the comments states above.	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with and supports the comments provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	

Answer	Yes
Document Name	
Comment	
EEI agrees that the Planning Coordinator(PC) is the appropriate entity to define what a qualified change is, however, we also recommend that the SDT consider adding language to Requirement R6 that would ensure PCs coordinate with Transmission Planners when defi ning this term.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response, please see response to EEI.	
Daniel Mason - Portland General Electric Co. - 6, Group Name PGE FCD	
Answer	Yes

Document Name	
Comment	
PGE agrees that standardization of the definition at the PC level removes ambiguity due to an auditors interpretation. PGE has some some concern about the lack of a formalized process to address disputes during the process to define the term.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response. If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast and Texas. The three interconnects, i.e. Texas, East, and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. The team has drafted implementation guidance to show examples of how a PC could define qualified change and encourage coordination with other entities where appropriate. In addition, the PC will be audited on their definition of qualified change. The SDT does not feel it is appropriate to write into the standard a dispute resolution path as other standards do not contain this sort of language.	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 2.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment, please see response to EEI.	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	
Answer	Yes
Document Name	
Comment	
The PC should be involved but should not be solely responsible for the definition. Instead R6 should direct the PC to develop and maintain the definition in consultation with Transmission Planner(s) as applicable.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Michael Jang - Seattle City Light - 1	
Answer	Yes
Document Name	
Comment	
City Light requests that the SDT propose some examples on how “qualified change” can be defined by PCs	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has drafted Implementation guidance with examples on how the PC could define qualified ch ange.	

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	Yes
Document Name	
Comment	
The NAGF agrees that the Planning Coordinator (PC) is the appropriate entity to define what a qualified change is. However, the NAGF is concerned that there will be large variations of the "qualified change" definition/threshold adopted by the various PCs across the ERO. The NAGF recommends PCs coordinate efforts to define the "qualified change" definition/threshold so as to enable consistency across the ERO to the extent possible.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT understands the issue that could be present when an entity is working with more than one Planning Coordinator. The SDT hopes that by adding the following, your concern will be alleviated: 1) adding time in the implementation plan to allow entities to be compliant after the PC has posted the definition for the "qualified change", 2) strongly encourage the PC to collaborate with their TPs in the development of the definition of "qualified change".	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
While the PC would appear to be the most appropriate entity to define "qualified change" the new requirement is incomplete in that it provides no guidance or reference whatever to what should be considered when defining a qualified change. Since this is completely arbitrary and can change from one PC to another. It can be defined as broadly as any change at all or as narrowly as only a complete removal of a facility. Without some specification of what should be considered as a qualified change this revision does not support consistency and cannot be considered necessary for the reliability of the Bulk Electric System.	

Likes 0	
Dislikes 0	

Response

Thank you for your comment. Related to your comment about created a NERC Glossary term: If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast and Texas. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. The SDT understands the issue that could be present when an entity is working with more than one Planning Coordinator. The SDT hopes that by adding the following, your concern will be alleviated: 1) adding time in the implementation plan to allow entities to be compliant after the PC has posted the definition for the "qualified change", 2) strongly encourage the PC to collaborate with their TPs in the development of the definition of "qualified change".

Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller

Answer	Yes
Document Name	

Comment

What if Planning Coordinators, in different regions define a differing definition of qualified change? How will you ensure consistency of definition of qualified change? Is it OK to have a differing definition of qualified change?

Likes 0	
Dislikes 0	

Response

Thank you for our comment. The SDT maintains that the planning coordinator is the correct entity to define the minimum requirements for this definition which may vary broadly across regions. The three interconnects, i.e. Texas, East, and the West, have very different issues among them making it likely that there will be varying definitions to accommodate every areas unique structure.

Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy

Answer	Yes
Document Name	
Comment	
The Duke Energy YES response is predicated on the assumption that the PC will have sole discretion in defining "technically substantive change".	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The draft requirement language only applies to the planning coordinator and the SDT urges the PC to coordinate with any entities needed but it is not required.	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
While assigning each Planning Coordinator to create its definition of "qualified change" does match the status quo, there may be value in publishing application guidelines or another type of NERC guidance documenting best practices in defining a "qualified change" and/or encouraging collaboration and standardization between PCs. Minimizing unnecessary differences in definitions and to promoting clear identification of any differences deemed necessary would help to avoid potential confusion in the industry, especially for facility owners with a presence in more than one PC footprint.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT has provided examples as to what a "qualified change" definition could entail to the implementation guidance.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	Yes
Document Name	
Comment	
Entergy agrees with the North American Generator Forum (NAGF) comment as follows: *"The NAGF agrees that the Planning Coordinator (PC) is the appropriate entity to define what a qualified change is. However, the NAGF is concerned that there will be large variations of the "qualified change" definition/threshold adopted by the various PCs across the ERO. The NAGF recommends PCs coordinate efforts to define the "qualified change" definition/threshold so as to enable consistency across the ERO to the extent possible."* Entergy also recommends that the definition of "qualified change" should be agreed upon through a stakeholder review process and align with the end user facilities.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to NAGF. The team has drafted implementation guidance to show examples of how a PC could define qualified change and encourage coordination with other entities where appropriate. The SDT does not feel it is appropriate to write into the standard a dispute resolution path as other standards do not contain this sort of language.	
Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	

Southern Indiana Gas & Electric Company (SIGE) agrees that the PC is the appropriate entity to define what a qualified change is but proposes to include the PC's coordination with its Transmission Planner(s) in defining what a qualified change is. See SIGE's comment for Question #6 for suggested changes.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to question 6. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
CenterPoint Energy Houston Electric, LLC (CEHE) agrees that the PC is the appropriate entity to define what a qualified change is but proposes to include the PC's coordination with its Transmission Planner(s) in defining what a qualified change is. See CEHE's comment for Question #6 for suggested changes.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to question 6. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	

Comment	
AZPS agrees that the Planning Coordinator is the correct entity to define what a qualified change is. AZPS further proposes that Planning Coordinators should be required to provide their definition of "qualified changes" to all Transmission Planners and Transmission Owners within their Planning Coordinator area because both entities are required to study the reliability impacts per R1 . In addition, if there are future modifications to their definition of "qualified changes" the Planning Coordinator should provide the updated version to to all Transmission Planners and Transmission Owners within their Planning Coordinator area prior to the effective date of the change. AZPS also proposes that the Transmission Planner and Transmission Owner should post the Planning Coordinators' definition of "qualified changes" as they are likely to be the initial point of contact for the interconnection customer.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to question 6. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate. The draft requirement language requires the PC to make the definition publicly available. It does not prohibit the TPs and TOs from linking back to the PCs publicly available definition.	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	Yes
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Please see response to MRO NSRF.	
Robert Hirchak - Cleco Corporation - 6	
Answer	Yes
Document Name	
Comment	
The PC is the correct entity, but different PCs may have different ideas for what is a "qualified change." This could lead to various interpretations across the BES.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. The SDT has provided examples as to what a "qualified change" definition could entail to the implementation guidance.	
Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	Yes
Document Name	
Comment	
DTEE agrees that the Planning Coordinator (PC) is the appropriate entity to define a "qualified change." Consitent with the NAGF recommendations, DTEE requests a consistent "qualified change" definition be developed.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. The SDT has provided examples as to what a "qualified change" definition could entail to the implementation guidance.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
AEP has no objections to the PC being tasked with defining what a qualified change is, however please see our concerns regarding a) the Transmission Planner being given opportunity to help shape a definition as provided above in Response #1 and b) the importance of pursuing a phased implementation plan as provided below in Response #5.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to questions 1 and 5.	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	Yes
Document Name	
Comment	
Yes, the PC is the appropriate entity. A guideline providing additional specification and examples would be value-add.	
Likes 0	

Dislikes 0	
Response	
Thank you for your response. The SDT has provided examples as to what a "qualified change" definition could entail to the implementation guidance.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
John Pearson - ISO New England, Inc. - 2	
Answer	Yes
Document Name	2020-05_Mod_to_FAC-001_and_FAC-002_Unofficial_Comment_Form_12072021 FINAL.docx
Comment	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Bradley Collard - Pedernales Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
3. The SDT proposes the new requirement R6 in FAC-002-4 and associated VRF and VSL. Do you agree that the associate VRF and VSL levels are appropriate? If you do not agree, or if you agree but have suggestions for improvement please provide your recommendation and, if appropriate, technical or procedural justification.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	

If you are asking the Planning Coordinators to make the definitions, then the PCs should determine how severe the violation s hould be. The Drafting team is asking for us to approve a standard with a definition that is yet to be determined. This puts the entities in a high risk situation with no recourse to debate the definition or the severity of the penalty.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The risk factor for R6 is relative to if the PC has developed the definition and made it publicly available and not in regards to any other entities risk in complying with that definition.	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	No
Document Name	
Comment	
BHC does not agree with the singular Severe VSL rating. The ratings should be provided in a tiered structure, similar to the suggestion below. • Severe – PC did not have a definition and did no not maintain a publicily available definition… • High – PC had a definition, but did not make the public • Moderate – PC had a definition, but was not public for an extended duration • Lower – PC had a definition, but not public for a small duration	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT maintains that Requirement R6 is written in a binary format and there for a single severe VSL is appropriate per the FERC Order of Violation Severity Levels, Guideline 2. Please see the VRF and VSL Justification document included with this posting for additional information.	
Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	
DTEE disgrees that a Lower Violation Risk Factor is aligned with a Severe Vioaltion Severity Level	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT maintains that Requirement R6 is written in a binary format and there for a single severe VSL is appropriate per the FERC Order of Violation Severity Levels, Guideline 2. Please see the VRF and VSL Justification document included with this posting for additional information.	
Robert Hirchak - Cleco Corporation - 6	
Answer	No
Document Name	
Comment	
Medium risk should be low since the study is based on human judgement which for reliability planning is very conservative.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. There was a mismatch between the VRF listed in the body of the standard and that in the VRF.VSL table. It has been updated to show the VRF for R6 is lower.	
Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC	
Answer	No
Document Name	
Comment	
The Risk Factor in the Requirement (Page5) should be "Low", it does not correlate with the VRF in Column R6 in the Violation Severity Level table on Page 11. The verbiage should be "Low" rather than "Lower" for both locations.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. There was a mismatch between the VRF listed in the body of the standard and that in the VRF.VSL table. It has been updated to show the VRF for R6 is lower.	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	No
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	

Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
As discussed in the response to Question 2, Reclamation recommends that Requirement R6 is not necessary when the definition is properly contained in the NERC Glossary of Terms. If R6 is left in the standard, Reclamation recommends language to correct the grammatical mishaps in the VSLs similar to the proposed language stated in the response to Question 1.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast and Texas. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. There was a mismatch between the VRF listed in the body of the standard and that in the VRF/VSL table. It has been updated to show the VRF for R6 is lower.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	
Entergy agrees with the NAGF comment as follows:	

"The NAGF believes that the proposed VRF = Lower is not aligned with a VSL that is proposed as being severe." Entergy also recommends that the Table and Requirement 6 should be consistent.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. There was a mismatch between the VRF listed in the body of the standard and that in the VRF.VSL table. It has been updated to show the VRF for R6 is lower.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	No
Document Name	
Comment	
Duke Energy agrees with the VRF classification. However, the stated Violation Severity Level should be delineated with multiple classifications. For example, additional classifications should be considered for Developing/Establishing, Posting/Publishing, etc.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT maintains that Requirement R6 is written in a binary format and there for a single severe VSL is appropriate per the FERC Order of Violation Severity Levels, Guideline 2. Please see the VRF and VSL Justification document included with this posting for additional information.	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	No
Document Name	

Comment	
R6 can be categorized under 'High VSL'.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT maintains that Requirement R6 is written in a binary format and there for a single severe VSL is appropriate per the FERC Order of Violation Severity Levels, Guideline 2. Please see the VRF and VSL Justification document included with this posting for additional information.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	No
Document Name	
Comment	
A VRF of "Medium" is listed in the text of the requirement while a VSL of Lower is listed in the VSL Tables. Because there is no minimum or stated guidance for what constitutes a qualified change and that there are multiple ways an interested entity could communicate and coordinate with its PC the requirement to publicly post is administrative in nature and represents only one way information could be communicated. A VRF of "Lower" should be the maximum considered. Similarly, while a non-compliance with the requirement would be binary since this is a simple posting requirement the maximum severity level should be Lower VSL	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. There was a mismatch between the VRF listed in the body of the standard and that in the VRF.VSL table. It has been updated to show the VRF for R6 is lower. The SDT maintains that Requirement R6 is written in a binary format and there for a	

single severe VSL is appropriate per the FERC Order of Violation Severity Levels, Guideline 2. Please see the VRF and VSL Justification document included with this posting for additional information.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	
Comment	
The NAGF believes that the proposed VRF = Lower is not aligned with a VSL that is proposed as being severe per the table on page 11 of FAC-002-4. Note that there is a disconnect between the VRF = Medium defined under R6 on page 5 compared to the table on page 11.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. There was a mismatch between the VRF listed in the body of the standard and that in the VRF.VSL table. It has been updated to show the VRF for R6 is lower. The SDT maintains that Requirement R6 is written in a binary format and there for a single severe VSL is appropriate per the FERC Order of Violation Severity Levels, Guideline 2. Please see the VRF and VSL Justification document included with this posting for additional information.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	
Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6 Exelon concurs with the NAGF comment to review and align the VRF and VSL	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. There was a mismatch between the VRF listed in the body of the standard and that in the VRF.VSL table. It has been updated to show the VRF for R6 is lower. The SDT maintains that Requirement R6 is written in a binary format and there for a single severe VSL is appropriate per the FERC Order of Violation Severity Levels, Guideline 2. Please see the VRF and VSL Justification document included with this posting for additional information.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	

The VRF identified in the VSL table on Page 11 of 13 indicates this VRF is Lower. This is in conflict with the identified VRF stated in the actual Requirement on Page 5 of 13. Additionally, the NSRF supports a Lower VRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. There was a mismatch between the VRF listed in the body of the standard and that in the VRF.VSL table. It has been updated to show the VRF for R6 is lower. The SDT maintains that Requirement R6 is written in a binary format and there for a single severe VSL is appropriate per the FERC Order of Violation Severity Levels, Guideline 2. Please see the VRF and VSL Justification document included with this posting for additional information.	
Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	Yes
Document Name	
Comment	
A NERC glossary term for "qualified change" is preferred and would make this more of a moot point but, in the absence of that, consider allowing for a VSL accounting for the maintaining of the definition but failure to make it public.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east cost to the west coast and Texas. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area.	

(definition) The SDT maintains that Requirement R6 is written in a binary format and there for a single severe VSL is appropriate per the FERC Order of Violation Severity Levels, Guideline 2. Please see the VRF and VSL Justification document included with this posting for additional information.	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	Yes
Document Name	
Comment	
Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 3.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports the comments of EEI.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. Please see response to EEI.	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
The IRC SRC is supportive of the Lower VRF. We note that there appears to be a discrepancy between the VRF noted in the text of the requirement (i.e. Medium) and the VRF in the table (i.e. Lower). We ask the SDT to ensure these are aligned to a "Lower" VRF. The revised language would read: R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. [Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. There was a mismatch between the VRF listed in the body of the standard and that in the VRF.VSL table. It has been updated to show the VRF for R6 is lower.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	Yes
Document Name	
Comment	
EEI agrees with the SDT that the VRF and VSL developed for FAC-002-4, R6.	

Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
ERCOT supports the comments of the IRS SRC.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see the response to IRS SRC.	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with and supports the comments provided by EEI.	
Likes 0	
Dislikes 0	
Response	

Thank you for the comment. Please see response to EEI.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	Yes
Document Name	
Comment	
PG&E agrees with the SDT on the VRF and VSL developed for FAC-002-4, R6.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
No additional suggestions for improvement.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Donna Wood - Tri-State G and T Association, Inc. - 1	

Answer	Yes
Document Name	
Comment	
Yes, we agree with the proposed VRF and VSL levels. However, please ensure the VRF in R6 is corrected to reflect Lower, inste ad of Medium.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. There was a mismatch between the VRF listed in the body of the standard and that in the VRF.VSL table. It has been updated to show the VRF for R6 is lower.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Alliant Energy supports comments submitted by the MRO NSRF.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response, please see response to MRO NSRF.	
Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bradley Collard - Pedernales Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Michael Jang - Seattle City Light - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	
Answer	
Document Name	
Comment	
No comment since this is a PC responsibility.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

4. *The SDT proposes that the modifications in FAC-001-4 and FAC-002-4 meet the SAR in a cost effective manner. Do you agree? If you do not agree, or if you agree but have suggestions for improvement to enable more cost effective approaches, please provide your recommendation and, if appropriate, technical or procedural justification*.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
PG&E at this time cannot determine if the modifications are cost effective.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO	
Answer	No
Document Name	
Comment	
SPP believes reliability requirements should not merely be cost effective but are commensurate with the risks they seek to mitigate. There is not a simple approach to assess cost impacts of standards. Therefore, we suggest that NERC develop a pilot program to introduce parameters that would help industry gauge the cost effectiveness of new or revised standards. From our perspective, the parameters for cost are best developed by the standards drafting team. As an example, standards that are more administrative in nature such as in this	

Project, the SDT could provide a range based on implementation of the FAC-001 and FAC-002 from their respective team members' companies. For standard projects that are more involved and may require equipment reconfigurations/purchases a broader approach to gathering cost data from the industry might be necessary.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. We will forward this comment to NERC for their consideration.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	
Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6 The proposed changes to the standards do not define "qualified change" which creates concern that routine maintenance activities such as cleaning condenser tubes or calibrating instrumentation that may cause nominal changes to generator output power could trigger the need for expensive studies.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has provided examples as to what a "qualified change" definition could entail to the implementation guidance.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	

Comment	
GO/GOPs will need more information to adequately assess the cost effectiveness of the proposed approach.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	
Entergy agrees with the NAGF comment as follows: *"GO/GOPs will need more information to adequately assess the cost effectiveness of the proposed approach."*	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	No
Document Name	
Comment	

A NERC glossary term for "qualified change" is preferred and would make this more of a moot point but, the proposed action would have little cost benefit to industry. If the SDT were to consider condensing the requirements included in both the FAC-001-4 and FAC-002-3 Reliability Standards into one streamlined FAC Facility Interconnection Studies and Requirements Standard, industry may see some benefit in accomplishing and demonstrating compliance.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Related to your comment about created a NERC Glossary term: If a NERC Glossary term were developed for "Qualified Change", the SDT sees issues with attempting to determine what constitutes a "Qualified Change" which requires restudy that will be the same for every planning coordinator area from the east coast to the west coast and Texas. The three interconnects, i.e. Texas, East and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. The SDT has provided examples as to what a "qualified change" definition could entail to the implementation guidance.	
Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	No
Document Name	
Comment	
We ask for clarification of terms to be used and how PCs may interpret these terms before cost effectiveness can be determined.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	No
Document Name	
Comment	
Reclamation observes that the primary modifications to FAC-001 and FAC-002 are grammatical and do not materially affect the compliance obligations or activities of applicable entities. Project 2020-05 could have been accomplished with errata rather than the expensive and resource-intensive standards development process.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT disagrees that these changes could be made through the errata process which is limited to a small set of defined circumstances.	
Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	
A position on cost effectiveness of the proposed approach cannot be conducted until futher information is provided.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	

Answer	No
Document Name	
Comment	
I do not see a cost/benefit analysis of this standard, how was cost effectiveness established? What metrics were used? How much did the problem cost, and how much will the solution cost?	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The industry consensus, as borne out from the support for this project, is that the term "material modification" was vague, and entities were not clear as to their compliance obligations under the standards. The proposed modifications are intended to provide that clarity by establishing that a single entity will be responsible for developing a clear definition regarding what needs to be studied. The drafting team does not anticipate that there will be any significant added costs on entities beyond the Planning Coordinator developing the definition for what should be studied and making that definition publicly available for those that need to rely on it.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
No additional suggestions for improvement.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	

Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	Yes
Document Name	
Comment	
Change appears cost effective in relation to implementation of the processes necessary to identify the potential impacts to the system, and our response is not in relation to potential future upgrades that may result from those reviews.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli	
Answer	Yes
Document Name	
Comment	
Xcel Energy supports the comments of EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	

Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	Yes
Document Name	

Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to MRO NSRF.	
Thomas Foltz - AEP - 5	
Answer	Yes
Document Name	
Comment	
The proposed modifications appear to be cost effective, as they would continue to utilize the existing stakeholder planning and processes that are valued and have proven beneficial.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	Yes
Document Name	
Comment	

BHC believes it would be cost effective with a guideline providing additional specification and examples.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has provided examples as to what a "qualified change" definition could entail to the implementation guidance.	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	Yes
Document Name	

Comment	
Likes 0	
Dislikes 0	
Response	
Michael Jang - Seattle City Light - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Bradley Collard - Pedernales Electric Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nazra Gladu - Manitoba Hydro - 1	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Robert Hirchak - Cleco Corporation - 6	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
David Jendras - Ameren - Ameren Services - 3	
Answer	
Document Name	
Comment	
No comment.	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	
Answer	
Document Name	
Comment	
No comment on cost	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	

Document Name	
Comment	
Texas RE does not have comments on this question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

5. *The SDT is proposing a 12-month implementation plan. If you think an alternate timeframe is needed, please propose an alternate implementation plan and time period, and provide a detailed explanation of actions planned to meet the implementation deadline.*

Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	No
Document Name	
Comment	
A 12 month implementation is not sufficient, since we don't know how long it will take a PC to negotiate a definition for qualified change, when that will hit our planning process, and how it may impact our facilities.	
Likes 1	Pedernales Electric Cooperative, Inc., 1, Collard Bradley
Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Thomas Foltz - AEP - 5	
Answer	No
Document Name	
Comment	
While the proposed implementation period for the revised FAC-002 may be sufficient, 12 months would *not* be sufficient for what has been proposed for the revised FAC-001. The PC's will first require time of their own to develop their definitions through their list of	

stakeholders. Following that, the Transmission Planners would then need ample opportunity to update their appropriate procedu res based on those new definitions. As a result, we believe a phased implementation approach for FAC-001 would be appropriate, one that allows the PC's 12 months to both develop their definitions and potentially collaborate with their stakeholders on them, and a subsequent (i.e. not "concurrent") 12 months for the Transmission Planners to update their procedures as needed.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	No
Document Name	
Comment	
Consistent with the NAGF's comments, DTEE is concerned with a 12 month implementation plan. It may not provide enough time or clarity to ensure that entities within a Planning Coordinator area will have enough time to respond to the Planning Coordinator's definition of a "qualiied change." We recommend a longer implementation plan for Generator Owners, perhaps eighteen (18) to twenty-four (24) months.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for	

compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Robert Hirchak - Cleco Corporation - 6	
Answer	No
Document Name	
Comment	
Transmission and generation projects are usually planned two to five years ahead. Twelve months may cause a gap in projects that have completed the studies and approval processes and may need to be re-evaluated with the new PC criteria. Two years would give enough time to re-evaluate and re-study projects.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Matthew Jaramilla - Salt River Project - NA - Not Applicable - WECC	
Answer	No
Document Name	
Comment	
In the Western Interconnection the Large Generator Interconnection Procedures (LGIP) is sometimes used for Joint Ownership projects. Getting these amended takes longer than 12 months.	
Likes 0	

Dislikes 0	

Response
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.

Bradley Collard - Pedernales Electric Cooperative, Inc. - 1	
Answer	No
Document Name	

Comment
PEC recommends a two step implementation plan: - Step one would define the timeline for adoption of the definition of the qualified change by the Planning Coordinator. - Step two would define the timeline for adoption of the study requirements for "qualified changes" when the change did not require study before the adoption of the new definition of a "qualified change" (suggest a minimum of two years). PEC believes the initial requirement of the PC to identify what constitutes a "qualified change," depending when that occurs, should have a delayed implementation of FAC-001-4 R1 and R2 that will allow some time to change any of the TOs' or applicable GOs' terms taking into account what may constitute a "qualified change." PEC desires a minimum of a six month delay between FAC-002-4 R6 and FAC-001-4 R3 for the same reasons mentioned above.

Likes 0	
Dislikes 0	

Response
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for

compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	No
Document Name	
Comment	
We suggest the Drafting Team add an additional 12-month timeframe so that affected entities may implement changes stemming from work PCs will undertake to comply with the standard (i.e., additional time is needed to provide affected responsible entities to develop processes and procedures internally).	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford	
Answer	No
Document Name	
Comment	
A 24 month implementation period would better ensure a sufficient transitional period.	
Likes 0	
Dislikes 0	

Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Julie Hall - Entergy - 6, Group Name Entergy	
Answer	No
Document Name	
Comment	

Entergy agrees with the NAGF comment as follows:

"The NAGF is concerned that a 12 month implementation plan will not provide enough time or clarity to ensure that entities within a Planning Coordinator area will have enough time to respond to the Planning Coordinator's definition of a "qualified change." For instance, if a Planning Coordinator were to develop and publish their "qualified change" 11 months within the implementation plan, this would only give entities within their footprint one month to develop a compliance plan. The NAGF supports an implementation plan that would give Planning Coordinators twelve months to develop their definition of a "qualified change" as required within FAC-002-4 R6. Compliance with FAC-001-4 R3 and R4 will take time based upon the Planning Coordinator's definition of a "qualified change." As such, twenty-four calendar months to comply with FAC-001-4 R3 and 4 would be prudent for Generator Owners. Additionally, a current challenge is that "publicly available" information can be challenging to locate. Planning Coordinators need to directly communicate with their Generator Owners on where the information required within FAC-002-4 R6 is located."

Entergy agrees with a Phased Implementation approach whereas the 1st phase would allow the PC to define and set the threshold of a qualified change and the 2nd phase would begin after qualified change had been defined and approved.

Another option would be for projects that start after standard implementation date but before definition of qualified change would be excluded from qualified change definition.

Likes 0	
Dislikes 0	

Response
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.

Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	No
Document Name	

Comment
The NAGF is concerned that a 12 month implementation plan will not provide enough time or clarity to ensure that entities within a Planning Coordinator area will have enough time to respond to the Planning Coordinator's definition of a "qualified change." For instance, if a Planning Coordinator were to develop and publish their "qualified change" 11 months within the implementation plan, this would only give entities within their footprint one month to develop a compliance plan. The NAGF supports an implementation plan that would give Planning Coordinators twelve months to develop their definition of a "qualified change" as required within FAC-002-4 R6. Compliance with FAC-001-4 R3 and R4 will take additional time based upon the Planning Coordinator's definition of a "qualified change." As such, twenty-four calendar months to comply with FAC-001-4 R3 and R4 would be prudent. *Additionally, a concern is that "publicly available" information can be challenging to locate. Planning Coordinators need to directly communicate with their Generator Owners on where the information required within FAC-002-4 R6 is located.*

Likes 0	
Dislikes 0	

Response
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.

The SDT believes the language as proposed is clear and has chosen to not change it. The definition of qualified change needs to be available to parties involved in the interconnection process beyond those applicable Functional Entities registered with NERC. As such, making the definition publicly available is the most efficient method of ensuring that all interested parties have access to the information.	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	No
Document Name	
Comment	
Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 5.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Amy Casuscelli - Amy Casuscelli On Behalf of: Dean Schiro, Xcel Energy, Inc., 1, 5, 3; - Amy Casuscelli	
Answer	No
Document Name	
Comment	
Xcel Energy supports the comments of EEI.	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment, please see response to EEI.	
Daniel Gacek - Exelon - 1	
Answer	No
Document Name	
Comment	
Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6 Exelon does not support a 12-month implementation plan and concurs with the comments and suggestions submitted by the NAGF and EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment, please see response to EEI.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	No
Document Name	
Comment	
Although EEI agrees a 12-month implementation plan would be sufficient for the PC to implement the changes proposed under FAC-002, an additional 12-months will be necessary for other affected entities to implement changes stemming from work PCs will undertake to comply with the standard (i.e., additional time is needed to provide affected responsible entities to develop processes and procedures internally).	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Dennis Chastain - Tennessee Valley Authority - 1,3,5,6 - SERC	
Answer	No
Document Name	
Comment	
Additional time is necessary to not only develop the qualified change definition but to then educate the stakeholders. We suggest an implementation period of 24 months. The proposed revision to FAC-002-3 would have the Planning Coordinators maintain a definition of "qualified change" for the purposes of Facility interconnection. There are currently 73 registered PCs reflected in the NERC Compliance Registry. We suggest that PCs within each of the four Interconnections be provided an opportunity to develop a definition at the Interconnection level, and if that cannot be achieved, allow PCs within each of the NERC Regions to consider a common definition at the Region level. Otherwise, entities seeking to interconnect generation, transmission or end-user Facilities could have multiple definitions to keep track of. Also to be considered, the PCs will need to coordinate with their associated Transmission Owners and possibly Transmission Planners in developing this definition. The Transmission Owners are required to maintain Facility interconnection requirements under FAC-001, R1. Incorporation of their PC's definition of a qualified change into those Facility interconnection requirements would likely be needed, so those seeking to interconnect a generation, transmission or end-user Facility to the TO's facilities would have a better understanding of the associated study expectations. Cooperation and communication among the TO, PC and TP seems to be an assumed given between FAC-001 and FAC-002.	
Likes 0	
Dislikes 0	
Response	

Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	No
Document Name	
Comment	
PG&E agrees with the Edison Electric Institute (EEI) input that a 12-month implementation plan for the PC is sufficient, but an additional 12-months may be necessary for TP entities affected by the change to implement those changes.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and is suggesting a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	Yes
Document Name	

Comment	
BHC agrees with the 12-month implementation plan, but would recommend providing a guideline with additional specification and examples.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, the SDT has drafted Implementation Guidance to show examples of how a PC could define "qualified change".	
Carl Pineault - Hydro-Qu?bec Production - 5	
Answer	Yes
Document Name	
Comment	
12 months is OK	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	Yes
Document Name	
Comment	

MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment, please see response to MRO NSRF.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	Yes
Document Name	
Comment	
None	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
CEHE agrees with a 12-month implementation timeframe.	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment.	
Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	Yes
Document Name	
Comment	
SIGE agrees with a 12-month implementation timeframe.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	Yes
Document Name	
Comment	
None.	
Likes 0	
Dislikes 0	
Response	

Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	Yes
Document Name	
Comment	
Southern Company supports EEI's comments to Project 2020-05 Modifications to FAC-001 and FAC-002 for the comment period closing January 31, 2022. A 12-month implementation plan would be sufficient for the PC to implement the changes proposed under FAC-002 however, an additional 12-months may be necessary for other affected entities to implement changes stemming from work PCs will undertake to comply with the standard (i.e., additional time is needed to provide affected responsible entities to develop processes and procedures internally).	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and suggest a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Steven Rueckert - Western Electricity Coordinating Council - 10, Group Name WECC Entity Monitoring	
Answer	Yes
Document Name	
Comment	
12 months should be adequate.	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment.	
Daniel Mason - Portland General Electric Co. - 6, Group Name PGE FCD	
Answer	Yes
Document Name	
Comment	
There should be a set timeline for defining the term "qualified change" so that entities have a predictable timeline to implement the applicable changes.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and suggest a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
David Jendras - Ameren - Ameren Services - 3	
Answer	Yes
Document Name	
Comment	
Ameren agrees with and supports the comments provided by EEI.	
Likes 0	

Dislikes 0	
Response	
Thank you for the comment. The SDT agrees that more time may be warranted for implementation and suggest a phased implementation approach providing 12 months for compliance with FAC-002 R6 and an additional 12 months (24 months total) for compliance with FAC-001 R1-R4 and FAC-002 R2-R3 to allow entities sufficient time to incorporate their PC's qualified change definition into their planning processes.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	Yes
Document Name	
Comment	
No additional suggestions for improvement.	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	
Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Cain Braveheart - Bonneville Power Administration - 1,3,5,6 - WECC	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Glen Farmer - Avista - Avista Corporation - 5	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Nazra Gladu - Manitoba Hydro - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	

Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Leonard Kula - Independent Electricity System Operator - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Kendra Buesgens - MRO - 1,2,3,4,5,6 - MRO, Group Name MRO NSRF	
Answer	Yes
Document Name	
Comment	

Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Jamie Monette - Allete - Minnesota Power, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Lindsey Mannion - ReliabilityFirst - 10	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
LaTroy Brumfield - American Transmission Company, LLC - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Michael Jang - Seattle City Light - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Paul Mehlhaff - Sunflower Electric Power Corporation - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	

Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Tammy Porter - Oncor Electric Delivery - 1 - Texas RE	
Answer	Yes
Document Name	
Comment	
Likes 0	

Dislikes 0	
Response	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Shannon Mickens - Southwest Power Pool, Inc. (RTO) - 2 - MRO, Group Name SPP RTO	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Mo Derbas - Sempra - San Diego Gas and Electric - 1	
Answer	Yes

Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Teresa Krabe - Lower Colorado River Authority - 1,5	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Donna Wood - Tri-State G and T Association, Inc. - 1	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	

Response	
Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	Yes
Document Name	
Comment	
Likes 0	
Dislikes 0	
Response	
Quintin Lee - Eversource Energy - 1, Group Name Eversource Group	
Answer	
Document Name	
Comment	
This cannot be answered until the PC defines 'qualified change.'	
Likes 0	
Dislikes 0	
Response	
Thank you for the comment.	

6. *Provide any additional comments for the standard drafting team to consider, including the provided technical rationale document, if desired*.

Larry Heckert - Alliant Energy Corporation Services, Inc. - 4	
Answer	
Document Name	
Comment	
No additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment.	
Jodirah Green - ACES Power Marketing - 1,3,4,5,6 - MRO,WECC,Texas RE,SERC,RF, Group Name ACES Standard Collaborations	
Answer	
Document Name	
Comment	
While ACES agrees with all of the proposed changes, the adequacy of the "qualified change" definition the Planning Coordinator (PC) develops is not addressed. Proposed changes to FAC-001 and FAC-002 are meant to address confusion and potential reliability issues within the industry stemming from potential differences to what is considered "materially modifying". While the proposed changes should eliminate potential confusion amongst coordinating entities, it does not ensure the definition is adequate.	
Likes 0	

Dislikes 0	
Response	
Thank you for your comment. The SDT believes as the language is written it is the responsibility of the PC to determine that its definition of a qualified change is "adequate."	
Jose Avendano Mora - Edison International - Southern California Edison Company - 1,3,5,6	
Answer	
Document Name	
Comment	
See comments submitted by the Edison Electric Institute.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Michael Johnson - Michael Johnson On Behalf of: Frank Lee, Pacific Gas and Electric Company, 3, 1, 5; Marco Rios, Pacific Gas and Electric Company, 3, 1, 5; Sandra Ellis, Pacific Gas and Electric Company, 3, 1, 5; - Michael Johnson, Group Name PG&E All Segments	
Answer	
Document Name	
Comment	
PG&E supports the comments provided by the Edison Electric Institute (EEI) related to the suggested modification to FAC-001-4, Requirement R3, Part 3.1 on the removal of the reference to FAC-002-4, Requirement R6. PG&E is voting "negative" on approval of the modifications to allow the SDT to address the comments provided in Q2 (PC/TOP coordination) and Q5 (additional time for the TP).	

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
David Jendras - Ameren - Ameren Services - 3	
Answer	
Document Name	
Comment	
Ameren agrees with and supports the comments provided by EEI.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Dana Showalter - Electric Reliability Council of Texas, Inc. - 2	
Answer	
Document Name	
Comment	
ERCOT supports the comments of the IRS SRC.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. Please see response to IRS SRC.	
Mark Gray - Edison Electric Institute - NA - Not Applicable - NA - Not Applicable	
Answer	
Document Name	
Comment	
EEI offers the following additional input: **FAC-001-4** **Requirement R3, subpart 3.1** EEI suggest removing the reference to FAC-002 because aligning requirements within one Reliability Standard to another Reliability Standard can create problems when the standard is changed in the future. (see suggested input below) 3.1 Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator. (**Delete:** *under Reliability Standard FAC-002-4 Requirement R6*)	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has removed the reference to FAC-002 as it was proposed in FAC-001.	
Nicolas Turcotte - Hydro-Qu?bec TransEnergie - 1	
Answer	
Document Name	
Comment	

It would seem clearer and more precise if in FAC-001, under R3.1 and R3.2, instead of the wordings "… new interconnections…" and "… existing interconnections seeking…", we had "… new interconnections of Facilities…" and "… existing interconnected Facilities seeking… "(or"… existing interconnections of Facilities seeking… "). It seems to me that this would better and advantageously link the text to the notion of facilities rather than to their connection, especially in the case where we are talking about modifications (qualified change). This could also be applied in FAC-002, under R1.1.1, and under R4 (R1, R2 and R3 do include the term "Facilities"). M6 of FAC-002-4 should appear as a redline in the Redline version of the standard in question.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT discussed this comment and believes the use of Facility in the parent requirement R3 flows down to all the sub part requirements as the entity seeking to make the change. Measure 6 of FAC-002-4 has been properly shown in redline in this posting.	
Elizabeth Davis - Elizabeth Davis On Behalf of: Tom Foster, PJM Interconnection, L.L.C., 2; - Elizabeth Davis, Group Name ISO/RTO Council (IRC) Standards Review Committee (SRC)	
Answer	
Document Name	
Comment	
The IRC SRC supports the substance of these standards, as drafted. However, if the SDT proposes a second draft of these standards, the IRC SRC proposes the following editorial changes: Change "seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6" to "for which a qualified change, as defined by the PC under Requirement R6, is proposed" and change "seeking to make a qualified change" to "for which a qualified change is proposed" in all instances where these or similar phrases are used.	
Likes 0	
Dislikes 0	

Response
Thank you for your comment. The SDT believes the language as drafted is clear and will maintain the draft language as propose d going forward.
Paul Mehlhaff - Sunflower Electric Power Corporation - 1
Answer
Document Name
Comment
Sunflower supports the following ACES comment. While ACES agrees with all of the proposed changes, the adequacy of the "qualified change" definition the Planning Coordinato r (PC) develops is not addressed. Proposed changes to FAC-001 and FAC-002 are meant to address confusion and potential reliability issues within the industry stemming from potential differences to what is considered "materially modifying". While the proposed chan ges should eliminate potential confusion amongst coordinating entities, it does not ensure the definition is adequate.
Likes 0
Dislikes 0
Response
Thank you for your comment. Please see response to ACES.
Daniel Gacek - Exelon - 1
Answer
Document Name
Comment
Comments submitted on behalf of Exelon for Segments 1, 3, 5, 6 Exelon concurs with the additional comments submitted by the EEI.

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Alan Kloster - Alan Kloster On Behalf of: Allen Klassen, Evergy, 6, 1, 3, 5; Derek Brown, Evergy, 6, 1, 3, 5; Marcus Moor, Evergy, 6, 1, 3, 5; Thomas ROBBEN, Evergy, 6, 1, 3, 5; - Alan Kloster	
Answer	
Document Name	
Comment	
Evergy supports and incorporates by reference Edison Electric Institute's (EEI) response to Question 6.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see response to EEI.	
Michael Jang - Seattle City Light - 1	
Answer	
Document Name	
Comment	
SCL suggests the team should consider adding the definition of qualified change to the items to include in Facility interconn ection requirements under R3 of FAC-001	
Likes 0	
Dislikes 0	

Response	
Thank you for your comment. The SDT believes the language as drafted is clear and will maintain the draft language as proposed going forward.	
Wayne Sipperly - North American Generator Forum - 5 - MRO,WECC,Texas RE,NPCC,SERC,RF	
Answer	
Document Name	
Comment	
The NAGF has no additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Pamela Hunter - Southern Company - Southern Company Services, Inc. - 1,3,5,6 - SERC, Group Name Southern Company	
Answer	
Document Name	
Comment	
The language in FAC-001-4 R3 was modified which changed the meaning. In previous versions of the standard, the language stated "Procedures for coordinated studies of new or materially modified existing interconnections and their impacts on the affected system(s)" whereas the new version 4 moved the wording regarding "impacts". The new standard now states in 3.1 that the TO shall address "Procedures for coordinated studies and identifying the impacts for affected systems…". The change to the requirement makes it sound as though the TO should itself, identify impacts instead of simply coordinating impacts. Southern Company recommends the SDT discuss if this was the intent.	

Additional comments for consideration: *NERC should consider whether the reliability objectives for FAC-001 and FAC-002 are met through existing FERC rules and/or existing enforceable Reliability Standards, especially with regard to Generator Interconnection Facilities. Several comments to this effect were submitted by registered entities during the Standards Efficiency Review (Phase I) effort. Perhaps a review of the applicability of these Standards to Generator Owners or to Generator Interconnection Facilities could be included in the next periodic review of these Standards.*	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT has revised the language to bring the intent back to the current enforceable language.	
Dwanique Spiller - Dwanique Spiller On Behalf of: Kevin Salsbury, Berkshire Hathaway - NV Energy, 5; - Dwanique Spiller	
Answer	
Document Name	
Comment	
N/A	
Likes 0	
Dislikes 0	
Response	
Kim Thomas - Duke Energy - 1,3,5,6 - SERC,RF, Group Name Duke Energy	
Answer	
Document Name	
Comment	

None.	
Likes 0	
Dislikes 0	
Response	
Lindsey Mannion - ReliabilityFirst - 10	
Answer	
Document Name	
Comment	
Throughout the proposed changes to FAC-001 and FAC-002, the grammatical use of "interconnection" is confusing. "Interconnections" do not seek to make changes; owners of interconnected Facilities seek make changes. In FAC-001 R3, the proposed text reads "existing interconnections seeking to make a qualified change" but language such as "owners of existing interconnected Facilities seeking to make a qualified change" is more accurate. An interconnection can be modified or changed, but a Facility owner would seek to make a modification or change. Similarly, in FAC-002 R2, a Facility owner is either seeking to interconnect new generation Facilities or seeking to make a qualified change, but the proposed text of R2 reads that the "existing interconnection of generation Facilities [is] seeking to make a qualified change."	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT discussed this comment and believes the use of Facility in the parent requirement R3 flows down to all the sub part requirements as the entity seeking to make the change.	
Julie Hall - Entergy - 6, Group Name Entergy	

Answer	
Document Name	
Comment	
NA	
Likes 0	
Dislikes 0	
Response	
Rachel Coyne - Texas Reliability Entity, Inc. - 10	
Answer	
Document Name	
Comment	

Texas RE has the following additional comments on FAC-001:

- Texas RE recommends not referencing the FAC-002-4 standard directly in Requirements R3.1 and R4.3 If changes are made to one or the other standard at a later date, both would need to be part of the project. The SDT could leave the language as "seeking to make a qualified change as defined by the Planning Coordinator."
- In Requirements R3.3 and R4.3, Texas RE recommends removing the term "metered" since the definition of Balancing Authority Area includes metered boundaries.
- Texas RE recommends adding "when" in front of "seeking to make a qualified change" in Requirements R3.1, R3.2, and R3.3 since the TO would need the procedures when seeking a qualified change.

Texas RE has the following comments on FAC-002:

- In Requirement R3, the phrase "electricity end-user Facilities" appears twice. Texas RE suggest removing the second one.

- Texas RE recommend including “end-user Facilities” in Requirement R4 to be consistent with Requirement R3.

Texas RE has the following additional comments:

- The VSL for Requirement R4 needs a space after between “R6to”

Likes 0	
Dislikes 0	

Response

Thank you for your comment. For FAC-001:

1. The SDT has removed the reference in R3.1 and R4.3 to FAC-002.
2. The SDT has removed the wording “metered boundaries” based on the suggestion and definition of Balancing Authority Area.
3. Thank you for the suggestion, the SDT believe the wording is clear as written.

For FAC-002:

1. In Requirement R3, the sentence was reworded to keep the original language but clarify the addition of “seeking to make a qualified change” that this team included in the initial draft.
2. The SDT believes that the language in R4 should remain as it did in the currently approved revision and will not be adding “end user Facilities” at this time.

Additional Comment:

1. This change has been made.

Stephen Stafford - Stephen Stafford On Behalf of: Greg Davis, Georgia Transmission Corporation, 1; - Stephen Stafford

Answer	
Document Name	

Comment

- It appears the primary impetus for the suggested changes to FAC-001 & FAC-002 is (inverter-based) generation related. Consideration should be given to providing distinguishinsment between generation interconnections and interconnection of transmission and electricity end-user Facilities. It should also be considered if the inclusion of transmission and electricity end-user Facilities in FAC-001 and FAC-002 has become redundant with currently effective TPL and PRC requirements.

• Overall, bringing clarity to "qualified changes" is appropriate, and distinguishing it from FERC's "materially modified" term is prudent. The currentl proposal for FAC-001 and FAC-002 would not effectively accomplish that however. Varying definitions of "qualified change" between PCs and the lack of input into this definition from TPs would almost certainly lead to industry confusion on these types of modifications. A NERC glossary term (preferably), or an enumeration of specific criteria within the standards would provide for a more consistent definition. • The wording "…seeking to make a qualified change…" should be preceded by a subject, such as the word "entities". For Example, the proposed FAC-001-4, R3.1 would be more appropriately written in the following manner. This suggestion also applies to parts R3.2 – R3.4 in FAC-001-4 and in the Purpose, R1, R1.1, R2, R3, R4, & R6 in FAC-002-4. • "Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections, or entities seeking to a make a qualified change to an existing interconnection as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6."	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT maintains that the topic of FAC-001 and FAC-002 is an approval of the change process and are not redundant to PRC, which is focused on protection and control, or TPL requirements, which is a planning process to identify required transmission planning improvements. In addition, it is outside the scope of this teams SAR to address these concerns. If a NERC Glossary term were developed, the SDT sees issues with attempting to determine what constitutes a "change" which re quires restudy that will be the same for every planning coordinator area from the east cost to the west coast. The three interconnects, i.e. Texas, East, and the West, have very different issues among them making it difficult to develop a list of changes that is complete enough for every planning coordinator area. Therefore, the SDT still believes that each PC is the best entity for identifying changes that would require restudy for the unique situations in their PC area. The SDT looked at the grammatical inconsistencies and attempted to mitigate these in the next release of the standard.	
Bryan Koyle - Southern Indiana Gas and Electric Co. - 3,5,6 - RF	
Answer	
Document Name	

Comment
SIGE commends the efforts of the SDT and believes that the proposal to replace the vague term, "materially modified," with the defined term, "qualified change," should bring clarity to what should be included in the Facility Interconnection Requirements and what should be studied in the Transmission Planning Assessment. SIGE believes that successful collaboration between the Planning Coordinator and its Transmission Planners will be beneficial in developing what a "qualified change" is. SIGE recommends that the following updates be considered for the proposed FAC-001-4: R3.1: Update the sub-requirement to include "in conjunction with its Transmission Planner(s)". The updated sub-requirement would read: (R3.1) "Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6." R3.2 and R3.3: Update the sub-requirements to include "as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6" and "in conjunction with its Transmission Planner(s)". The updated sub-requirements would read: (R3.2) "Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6." (R3.3) Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6 are within a Balancing Authority Area's metered boundaries. These changes will provide consistency and clarity as the term "qualified change" is not defined within the Standard but by the Planning Coordinator per FAC-002-4 R6. SIGE recommends that the following updates be considered for the proposed FAC-002-4:

R1, R1.1, R2, R3, R4: Update the requirement/sub-requirements to include "in conjunction with its Transmission Planner(s)". The updated requirement/sub-requirements would read:

(R1) Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6. The following shall be studied:…

(R1.1) The reliability impact of the new interconnection, or existing interconnection seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6, on affected system(s).

R2. Each Generator Owner seeking to interconnect new generation Facilities, or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6, or electricity end-user Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4

Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Tricia Bynum - FirstEnergy - FirstEnergy Corporation - 6, Group Name FE Voter	
Answer	
Document Name	
Comment	
n/a	
Likes 0	
Dislikes 0	
Response	
Leslie Hamby - CenterPoint Energy Houston Electric, LLC - 1 - Texas RE	
Answer	
Document Name	
Comment	
CEHE commends the efforts of the SDT and believes that the proposal to replace the vague term, "materially modified," with the defined term, "qualified change," should bring clarity to what should be included in the Facility Interconnection Requirements and what should be studied in the Transmission Planning Assessment. CEHE believes that successful collaboration between the Planning Coordinator and its Transmission Planners will be beneficial in developing what a "qualified change" is. CEHE recommends that the following updates be considered for the proposed FAC-001-4: R3.1: Update the sub-requirement to include "in conjunction with its Transmission Planner(s)". The updated sub-requirement would read:	

(R3.1) "Procedures for coordinated studies and identifying the impacts on affected systems for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Reliability Standard FAC-002-4 Requirement R6."

R3.2 and R3.3: Update the sub-requirements to include "as defined by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6" and "in conjunction with its Transmission Planner(s)".

The updated sub-requirements would read:

(R3.2) "Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change **as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6**."

(R3.3) Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change **as defined by the Planning Coordinator, in conjunction with its Transmission Planner(s), under Reliability Standard FAC-002-4 Requirement R6** are within a Balancing Authority Area's metered boundaries.

These changes will provide consistency and clarity as the term "qualified change" is not defined within the Standard but by the Planning Coordinator per FAC-002-4 R6.

CEHE recommends that the following updates be considered for the proposed FAC-002-4:

R1, R1.1, R2, R3, R4: Update the requirement/sub-requirements to include "in conjunction with its Transmission Planner(s)". The updated requirement/sub-requirements would read:

(R1) Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Requirement R6. The following shall be studied:…

(R1.1) The reliability impact of the new interconnection, or existing interconnection seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Requirement R6, on affected system(s).

R2. Each Generator Owner seeking to interconnect new generation Facilities, or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s),** under Requirement R6, or electricity end-user Facilities, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator, **in conjunction with its Transmission Planner(s)**, under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4

Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT maintains that the PC should not be required in the standards to coordinate with the TP. The team will draft supplemental documentation to encourage this coordination where appropriate.	
Daniela Atanasovski - APS - Arizona Public Service Co. - 1	
Answer	
Document Name	
Comment	
None	
Likes 0	

Dislikes 0	
Response	
Richard Jackson - U.S. Bureau of Reclamation - 1	
Answer	
Document Name	
Comment	

Reclamation recommends FAC-001 R3.1 be revised as follows:

From

Procedures for coordinated studies and identifying the impacts on affected systems …

To

Procedures for coordinating studies and identifying the impacts on affected systems …

Reclamation also recommends FAC-001 R4.1 be revised as follows:

From

Procedures for coordinated studies of new interconnections …

To

Procedures for coordinating studies of new interconnections …

Reclamation disagrees with the change to the Severe VSLs for FAC-001 R3 and R4. The VSLs already specify "Part 3.1 through Part 3.3" and "Part 4.1 through Part 4.3." The addition of "three parts of" is redundant. To fix this problem and apply consistency for all VSLs for both R3 and R4, Reclamation recommends changing the VSLs by adding parentheses as follows:

R3. Moderate

From

The Transmission Owner failed to address one part of Requirement R3 Part 3.1 through Part 3.3.

To

The Transmission Owner failed to address one part of Requirement R3 (Part 3.1 through Part 3.3.)

R3. High

From

The Transmission Owner failed to address two parts of Requirement R3 Part 3.1 through Part 3.3.

To

The Transmission Owner failed to address two parts of Requirement R3 (Part 3.1 through Part 3.3.)

R3. Severe

From

The Transmission Owner failed to address three parts of Requirement R3 Part 3.1 through Part 3.3.

To

The Transmission Owner failed to address three parts of Requirement R3 (Part 3.1 through Part 3.3.)

R4. Moderate

From

The Generator Owner failed to address one part of Requirement R4 Part 4.1 through Part 4.3.

To

The Generator Owner failed to address one part of Requirement R4 (Part 4.1 through Part 4.3.)

R4. High

From

The Generator Owner failed to address two parts of Requirement R4 Part 4.1 through Part 4.3.

To

The Generator Owner failed to address two parts of Requirement R4 (Part 4.1 through Part 4.3.)

R4. Severe

From

The Generator Owner failed to address three parts of Requirement R4 Part 4.1 through Part 4.3.

To

The Generator Owner failed to address three parts of Requirement R4 (Part 4.1 through Part 4.3.)

Likes 0	
Dislikes 0	

Response

Thank you for your comment. The team has chosen to remain with the currently approved language of "coordinated". The VSL language has been updated based on this comment.

Terry Harbour - Berkshire Hathaway Energy - MidAmerican Energy Co. - 1	
Answer	
Document Name	
Comment	
MEC supports the MRO NSRF comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. Please see responses to MRO NSRF.	
Jennifer Bray - Arizona Electric Power Cooperative, Inc. - 1	
Answer	
Document Name	
Comment	
AEPCO signed on with ACES comments below: While ACES agrees with all of the proposed changes, the adequacy of the "qualified change" definition the Planning Coordinator (PC) develops is not addressed. Proposed changes to FAC-001 and FAC-002 are meant to address confusion and potential reliability issues within the industry stemming from potential differences to what is considered "materially modifying". While the proposed changes should eliminate potential confusion amongst coordinating entities, it does not ensure the definition is adequate.	
Likes 0	
Dislikes 0	
Response	

Thank you for your comment. The SDT will be providing examples of things that the Planning Coordinator may use in their definition to provide clarity on what constitutes a "qualified change". These examples will be documented in the implementation guidance and/or technical paper included in the release of the revised standard. The SDT believes that these examples will address your concern.	
Steven Taddeucci - NiSource - Northern Indiana Public Service Co. - 3	
Answer	
Document Name	
Comment	
No additional comments.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	
Karie Barczak - DTE Energy - Detroit Edison Company - 3, Group Name DTE Energy - DTE Electric	
Answer	
Document Name	
Comment	
Nothing futher, thank you.	
Likes 0	
Dislikes 0	
Response	
Thank you for your response.	

Jennifer Malon - Jennifer Malon On Behalf of: Derek Silbaugh, Black Hills Corporation, 3, 5, 1, 6; Don Stahl, Black Hills Corporation, 3, 5, 1, 6; Seth Nelson, Black Hills Corporation, 3, 5, 1, 6; - Jennifer Malon	
Answer	
Document Name	
Comment	
BHC would recommend eliminating the "make publicly available" verbiage as it has not been utilized within other Reliability Standards. Recommendations for replacement may include "make available the current definition" as identified in MOD-001-1a R5.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The SDT believes the language as proposed is clear and has chosen to not change it.	
Kevin Conway - Public Utility District No. 1 of Pend Oreille County - 1,3,5,6	
Answer	
Document Name	
Comment	
These changes seem to punt the problem to the Planning Coordinators, do not promote consistency throughout the industry, and will add risk to the facility owners who may have to show compliance to multiple definitions of multiple PCs.	
Likes 0	
Dislikes 0	
Response	
The SDT appreciates your review and providing comments. The SDT will be providing examples of items that the Planning Coordinator may use in their definition to provide clarity on what constitutes a "qualified change" from the SDT perspective. These examples will be	

documented in the implementation guidance and/or technical paper included in the release of the revised standard. The SDT believes that these examples will help address your concern. Additionally, the SDT will be adding language to the implementation guidance that strongly encourages the PC to collaborate with the other entities in the development of the definition of "qualified change".

Diane Landry - Public Utility District No. 1 of Chelan County - 1, Group Name CHPD	
Answer	
Document Name	
Comment	
The term "affected systems" is also a FERC defined term which refers to "an electric system other than the Transmission Provider's Transmission System that may be affected by the proposed interconnection." Use of the term "affected systems" is confusing in a similar way as the term "materially modified" is confusing. Is it the intent of both FAC-001-4 and FAC-002-4 that wherever the term "affected system" is used it is in reference specifically to systems outside of the system to which the interconnection request is made? Because of industry familiarity with the FERC definition, it is inferred that NERC's meaning of the term affected system is not in reference to a utility's own system but rather to any impacted neighboring system. However, it appears that the use of the term "affected systems" in FAC-002-4 is meant to cover *both* the system being interconnected to *as well as* other surrounding systems, although it's not clear. For example, is the intention of FAC-002-4 R1.1 to only evaluate "the reliability impact… on affected systems," meaning those systems outside of the the interconnection request, or is the intent to evaluate the reliability impact to all systems that may be impacted, both the interconnecting system as well as surrounding systems? Use of the term in FAC-001-4 R3 and R4 appears to be more consistent with the FERC definition, but clarification of the intent of the term "affected system" would help ensure consistent interpretation.	
Likes 0	
Dislikes 0	
Response	
Thank you for your comment. The term "affected systems" is in the currently approved standard and it is not in the scope of this teams SAR to modify that language at this time. This concern will be directed to NERC for possible inclusion in a future periodic review project.	

End of Report

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Reminder

Project 2020-05 Modifications to FAC-001 and FAC-002

Initial Ballots and Non-binding Polls Open through January 31, 2022

Now Available

The initial ballots and non-binding polls of the associated Violation Risk Factors and Violation Severity Levels for Reliability Standards **FAC-001-4 — Facility Interconnection Requirements** and **FAC-002-4 – Facility Interconnection Studies**, are open through **8 p.m. Eastern, Monday, January 31, 2022**.

Balloting

Members of the ballot pools associated with this project can log in and submit their votes by accessing the Standards Balloting and Commenting System (SBS) here.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

The ballot results will be announced and posted on the project page. The drafting team will review all responses received during the comment period and determine the next steps of the project.

For more information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Alison Oswald (via email) or at 404-446-9668. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2020-05 Modifications to FAC-001 and FAC-002 Observer List” in the Description Box.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2020-05 Modifications to FAC-001 and FAC-002

Formal Comment Period Open through January 31, 2022
Ballot Pools Forming through January 10, 2022

Now Available

A formal comment period for Reliability Standards **FAC-001-4 — Facility Interconnection Requirements** and **FAC-002-4 – Facility Interconnection Studies**, is open through **8 p.m. Eastern, Monday, January 31, 2022**.

Commenting

Use the Standards Balloting and Commenting System (SBS) to submit comments. An unofficial Word version of the comment form is posted on the project page.

Ballot Pools

Ballot pools are being formed through **8 p.m. Eastern, Monday, January 10, 2022.** Registered Ballot Body members can join the ballot pools here.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

Initial ballots for the standards and implementation plan, as well as non-binding polls of the associated Violation Risk Factors and Violation Severity Levels will be conducted **January 21-31, 2022**.

For more information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Alison Oswald (via email) or at 404-446-9668. Subscribe to this project's observer mailing list by selecting "NERC Email Distribution Lists" from the "Service" drop-down menu and specify “Project 2020-05 Modifications to FAC-001 and FAC-002 Observer List” in the Description Box.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Ballot Results

Comment: View Comment Results
Ballot Name: 2020-05 Modifications to FAC-001 and FAC-002 FAC-001-4 and FAC-002-4 IN 1 ST
Voting Start Date: 1/21/2022 12:01:00 AM
Voting End Date: 1/31/2022 8:00:00 PM
Ballot Type: ST
Ballot Activity: IN
Ballot Series: 1
Total # Votes: 238
Total Ballot Pool: 255
Quorum: 93.33
Quorum Established Date: 1/31/2022 12:35:16 PM
Weighted Segment Value: 85.19

Actions

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 1	71	1	51	0.823	11	0.177	0	4	5
Segment: 2	7	0.7	6	0.6	1	0.1	0	0	0
Segment: 3	59	1	43	0.827	9	0.173	0	4	3
Segment: 4	15	1	10	1	0	0	0	1	4
Segment: 5	59	1	41	0.788	11	0.212	0	5	2
Segment: 6	39	1	27	0.844	5	0.156	0	4	3
Segment: 7	0	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0	0

Segment: 9	0	0	0	0	0	0	0	0	0
Segment: 10	5	0.5	4	0.4	1	0.1	0	0	0
Totals:	255	6.2	182	5.282	38	0.918	0	18	17

Ballot Pool Members

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	DTE Energy	patricia ireland		Affirmative	N/A
6	PPL - Louisville Gas and Electric Co.	Linn Oelker		Affirmative	N/A
5	AEP	Thomas Foltz		Negative	Comments Submitted
4	MGE Energy - Madison Gas and Electric Co.	Joseph DePoorter		Affirmative	N/A
6	OGE Energy - Oklahoma Gas and Electric Co.	Sing Tay		None	N/A
1	Dominion - Dominion Virginia Power	Candace Marshall		None	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Affirmative	N/A
3	PPL - Louisville Gas and Electric Co.	James Frank		Affirmative	N/A
10	ReliabilityFirst	Lindsey Mannion		Negative	Comments Submitted
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Affirmative	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Affirmative	N/A
1	PPL Electric Utilities Corporation	Michelle Longo		Affirmative	N/A
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Affirmative	N/A
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
1	Hydro-Qu?bec TransEnergie	Nicolas Turcotte		Affirmative	N/A
5	Platte River Power Authority	Tyson Archie		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Negative	Comments Submitted
3	Dominion - Dominion Resources, Inc.	Connie Schroeder		Affirmative	N/A
3	Omaha Public Power District	David Heins		Affirmative	N/A
2	PJM Interconnection, L.L.C.	Tom Foster	Elizabeth Davis	Affirmative	N/A
5	PPL - Louisville Gas and Electric Co.	JULIE HOSTRANDER		Affirmative	N/A
1	Allete - Minnesota Power, Inc.	Jamie Monette		Affirmative	N/A
1	AEP - AEP Service Corporation	Dennis Sauriol		Negative	Comments Submitted
1	Central Iowa Power Cooperative	Kevin Lyons		Affirmative	N/A
1	Western Area Power Administration	sean erickson		Affirmative	N/A
4	Utility Services, Inc.	Brian Evans-Mongeon		None	N/A
5	Ameren - Ameren Missouri	Sam Dwyer		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Affirmative	N/A
	Con Ed - Consolidated Edison Co. of New				

6	York	Cristhian Godoy		Affirmative	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard		Abstain	N/A
6	Platte River Power Authority	Sabrina Martz		Abstain	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	National Grid USA	Michael Jones		Negative	Third-Party Comments
3	BC Hydro and Power Authority	Hootan Jarollahi		Affirmative	N/A
6	Powerex Corporation	Raj Hundal		Affirmative	N/A
1	BC Hydro and Power Authority	Adrian Andreoiu		Affirmative	N/A
1	Public Utility District No. 1 of Chelan County	Diane Landry		Negative	Comments Submitted
3	Ameren - Ameren Services	David Jendras		Affirmative	N/A
6	NiSource - Northern Indiana Public Service Co.	Joe O'Brien		Negative	Comments Submitted
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Negative	Comments Submitted
1	Sunflower Electric Power Corporation	Paul Mehlhaff		Affirmative	N/A
5	NiSource - Northern Indiana Public Service Co.	Kathryn Tackett		Negative	Comments Submitted
5	Public Utility District No. 1 of Chelan County	Meaghan Connell		Negative	Comments Submitted
1	NiSource - Northern Indiana Public Service Co.	Steve Toosevich		Negative	Comments Submitted
6	Public Utility District No. 2 of Grant County, Washington	LeRoy Patterson		Affirmative	N/A
1	Xcel Energy, Inc.	Dean Schiro	Amy Casuscelli	Affirmative	N/A
5	Sacramento Municipal Utility District	Nicole Goi	Tim Kelley	Affirmative	N/A
5	Xcel Energy, Inc.	Gerry Huitt		Affirmative	N/A
6	Xcel Energy, Inc.	Carrie Dixon		Affirmative	N/A
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Affirmative	N/A
3	Public Utility District No. 1 of Chelan County	Joyce Gundry		Negative	Comments Submitted
1	Wind Energy Transmission Texas, LLC	Manivone Vorabouth		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Affirmative	N/A
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
5	Southern Company - Southern Company Generation	James Howell		Affirmative	N/A
6	Southern Company - Southern Company Generation	Ron Carlsen		Affirmative	N/A
5	Santee Cooper	Tommy Curtis		Affirmative	N/A
6	Santee Cooper	Marty Watson		Affirmative	N/A

1	Santee Cooper	Chris Wagner		Affirmative	N/A
3	Santee Cooper	James Poston		Affirmative	N/A
3	Platte River Power Authority	Wade Kiess		Abstain	N/A
4	Seattle City Light	Hao Li		Affirmative	N/A
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
3	Xcel Energy, Inc.	Nicholas Friebel		Affirmative	N/A
3	Tennessee Valley Authority	Ian Grant		Affirmative	N/A
1	American Transmission Company, LLC	LaTroy Brumfield		Negative	Comments Submitted
6	PSEG - PSEG Energy Resources and Trade LLC	Joseph Neglia		Affirmative	N/A
1	Tri-State G and T Association, Inc.	Donna Wood		Affirmative	N/A
5	Choctaw Generation Limited Partnership, LLLP	Rob Watson		Affirmative	N/A
1	Ameren - Ameren Services	Tamara Evey		Affirmative	N/A
3	Avista - Avista Corporation	Scott Kinney		Affirmative	N/A
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		None	N/A
5	Avista - Avista Corporation	Glen Farmer		Affirmative	N/A
6	Tennessee Valley Authority	Marjorie Parsons		Affirmative	N/A
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Arizona Electric Power Cooperative, Inc.	Jennifer Bray		Affirmative	N/A
3	National Grid USA	Brian Shanahan		Negative	Third-Party Comments
3	Con Ed - Consolidated Edison Co. of New York	Peter Yost		Affirmative	N/A
5	Con Ed - Consolidated Edison Co. of New York	Haizhen Wang		Affirmative	N/A
5	Dominion - Dominion Resources, Inc.	Rachel Snead		Affirmative	N/A
1	NB Power Corporation	Nurul Abser		Affirmative	N/A
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		None	N/A
5	National Grid USA	Elizabeth Spivak		Negative	Third-Party Comments
3	DTE Energy - Detroit Edison Company	Karie Barczak		Affirmative	N/A
3	Tri-State G and T Association, Inc.	Janelle Marriott Gill		Affirmative	N/A
5	DTE Energy - Detroit Edison Company	Adrian Raducea		Affirmative	N/A
6	Public Utility District No. 1 of Chelan County	Glen Pruitt		Negative	Comments Submitted
1	Georgia Transmission Corporation	Greg Davis	Stephen Stafford	Negative	Comments Submitted
1	IDACORP - Idaho Power Company	Mike Marshall		None	N/A
3	Georgia System Operations Corporation	Scott McGough		Negative	Third-Party Comments
					Third-Party

5	Oglethorpe Power Corporation	Donna Johnson		Negative	Comments
4	Seminole Electric Cooperative, Inc.	Jonathan Robbins		Abstain	N/A
5	Seminole Electric Cooperative, Inc.	Trena Haynes		Abstain	N/A
3	Nebraska Public Power District	Tony Eddleman		Affirmative	N/A
1	SaskPower	Wayne Guttormson		Affirmative	N/A
5	Nebraska Public Power District	Ronald Bender		Affirmative	N/A
6	APS - Arizona Public Service Co.	Marcus Bortman		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
5	APS - Arizona Public Service Co.	Michelle Amarantos		Affirmative	N/A
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	None	N/A
6	FirstEnergy - FirstEnergy Corporation	Tricia Bynum		Affirmative	N/A
3	Colorado Springs Utilities	Hillary Dobson		Affirmative	N/A
1	Lincoln Electric System	Josh Johnson		Affirmative	N/A
5	Lincoln Electric System	Kayleigh Wilkerson		Affirmative	N/A
1	Colorado Springs Utilities	Mike Braunstein		Affirmative	N/A
1	FirstEnergy - FirstEnergy Corporation	Julie Severino		Affirmative	N/A
1	Sempra - San Diego Gas and Electric	Mo Derbas		Negative	Comments Submitted
3	Sempra - San Diego Gas and Electric	Bridget Silvia		Negative	Comments Submitted
5	Sempra - San Diego Gas and Electric	Jennifer Wright		Negative	Comments Submitted
6	Evergy	Thomas ROBBEN	Alan Kloster	Affirmative	N/A
5	PSEG - PSEG Fossil LLC	Tim Kucey		Affirmative	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
3	NW Electric Power Cooperative, Inc.	John Stickley		Affirmative	N/A
5	Evergy	Derek Brown	Alan Kloster	Affirmative	N/A
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
6	Los Angeles Department of Water and Power	Anton Vu		Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Evergy	Allen Klassen	Alan Kloster	Affirmative	N/A
1	Eversource Energy	Quintin Lee		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
6	Lincoln Electric System	Eric Ruskamp		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Affirmative	N/A
6	Portland General Electric Co.	Daniel Mason		Affirmative	N/A
1	Nebraska Public Power District	Jamison Cawley		Affirmative	N/A

5	Berkshire Hathaway - NV Energy	Kevin Salsbury	Dwanique Spiller	Abstain	N/A
3	Owensboro Municipal Utilities	Thomas Lyons		Affirmative	N/A
3	Snohomish County PUD No. 1	Holly Chaney		Affirmative	N/A
4	Public Utility District No. 1 of Snohomish County	John Martinsen		Affirmative	N/A
6	Snohomish County PUD No. 1	John Liang		Affirmative	N/A
1	Public Utility District No. 1 of Snohomish County	Alyssia Rhoads		Affirmative	N/A
5	Public Utility District No. 1 of Snohomish County	Sam Nietfeld		Affirmative	N/A
5	FirstEnergy - FirstEnergy Corporation	Robert Loy		Affirmative	N/A
4	North Carolina Electric Membership Corporation	Richard McCall	Scott Brame	Affirmative	N/A
1	Northeast Missouri Electric Power Cooperative	Kevin White	Todd Bennett	Affirmative	N/A
5	Associated Electric Cooperative, Inc.	Brad Haralson		Affirmative	N/A
3	North Carolina Electric Membership Corporation	Chris DiMisa	Scott Brame	Affirmative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
3	Evergy	Marcus Moor	Alan Kloster	Affirmative	N/A
1	MEAG Power	David Weekley	Scott Miller	Abstain	N/A
5	NB Power Corporation	David Melanson		Affirmative	N/A
2	Southwest Power Pool, Inc. (RTO)	Charles Yeung		Affirmative	N/A
5	Colorado Springs Utilities	Jeff Icke		Affirmative	N/A
5	CMS Energy - Consumers Energy Company	David Greyerbiehl		Affirmative	N/A
1	Omaha Public Power District	Doug Peterchuck		Affirmative	N/A
4	CMS Energy - Consumers Energy Company	Aric Root		Affirmative	N/A
6	Omaha Public Power District	Shonda McCain		Affirmative	N/A
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Affirmative	N/A
5	Bonneville Power Administration	Scott Winner		Affirmative	N/A
5	Dairyland Power Cooperative	Tommy Drea		Affirmative	N/A
5	Orlando Utilities Commission	Dania Colon		Affirmative	N/A
1	OTP - Otter Tail Power Company	Charles Wicklund		Affirmative	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
4	LaGen	Wayne Messina		None	N/A
1	Bonneville Power Administration	Kammy Rogers-Holliday		Affirmative	N/A
3	Bonneville Power Administration	Ken Lanehome		Affirmative	N/A
6	Bonneville Power Administration	Andrew Meyers		Affirmative	N/A
6	AEP	JT Kuehne		Negative	Comments Submitted

5	Hydro-Qu?bec Production	Carl Pineault		Affirmative	N/A
3	Los Angeles Department of Water and Power	Tony Skourtas		None	N/A
3	CMS Energy - Consumers Energy Company	Karl Blaszkowski		Affirmative	N/A
1	Dairyland Power Cooperative	Steve Ritscher		Affirmative	N/A
3	OTP - Otter Tail Power Company	Wendi Olson		Affirmative	N/A
5	Los Angeles Department of Water and Power	Glenn Barry		None	N/A
1	Los Angeles Department of Water and Power	faranak sarbaz		None	N/A
3	M and A Electric Power Cooperative	Stephen Pogue		Affirmative	N/A
5	OTP - Otter Tail Power Company	Tammy Kubela		Affirmative	N/A
6	Florida Municipal Power Agency	Richard Montgomery	LaKenya VanNorman	Abstain	N/A
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	Comments Submitted
2	California ISO	Darcy O'Connell		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Affirmative	N/A
3	MEAG Power	Roger Brand	Scott Miller	Abstain	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
2	Midcontinent ISO, Inc.	Bobbi Welch		Affirmative	N/A
4	American Public Power Association	John McCaffrey		None	N/A
3	APS - Arizona Public Service Co.	Jessica Lopez		Affirmative	N/A
3	Ocala Utility Services	Neville Bowen	LaKenya VanNorman	Abstain	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
5	Pacific Gas and Electric Company	Frank Lee	Michael Johnson	Negative	Comments Submitted
6	Northern California Power Agency	Dennis Sismaet		Abstain	N/A
5	Herb Schrayshuen	Herb Schrayshuen		Affirmative	N/A
5	Ontario Power Generation Inc.	Constantin Chitescu		Affirmative	N/A
3	CPS Energy	Glenn Pressler		None	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		Affirmative	N/A
4	Northern California Power Agency	Marty Hostler		None	N/A
1	Manitoba Hydro	Nazra Gladu		Affirmative	N/A
1	Great River Energy	Gordon Pietsch		Affirmative	N/A
1	Pedernales Electric Cooperative, Inc.	Bradley Collard		Affirmative	N/A
1	Seminole Electric Cooperative, Inc.	Kristine Ward		Abstain	N/A
3	Seminole Electric Cooperative, Inc.	Jeremy Lorigan		Abstain	N/A
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
5	Talen Generation, LLC	Donald Lock		Affirmative	N/A
6	Great River Energy	Donna Stephenson		Affirmative	N/A
5	U.S. Bureau of Reclamation	Wendy Kalidass		Negative	Comments Submitted

6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
2	ISO New England, Inc.	John Pearson		Negative	Comments Submitted
6	Entergy	Julie Hall		Affirmative	N/A
3	Pacific Gas and Electric Company	Sandra Ellis	Michael Johnson	Negative	Comments Submitted
2	Independent Electricity System Operator	Leonard Kula		Affirmative	N/A
5	Omaha Public Power District	Mahmood Safi		Affirmative	N/A
3	Hydro One Networks, Inc.	Paul Malozewski		Affirmative	N/A
1	Hydro One Networks, Inc.	Payam Farahbakhsh		Affirmative	N/A
5	BC Hydro and Power Authority	Helen Hamilton Harding		Affirmative	N/A
6	Southern Indiana Gas and Electric Co.	Erin Spence		Affirmative	N/A
5	Vistra Energy	Dan Roethemeyer		Affirmative	N/A
1	Exelon	Daniel Gacek		Negative	Comments Submitted
3	AEP	Kent Feliks		Negative	Comments Submitted
3	Southern Indiana Gas and Electric Co.	Ryan Abshier		Affirmative	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Affirmative	N/A
1	Salt River Project	Chris Hofmann		Negative	Comments Submitted
3	Exelon	Kinte Whitehead		Negative	Comments Submitted
5	Exelon	Cynthia Lee		Negative	Comments Submitted
6	Exelon	Becky Webb		Negative	Comments Submitted
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A
5	North Carolina Electric Membership Corporation	John Cook	Scott Brame	Affirmative	N/A
5	Salt River Project	Kevin Nielsen		Negative	Comments Submitted
1	Pacific Gas and Electric Company	Marco Rios	Michael Johnson	Negative	Comments Submitted
5	Black Hills Corporation	Derek Silbaugh	Jennifer Malon	Affirmative	N/A
3	Black Hills Corporation	Don Stahl	Jennifer Malon	Affirmative	N/A
1	Corn Belt Power Cooperative	larry brusseau		Affirmative	N/A
1	Black Hills Corporation	Seth Nelson	Jennifer Malon	Affirmative	N/A
5	Public Utility District No. 2 of Grant County, Washington	Amy Jones		Abstain	N/A
5	New York Power Authority	Zahid Qayyum		Affirmative	N/A
			LaKenya		

5	Florida Municipal Power Agency	Chris Gowder	VanNorman	Abstain	N/A
6	Manitoba Hydro	Simon Tanapat-Andre		Affirmative	N/A
3	Manitoba Hydro	Mike Smith		Affirmative	N/A
10	Northeast Power Coordinating Council	Gerry Dunbar		Affirmative	N/A
3	PSEG - Public Service Electric and Gas Co.	maria pardo		Affirmative	N/A
5	Boise-Kuna Irrigation District - Lucky Peak Power Plant Project	Mike Kukla		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	Comments Submitted
1	Seattle City Light	Michael Jang		Affirmative	N/A
2	Electric Reliability Council of Texas, Inc.	Dana Showalter		Affirmative	N/A
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Darnez Gresham		Affirmative	N/A
6	New York Power Authority	Anirudh Bhimireddy		Affirmative	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
6	Austin Energy	Lisa Martin		Affirmative	N/A
1	Austin Energy	Thomas Standifur		Affirmative	N/A
4	Austin Energy	Jun Hua		Affirmative	N/A
5	Austin Energy	Michael Dillard		Affirmative	N/A
1	Sacramento Municipal Utility District	Wei Shao	Tim Kelley	Affirmative	N/A
6	Salt River Project	Bobby Olsen		None	N/A
3	Salt River Project	Zack Heim		Negative	Comments Submitted
3	Austin Energy	Michael Dieringer		Affirmative	N/A
3	Imperial Irrigation District	Glen Allegranza	Denise Sanchez	Affirmative	N/A
1	Portland General Electric Co.	Brooke Jockin		Affirmative	N/A
5	Portland General Electric Co.	Ryan Olson		Affirmative	N/A
5	Constellation	Alison Mackellar		None	N/A
6	Constellation	Kimberly Turco		None	N/A

Ballot Results

Comment: View Comment Results
Ballot Name: 2020-05 Modifications to FAC-001 and FAC-002 Implementation Plan IN 1 OT
Voting Start Date: 1/21/2022 12:01:00 AM
Voting End Date: 1/31/2022 8:00:00 PM
Ballot Type: OT
Ballot Activity: IN
Ballot Series: 1
Total # Votes: 237
Total Ballot Pool: 254
Quorum: 93.31
Quorum Established Date: 1/31/2022 12:35:34 PM
Weighted Segment Value: 78.97

Actions

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 1	71	1	49	0.803	12	0.197	0	5	5
Segment: 2	7	0.7	7	0.7	0	0	0	0	0
Segment: 3	59	1	37	0.725	14	0.275	0	5	3
Segment: 4	15	1	7	0.7	3	0.3	0	1	4
Segment: 5	58	1	37	0.725	14	0.275	0	5	2
Segment: 6	39	1	23	0.742	8	0.258	0	5	3
Segment: 7	0	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0	0

Segment: 9	0	0	0	0	0	0	0	0	0
Segment: 10	5	0.5	5	0.5	0	0	0	0	0
Totals:	254	6.2	165	4.896	51	1.304	0	21	17

Ballot Pool Members

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	DTE Energy	patricia ireland		Negative	Comments Submitted
6	PPL - Louisville Gas and Electric Co.	Linn Oelker		Negative	Third-Party Comments
5	AEP	Thomas Foltz		Negative	Comments Submitted
4	MGE Energy - Madison Gas and Electric Co.	Joseph DePoorter		Affirmative	N/A
6	OGE Energy - Oklahoma Gas and Electric Co.	Sing Tay		None	N/A
1	Dominion - Dominion Virginia Power	Candace Marshall		None	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Negative	Comments Submitted
3	PPL - Louisville Gas and Electric Co.	James Frank		Negative	Third-Party Comments
10	ReliabilityFirst	Lindsey Mannion		Affirmative	N/A
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Affirmative	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Affirmative	N/A
1	PPL Electric Utilities Corporation	Michelle Longo		Negative	Third-Party Comments
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Affirmative	N/A
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
1	Hydro-Qu?bec TransEnergie	Nicolas Turcotte		Affirmative	N/A
5	Platte River Power Authority	Tyson Archie		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Negative	Comments Submitted
3	Dominion - Dominion Resources, Inc.	Connie Schroeder		Affirmative	N/A
3	Omaha Public Power District	David Heins		Affirmative	N/A
2	PJM Interconnection, L.L.C.	Tom Foster	Elizabeth Davis	Affirmative	N/A
5	PPL - Louisville Gas and Electric Co.	JULIE HOSTRANDER		Negative	Third-Party Comments
1	Allete - Minnesota Power, Inc.	Jamie Monette		Affirmative	N/A
1	AEP - AEP Service Corporation	Dennis Sauriol		Negative	Comments Submitted
1	Central Iowa Power Cooperative	Kevin Lyons		Affirmative	N/A
1	Western Area Power Administration	sean erickson		Affirmative	N/A
4	Utility Services, Inc.	Brian Evans-Mongeon		None	N/A

5	Ameren - Ameren Missouri	Sam Dwyer		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Affirmative	N/A
6	Con Ed - Consolidated Edison Co. of New York	Cristhian Godoy		Affirmative	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard		Abstain	N/A
6	Platte River Power Authority	Sabrina Martz		Abstain	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	National Grid USA	Michael Jones		Negative	Third-Party Comments
1	BC Hydro and Power Authority	Adrian Andreoiu		Abstain	N/A
3	BC Hydro and Power Authority	Hootan Jarollahi		Abstain	N/A
6	Powerex Corporation	Raj Hundal		Abstain	N/A
1	Public Utility District No. 1 of Chelan County	Diane Landry		Affirmative	N/A
3	Ameren - Ameren Services	David Jendras		Affirmative	N/A
6	NiSource - Northern Indiana Public Service Co.	Joe O'Brien		Affirmative	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
1	Sunflower Electric Power Corporation	Paul Mehlhaff		Affirmative	N/A
5	NiSource - Northern Indiana Public Service Co.	Kathryn Tackett		Affirmative	N/A
5	Public Utility District No. 1 of Chelan County	Meaghan Connell		Affirmative	N/A
1	NiSource - Northern Indiana Public Service Co.	Steve Toosevich		Affirmative	N/A
6	Public Utility District No. 2 of Grant County, Washington	LeRoy Patterson		Affirmative	N/A
1	Xcel Energy, Inc.	Dean Schiro	Amy Casuscelli	Affirmative	N/A
5	Xcel Energy, Inc.	Gerry Huitt		Affirmative	N/A
5	Sacramento Municipal Utility District	Nicole Goi	Tim Kelley	Affirmative	N/A
6	Xcel Energy, Inc.	Carrie Dixon		Affirmative	N/A
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Affirmative	N/A
3	Public Utility District No. 1 of Chelan County	Joyce Gundry		Affirmative	N/A
1	Wind Energy Transmission Texas, LLC	Manivone Vorabouth		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Affirmative	N/A
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
5	Southern Company - Southern Company Generation	James Howell		Affirmative	N/A
6	Southern Company - Southern Company Generation	Ron Carlsen		Affirmative	N/A
5	Santee Cooper	Tommy Curtis		Affirmative	N/A
6	Santee Cooper	Marty Watson		Affirmative	N/A

1	Santee Cooper	Chris Wagner		Affirmative	N/A
3	Santee Cooper	James Poston		Affirmative	N/A
3	Platte River Power Authority	Wade Kiess		Abstain	N/A
4	Seattle City Light	Hao Li		Affirmative	N/A
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
3	Xcel Energy, Inc.	Nicholas Friebel		Affirmative	N/A
3	Tennessee Valley Authority	Ian Grant		Negative	Third-Party Comments
1	American Transmission Company, LLC	LaTroy Brumfield		Affirmative	N/A
6	PSEG - PSEG Energy Resources and Trade LLC	Joseph Neglia		Affirmative	N/A
1	Tri-State G and T Association, Inc.	Donna Wood		Affirmative	N/A
5	Choctaw Generation Limited Partnership, LLLP	Rob Watson		Affirmative	N/A
1	Ameren - Ameren Services	Tamara Evey		Affirmative	N/A
3	Avista - Avista Corporation	Scott Kinney		Affirmative	N/A
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		None	N/A
5	Avista - Avista Corporation	Glen Farmer		Affirmative	N/A
6	Tennessee Valley Authority	Marjorie Parsons		Negative	Comments Submitted
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Arizona Electric Power Cooperative, Inc.	Jennifer Bray		Affirmative	N/A
3	National Grid USA	Brian Shanahan		Negative	Third-Party Comments
3	Con Ed - Consolidated Edison Co. of New York	Peter Yost		Affirmative	N/A
5	Con Ed - Consolidated Edison Co. of New York	Haizhen Wang		Affirmative	N/A
5	Dominion - Dominion Resources, Inc.	Rachel Snead		Affirmative	N/A
1	NB Power Corporation	Nurul Abser		Affirmative	N/A
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		None	N/A
5	National Grid USA	Elizabeth Spivak		Negative	Third-Party Comments
3	DTE Energy - Detroit Edison Company	Karie Barczak		Negative	Comments Submitted
3	Tri-State G and T Association, Inc.	Janelle Marriott Gill		Affirmative	N/A
5	DTE Energy - Detroit Edison Company	Adrian Raducea		Negative	Comments Submitted
6	Public Utility District No. 1 of Chelan County	Glen Pruitt		Affirmative	N/A
1	Georgia Transmission Corporation	Greg Davis	Stephen Stafford	Negative	Comments Submitted
1	IDACORP - Idaho Power Company	Mike Marshall		None	N/A
					Third-Party

3	Georgia System Operations Corporation	Scott McGough		Negative	Comments
5	Oglethorpe Power Corporation	Donna Johnson		Negative	Third-Party Comments
4	Seminole Electric Cooperative, Inc.	Jonathan Robbins		Abstain	N/A
5	Seminole Electric Cooperative, Inc.	Trena Haynes		Abstain	N/A
3	Nebraska Public Power District	Tony Eddleman		Affirmative	N/A
1	SaskPower	Wayne Guttormson		Affirmative	N/A
5	Nebraska Public Power District	Ronald Bender		Affirmative	N/A
6	APS - Arizona Public Service Co.	Marcus Bortman		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Negative	Comments Submitted
5	APS - Arizona Public Service Co.	Michelle Amarantos		Affirmative	N/A
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	None	N/A
6	FirstEnergy - FirstEnergy Corporation	Tricia Bynum		Negative	Comments Submitted
3	Colorado Springs Utilities	Hillary Dobson		Affirmative	N/A
1	Lincoln Electric System	Josh Johnson		Affirmative	N/A
5	Lincoln Electric System	Kayleigh Wilkerson		Affirmative	N/A
1	Colorado Springs Utilities	Mike Braunstein		Affirmative	N/A
1	FirstEnergy - FirstEnergy Corporation	Julie Severino		Negative	Comments Submitted
1	Sempra - San Diego Gas and Electric	Mo Derbas		Negative	Comments Submitted
3	Sempra - San Diego Gas and Electric	Bridget Silvia		Negative	Comments Submitted
5	Sempra - San Diego Gas and Electric	Jennifer Wright		Negative	Comments Submitted
6	Evergy	Thomas ROBBEN	Alan Kloster	Negative	Comments Submitted
5	PSEG - PSEG Fossil LLC	Tim Kucey		Affirmative	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
3	NW Electric Power Cooperative, Inc.	John Stickley		Affirmative	N/A
5	Evergy	Derek Brown	Alan Kloster	Negative	Comments Submitted
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
6	Los Angeles Department of Water and Power	Anton Vu		Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Evergy	Allen Klassen	Alan Kloster	Negative	Comments Submitted

1	Eversource Energy	Quintin Lee		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
6	Lincoln Electric System	Eric Ruskamp		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Affirmative	N/A
6	Portland General Electric Co.	Daniel Mason		Affirmative	N/A
1	Nebraska Public Power District	Jamison Cawley		Affirmative	N/A
5	Berkshire Hathaway - NV Energy	Kevin Salsbury	Dwanique Spiller	Abstain	N/A
3	Owensboro Municipal Utilities	Thomas Lyons		Affirmative	N/A
3	Snohomish County PUD No. 1	Holly Chaney		Affirmative	N/A
4	Public Utility District No. 1 of Snohomish County	John Martinsen		Affirmative	N/A
6	Snohomish County PUD No. 1	John Liang		Affirmative	N/A
1	Public Utility District No. 1 of Snohomish County	Alyssia Rhoads		Affirmative	N/A
5	Public Utility District No. 1 of Snohomish County	Sam Nietfeld		Affirmative	N/A
5	FirstEnergy - FirstEnergy Corporation	Robert Loy		Negative	Comments Submitted
4	North Carolina Electric Membership Corporation	Richard McCall	Scott Brame	Negative	Third-Party Comments
1	Northeast Missouri Electric Power Cooperative	Kevin White	Todd Bennett	Affirmative	N/A
5	Associated Electric Cooperative, Inc.	Brad Haralson		Affirmative	N/A
3	North Carolina Electric Membership Corporation	Chris DiMisa	Scott Brame	Negative	Third-Party Comments
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
3	Evergy	Marcus Moor	Alan Kloster	Negative	Comments Submitted
1	MEAG Power	David Weekley	Scott Miller	Abstain	N/A
2	Southwest Power Pool, Inc. (RTO)	Charles Yeung		Affirmative	N/A
5	Colorado Springs Utilities	Jeff Icke		Affirmative	N/A
5	CMS Energy - Consumers Energy Company	David Greyerbiehl		Affirmative	N/A
1	Omaha Public Power District	Doug Peterchuck		Affirmative	N/A
4	CMS Energy - Consumers Energy Company	Aric Root		Affirmative	N/A
6	Omaha Public Power District	Shonda McCain		Affirmative	N/A
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Affirmative	N/A
5	Bonneville Power Administration	Scott Winner		Affirmative	N/A
5	Dairyland Power Cooperative	Tommy Drea		Affirmative	N/A
5	Orlando Utilities Commission	Dania Colon		Affirmative	N/A
1	OTP - Otter Tail Power Company	Charles Wicklund		Affirmative	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Negative	Comments Submitted

4	LaGen	Wayne Messina		None	N/A
1	Bonneville Power Administration	Kammy Rogers-Holliday		Affirmative	N/A
3	Bonneville Power Administration	Ken Lanehome		Affirmative	N/A
6	Bonneville Power Administration	Andrew Meyers		Affirmative	N/A
6	AEP	JT Kuehne		Negative	Comments Submitted
5	Hydro-Qu?bec Production	Carl Pineault		Affirmative	N/A
3	Los Angeles Department of Water and Power	Tony Skourtas		None	N/A
3	CMS Energy - Consumers Energy Company	Karl Blaszkowski		Affirmative	N/A
1	Dairyland Power Cooperative	Steve Ritscher		Affirmative	N/A
3	OTP - Otter Tail Power Company	Wendi Olson		Affirmative	N/A
5	Los Angeles Department of Water and Power	Glenn Barry		None	N/A
1	Los Angeles Department of Water and Power	faranak sarbaz		None	N/A
3	M and A Electric Power Cooperative	Stephen Pogue		Affirmative	N/A
5	OTP - Otter Tail Power Company	Tammy Kubela		Affirmative	N/A
6	Florida Municipal Power Agency	Richard Montgomery	LaKenya VanNorman	Abstain	N/A
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	Comments Submitted
2	California ISO	Darcy O'Connell		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Affirmative	N/A
3	MEAG Power	Roger Brand	Scott Miller	Abstain	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
2	Midcontinent ISO, Inc.	Bobbi Welch		Affirmative	N/A
4	American Public Power Association	John McCaffrey		None	N/A
3	APS - Arizona Public Service Co.	Jessica Lopez		Affirmative	N/A
3	Ocala Utility Services	Neville Bowen	LaKenya VanNorman	Abstain	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
5	Pacific Gas and Electric Company	Frank Lee	Michael Johnson	Negative	Comments Submitted
6	Northern California Power Agency	Dennis Sismaet		Abstain	N/A
5	Herb Schrayshuen	Herb Schrayshuen		Affirmative	N/A
5	Ontario Power Generation Inc.	Constantin Chitescu		Affirmative	N/A
3	CPS Energy	Glenn Pressler		None	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		Affirmative	N/A
4	Northern California Power Agency	Marty Hostler		None	N/A
1	Manitoba Hydro	Nazra Gladu		Affirmative	N/A
1	Great River Energy	Gordon Pietsch		Affirmative	N/A
1	Pedernales Electric Cooperative, Inc.	Bradley Collard		Negative	Comments Submitted

1	Seminole Electric Cooperative, Inc.	Kristine Ward		Abstain	N/A
3	Seminole Electric Cooperative, Inc.	Jeremy Lorigan		Abstain	N/A
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
5	Talen Generation, LLC	Donald Lock		Affirmative	N/A
6	Great River Energy	Donna Stephenson		Affirmative	N/A
5	U.S. Bureau of Reclamation	Wendy Kalidass		Negative	Comments Submitted
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
2	ISO New England, Inc.	John Pearson		Affirmative	N/A
6	Entergy	Julie Hall		Negative	Comments Submitted
3	Pacific Gas and Electric Company	Sandra Ellis	Michael Johnson	Negative	Comments Submitted
2	Independent Electricity System Operator	Leonard Kula		Affirmative	N/A
5	Omaha Public Power District	Mahmood Safi		Affirmative	N/A
3	Hydro One Networks, Inc.	Paul Malozewski		Affirmative	N/A
1	Hydro One Networks, Inc.	Payam Farahbakhsh		Affirmative	N/A
5	BC Hydro and Power Authority	Helen Hamilton Harding		Affirmative	N/A
6	Southern Indiana Gas and Electric Co.	Erin Spence		Affirmative	N/A
5	Vistra Energy	Dan Roethemeyer		Affirmative	N/A
1	Exelon	Daniel Gacek		Negative	Comments Submitted
3	AEP	Kent Feliks		Negative	Comments Submitted
3	Southern Indiana Gas and Electric Co.	Ryan Abshier		Affirmative	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Affirmative	N/A
1	Salt River Project	Chris Hofmann		Negative	Comments Submitted
3	Exelon	Kinte Whitehead		Negative	Comments Submitted
5	Exelon	Cynthia Lee		Negative	Comments Submitted
6	Exelon	Becky Webb		Negative	Comments Submitted
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A
5	North Carolina Electric Membership Corporation	John Cook	Scott Brame	Negative	Third-Party Comments
5	Salt River Project	Kevin Nielsen		Negative	Comments Submitted
1	Pacific Gas and Electric Company	Marco Rios	Michael Johnson	Negative	Comments Submitted

5	Black Hills Corporation	Derek Silbaugh	Jennifer Malon	Affirmative	N/A
3	Black Hills Corporation	Don Stahl	Jennifer Malon	Affirmative	N/A
1	Corn Belt Power Cooperative	larry brusseau		Affirmative	N/A
1	Black Hills Corporation	Seth Nelson	Jennifer Malon	Affirmative	N/A
5	Public Utility District No. 2 of Grant County, Washington	Amy Jones		Abstain	N/A
5	New York Power Authority	Zahid Qayyum		Affirmative	N/A
5	Florida Municipal Power Agency	Chris Gowder	LaKenya VanNorman	Abstain	N/A
6	Manitoba Hydro	Simon Tanapat-Andre		Affirmative	N/A
3	Manitoba Hydro	Mike Smith		Affirmative	N/A
10	Northeast Power Coordinating Council	Gerry Dunbar		Affirmative	N/A
3	PSEG - Public Service Electric and Gas Co.	maria pardo		Affirmative	N/A
5	Boise-Kuna Irrigation District - Lucky Peak Power Plant Project	Mike Kukla		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	Comments Submitted
1	Seattle City Light	Michael Jang		Affirmative	N/A
2	Electric Reliability Council of Texas, Inc.	Dana Showalter		Affirmative	N/A
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Darnez Gresham		Affirmative	N/A
6	New York Power Authority	Anirudh Bhimireddy		Affirmative	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
6	Austin Energy	Lisa Martin		Affirmative	N/A
1	Austin Energy	Thomas Standifur		Affirmative	N/A
4	Austin Energy	Jun Hua		Affirmative	N/A
5	Austin Energy	Michael Dillard		Affirmative	N/A
1	Sacramento Municipal Utility District	Wei Shao	Tim Kelley	Affirmative	N/A
6	Salt River Project	Bobby Olsen		None	N/A
3	Salt River Project	Zack Heim		Negative	Comments Submitted
3	Austin Energy	Michael Dieringer		Affirmative	N/A
3	Imperial Irrigation District	Glen Allegranza	Denise Sanchez	Affirmative	N/A
1	Portland General Electric Co.	Brooke Jockin		Affirmative	N/A
5	Portland General Electric Co.	Ryan Olson		Affirmative	N/A
5	Constellation	Alison Mackellar		None	N/A
6	Constellation	Kimberly Turco		None	N/A

Ballot Results

Ballot Name: 2020-05 Modifications to FAC-001 and FAC-002 FAC-001-4 | Non-binding Poll IN 1 NB
Voting Start Date: 1/21/2022 12:01:00 AM
Voting End Date: 1/31/2022 8:00:00 PM
Ballot Type: NB
Ballot Activity: IN
Ballot Series: 1
Total # Votes: 215
Total Ballot Pool: 240
Quorum: 89.58
Quorum Established Date: 1/31/2022 2:21:10 PM
Weighted Segment Value: 82.63

Actions

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes	Negative Fraction	Abstain	No Vote
Segment: 1	65	1	39	0.83	8	0.17	12	6
Segment: 2	7	0.6	5	0.5	1	0.1	1	0
Segment: 3	57	1	34	0.81	8	0.19	9	6
Segment: 4	13	0.7	7	0.7	0	0	2	4
Segment: 5	55	1	31	0.775	9	0.225	12	3
Segment: 6	38	1	19	0.905	2	0.095	11	6
Segment: 7	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0
Segment:	0	0	0	0	0	0	0	0

9								
Segment: 10	5	0.4	3	0.3	1	0.1	1	0
Totals:	240	5.7	138	4.819	29	0.881	48	25

Ballot Pool Members

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	DTE Energy	patricia ireland		Affirmative	N/A
6	PPL - Louisville Gas and Electric Co.	Linn Oelker		None	N/A
5	AEP	Thomas Foltz		Affirmative	N/A
6	OGE Energy - Oklahoma Gas and Electric Co.	Sing Tay		None	N/A
1	Dominion - Dominion Virginia Power	Candace Marshall		None	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Affirmative	N/A
3	PPL - Louisville Gas and Electric Co.	James Frank		None	N/A
10	ReliabilityFirst	Lindsey Mannion		Negative	Comments Submitted
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Affirmative	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Affirmative	N/A
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Affirmative	N/A
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
1	Hydro-Qu?bec TransEnergie	Nicolas Turcotte		Affirmative	N/A
5	Platte River Power Authority	Tyson Archie		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Abstain	N/A
3	Omaha Public Power District	David Heins		Affirmative	N/A
3	Dominion - Dominion Resources, Inc.	Connie Schroeder		Abstain	N/A
1	PPL Electric Utilities Corporation	Michelle Longo		None	N/A
2	PJM Interconnection, L.L.C.	Tom Foster	Elizabeth Davis	Affirmative	N/A
5	PPL - Louisville Gas and Electric Co.	JULIE HOSTRANDER		None	N/A
1	AEP - AEP Service Corporation	Dennis Sauriol		Affirmative	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Affirmative	N/A
1	Western Area Power Administration	sean erickson		Abstain	N/A
4	Utility Services, Inc.	Brian Evans-Mongeon		None	N/A
5	Ameren - Ameren Missouri	Sam Dwyer		Abstain	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Affirmative	N/A
6	Con Ed - Consolidated Edison Co. of New York	Cristhian Godoy		Affirmative	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard		Abstain	N/A
6	Platte River Power Authority	Sabrina Martz		Abstain	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A

1	National Grid USA	Michael Jones		Negative	Comments Submitted
1	BC Hydro and Power Authority	Adrian Andreoiu		Abstain	N/A
3	BC Hydro and Power Authority	Hootan Jarollahi		Abstain	N/A
6	Powerex Corporation	Raj Hundal		Abstain	N/A
3	Ameren - Ameren Services	David Jendras		Abstain	N/A
6	NiSource - Northern Indiana Public Service Co.	Joe O'Brien		Affirmative	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
1	Sunflower Electric Power Corporation	Paul Mehlhaff		Affirmative	N/A
5	NiSource - Northern Indiana Public Service Co.	Kathryn Tackett		Affirmative	N/A
5	Public Utility District No. 1 of Chelan County	Meaghan Connell		Negative	Comments Submitted
1	NiSource - Northern Indiana Public Service Co.	Steve Toosevich		Affirmative	N/A
6	Public Utility District No. 2 of Grant County, Washington	LeRoy Patterson		Affirmative	N/A
5	Sacramento Municipal Utility District	Nicole Goi	Tim Kelley	Affirmative	N/A
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Abstain	N/A
3	Public Utility District No. 1 of Chelan County	Joyce Gundry		Negative	Comments Submitted
1	Public Utility District No. 1 of Chelan County	Diane Landry		Negative	Comments Submitted
1	Wind Energy Transmission Texas, LLC	Manivone Vorabouth		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Abstain	N/A
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
5	Southern Company - Southern Company Generation	James Howell		Affirmative	N/A
6	Southern Company - Southern Company Generation	Ron Carlsen		Affirmative	N/A
5	Santee Cooper	Tommy Curtis		Abstain	N/A
6	Santee Cooper	Marty Watson		Abstain	N/A
1	Santee Cooper	Chris Wagner		Abstain	N/A
3	Santee Cooper	James Poston		Abstain	N/A
3	Platte River Power Authority	Wade Kiess		Negative	Comments Submitted
4	Seattle City Light	Hao Li		Affirmative	N/A
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
3	Tennessee Valley Authority	Ian Grant		None	N/A
6	PSEG - PSEG Energy Resources and Trade LLC	Joseph Neglia		Abstain	N/A

1	Tri-State G and T Association, Inc.	Donna Wood		Affirmative	N/A
5	Choctaw Generation Limited Partnership, LLLP	Rob Watson		Affirmative	N/A
1	Ameren - Ameren Services	Tamara Evey		Abstain	N/A
3	Avista - Avista Corporation	Scott Kinney		Affirmative	N/A
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		None	N/A
5	Avista - Avista Corporation	Glen Farmer		Affirmative	N/A
6	Tennessee Valley Authority	Marjorie Parsons		Abstain	N/A
1	Arizona Electric Power Cooperative, Inc.	Jennifer Bray		Affirmative	N/A
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
3	National Grid USA	Brian Shanahan		Negative	Comments Submitted
3	Con Ed - Consolidated Edison Co. of New York	Peter Yost		Affirmative	N/A
5	Con Ed - Consolidated Edison Co. of New York	Haizhen Wang		Affirmative	N/A
5	Dominion - Dominion Resources, Inc.	Rachel Snead		Affirmative	N/A
1	NB Power Corporation	Nurul Abser		Affirmative	N/A
2	Midcontinent ISO, Inc.	Bobbi Welch		Affirmative	N/A
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		None	N/A
5	National Grid USA	Elizabeth Spivak		Negative	Comments Submitted
3	DTE Energy - Detroit Edison Company	Karie Barczak		Affirmative	N/A
3	Tri-State G and T Association, Inc.	Janelle Marriott Gill		Affirmative	N/A
5	DTE Energy - Detroit Edison Company	Adrian Raducea		Affirmative	N/A
6	Public Utility District No. 1 of Chelan County	Glen Pruitt		Negative	Comments Submitted
1	Georgia Transmission Corporation	Greg Davis	Stephen Stafford	Negative	Comments Submitted
1	IDACORP - Idaho Power Company	Mike Marshall		None	N/A
3	Georgia System Operations Corporation	Scott McGough		Negative	Comments Submitted
5	Oglethorpe Power Corporation	Donna Johnson		Negative	Comments Submitted
4	Seminole Electric Cooperative, Inc.	Jonathan Robbins		Abstain	N/A
5	Seminole Electric Cooperative, Inc.	Trena Haynes		Abstain	N/A
3	Nebraska Public Power District	Tony Eddleman		Abstain	N/A
1	SaskPower	Wayne Guttormson		Abstain	N/A
5	Nebraska Public Power District	Ronald Bender		Abstain	N/A
6	APS - Arizona Public Service Co.	Marcus Bortman		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
		Michelle			

5	APS - Arizona Public Service Co.	Amarantos		Affirmative	N/A
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	None	N/A
6	FirstEnergy - FirstEnergy Corporation	Tricia Bynum		Affirmative	N/A
3	Colorado Springs Utilities	Hillary Dobson		Affirmative	N/A
1	Lincoln Electric System	Josh Johnson		Abstain	N/A
5	Lincoln Electric System	Kayleigh Wilkerson		Abstain	N/A
1	Colorado Springs Utilities	Mike Braunstein		Affirmative	N/A
1	FirstEnergy - FirstEnergy Corporation	Julie Severino		Affirmative	N/A
1	Sempra - San Diego Gas and Electric	Mo Derbas		Negative	Comments Submitted
3	Sempra - San Diego Gas and Electric	Bridget Silvia		Negative	Comments Submitted
5	Sempra - San Diego Gas and Electric	Jennifer Wright		Negative	Comments Submitted
6	Evergy	Thomas ROBBEN	Alan Kloster	Affirmative	N/A
5	PSEG - PSEG Fossil LLC	Tim Kucey		Abstain	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
3	NW Electric Power Cooperative, Inc.	John Stickley		Affirmative	N/A
5	Evergy	Derek Brown	Alan Kloster	Affirmative	N/A
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
6	Los Angeles Department of Water and Power	Anton Vu		Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Evergy	Allen Klassen	Alan Kloster	Affirmative	N/A
1	Eversource Energy	Quintin Lee		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
6	Lincoln Electric System	Eric Ruskamp		Abstain	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Abstain	N/A
6	Portland General Electric Co.	Daniel Mason		None	N/A
1	Nebraska Public Power District	Jamison Cawley		Abstain	N/A
5	Berkshire Hathaway - NV Energy	Kevin Salsbury	Dwanique Spiller	Abstain	N/A
3	Owensboro Municipal Utilities	Thomas Lyons		Affirmative	N/A
3	Snohomish County PUD No. 1	Holly Chaney		Affirmative	N/A
4	Public Utility District No. 1 of Snohomish County	John Martinsen		Affirmative	N/A
6	Snohomish County PUD No. 1	John Liang		Affirmative	N/A
1	Public Utility District No. 1 of Snohomish County	Alyssia Rhoads		Affirmative	N/A
5	Public Utility District No. 1 of Snohomish County	Sam Nietfeld		Affirmative	N/A

5	FirstEnergy - FirstEnergy Corporation	Robert Loy		Affirmative	N/A
4	North Carolina Electric Membership Corporation	Richard McCall	Scott Brame	Affirmative	N/A
1	Northeast Missouri Electric Power Cooperative	Kevin White	Todd Bennett	Affirmative	N/A
5	Associated Electric Cooperative, Inc.	Brad Haralson		Affirmative	N/A
3	North Carolina Electric Membership Corporation	Chris DiMisa	Scott Brame	Affirmative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
3	Evergy	Marcus Moor	Alan Kloster	Affirmative	N/A
1	MEAG Power	David Weekley	Scott Miller	Abstain	N/A
2	Southwest Power Pool, Inc. (RTO)	Charles Yeung		Abstain	N/A
5	Colorado Springs Utilities	Jeff Icke		Affirmative	N/A
5	CMS Energy - Consumers Energy Company	David Greyerbiehl		Abstain	N/A
1	Omaha Public Power District	Doug Peterchuck		Affirmative	N/A
4	CMS Energy - Consumers Energy Company	Aric Root		Affirmative	N/A
6	Omaha Public Power District	Shonda McCain		Affirmative	N/A
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Affirmative	N/A
5	Bonneville Power Administration	Scott Winner		Affirmative	N/A
5	Dairyland Power Cooperative	Tommy Drea		Affirmative	N/A
5	Orlando Utilities Commission	Dania Colon		Affirmative	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
4	LaGen	Wayne Messina		None	N/A
1	Bonneville Power Administration	Kammy Rogers-Holliday		Affirmative	N/A
3	Bonneville Power Administration	Ken Lanehome		Affirmative	N/A
6	Bonneville Power Administration	Andrew Meyers		Affirmative	N/A
6	AEP	JT Kuehne		Affirmative	N/A
5	Hydro-Qu?bec Production	Carl Pineault		Affirmative	N/A
3	Los Angeles Department of Water and Power	Tony Skourtas		None	N/A
3	CMS Energy - Consumers Energy Company	Karl Blaszkowski		Affirmative	N/A
1	Dairyland Power Cooperative	Steve Ritscher		Affirmative	N/A
3	OTP - Otter Tail Power Company	Wendi Olson		None	N/A
5	Los Angeles Department of Water and Power	Glenn Barry		None	N/A
1	Los Angeles Department of Water and Power	faranak sarbaz		None	N/A
3	M and A Electric Power Cooperative	Stephen Pogue		Affirmative	N/A
6	Florida Municipal Power Agency	Richard Montgomery	LaKenya VanNorman	Abstain	N/A
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	Comments Submitted
2	California ISO	Darcy O'Connell		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Affirmative	N/A

3	MEAG Power	Roger Brand	Scott Miller	Abstain	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
4	American Public Power Association	John McCaffrey		None	N/A
3	APS - Arizona Public Service Co.	Jessica Lopez		Affirmative	N/A
3	Ocala Utility Services	Neville Bowen	LaKenya VanNorman	Abstain	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
5	Pacific Gas and Electric Company	Frank Lee	Michael Johnson	Negative	Comments Submitted
6	Northern California Power Agency	Dennis Sismaet		Abstain	N/A
5	Herb Schrayshuen	Herb Schrayshuen		Affirmative	N/A
3	CPS Energy	Glenn Pressler		None	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		Affirmative	N/A
4	Northern California Power Agency	Marty Hostler		None	N/A
1	Great River Energy	Gordon Pietsch		Affirmative	N/A
1	Pedernales Electric Cooperative, Inc.	Bradley Collard		Affirmative	N/A
1	Seminole Electric Cooperative, Inc.	Kristine Ward		Abstain	N/A
3	Seminole Electric Cooperative, Inc.	Jeremy Lorigan		Abstain	N/A
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
6	Great River Energy	Donna Stephenson		Affirmative	N/A
5	U.S. Bureau of Reclamation	Wendy Kalidass		Negative	Comments Submitted
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
2	ISO New England, Inc.	John Pearson		Negative	Comments Submitted
6	Entergy	Julie Hall		Affirmative	N/A
3	Pacific Gas and Electric Company	Sandra Ellis	Michael Johnson	Negative	Comments Submitted
5	Edison International - Southern California Edison Company	Selene Willis		Affirmative	N/A
2	Independent Electricity System Operator	Leonard Kula		Affirmative	N/A
5	Omaha Public Power District	Mahmood Safi		Affirmative	N/A
3	Hydro One Networks, Inc.	Paul Malozewski		Affirmative	N/A
1	Hydro One Networks, Inc.	Payam Farahbakhsh		Affirmative	N/A
5	BC Hydro and Power Authority	Helen Hamilton Harding		Abstain	N/A
6	Southern Indiana Gas and Electric Co.	Erin Spence		Affirmative	N/A
5	Vistra Energy	Dan Roethemeyer		Affirmative	N/A
1	Exelon	Daniel Gacek		Negative	Comments

					Submitted
3	AEP	Kent Feliks		Affirmative	N/A
3	Southern Indiana Gas and Electric Co.	Ryan Abshier		Affirmative	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Affirmative	N/A
1	Salt River Project	Chris Hofmann		Negative	Comments Submitted
3	Exelon	Kinte Whitehead		Negative	Comments Submitted
5	Exelon	Cynthia Lee		Negative	Comments Submitted
6	Exelon	Becky Webb		Negative	Comments Submitted
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A
5	North Carolina Electric Membership Corporation	John Cook	Scott Brame	Affirmative	N/A
5	Salt River Project	Kevin Nielsen		Negative	Comments Submitted
1	Pacific Gas and Electric Company	Marco Rios	Michael Johnson	Negative	Comments Submitted
5	Black Hills Corporation	Derek Silbaugh	Jennifer Malon	Affirmative	N/A
3	Black Hills Corporation	Don Stahl	Jennifer Malon	Affirmative	N/A
1	Corn Belt Power Cooperative	larry brusseau		Affirmative	N/A
1	Black Hills Corporation	Seth Nelson	Jennifer Malon	Affirmative	N/A
5	Public Utility District No. 2 of Grant County, Washington	Amy Jones		Abstain	N/A
5	New York Power Authority	Zahid Qayyum		Affirmative	N/A
5	Florida Municipal Power Agency	Chris Gowder	LaKenya VanNorman	Abstain	N/A
6	Manitoba Hydro	Simon Tanapat-Andre		None	N/A
10	Northeast Power Coordinating Council	Gerry Dunbar		Affirmative	N/A
5	Boise-Kuna Irrigation District - Lucky Peak Power Plant Project	Mike Kukla		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	Comments Submitted
3	PSEG - Public Service Electric and Gas Co.	maria pardo		Abstain	N/A
2	Electric Reliability Council of Texas, Inc.	Dana Showalter		Affirmative	N/A
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Darnez Gresham		Affirmative	N/A
6	New York Power Authority	Anirudh Bhimireddy		Affirmative	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
6	Austin Energy	Lisa Martin		Affirmative	N/A
1	Austin Energy	Thomas Standifur		Affirmative	N/A
5	Austin Energy	Michael Dillard		Affirmative	N/A

1	Sacramento Municipal Utility District	Wei Shao	Tim Kelley	Affirmative	N/A
6	Salt River Project	Bobby Olsen		None	N/A
3	Salt River Project	Zack Heim		Negative	Comments Submitted
3	Austin Energy	Michael Dieringer		Affirmative	N/A
3	Imperial Irrigation District	Glen Allegranza	Denise Sanchez	Affirmative	N/A
1	Portland General Electric Co.	Brooke Jockin		Abstain	N/A
5	Portland General Electric Co.	Ryan Olson		Affirmative	N/A
5	Constellation	Alison Mackellar		None	N/A
6	Constellation	Kimberly Turco		None	N/A

Ballot Results

Ballot Name: 2020-05 Modifications to FAC-001 and FAC-002 FAC-002-4 | Non-binding Poll IN 1 NB
Voting Start Date: 1/21/2022 12:01:00 AM
Voting End Date: 1/31/2022 8:00:00 PM
Ballot Type: NB
Ballot Activity: IN
Ballot Series: 1
Total # Votes: 214
Total Ballot Pool: 239
Quorum: 89.54
Quorum Established Date: 1/31/2022 2:21:38 PM
Weighted Segment Value: 80.72

Actions

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes	Negative Fraction	Abstain	No Vote
Segment: 1	65	1	39	0.83	8	0.17	12	6
Segment: 2	7	0.6	5	0.5	1	0.1	1	0
Segment: 3	57	1	33	0.805	8	0.195	10	6
Segment: 4	13	0.7	6	0.6	1	0.1	2	4
Segment: 5	54	1	29	0.744	10	0.256	12	3
Segment: 6	38	1	19	0.905	2	0.095	11	6
Segment: 7	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0
Segment:	0	0	0	0	0	0	0	0

9								
Segment: 10	5	0.5	3	0.3	2	0.2	0	0
Totals:	239	5.8	134	4.683	32	1.117	48	25

Ballot Pool Members

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	DTE Energy	patricia ireland		Affirmative	N/A
6	PPL - Louisville Gas and Electric Co.	Linn Oelker		None	N/A
5	AEP	Thomas Foltz		Affirmative	N/A
6	OGE Energy - Oklahoma Gas and Electric Co.	Sing Tay		None	N/A
1	Dominion - Dominion Virginia Power	Candace Marshall		None	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Affirmative	N/A
3	PPL - Louisville Gas and Electric Co.	James Frank		None	N/A
10	ReliabilityFirst	Lindsey Mannion		Negative	Comments Submitted
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Affirmative	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Affirmative	N/A
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Affirmative	N/A
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
1	Hydro-Qu?bec TransEnergie	Nicolas Turcotte		Affirmative	N/A
5	Platte River Power Authority	Tyson Archie		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Abstain	N/A
3	Omaha Public Power District	David Heins		Affirmative	N/A
3	Dominion - Dominion Resources, Inc.	Connie Schroeder		Abstain	N/A
1	PPL Electric Utilities Corporation	Michelle Longo		None	N/A
2	PJM Interconnection, L.L.C.	Tom Foster	Elizabeth Davis	Affirmative	N/A
5	PPL - Louisville Gas and Electric Co.	JULIE HOSTRANDER		None	N/A
1	AEP - AEP Service Corporation	Dennis Sauriol		Affirmative	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Affirmative	N/A
1	Western Area Power Administration	sean erickson		Abstain	N/A
4	Utility Services, Inc.	Brian Evans-Mongeon		None	N/A
5	Ameren - Ameren Missouri	Sam Dwyer		Abstain	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Affirmative	N/A
6	Con Ed - Consolidated Edison Co. of New York	Cristhian Godoy		Affirmative	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard		Abstain	N/A
6	Platte River Power Authority	Sabrina Martz		Abstain	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A
1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A

1	National Grid USA	Michael Jones		Negative	Comments Submitted
1	BC Hydro and Power Authority	Adrian Andreoiu		Abstain	N/A
3	BC Hydro and Power Authority	Hootan Jarollahi		Abstain	N/A
6	Powerex Corporation	Raj Hundal		Abstain	N/A
3	Ameren - Ameren Services	David Jendras		Abstain	N/A
6	NiSource - Northern Indiana Public Service Co.	Joe O'Brien		Affirmative	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
1	Sunflower Electric Power Corporation	Paul Mehlhaff		Affirmative	N/A
5	NiSource - Northern Indiana Public Service Co.	Kathryn Tackett		Affirmative	N/A
5	Public Utility District No. 1 of Chelan County	Meaghan Connell		Negative	Comments Submitted
1	NiSource - Northern Indiana Public Service Co.	Steve Toosevich		Affirmative	N/A
6	Public Utility District No. 2 of Grant County, Washington	LeRoy Patterson		Affirmative	N/A
5	Sacramento Municipal Utility District	Nicole Goi	Tim Kelley	Affirmative	N/A
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Abstain	N/A
3	Public Utility District No. 1 of Chelan County	Joyce Gundry		Negative	Comments Submitted
1	Wind Energy Transmission Texas, LLC	Manivone Vorabouth		Affirmative	N/A
1	Public Utility District No. 1 of Chelan County	Diane Landry		Negative	Comments Submitted
6	Ameren - Ameren Services	Robert Quinlivan		Abstain	N/A
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
5	Southern Company - Southern Company Generation	James Howell		Affirmative	N/A
6	Southern Company - Southern Company Generation	Ron Carlsen		Affirmative	N/A
5	Santee Cooper	Tommy Curtis		Abstain	N/A
6	Santee Cooper	Marty Watson		Abstain	N/A
1	Santee Cooper	Chris Wagner		Abstain	N/A
3	Santee Cooper	James Poston		Abstain	N/A
3	Platte River Power Authority	Wade Kiess		Abstain	N/A
4	Seattle City Light	Hao Li		Affirmative	N/A
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
3	Tennessee Valley Authority	Ian Grant		None	N/A
6	PSEG - PSEG Energy Resources and Trade LLC	Joseph Neglia		Abstain	N/A
1	Tri-State G and T Association, Inc.	Donna Wood		Affirmative	N/A

5	Choctaw Generation Limited Partnership, LLLP	Rob Watson		Affirmative	N/A
1	Ameren - Ameren Services	Tamara Evey		Abstain	N/A
3	Avista - Avista Corporation	Scott Kinney		Affirmative	N/A
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		None	N/A
5	Avista - Avista Corporation	Glen Farmer		Affirmative	N/A
6	Tennessee Valley Authority	Marjorie Parsons		Abstain	N/A
1	Arizona Electric Power Cooperative, Inc.	Jennifer Bray		Affirmative	N/A
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
3	National Grid USA	Brian Shanahan		Negative	Comments Submitted
3	Con Ed - Consolidated Edison Co. of New York	Peter Yost		Affirmative	N/A
5	Con Ed - Consolidated Edison Co. of New York	Haizhen Wang		Affirmative	N/A
5	Dominion - Dominion Resources, Inc.	Rachel Snead		Affirmative	N/A
1	NB Power Corporation	Nurul Abser		Affirmative	N/A
2	Midcontinent ISO, Inc.	Bobbi Welch		Affirmative	N/A
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		None	N/A
5	National Grid USA	Elizabeth Spivak		Negative	Comments Submitted
3	DTE Energy - Detroit Edison Company	Karie Barczak		Affirmative	N/A
3	Tri-State G and T Association, Inc.	Janelle Marriott Gill		Affirmative	N/A
5	DTE Energy - Detroit Edison Company	Adrian Raducea		Affirmative	N/A
6	Public Utility District No. 1 of Chelan County	Glen Pruitt		Negative	Comments Submitted
1	Georgia Transmission Corporation	Greg Davis	Stephen Stafford	Negative	Comments Submitted
1	IDACORP - Idaho Power Company	Mike Marshall		None	N/A
3	Georgia System Operations Corporation	Scott McGough		Negative	Comments Submitted
5	Oglethorpe Power Corporation	Donna Johnson		Negative	Comments Submitted
4	Seminole Electric Cooperative, Inc.	Jonathan Robbins		Abstain	N/A
5	Seminole Electric Cooperative, Inc.	Trena Haynes		Abstain	N/A
3	Nebraska Public Power District	Tony Eddleman		Abstain	N/A
1	SaskPower	Wayne Guttormson		Abstain	N/A
5	Nebraska Public Power District	Ronald Bender		Abstain	N/A
6	APS - Arizona Public Service Co.	Marcus Bortman		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
5	APS - Arizona Public Service Co.	Michelle Amarantos		Affirmative	N/A

1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	None	N/A
6	FirstEnergy - FirstEnergy Corporation	Tricia Bynum		Affirmative	N/A
3	Colorado Springs Utilities	Hillary Dobson		Affirmative	N/A
1	Lincoln Electric System	Josh Johnson		Abstain	N/A
5	Lincoln Electric System	Kayleigh Wilkerson		Abstain	N/A
1	Colorado Springs Utilities	Mike Braunstein		Affirmative	N/A
1	FirstEnergy - FirstEnergy Corporation	Julie Severino		Affirmative	N/A
1	Sempra - San Diego Gas and Electric	Mo Derbas		Negative	Comments Submitted
3	Sempra - San Diego Gas and Electric	Bridget Silvia		Negative	Comments Submitted
5	Sempra - San Diego Gas and Electric	Jennifer Wright		Negative	Comments Submitted
6	Evergy	Thomas ROBBEN	Alan Kloster	Affirmative	N/A
5	PSEG - PSEG Fossil LLC	Tim Kucey		Abstain	N/A
3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
3	NW Electric Power Cooperative, Inc.	John Stickley		Affirmative	N/A
5	Evergy	Derek Brown	Alan Kloster	Affirmative	N/A
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
6	Los Angeles Department of Water and Power	Anton Vu		Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Evergy	Allen Klassen	Alan Kloster	Affirmative	N/A
1	Eversource Energy	Quintin Lee		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
6	Lincoln Electric System	Eric Ruskamp		Abstain	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Negative	Comments Submitted
6	Portland General Electric Co.	Daniel Mason		None	N/A
1	Nebraska Public Power District	Jamison Cawley		Abstain	N/A
5	Berkshire Hathaway - NV Energy	Kevin Salsbury	Dwanique Spiller	Abstain	N/A
3	Owensboro Municipal Utilities	Thomas Lyons		Affirmative	N/A
3	Snohomish County PUD No. 1	Holly Chaney		Affirmative	N/A
4	Public Utility District No. 1 of Snohomish County	John Martinsen		Affirmative	N/A
6	Snohomish County PUD No. 1	John Liang		Affirmative	N/A
1	Public Utility District No. 1 of Snohomish County	Alyssia Rhoads		Affirmative	N/A
5	Public Utility District No. 1 of Snohomish County	Sam Nietfeld		Affirmative	N/A
5	FirstEnergy - FirstEnergy Corporation	Robert Loy		Affirmative	N/A

4	North Carolina Electric Membership Corporation	Richard McCall	Scott Brame	Negative	Comments Submitted
1	Northeast Missouri Electric Power Cooperative	Kevin White	Todd Bennett	Affirmative	N/A
5	Associated Electric Cooperative, Inc.	Brad Haralson		Affirmative	N/A
3	North Carolina Electric Membership Corporation	Chris DiMisa	Scott Brame	Negative	Comments Submitted
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
3	Evergy	Marcus Moor	Alan Kloster	Affirmative	N/A
1	MEAG Power	David Weekley	Scott Miller	Abstain	N/A
2	Southwest Power Pool, Inc. (RTO)	Charles Yeung		Abstain	N/A
5	Colorado Springs Utilities	Jeff Icke		Affirmative	N/A
5	CMS Energy - Consumers Energy Company	David Greyerbiehl		Abstain	N/A
1	Omaha Public Power District	Doug Peterchuck		Affirmative	N/A
4	CMS Energy - Consumers Energy Company	Aric Root		Affirmative	N/A
6	Omaha Public Power District	Shonda McCain		Affirmative	N/A
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Affirmative	N/A
5	Bonneville Power Administration	Scott Winner		Affirmative	N/A
5	Dairyland Power Cooperative	Tommy Drea		Affirmative	N/A
5	Orlando Utilities Commission	Dania Colon		Affirmative	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
4	LaGen	Wayne Messina		None	N/A
1	Bonneville Power Administration	Kammy Rogers-Holliday		Affirmative	N/A
3	Bonneville Power Administration	Ken Lanehome		Affirmative	N/A
6	Bonneville Power Administration	Andrew Meyers		Affirmative	N/A
6	AEP	JT Kuehne		Affirmative	N/A
5	Hydro-Qu?bec Production	Carl Pineault		Affirmative	N/A
3	Los Angeles Department of Water and Power	Tony Skourtas		None	N/A
3	CMS Energy - Consumers Energy Company	Karl Blaszkowski		Affirmative	N/A
1	Dairyland Power Cooperative	Steve Ritscher		Affirmative	N/A
3	OTP - Otter Tail Power Company	Wendi Olson		None	N/A
5	Los Angeles Department of Water and Power	Glenn Barry		None	N/A
1	Los Angeles Department of Water and Power	faranak sarbaz		None	N/A
3	M and A Electric Power Cooperative	Stephen Pogue		Affirmative	N/A
6	Florida Municipal Power Agency	Richard Montgomery	LaKenya VanNorman	Abstain	N/A
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	Comments Submitted
2	California ISO	Darcy O'Connell		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Affirmative	N/A
3	MEAG Power	Roger Brand	Scott Miller	Abstain	N/A

10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
4	American Public Power Association	John McCaffrey		None	N/A
3	APS - Arizona Public Service Co.	Jessica Lopez		Affirmative	N/A
3	Ocala Utility Services	Neville Bowen	LaKenya VanNorman	Abstain	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
5	Pacific Gas and Electric Company	Frank Lee	Michael Johnson	Negative	Comments Submitted
6	Northern California Power Agency	Dennis Sismaet		Abstain	N/A
5	Herb Schrayshuen	Herb Schrayshuen		Affirmative	N/A
3	CPS Energy	Glenn Pressler		None	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		Affirmative	N/A
4	Northern California Power Agency	Marty Hostler		None	N/A
1	Great River Energy	Gordon Pietsch		Affirmative	N/A
1	Pedernales Electric Cooperative, Inc.	Bradley Collard		Affirmative	N/A
1	Seminole Electric Cooperative, Inc.	Kristine Ward		Abstain	N/A
3	Seminole Electric Cooperative, Inc.	Jeremy Lorigan		Abstain	N/A
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
6	Great River Energy	Donna Stephenson		Affirmative	N/A
5	U.S. Bureau of Reclamation	Wendy Kalidass		Negative	Comments Submitted
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
2	ISO New England, Inc.	John Pearson		Negative	Comments Submitted
6	Entergy	Julie Hall		Affirmative	N/A
3	Pacific Gas and Electric Company	Sandra Ellis	Michael Johnson	Negative	Comments Submitted
5	Edison International - Southern California Edison Company	Selene Willis		Affirmative	N/A
2	Independent Electricity System Operator	Leonard Kula		Affirmative	N/A
5	Omaha Public Power District	Mahmood Safi		Affirmative	N/A
3	Hydro One Networks, Inc.	Paul Malozewski		Affirmative	N/A
1	Hydro One Networks, Inc.	Payam Farahbakhsh		Affirmative	N/A
5	BC Hydro and Power Authority	Helen Hamilton Harding		Abstain	N/A
6	Southern Indiana Gas and Electric Co.	Erin Spence		Affirmative	N/A
5	Vistra Energy	Dan Roethemeyer		Affirmative	N/A
1	Exelon	Daniel Gacek		Negative	Comments Submitted

3	AEP	Kent Feliks		Affirmative	N/A
3	Southern Indiana Gas and Electric Co.	Ryan Abshier		Affirmative	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Affirmative	N/A
1	Salt River Project	Chris Hofmann		Negative	Comments Submitted
3	Exelon	Kinte Whitehead		Negative	Comments Submitted
5	Exelon	Cynthia Lee		Negative	Comments Submitted
6	Exelon	Becky Webb		Negative	Comments Submitted
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A
5	North Carolina Electric Membership Corporation	John Cook	Scott Brame	Negative	Comments Submitted
5	Salt River Project	Kevin Nielsen		Negative	Comments Submitted
1	Pacific Gas and Electric Company	Marco Rios	Michael Johnson	Negative	Comments Submitted
5	Black Hills Corporation	Derek Silbaugh	Jennifer Malon	Affirmative	N/A
3	Black Hills Corporation	Don Stahl	Jennifer Malon	Affirmative	N/A
1	Corn Belt Power Cooperative	larry brusseau		Affirmative	N/A
1	Black Hills Corporation	Seth Nelson	Jennifer Malon	Affirmative	N/A
5	Public Utility District No. 2 of Grant County, Washington	Amy Jones		Abstain	N/A
5	New York Power Authority	Zahid Qayyum		Affirmative	N/A
5	Florida Municipal Power Agency	Chris Gowder	LaKenya VanNorman	Abstain	N/A
6	Manitoba Hydro	Simon Tanapat-Andre		None	N/A
10	Northeast Power Coordinating Council	Gerry Dunbar		Affirmative	N/A
5	Boise-Kuna Irrigation District - Lucky Peak Power Plant Project	Mike Kukla		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	Comments Submitted
3	PSEG - Public Service Electric and Gas Co.	maria pardo		Abstain	N/A
2	Electric Reliability Council of Texas, Inc.	Dana Showalter		Affirmative	N/A
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Darnez Gresham		Affirmative	N/A
6	New York Power Authority	Anirudh Bhimireddy		Affirmative	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
6	Austin Energy	Lisa Martin		Affirmative	N/A
1	Austin Energy	Thomas Standifur		Affirmative	N/A
5	Austin Energy	Michael Dillard		Affirmative	N/A
1	Sacramento Municipal Utility District	Wei Shao	Tim Kelley	Affirmative	N/A

6	Salt River Project	Bobby Olsen		None	N/A
3	Salt River Project	Zack Heim		Negative	Comments Submitted
3	Austin Energy	Michael Dieringer		Affirmative	N/A
3	Imperial Irrigation District	Glen Allegranza	Denise Sanchez	Affirmative	N/A
1	Portland General Electric Co.	Brooke Jockin		Abstain	N/A
5	Constellation	Alison Mackellar		None	N/A
6	Constellation	Kimberly Turco		None	N/A

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

Final posting for 10-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020
45-day formal or informal comment period with ballot	12/07/2021 – 1/31/2022

Anticipated Actions	Date
10-day final ballot	April 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

None

A. Introduction

1. **Title:** **Facility Interconnection Requirements**

2. **Number:** FAC-001-4

3. **Purpose:** To avoid adverse impacts on the reliability of the Bulk Electric System, Transmission Owners and applicable Generator Owners must document and make Facility interconnection requirements available so that entities seeking to interconnect will have the necessary information.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Transmission Owner

   4.1.2. Applicable Generator Owner

   4.1.2.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Owner shall document Facility interconnection requirements, update them as needed, and make them available upon request. Each Transmission Owner's Facility interconnection requirements shall address interconnection requirements for: *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

1.1. generation Facilities;

1.2. transmission Facilities; and

1.3. end-user Facilities.

M1. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R1.

R2. Each applicable Generator Owner shall document Facility interconnection requirements and make them available upon request within 45 calendar days of full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M2. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R2.

R3. Each Transmission Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. Procedures for coordinated studies for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator and their impacts on affected systems.

3.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change.

3.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority Area.

M3. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R3.

R4. Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. Procedures for coordinated studies of new interconnections and their impacts on affected system(s).

4.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.

4.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator are within a Balancing Authority Area.

M4. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R4.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The responsible entities shall retain documentation as evidence for three years.
- If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.
- The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Lower	N/A	The Transmission Owner documented Facility interconnection requirements and updated them as needed, but failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements and made them available upon request, but failed to update them as needed. OR The Transmission Owner documented Facility interconnection requirements,	The Transmission Owner documented Facility interconnection requirements, but failed to update them as needed and failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements, updated them as needed, and made them available upon request, but failed to address interconnection requirements for two of the Facilities as	The Transmission Owner did not document Facility interconnection requirements.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
				updated them as needed, and made them available upon request, but failed to address interconnection requirements for one of the Facilities as specified in R1, Parts 1.1, 1.2, or 1.3.	specified in R1, Parts 1.1, 1.2, or 1.3.	
R2.	Long-term Planning	Lower	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 45 calendar days but less than or equal to 60 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 60 calendar days but less than or equal to 70 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 70 calendar days but less than or equal to 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	existing Facility that is used to interconnect to the Transmission system.
R3.	Long-term Planning	Lower	N/A	The Transmission Owner failed to address one part of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address two parts of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address three parts of Requirement R3 (Part 3.1 through Part 3.3).
R4.	Long-term Planning	Lower	N/A	The Generator Owner failed to address one part of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address two parts of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address three parts of Requirement R4 (Part 4.1 through Part 4.3).

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1		Added requirements for Generator Owner and brought overall standard format up to date.	Revision under Project 2010-07
1	February 9, 2012	Adopted by the Board of Trustees	
1	September 19, 2013	A FERC order was issued on September 19, 2013, approving FAC-001-1. This standard became enforceable on November 25, 2013 for Transmission Owners. For Generator Owners, the standard becomes enforceable on January 1, 2015.	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees	
2	November 6, 2014	FERC letter order issued approving FAC-001-2.	
3	February 11, 2016	Adopted by the Board of Trustees	Moved BAL-005-0.2b Requirement R1 into FAC-001-3 Requirements R3 and R4
3	September 20, 2017	FERC Order No. 836 issued approving FAC-001-3	
3	February 19, 2021	FERC letter Order issued approving FAC-001-3 Errata	
4	TBD	Adopted by the Board of Trustees	Revisions under Project 2020-05

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

~~Initial~~ Final posting for~~of~~ 10~~45~~-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020
45-day formal or informal comment period with ballot	12/07/2021 – 1/31/2022

Anticipated Actions	Date
~~45-day formal or informal comment period with ballot~~	~~December 2021~~
~~45-day formal or informal comment period with additional ballot~~	~~March 2022~~
~~45-day formal or informal comment period with additional ballot~~	~~June 2022~~
10-day final ballot	~~August~~ April 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

None

A. Introduction

1. **Title:** **Facility Interconnection Requirements**

2. **Number:** FAC-001-4

3. **Purpose:** To avoid adverse impacts on the reliability of the Bulk Electric System, Transmission Owners and applicable Generator Owners must document and make Facility interconnection requirements available so that entities seeking to interconnect will have the necessary information.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Transmission Owner

   4.1.2. Applicable Generator Owner

   4.1.2.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Owner shall document Facility interconnection requirements, update them as needed, and make them available upon request. Each Transmission Owner's Facility interconnection requirements shall address interconnection requirements for: *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

1.1. generation Facilities;

1.2. transmission Facilities; and

1.3. end-user Facilities.

M1. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R1.

R2. Each applicable Generator Owner shall document Facility interconnection requirements and make them available upon request within 45 calendar days of full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M2. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R2.

R3. Each Transmission Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. Procedures for coordinated studies ~~and identifying the impacts on affected systems~~ for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator and their impacts on affected systems ~~under Reliability Standard FAC-002-4 Requirement R6~~.

3.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change.

3.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority Area~~'s metered boundaries~~.

M3. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R3.

R4. Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. Procedures for coordinated studies of new interconnections and their impacts on affected system(s).

4.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.

4.3. Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator ~~under Reliability Standard FAC-002-4 Requirement R6~~ are within a Balancing Authority Area~~'s metered boundaries~~.

M4. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R4.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- The responsible entities shall retain documentation as evidence for three years.
- If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.
- The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Lower	N/A	The Transmission Owner documented Facility interconnection requirements and updated them as needed, but failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements and made them available upon request, but failed to update them as needed. OR The Transmission Owner documented Facility interconnection requirements,	The Transmission Owner documented Facility interconnection requirements, but failed to update them as needed and failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements, updated them as needed, and made them available upon request, but failed to address interconnection requirements for two of the Facilities as	The Transmission Owner did not document Facility interconnection requirements.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
				updated them as needed, and made them available upon request, but failed to address interconnection requirements for one of the Facilities as specified in R1, Parts 1.1, 1.2, or 1.3.	specified in R1, Parts 1.1, 1.2, or 1.3.	
R2.	Long-term Planning	Lower	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 45 calendar days but less than or equal to 60 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 60 calendar days but less than or equal to 70 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 70 calendar days but less than or equal to 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	existing Facility that is used to interconnect to the Transmission system.
R3.	Long-term Planning	Lower	N/A	The Transmission Owner failed to address one part of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address two parts of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address three parts of Requirement R3 (Part 3.1 through Part 3.3).
R4.	Long-term Planning	Lower	N/A	The Generator Owner failed to address one part of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address two parts of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address three parts of Requirement R4 (Part 4.1 through Part 4.3).

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1		Added requirements for Generator Owner and brought overall standard format up to date.	Revision under Project 2010-07
1	February 9, 2012	Adopted by the Board of Trustees	
1	September 19, 2013	A FERC order was issued on September 19, 2013, approving FAC-001-1. This standard became enforceable on November 25, 2013 for Transmission Owners. For Generator Owners, the standard becomes enforceable on January 1, 2015.	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees	
2	November 6, 2014	FERC letter order issued approving FAC-001-2.	
3	February 11, 2016	Adopted by the Board of Trustees	Moved BAL-005-0.2b Requirement R1 into FAC-001-3 Requirements R3 and R4
3	September 20, 2017	FERC Order No. 836 issued approving FAC-001-3	
3	February 19, 2021	FERC letter Order issued approving FAC-001-3 Errata	
4	TBD	Adopted by the Board of Trustees	Revisions under Project 2020-05

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

Final posting for 10-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020
45-day formal or informal comment period with ballot	12/07/2021 – 1/31/2022

Anticipated Actions	Date
10-day final ballot	April 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

None

A. Introduction

1. **Title:** **Facility Interconnection Requirements**

2. **Number:** FAC-001-34

3. **Purpose:** To avoid adverse impacts on the reliability of the Bulk Electric System, Transmission Owners and applicable Generator Owners must document and make Facility interconnection requirements available so that entities seeking to interconnect will have the necessary information.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Transmission Owner

   4.1.2. Applicable Generator Owner

   4.1.2.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for FAC-001-3. Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Owner shall document Facility interconnection requirements, update them as needed, and make them available upon request. Each Transmission Owner's Facility interconnection requirements shall address interconnection requirements for: *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

1.1. generation Facilities;

1.2. transmission Facilities; and

1.3. end-user Facilities.

M1. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R1.

R2. Each applicable Generator Owner shall document Facility interconnection requirements and make them available upon request within 45 calendar days of full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M2. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements) that it met all requirements in Requirement R2.

R3. Each Transmission Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. Procedures for coordinated studies ~~of~~for new interconnections or ~~materially modified~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator and their impacts on affected systems.

3.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or ~~materially modified~~ existing interconnections~~.~~ seeking to make a qualified change.

3.3. Procedures for confirming with those responsible for the reliability of affected systems that new ~~or materially modified~~ Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority ~~Area's metered boundaries.~~ Area.

M3. Each Transmission Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R3.

R4. Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: *[Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. Procedures for coordinated studies of new interconnections and their impacts on affected system(s).

4.2. Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.

4.3. Procedures for confirming with those responsible for the reliability of affected systems that new ~~or materially modified~~ Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator are within a Balancing Authority ~~Area's metered boundaries~~Area.

M4. Each applicable Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) that it met all requirements in Requirement R4.

C. Compliance

1. **Compliance Monitoring Process**

~~1.1.~~ **Compliance Enforcement Authority**

~~1.2.~~1.1. ~~As defined in the NERC Rules of Procedure,~~: "Compliance Enforcement Authority" ~~(CEA)~~ means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with ~~the NERC~~mandatory and enforceable Reliability Standards in their respective jurisdictions.

~~1.3.~~ **Evidence Retention**

~~1.4.~~1.2. : The following evidence retention ~~periods~~period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the ~~CEA~~Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full ~~-~~time period since the last audit.

The applicable ~~Functional Entity~~entity shall keep data or evidence to show compliance as identified below unless directed by its ~~CEA~~Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation~~:~~.

- The responsible entities shall retain documentation as evidence for three years.
- If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.
- The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

~~**1.5. Compliance Monitoring and Assessment Processes:**~~

~~Compliance Audit~~

~~Self Certification~~

~~Spot Check~~

~~Compliance Investigation~~

~~Self Reporting~~

~~Complaint~~

~~**1.6. Additional Compliance Information**~~

1.3. **Compliance Monitoring and Enforcement Program:** As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or

information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

~~None~~

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Lower	N/A	The Transmission Owner documented Facility interconnection requirements and updated them as needed, but failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements and made them available upon request, but failed to update them as needed. OR The Transmission Owner documented Facility interconnection requirements,	The Transmission Owner documented Facility interconnection requirements, but failed to update them as needed and failed to make them available upon request. OR The Transmission Owner documented Facility interconnection requirements, updated them as needed, and made them available upon request, but failed to address interconnection requirements for two of the Facilities as specified in R1, Parts 1.1, 1.2, or 1.3.	The Transmission Owner did not document Facility interconnection requirements.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
				updated them as needed, and made them available upon request, but failed to address interconnection requirements for one of the Facilities as specified in R1, Parts 1.1, 1.2, or 1.3.		
R2.	Long-term Planning	Lower	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 45 calendar days but less than or equal to 60 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 60 calendar days but less than or equal to 70 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 70 calendar days but less than or equal to 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third	The applicable Generator Owner failed to document Facility interconnection requirements and make them available upon request until more than 80 calendar days after full execution of an Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.	existing Facility that is used to interconnect to the Transmission system.
R3.	Long-term Planning	Lower	N/A	The Transmission Owner failed to address one part of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address two parts of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address three parts of Requirement R3 (Part 3.1 through Part 3.3).
R4.	Long-term Planning	Lower	N/A	The Generator Owner failed to address one part of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address two parts of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address three parts of Requirement R4 (Part 4.1 through Part 4.3).

D. Regional Variances

None.

~~E. Interpretations~~

~~None.~~

~~F.~~E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
1		Added requirements for Generator Owner and brought overall standard format up to date.	Revision under Project 2010-07
1	February 9, 2012	Adopted by the Board of Trustees	
1	September 19, 2013	A FERC order was issued on September 19, 2013, approving FAC-001-1. This standard became enforceable on November 25, 2013 for Transmission Owners. For Generator Owners, the standard becomes enforceable on January 1, 2015.	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees	
2	November 6, 2014	FERC letter order issued approving FAC-001-2.	
3	February 11, 2016	Adopted by the Board of Trustees	Moved BAL-005-0.2b Requirement R1 into FAC-001-3 Requirements R3 and R4
3	September 20, 2017	FERC Order No. 836 issued approving FAC-001-3	
3	February 19, 2021	FERC letter Order issued approving FAC-001-3 Errata	
4	TBD	Adopted by the Board of Trustees	Revisions under Project 2020-05

Guidelines and Technical Basis

Entities should have documentation to support the technical rationale for determining whether an existing interconnection was "materially modified." Recognizing that what constitutes a "material modification" will vary from entity to entity, the intent is for this determination to be based on engineering judgment.

Requirement R3:

Originally the Parts of R3, with the exception of the first two bullets, which were added by the Project 2010-02 drafting team, this list has been moved to the Guidelines and Technical Basis section to provide entities with the flexibility to determine the Facility interconnection requirements that are technically appropriate for their respective Facilities. Including them as Parts of R3 was deemed too prescriptive, as frequently some items in the list do not apply to all applicable entities — and some applicable entities will have requirements that are not included in this list.

Each Transmission Owner and applicable Generator Owner should consider the following items in the development of Facility interconnection requirements:

- Procedures for requesting a new Facility interconnection or material modification to an existing interconnection
- Data required to properly study the interconnection
- Voltage level and MW and MVAR capacity or demand at the point of interconnection
- Breaker duty and surge protection
- System protection and coordination
- Metering and telecommunications
- Grounding and safety issues
- Insulation and insulation coordination
- Voltage, Reactive Power (including specifications for minimum static and dynamic reactive power requirements), and power factor control
- Power quality impacts
- Equipment ratings
- Synchronizing of Facilities
- Maintenance coordination
- Operational issues (abnormal frequency and voltages)
- Inspection requirements for new or materially modified existing interconnections
- Communications and procedures during normal and emergency operating conditions

Rationale

During development of this standard, text boxes were embedded within the standard to explain the rationale for various parts of the standard. Upon Board approval, the text from the rationale boxes will be moved to this section.

Rationale for Requirement R3.3: Consistent with the Functional Model, there cannot be an assumption that the entity owning the transmission will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate arrangements with a Balancing Authority to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 3.3, the Transmission Owner is responsible for confirming that the party interconnecting has made appropriate provisions with a Balancing Authority to operate within its metered boundaries.

Rationale for Requirement R4.3: Consistent with the Functional Model, there cannot be an assumption that the entity owning the generation will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate arrangements with a Balancing Authority to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 4.3, the Generator Owner is responsible for confirming that the party interconnecting has made appropriate provisions with a Balancing Authority to operate within its metered boundaries.

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

Final posting for 10-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020
45-day formal or informal comment period with ballot	12/07/2021 – 1/31/2022

Anticipated Actions	Date
10-day final ballot	April 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

None

A. Introduction

1. **Title:** **Facility Interconnection Studies**

2. **Number:** FAC-002-4

3. **Purpose:** To study the impact of interconnecting new or changed Facilities on the Bulk Electric System.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Planning Coordinator

   4.1.2. Transmission Planner

   4.1.3. Transmission Owner

   4.1.4. Distribution Provider

   4.1.5. Generator Owner

   4.1.6. Applicable Generator Owner

   4.1.6.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

1.1. The reliability impact of the new interconnection, or existing interconnection seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, on affected system(s);

1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;

1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and

1.4. Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.

M1. Each Transmission Planner or each Planning Coordinator shall have evidence (such as study reports, including documentation of reliability issues) that it met all requirements in Requirement R1.

R2. Each Generator Owner seeking to interconnect new generation Facilities, or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Each Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R2.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Owner and each Distribution Provider shall have evidence (such as documents containing the data provided in response to the requests of the

Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R3.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M4. Each Transmission Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R4.

R5. Each applicable Generator Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M5. Each applicable Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R5.

R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M6. Each Planning Coordinator shall have evidence that it has maintained a publicly available definition of qualified change.

C. Compliance

1. Compliance Monitoring Process

1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner and applicable Generator Owner shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:

The responsible entities shall retain documentation as evidence for three years.

If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.

The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Medium	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study one of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.
R2.	Long-term Planning	Medium	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R3.	Long-term Planning	Medium	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R4.	Long-term Planning	Medium	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities.
R5.	Long-term Planning	Medium	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R6.	Long-term Planning	Lower	N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	January 13, 2006	Removed duplication of "Regional Reliability Organizations(s).	Errata
1	August 5, 2010	Modified to address Order No. 693 Directives contained in paragraph 693. Adopted by the NERC Board of Trustees.	Revised
1	February 7, 2013	R2 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
1	November 21, 2013	R2 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees.	
2	November 6, 2014	FERC letter order issued approving FAC-002-2.	
3	February 6, 2020	Adopted by NERC Board of Trustees.	Revisions under Project 2017-07
4	TBD	Adopted by NERC Board of Trustees.	Revisions under Project 2020-05

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

~~Initial~~ Final posting for ~~45~~10-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020
45-day formal or informal comment period with ballot	12/07/2021 – 1/31/2022

Anticipated Actions	Date
~~45-day formal or informal comment period with ballot~~	~~December 2021~~
~~45-day formal or informal comment period with additional ballot~~	~~March 2022~~
~~45-day formal or informal comment period with additional ballot~~	~~June 2022~~
10-day final ballot	~~August~~ April 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

None

A. Introduction

1. **Title:** **Facility Interconnection Studies**

2. **Number:** FAC-002-4

3. **Purpose:** To study the impact of interconnecting new or changed Facilities on the Bulk Electric System.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Planning Coordinator

   4.1.2. Transmission Planner

   4.1.3. Transmission Owner

   4.1.4. Distribution Provider

   4.1.5. Generator Owner

   4.1.6. Applicable Generator Owner

   4.1.6.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

1.1. The reliability impact of the new interconnection, or existing interconnection seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, on affected system(s);

1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;

1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and

1.4. Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.

M1. Each Transmission Planner or each Planning Coordinator shall have evidence (such as study reports, including documentation of reliability issues) that it met all requirements in Requirement R1.

R2. Each Generator Owner seeking to interconnect new generation Facilities, or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Each Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R2.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6~~,~~ ~~or electricity end-user Facilities,~~ shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Owner and each Distribution Provider shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R3.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M4. Each Transmission Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R4.

R5. Each applicable Generator Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M5. Each applicable Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R5.

R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. *[Violation Risk Factor: ~~Medium~~Lower] [Time Horizon: Long-term Planning]*

M6. Each Planning Coordinator shall have evidence that it has maintained a publicly available definition of qualified change.

C. Compliance

1. **Compliance Monitoring Process**

   1.1. Compliance Enforcement Authority: "Compliance Enforcement Authority" means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

   1.2. Evidence Retention: The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

   The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

   The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner and applicable Generator Owner shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:

   The responsible entities shall retain documentation as evidence for three years.

   If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.

   The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

   1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Medium	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study one of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.
R2.	Long-term Planning	Medium	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,	The Generator Owner seeking to interconnect new generation Facilities,

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R3.	Long-term Planning	Medium	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or existing interconnections of transmission Facilities

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R4.	Long-term Planning	Medium	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or existing interconnections

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6to its Facilities.
R5.	Long-term Planning	Medium	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R6.	Long-term Planning	Lower	N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

D. Regional Variances

None.

E. Associated Documents

None.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	January 13, 2006	Removed duplication of "Regional Reliability Organizations(s).	Errata
1	August 5, 2010	Modified to address Order No. 693 Directives contained in paragraph 693. Adopted by the NERC Board of Trustees.	Revised
1	February 7, 2013	R2 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
1	November 21, 2013	R2 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees.	
2	November 6, 2014	FERC letter order issued approving FAC-002-2.	
3	February 6, 2020	Adopted by NERC Board of Trustees.	Revisions under Project 2017-07
4	TBD	Adopted by NERC Board of Trustees.	Revisions under Project 2020-05

Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

Description of Current Draft

Final posting for 10-day formal comment period with ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	9/24/2020
SAR posted for comment	11/12 – 12/12/2020
45-day formal or informal comment period with ballot	12/07/2021 – 1/31/2022

Anticipated Actions	Date
10-day final ballot	April 2022
Board adoption	November 2022

New or Modified Term(s) Used in NERC Reliability Standards

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

Term(s):

None

A. Introduction

1. **Title:** **Facility Interconnection Studies**

2. **Number:** FAC-002-~~3~~4

3. **Purpose:** To study the impact of interconnecting new or ~~materially modified~~changed Facilities on the Bulk Electric System.

4. **Applicability:**

   4.1. Functional Entities:

   4.1.1. Planning Coordinator

   4.1.2. Transmission Planner

   4.1.3. Transmission Owner

   4.1.4. Distribution Provider

   4.1.5. Generator Owner

   4.1.6. Applicable Generator Owner

   4.1.6.1. Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

5. **Effective Date:** See Implementation Plan for Project 2020-05.

B. Requirements and Measures

R1. Each Transmission Planner and each Planning Coordinator shall study the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6. The following shall be studied: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

1.1. The reliability impact of the new interconnection, or ~~materially modified~~ existing interconnection seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, on affected system(s);

1.2. Adherence to applicable NERC Reliability Standards; regional and Transmission Owner planning criteria; and Facility interconnection requirements;

1.3. Steady-state, short-circuit, and dynamics studies, as necessary, to evaluate system performance under both normal and contingency conditions; and

1.4. Study assumptions, system performance, alternatives considered, and coordinated recommendations. While these studies may be performed independently, the results shall be evaluated and coordinated by the entities involved.

M1. Each Transmission Planner or each Planning Coordinator shall have evidence (such as study reports, including documentation of reliability issues) that it met all requirements in Requirement R1.

R2. Each Generator Owner seeking to interconnect new generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Each Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R2.

R3. Each Transmission Owner and each Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to materially modify~~ existing interconnections of transmission Facilities or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Each Transmission Owner and each Distribution Provider shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R3.

R4. Each Transmission Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or ~~materially modified interconnections~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M4. Each Transmission Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R4.

R5. Each applicable Generator Owner shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts 1.1-1.4. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M5. Each applicable Generator Owner shall have evidence (such as documents containing the data provided in response to the requests of the Transmission Planner or Planning Coordinator) that it met all requirements in Requirement R5.

R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

M6. Each Planning Coordinator shall have evidence that it has maintained a publicly available definition of qualified change.

C. Compliance

1. Compliance Monitoring Process

~~1.1.~~ Compliance Enforcement Authority

~~1.2.~~1.1. ~~As defined in the NERC Rules of Procedure,~~: "Compliance Enforcement Authority" ~~(CEA)~~ means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with ~~the NERC~~mandatory and enforceable Reliability Standards in their respective jurisdictions.

~~1.3.~~ Evidence Retention

1.2. : The following evidence retention ~~periods~~period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the ~~CEA~~Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full ~~-~~ time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner and applicable Generator Owner shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:

The responsible entities shall retain documentation as evidence for three years.

If a responsible entity is found non-compliant, it shall keep information related to the non-compliance until mitigation is complete and approved or for the time specified above, whichever is longer.

The CEA shall keep the last audit records and all requested and submitted subsequent audit records.

~~1.4. Compliance Monitoring and Assessment Processes:~~

~~Compliance Audit~~

~~Self-Certification~~

~~Spot Check~~

~~Compliance Investigation~~

~~Self-Reporting~~

~~Complaint~~

~~**1.5. Additional Compliance Information**~~

1.3. Compliance Monitoring and Enforcement Program: As defined in the NERC Rules of Procedure, "Compliance Monitoring and Enforcement Program" refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

Violation Severity Levels

~~None~~

~~Table of Compliance Elements~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	Long-term Planning	Medium	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study one of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.
R2.	Long-term Planning	Medium	The Generator Owner seeking to interconnect new	The Generator Owner seeking to interconnect new	The Generator Owner seeking to interconnect new	The Generator Owner seeking to interconnect new

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	generation Facilities, or ~~to materially modify~~ existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R3.	Long-term Planning	Medium	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to~~	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to~~	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to~~	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~to~~

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			~~materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	~~materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	~~materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	~~materially modify~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R4.	Long-term Planning	Medium	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			Coordinator regarding requested new or ~~materially modified~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	Coordinator regarding requested new or ~~materially modified~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	Coordinator regarding requested new or ~~materially modified~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	Coordinator regarding requested new or ~~materially modified~~existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities.
R5.	Long-term Planning	Medium	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary	The applicable Generator Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities, but failed to provide data necessary	The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities.

R #	Time Horizon	VRF	Violation Severity Levels			
			Lower VSL	Moderate VSL	High VSL	Severe VSL
			to perform studies as described in one of the Parts (R1, 1.1-1.4).	to perform studies as described in two of the Parts (R1, 1.1-1.4).	to perform studies as described in three of the Parts (R1, 1.1-1.4).	
R6.	Long-term Planning	Lower	N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

D. Regional Variances

None.

~~E. Interpretations~~

~~None.~~

~~F.~~E. Associated Documents

None

~~Guidelines and Technical Basis~~

~~Entities should have documentation to support the technical rationale for determining whether an existing interconnection was "materially modified." Recognizing that what constitutes a "material modification" will vary from entity to entity, the intent is for this determination to be based on engineering judgment.~~

.

Version History

Version	Date	Action	Change Tracking
0	April 1, 2005	Effective Date	New
0	January 13, 2006	Removed duplication of "Regional Reliability Organizations(s).	Errata
1	August 5, 2010	Modified to address Order No. 693 Directives contained in paragraph 693. Adopted by the NERC Board of Trustees.	Revised
1	February 7, 2013	R2 and associated elements approved by NERC Board of Trustees for retirement as part of the Paragraph 81 project (Project 2013-02) pending applicable regulatory approval.	
1	November 21, 2013	R2 and associated elements approved by FERC for retirement as part of the Paragraph 81 project (Project 2013-02)	
2		Revisions to implement the recommendations of the FAC Five-Year Review Team.	Revision under Project 2010-02
2	August 14, 2014	Adopted by the Board of Trustees.	
2	November 6, 2014	FERC letter order issued approving FAC-002-2.	
3	February 6, 2020	Adopted by NERC Board of Trustees.	Revisions under Project 2017-07
4	TBD	Adopted by NERC Board of Trustees.	Revisions under Project 2020-05

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan

Project 2020-05 Modifications to FAC-001-3 and FAC-002-3

Applicable Standards

- FAC-001-4 Facility Interconnection Requirements
- FAC-002-4 Facility Interconnection Studies

Requested Retirements

- FAC-001-3 Facility Interconnection Requirements
- FAC-002-3 Facility Interconnection Studies

Prerequisite Standard

None

Applicable Entities for FAC-001-4

- Transmission Owner;
- Applicable Generation Owner;
- Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

Applicable Entities for FAC-002-4

- Planning Coordinator;
- Transmission Planner;
- Transmission Owner
- Distribution Provider;
- Generation Owner;
- Applicable Generation Owner;
- Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

Terms in the NERC Glossary of Terms

There are no new, modified, or retired terms.

Background

Proposed Reliability Standards FAC-001-4 and FAC-002-4 revise Reliability Standards FAC-001-3 and FAC-002-3 to provide clarity and specificity regarding which changes to existing Facility interconnections require study under the standards.

Currently effective Reliability Standards FAC-001-3 and FAC-002-3 require coordination and cooperation between a Facility owner and the Transmission Planner or Planning Coordinator when a new or materially modified interconnection Facility is connected to their system. These standards imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied; however, neither standard specifies what entity is responsible for determining what is considered to be a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility. Additionally, in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[1] This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements.

Proposed Reliability Standards FAC-001-4 and FAC-002-4 address these issues by clarifying that the changes to existing Facilities that will need to be studied under the standards are those meeting the definition of "qualified change" developed by the Planning Coordinator under new Requirement R6 of proposed FAC-002-4.

Effective Date and Phased-In Compliance Dates

The effective date for the proposed Reliability Standards FAC-001-4 and FAC-002-4 are provided below. Where the standard drafting team identified the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must begin to comply with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

Standards FAC-001-4 and FAC-002-4

Where approval by an applicable governmental authority is required, the standards shall become effective on the first day of the first calendar quarter that is twelve (12) months after the effective date of the applicable governmental authority's order approving the standards, or as otherwise provided for by the applicable governmental authority.

[1] LGIA-agreement.pdf (ferc.gov)

Where approval by an applicable governmental authority is not required, the standards shall become effective on the first day of the first calendar quarter that is twelve (12) months after the date the standards are adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Compliance Date for FAC-001-4 Requirements R3 and R4 and FAC-002-4 Requirement R1, R2, R3 and R4

To the extent a change is considered a "qualified change" under the definition developed by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6 but was not considered a "material modification" under FAC-001-3 or FAC-002-3, the entity shall not be required to comply with Reliability Standard FAC-001-4 Requirement R3 and R4 or Reliability Standard FAC-002-4 Requirements R1, R2, R3 and R4 until 12 months after the effective date of the standards.

Retirement Date

Reliability Standards FAC-001-3 and FAC-002-3 shall be retired immediately prior to the effective date of FAC-001-4 and FAC-002-4 in the particular jurisdiction in which the revised standard is becoming effective.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Implementation Plan

Project 2020-05 Modifications to FAC-001-3 and FAC-002-3

Applicable Standards

- FAC-001-4 Facility Interconnection Requirements
- FAC-002-4 Facility Interconnection Studies

Requested Retirements

- FAC-001-3 Facility Interconnection Requirements
- FAC-002-3 Facility Interconnection Studies

Prerequisite Standard

None

Applicable Entities for FAC-001-4

- Transmission Owner;
- Applicable Generation Owner;
- Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

Applicable Entities for FAC-002-4

- Planning Coordinator;
- Transmission Planner;
- Transmission Owner
- Distribution Provider;
- Generation Owner;
- Applicable Generation Owner;
- Generator Owner with a fully executed Agreement to conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the Transmission system.

Terms in the NERC Glossary of Terms

There are no new, modified, or retired terms.

Background

Proposed Reliability Standards FAC-001-4 and FAC-002-4 revise Reliability Standards FAC-001-3 and FAC-002-3 to provide clarity and specificity regarding which changes to existing Facility interconnections require study under the standards.

Currently effective Reliability Standards FAC-001-3 and FAC-002-3 require coordination and cooperation between a Facility owner and the Transmission Planner or Planning Coordinator when a new or materially modified interconnection Facility is connected to their system. These standards imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied; however, neither standard specifies what entity is responsible for determining what is considered to be a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility. Additionally, in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[1] This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements.

Proposed Reliability Standards FAC-001-4 and FAC-002-4 ~~will~~ address these issues by clarifying that the changes to existing Facilities that will need to be studied under the standards are those meeting the definition of "qualified change" developed by the Planning Coordinator under new Requirement R6 of proposed FAC-002-4.

Effective Date and Phased-In Compliance Dates

The effective date for the proposed Reliability Standards FAC-001-4 and FAC-002-4 are provided below. Where the standard drafting team identified the need for a longer implementation period for compliance with a particular section of a proposed Reliability Standard (i.e., an entire Requirement or a portion thereof), the additional time for compliance with that section is specified below. The phased-in compliance date for those particular sections represents the date that entities must begin to comply with that particular section of the Reliability Standard, even where the Reliability Standard goes into effect at an earlier date.

~~The effective date for proposed Reliability Standards FAC-001-4 and FAC-002-4 is provided below.~~

Standards FAC-001-4 and FAC-002-4

Where approval by an applicable governmental authority is required, the standards shall become effective on the first day of the first calendar quarter that is twelve (12) months after the effective date of the applicable governmental authority's order approving the standards, or as otherwise provided for by the applicable governmental authority.

[1] LGIA-agreement.pdf (ferc.gov)

Where approval by an applicable governmental authority is not required, the standards shall become effective on the first day of the first calendar quarter that is twelve (12) months after the date the standards are adopted by the NERC Board of Trustees, or as otherwise provided for in that jurisdiction.

Compliance Date for FAC-001-4 Requirements R3 and R4 and FAC-002-4 Requirement R1, R2, R3 and R4

To the extent a change is considered a "qualified change" under the definition developed by the Planning Coordinator under Reliability Standard FAC-002-4 Requirement R6 but was not considered a "material modification" under FAC-001-3 or FAC-002-3, the entity shall not be required to comply with Reliability Standard FAC-001-4 Requirement R3 and R4 or Reliability Standard FAC-002-4 Requirements R1, R2, R3 and R4 until 12 months after the effective date of the standards.

Retirement Date

Reliability Standards FAC-001-3 and FAC-002-3 shall be retired immediately prior to the effective date of FAC-001-4 and FAC-002-4 in the particular jurisdiction in which the revised standard is becoming effective.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Facility Interconnection Studies and Requirements

Technical Rationale and Justification for Reliability Standards FAC-001 and FAC-002

April 2022

RELIABILITY | RESILIENCE | SECURITY




3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Table of Contents

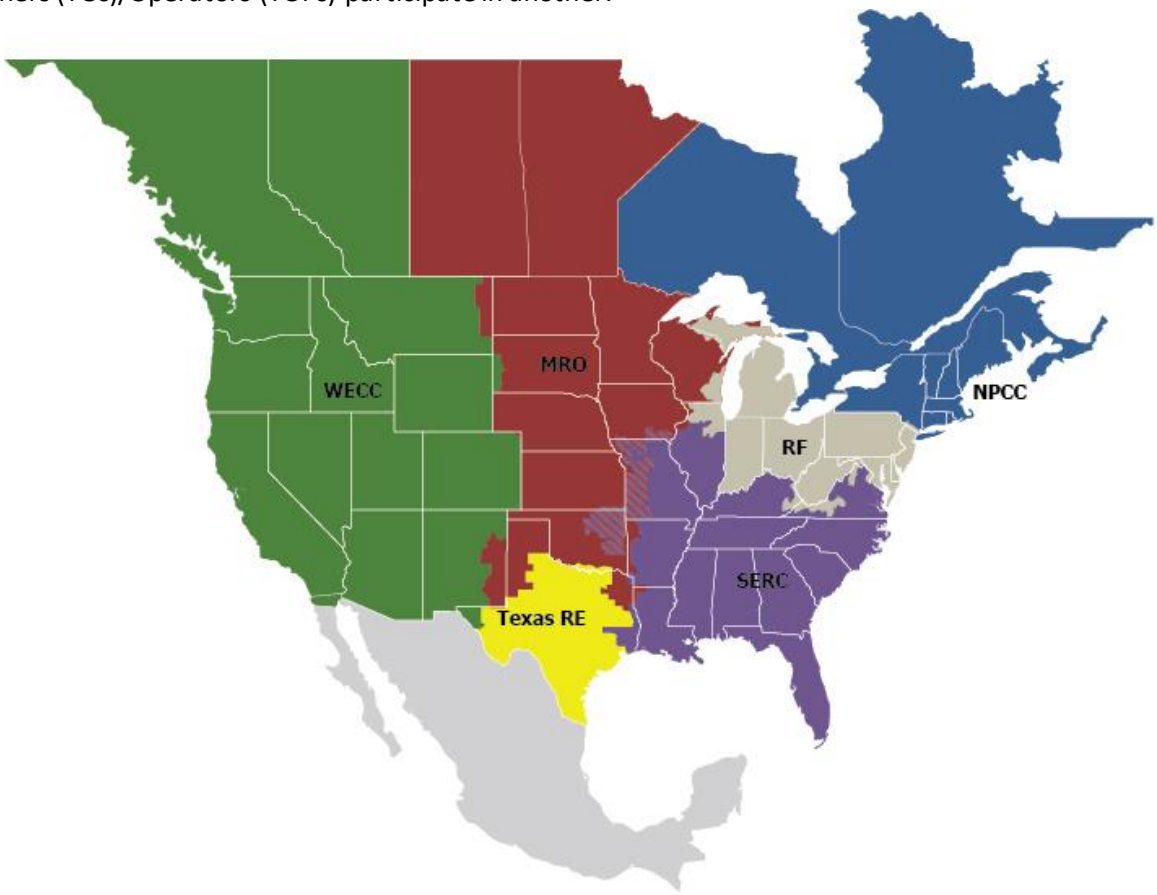
Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security

Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one RE while associated Transmission Owners (TOs)/Operators (TOPs) participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standards FAC-001-4 and FAC-002-4. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justifications document is not a Reliability Standard and should not be considered mandatory and enforceable.

Updates to this document now include the Project 2020-05 Modifications to FAC-001 and FAC-002 standard drafting team's (SDT's) intent in the requirement changes.

Background

This project modifies FAC-001-3 and FAC-002-3 to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.

FAC-001-3 and FAC-002-3 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner (TP) or Planning Coordinator (PC) when a new or materially modified interconnection Facility is connected to their system, neither standard specifies what entity is responsible for determining what is considered a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility.

Additionally, in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[1] This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements.

[1] LGIA-agreement.pdf (ferc.gov)

General Considerations

Qualified Change

The NERC Inverter-Based Resource Performance Task Force (IRPTF) identified several issues, which are documented in the white paper "IRPTF Review of NERC Reliability Standards" approved by the NERC Operating and Planning Committees in March 2020. The white paper identified issues in the FAC-001 and FAC-002 NERC Reliability Standards when using the term "materially modified". The IRPTF white paper points out that the term "materially modifying" in the FAC standards may cause confusion because of the FERC pro forma OATT using the same "materially modifying" term. in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[2] Also quoting from the IRPTF white paper "Both standards *(i.e. FAC-001 and FAC-002)* imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied."[3] Per the white paper, "This has led to confusion and potential reliability issues within industry. For example, a TP may consider an Inverter Based Resource (IBR) control system software change to be materially modifying, but if the Generator Owner (GO) does not consider such a change to be materially modifying they will not notify the TP of the change."[3]

The IRPTF White Paper recommends:

"FAC-001-3 and FAC-002-2 should be revised to: (a) clarify which entity is responsible for determining which facility changes are materially modifying, and therefore require study, (b) clarify that a Generator Owner should notify the affected entities before making a change that is considered materially modifying and (c) revise the term "materially modifying" so as to not cause confusion between the FAC standards and the FERC interconnection process:"[4]

The Project 2020-05 SDT researched existing language in current NERC standards and FERC pro forma language and concluded that the term "qualified change" was not used. Therefore, changing the term in FAC-001 and FAC-002 to "qualified change" should not cause confusion in the industry. The SDT proposes that the terms "materially modified", "material modification" and "materially modifying" in FAC-001 and FAC-002 be changed to "qualified change". As discussed below, the PC shall be required to post a publicly available definition of "qualified change" for the purposes of facility interconnection.

[2] LGIA-agreement.pdf (ferc.gov)

[3] IRPTF White Paper, dated March 2020: page 3 second paragraph (italics added)

Requirement R3

R3. *Each Transmission Owner shall address the following items in its Facility interconnection requirements: [Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. *Procedures for coordinated studies for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator and their impacts on affected systems.*

3.2. *Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change.*

3.3. *Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority Area.*

General Considerations for Requirement R3

Each TO and applicable GO should consider the following items in the development of Facility interconnection requirements:

- Procedures for requesting a new Facility interconnection or an existing interconnection seeking to make a qualified change
- Data required to properly study the interconnection
- Voltage level and MW and MVAR capacity or demand at the point of interconnection
- Breaker duty and surge protection
- System protection and coordination
- Metering and telecommunications
- Grounding and safety issues
- Insulation and insulation coordination
- Voltage, Reactive Power (including specifications for minimum static and dynamic reactive power requirements), and power factor control
- Power quality impacts
- Equipment ratings
- Synchronizing of Facilities
- Maintenance coordination
- Operational issues (abnormal frequency and voltages)
- Inspection requirements for new or existing interconnections seeking to make a qualified change
- Communications and procedures during normal and emergency operating conditions

Requirement R3, Part 3.3

Consistent with the Functional Model, there cannot be an assumption that the entity owning the transmission will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate

arrangements with a Balancing Authority (BA) to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 3.3, the TO is responsible for confirming that the party interconnecting has made appropriate provisions with a BA to operate within its metered boundaries.

Requirement R4

R4. *Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: [Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. *Procedures for coordinated studies of new interconnections and their impacts on affected system(s).*

4.2. *Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.*

4.3. *Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator are within a Balancing Authority Area.*

Requirement R4, Part 4.3

Consistent with the Functional Model, there cannot be an assumption that the entity owning the generation will be the same entity providing the BA function. It is the responsibility of the interconnecting party to make appropriate arrangements with a BA to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 4.3, the GO is responsible for confirming that the interconnecting party has made appropriate provisions with a BA to operate within its metered boundaries.

Requirement R6

R6. *Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

General Considerations for Requirement R6

The Project 2020-05 SDT drafted Requirement R6. The PC coordinates regional planning activities. *See, e.g.*, Glossary of Terms used in NERC Reliability Standards, which defines the Planning Authority/PC as "the responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems." Since the PC is responsible for this coordination, the PC is in the best position to ensure that changes to existing interconnections do not have adverse reliability impacts to the PC area as well as the neighboring areas. The PC is the appropriate party to define qualified change and make that definition publicly available. The PC is encouraged to coordinate the definition of qualified change with affected entities in their region, which could include TPs, GOs or others. Much of the same justifications for the PC to develop and make that definition publicly available are also applicable for this standard. This will provide consistency and clarity for entities to understand how changes to their interconnections may or may not have adverse reliability impacts.

If an entity is requesting a qualified change of an interconnection, the entity should determine whom the PC is. Entities requesting a qualified change should contact their TO to ascertain the relevant PC. Often the TO and PC are the same entity, or the TO can provide information on contacting the PC.

Factors the PC should consider in developing its definition of "qualified change" for purposes of required studies include how interconnection facility changes affect the steady-state short circuit and dynamic performance of that facility. Not all interconnection changes will necessarily result in changes on steady state, dynamic, or short circuit characteristics of a facility. The PC should also remember that potential qualified changes can have substantially different levels of performance as technology evolves or new technologies become available. Defining adverse reliability impacts calls for careful consideration.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Facility Interconnection Studies and Requirements

Technical Rationale and Justification for Reliability Standards FAC-001 and FAC-002

~~December 2021~~April 2022

RELIABILITY | RESILIENCE | SECURITY




3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

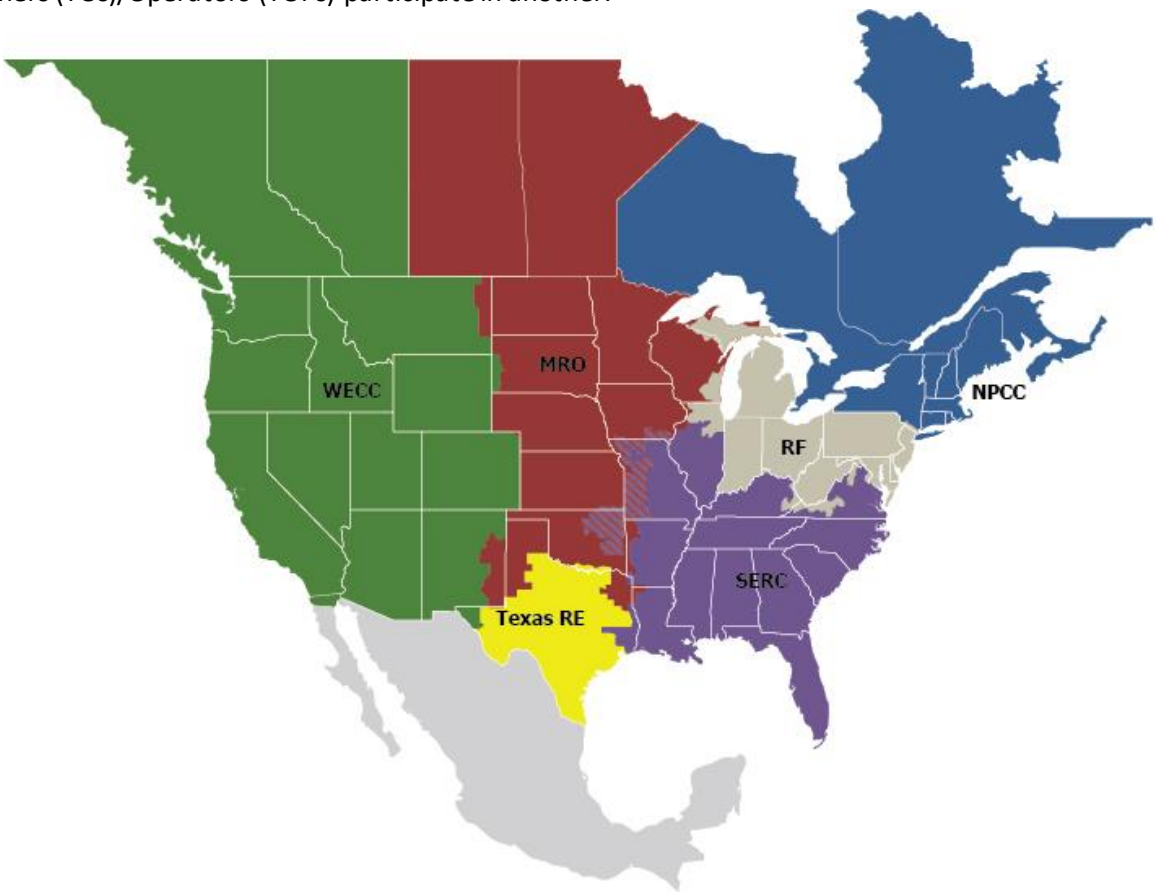
Table of Contents

Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities (REs), is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six RE boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one RE while associated Transmission Owners (TOs)/Operators (TOPs) participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

This document explains the technical rationale and justification for the proposed Reliability Standards FAC-001-4 and FAC-002-4. It provides stakeholders and the ERO Enterprise with an understanding of the technology and technical requirements in the Reliability Standard. This Technical Rationale and Justifications document is not a Reliability Standard and should not be considered mandatory and enforceable.

Updates to this document now include the Project 2020-05 Modifications to FAC-001 and FAC-002 standard drafting team's (SDT's) intent in the requirement changes.

Background

This project modifies FAC-001-3 and FAC-002-3 to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.

FAC-001-3 and FAC-002-3 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner (TP) or Planning Coordinator (PC) when a new or materially modified interconnection Facility is connected to their system, neither standard specifies what entity is responsible for determining what is considered a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility.

Additionally, in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[1] This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements.

[1] LGIA-agreement.pdf (ferc.gov)

General Considerations

Qualified Change

The NERC Inverter-Based Resource Performance Task Force (IRPTF) identified several issues, which are documented in the white paper "IRPTF Review of NERC Reliability Standards" approved by the NERC Operating and Planning Committees in March 2020. The white paper identified issues in the FAC-001 and FAC-002 NERC Reliability Standards when using the term "materially modified". The IRPTF white paper points out that the term "materially modifying" in the FAC standards may cause confusion because of the FERC pro forma OATT using the same "materially modifying" term. in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date."[2] Also quoting from the IRPTF white paper "Both standards *(i.e. FAC-001 and FAC-002)* imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied."[3] Per the white paper, "This has led to confusion and potential reliability issues within industry. For example, a TP may consider an Inverter Based Resource (IBR) control system software change to be materially modifying, but if the Generator Owner (GO) does not consider such a change to be materially modifying they will not notify the TP of the change."[3]

The IRPTF White Paper recommends:

"FAC-001-3 and FAC-002-2 should be revised to: (a) clarify which entity is responsible for determining which facility changes are materially modifying, and therefore require study, (b) clarify that a Generator Owner should notify the affected entities before making a change that is considered materially modifying and (c) revise the term "materially modifying" so as to not cause confusion between the FAC standards and the FERC interconnection process:"[4]

The Project 2020-05 SDT researched existing language in current NERC standards and FERC pro forma language and concluded that the term "qualified change" was not used. Therefore, changing the term in FAC-001 and FAC-002 to "qualified change" should not cause confusion in the industry. The SDT proposes that the terms "materially modified", "material modification" and "materially modifying" in FAC-001 and FAC-002 be changed to "qualified change". As discussed below, the PC shall be required to post a publicly available definition of "qualified change" for the purposes of facility interconnection.

[2] LGIA-agreement.pdf (ferc.gov)

[3] IRPTF White Paper, dated March 2020: page 3 second paragraph (italics added)

Requirement R3

R3. *Each Transmission Owner shall address the following items in its Facility interconnection requirements: [Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

3.1. *Procedures for coordinated studies ~~and identifying the impacts on affected systems~~ for new interconnections or existing interconnections seeking to make a qualified change as defined by the Planning Coordinator ~~under Reliability Standard FAC-002-4 Requirement R6~~and their impacts on affected systems.*

3.2. *Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections or existing interconnections seeking to make a qualified change.*

3.3. *Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change are within a Balancing Authority Area~~'s metered boundaries~~.*

General Considerations for Requirement R3

~~Originally the Parts of R3, with the exception of the first two bullets, which were added by the Project 2010-02 drafting team, this list has been moved to the Guidelines and Technical Basis section to provide entities with the flexibility to determine the Facility interconnection requirements that are technically appropriate for their respective Facilities. Including them as Parts of R3 was deemed too prescriptive, as frequently some items in the list do not apply to all applicable entities – and some applicable entities will have requirements that are not included in this list.~~

Each TO and applicable GO should consider the following items in the development of Facility interconnection requirements:

- Procedures for requesting a new Facility interconnection or an existing interconnection seeking to make a qualified change
- Data required to properly study the interconnection
- Voltage level and MW and MVAR capacity or demand at the point of interconnection
- Breaker duty and surge protection
- System protection and coordination
- Metering and telecommunications
- Grounding and safety issues
- Insulation and insulation coordination
- Voltage, Reactive Power (including specifications for minimum static and dynamic reactive power requirements), and power factor control
- Power quality impacts
- Equipment ratings
- Synchronizing of Facilities
- Maintenance coordination
- Operational issues (abnormal frequency and voltages)

- Inspection requirements for new or existing interconnections seeking to make a qualified change
- Communications and procedures during normal and emergency operating conditions

Requirement R3, Part 3.3

Consistent with the Functional Model, there cannot be an assumption that the entity owning the transmission will be the same entity providing the BA function. It is the responsibility of the party interconnecting to make appropriate arrangements with a Balancing Authority (BA) to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 3.3, the TO is responsible for confirming that the party interconnecting has made appropriate provisions with a BA to operate within its metered boundaries.

Requirement R4

R4. *Each applicable Generator Owner shall address the following items in its Facility interconnection requirements: [Violation Risk Factor: Lower] [Time Horizon: Long-Term Planning]*

4.1. *Procedures for coordinated studies of new interconnections and their impacts on affected system(s).*

4.2. *Procedures for notifying those responsible for the reliability of affected system(s) of new interconnections.*

4.3. *Procedures for confirming with those responsible for the reliability of affected systems that new Facilities or existing Facilities seeking to make a qualified change as defined by the Planning Coordinator ~~under Reliability Standard FAC-002-4 Requirement R6~~ are within a Balancing Authority Area~~'s metered boundaries~~.*

Requirement R4, Part 4.3

Consistent with the Functional Model, there cannot be an assumption that the entity owning the generation will be the same entity providing the BA function. It is the responsibility of the interconnecting party to make appropriate arrangements with a BA to ensure its Facilities are within the BA's metered boundaries, which also serves to facilitate the process of the coordination between the two entities that will be required under numerous other standards upon the start of operation. Under 4.3, the GO is responsible for confirming that the interconnecting party has made appropriate provisions with a BA to operate within its metered boundaries.

Requirement R6

R6. *Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

General Considerations for Requirement R6

The Project 2020-05 SDT drafted Requirement R6. The PC coordinates regional planning activities. *See, e.g.*, Glossary of Terms used in NERC Reliability Standards, which defines the Planning Authority/PC as "the responsible entity that coordinates and integrates transmission Facilities and service plans, resource plans, and Protection Systems." Since the PC is responsible for this coordination, the PC is in the best position to ensure that changes to existing interconnections do not have adverse reliability impacts to the PC area as well as the neighboring areas. The PC is the appropriate party to define qualified change and make that definition publicly available. The PC is encouraged to coordinate the definition of qualified change with affected entities in their region, which could include TPs, GOs or others. Much of the same justifications for the PC to develop and make that definition publicly available are also applicable for this standard. This will provide consistency and clarity for entities to understand how changes to their interconnections may or may not have adverse reliability impacts.

If an entity is requesting a qualified change of an interconnection, the entity should determine whom the PC is. Entities requesting a qualified change should contact their TO to ascertain the relevant PC. Often the TO and PC are the same entity, or the TO can provide information on contacting the PC.

Factors the PC should consider in developing its definition of "qualified change" for purposes of required studies include how interconnection facility changes affect the steady-state short circuit and dynamic performance of that facility. Not all interconnection changes will necessarily result in changes on steady state, dynamic, or short circuit characteristics of a facility. The PC should also remember that potential qualified changes can have substantially different levels of performance as technology evolves or new technologies become available. Defining adverse reliability impacts calls for careful consideration.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

DRAFT Implementation Guidance
Pending Submittal for ERO Enterprise Endorsement

Implementation Guidance for FAC-002-4

Implementation Guidance for FAC-002-4

April 2022

RELIABILITY | RESILIENCE | SECURITY




3353 Peachtree Road NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

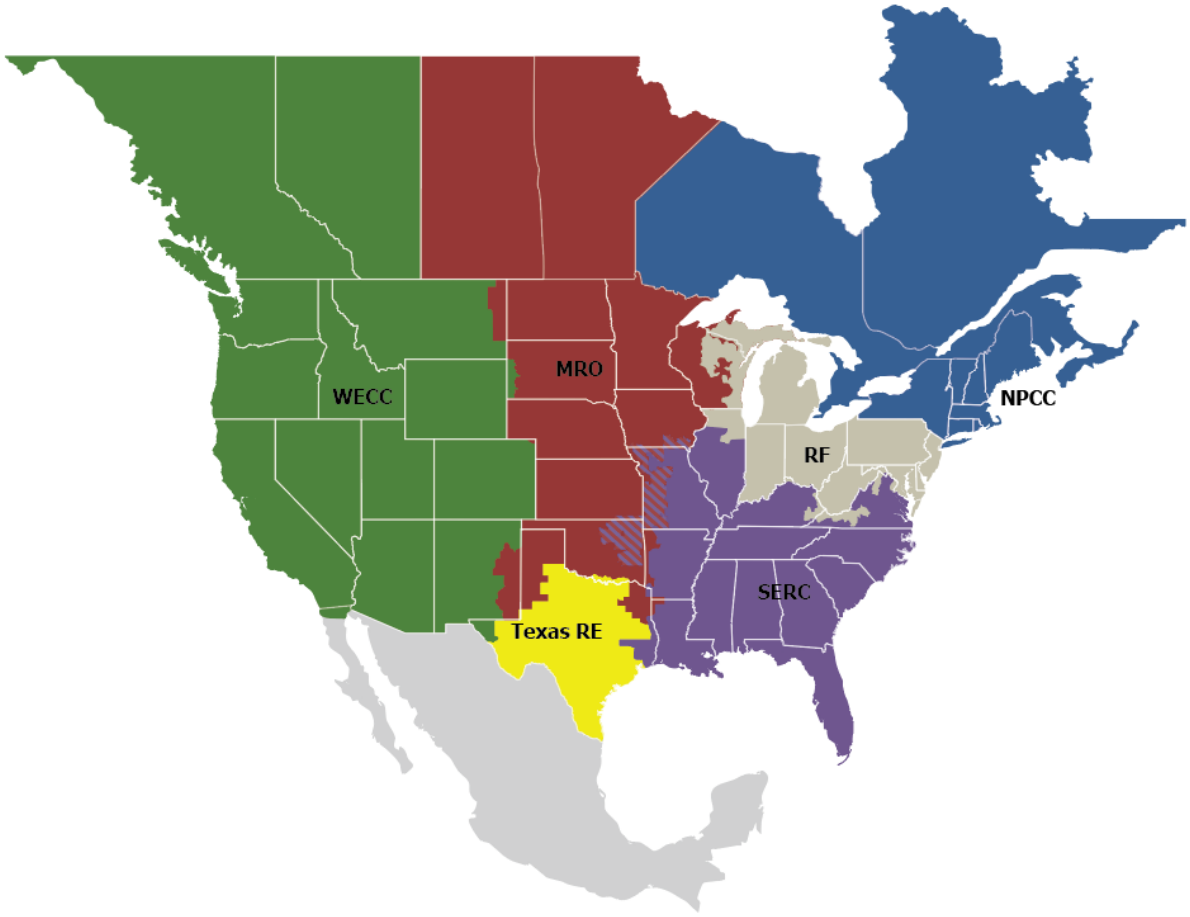
Table of Contents

Preface

Electricity is a key component of the fabric of modern society and the Electric Reliability Organization (ERO) Enterprise serves to strengthen that fabric. The vision for the ERO Enterprise, which is comprised of the North American Electric Reliability Corporation (NERC) and the six Regional Entities, is a highly reliable and secure North American bulk power system (BPS). Our mission is to assure the effective and efficient reduction of risks to the reliability and security of the grid.

Reliability | Resilience | Security
Because nearly 400 million citizens in North America are counting on us

The North American BPS is made up of six Regional Entity boundaries as shown in the map and corresponding table below. The multicolored area denotes overlap as some load-serving entities participate in one Regional Entity while associated Transmission Owners/Operators participate in another.



MRO	Midwest Reliability Organization
NPCC	Northeast Power Coordinating Council
RF	ReliabilityFirst
SERC	SERC Reliability Corporation
Texas RE	Texas Reliability Entity
WECC	WECC

Introduction

The Project 2020-05 Standard Drafting Team (SDT) drafted this Implementation Guidance to provide example approaches for compliance with FAC-002-4 Requirement R6. Implementation Guidance does not prescribe the only approach, but highlights one or more approaches that would be effective in achieving compliance with the standard. Because Implementation Guidance only provides examples, entities may choose alternative approaches that better fit their individual situations.

This document will be reviewed and updated upon initiation of a standards development project to modify the FAC-002-4 Standard.

Background

Project 2020-05 modified FAC-001-3 and FAC-002-3 to clarify the use of "materially modifying", particularly as it relates to compliance with the standards.

FAC-001-3 and FAC-002-3 imply that the term "materially modified" should be used to distinguish between facility changes that are required to be studied and those that need not be studied. While the existing standards do require coordination and cooperation between a Facility owner and the Transmission Planner (TP) or Planning Coordinator (PC) when a new or materially modified interconnection Facility is connected to their system, neither standard specifies what entity is responsible for determining what is considered a material modification. Further, the existing language is unclear about whether these requirements only apply when a different entity is proposing to interconnect to a Facility owner's Facility or if they also apply to the Facility owner's new or modified Facility.

Additionally, in FERC-jurisdictional areas, the term "Material Modification" means "those modifications that have a material impact on the cost or timing of any Interconnection Request with a later queue priority date." This has led to widespread confusion across the industry regarding the correct application of these terms related to the FERC Open Access Transmission Tariff (OATT) implementation and the NERC Reliability Standards requirements.

To address the confusion described above, the standard drafting team changed the term from "materially modified" to "qualified change". The standard drafting team also added a new Requirement R6 in FAC-002-4 to require the Planning Coordinator to define qualified change and make the definition publicly available.

Requirement R6

R6. Each Planning Coordinator shall maintain a publicly available definition of qualified change for the purposes of facility interconnection. [Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]

The Project 2020-05 SDT drafted Requirement R6. Examples of factors the PC could consider in developing its definition of "qualified change" for purposes of required studies are included in the tables below. The PC should consider what is appropriate for their region in determining the definition of qualified change.

Table 1.1: Qualified Changes for End-User Facilities

Category	Description	Detailed Example(s)
1	Increase in Demand	**Example 1:** • Annual increase in Demand exceeding 10% **Example 2:** • Increase in Demand of 75 MW or greater within the next two years; or • Increase in Demand of 20 MW or greater within the next two years for a third-party Facility interconnected to a Generator Owner's Facility
2	Addition of equipment that would significantly impact the composite load model used to represent a Facility	**Example 1:** • Installation of a motor 1,000 hp or larger where no motors previously existed; or • Addition of a motor exceeding the size of all other motors connected within a Facility with at least 500 hp of motors
3	Changes in protection schemes or settings	
4	Changes in harmonic levels	
5	A change in end-user Facility topology that may affect power flows on the BES	

Table 1.2: Qualified Changes for Transmission		
Category	**Description**	**Detailed Example(s)**
1	Change in Rating	**Example 1:** • Change in the facility thermal rating by greater than 5% **Example 2:** • Change in the facility impedance by greater than 5% **Example 3:** • Change in facility voltage class
3	Change in Protection Coordination	**Example 1:** • Change in the protection coordination that would alter the way a facility would switch
4	Change in topology	**Example 1:** • Change in topology that would alter power flows on the BES

Table 1.3: Qualified changes for generation		
Category	**Description**	**Detailed Example(s)**
1	Change in Generator Output	**Examples** • Change that affects its Seasonal Real Power or Reactive Power capability by more than 10 percent of the last reported verified capability and is expected to last more than six months. • Change in power factor capability of the generator
2	Change of GSU	**Examples** • Change of GSU that results in any of the following differences ▪ Reduction in rating by more than 10% ▪ Impedance change by more than 10% ○ Change in transformer losses ○ Change in transformer saturation differences
3	Change in Generator Characteristics	**Examples** • Change in the inertia of the Generator by more than 10% • Change in steady state transient and sub-transient reactance of the Generator or generator Interconnection Facilities by more than 10% • Transmission Planner requested Generator facility projects in MOD-027 or MOD-026 resulting in changes that alter the equipment response characteristic. • Changes to a generator's electromagnetic transient models.
4	Change in Protection System of the generator facilities or generator interconnection facilities	**Examples** • Changes in relay settings as required in PRC-024 R3 to report changes or limitations to Transmission Planner and Planning Coordinator within 30 days. ▪ include high and low frequency settings along with delay times if applicable ▪ include high and low voltage settings along with delay times if applicable
5	Inverter Based Resource (IBR) Only: Change in Inverter or inverter settings or	**Examples** • Change of 10% or more of the inverter-based resource units at a facility that is not replacement in-kind. • Change in any control settings ▪ resulting in a difference in frequency or voltage support of the Inverter Based Resource ▪ resulting in a difference in when the IBR discontinues current injection to the GRID (i.e. blocking commands)

Table 1.3: Qualified changes for generation		
Category	**Description**	**Detailed Example(s)**
6	Unplanned change in governor or governor settings	**Examples** Uncharacteristic changes that result in how the generator responds to grid frequency deviations and is expected to last more than six months.
7	Unplanned change in exciter or exciter settings or	**Examples** Uncharacteristic changes that result in how the generator responds to grid voltage deviations and is expected to last more than six months.
8	Change in power system stabilizer	**Examples** • Addition or removal of power system stabilizer • Setting changes of power system stabilizer

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Violation Risk Factor and Violation Severity Level Justifications

Project 2020-05 Modifications to FAC-001 and FAC-002

This document provides the standard drafting team's (SDT's) justification for assignment of violation risk factors (VRFs) and violation severity levels (VSLs) for each requirement in FAC-001 and FAC-002. Each requirement is assigned a VRF and a VSL. These elements support the determination of an initial value range for the Base Penalty Amount regarding violations of requirements in FERC-approved Reliability Standards, as defined in the Electric Reliability Organizations (ERO) Sanction Guidelines. The SDT applied the following NERC criteria and FERC Guidelines when developing the VRFs and VSLs for the requirements.

NERC Criteria for Violation Risk Factors

High Risk Requirement

A requirement that, if violated, could directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly cause or contribute to Bulk Electric System instability, separation, or a cascading sequence of failures, or could place the Bulk Electric System at an unacceptable risk of instability, separation, or cascading failures, or could hinder restoration to a normal condition.

Medium Risk Requirement

A requirement that, if violated, could directly affect the electrical state or the capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System. However, violation of a medium risk requirement is unlikely to lead to Bulk Electric System instability, separation, or cascading failures; or, a requirement in a planning time frame that, if violated, could, under emergency, abnormal, or restorative conditions anticipated by the preparations, directly and adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System. However, violation of a medium risk requirement is unlikely, under emergency, abnormal, or restoration conditions anticipated by the preparations, to lead to Bulk Electric System instability, separation, or cascading failures, nor to hinder restoration to a normal condition.

Lower Risk Requirement
A requirement that is administrative in nature and a requirement that, if violated, would not be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor and control the Bulk Electric System; or, a requirement that is administrative in nature and a requirement in a planning time frame that, if violated, would not, under the emergency, abnormal, or restorative conditions anticipated by the preparations, be expected to adversely affect the electrical state or capability of the Bulk Electric System, or the ability to effectively monitor, control, or restore the Bulk Electric System.

FERC Guidelines for Violation Risk Factors

Guideline (1) – Consistency with the Conclusions of the Final Blackout Report

FERC seeks to ensure that VRFs assigned to Requirements of Reliability Standards in these identified areas appropriately reflect their historical critical impact on the reliability of the Bulk-Power System. In the VSL Order, FERC listed critical areas (from the Final Blackout Report) where violations could severely affect the reliability of the Bulk-Power System:

- Emergency operations
- Vegetation management
- Operator personnel training
- Protection systems and their coordination
- Operating tools and backup facilities
- Reactive power and voltage control
- System modeling and data exchange
- Communication protocol and facilities
- Requirements to determine equipment ratings
- Synchronized data recorders
- Clearer criteria for operationally critical facilities
- Appropriate use of transmission loading relief.

Guideline (2) – Consistency within a Reliability Standard
FERC expects a rational connection between the sub-Requirement VRF assignments and the main Requirement VRF assignment.

Guideline (3) – Consistency among Reliability Standards
FERC expects the assignment of VRFs corresponding to Requirements that address similar reliability goals in different Reliability Standards would be treated comparably.

Guideline (4) – Consistency with NERC's Definition of the Violation Risk Factor Level
Guideline (4) was developed to evaluate whether the assignment of a particular VRF level conforms to NERC's definition of that risk level.

Guideline (5) – Treatment of Requirements that Co-mingle More Than One Obligation
Where a single Requirement co-mingles a higher risk reliability objective and a lesser risk reliability objective, the VRF assignment for such Requirements must not be watered down to reflect the lower risk level associated with the less important objective of the Reliability Standard.

NERC Criteria for Violation Severity Levels

VSLs define the degree to which compliance with a requirement was not achieved. Each requirement must have at least one VSL. While it is preferable to have four VSLs for each requirement, some requirements do not have multiple "degrees" of noncompliant performance and may have only one, two, or three VSLs.

VSLs should be based on NERC's overarching criteria shown in the table below:

Lower VSL	Moderate VSL	High VSL	Severe VSL
The performance or product measured almost meets the full intent of the requirement.	The performance or product measured meets the majority of the intent of the requirement.	The performance or product measured does not meet the majority of the intent of the requirement, but does meet some of the intent.	The performance or product measured does not substantively meet the intent of the requirement.

FERC Order of Violation Severity Levels

The FERC VSL guidelines are presented below, followed by an analysis of whether the VSLs proposed for each requirement in the standard meet the FERC Guidelines for assessing VSLs:

Guideline (1) – Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance

Compare the VSLs to any prior levels of non-compliance and avoid significant changes that may encourage a lower level of compliance than was required when levels of non-compliance were used.

Guideline (2) – Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties

A violation of a "binary" type requirement must be a "Severe" VSL.
Do not use ambiguous terms such as "minor" and "significant" to describe noncompliant performance.

Guideline (3) – Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement

VSLs should not expand on what is required in the requirement.

Guideline (4) – Violation Severity Level Assignment Should Be Based on a Single Violation, Not on a Cumulative Number of Violations

Unless otherwise stated in the requirement, each instance of non-compliance with a requirement is a separate violation. Section 4 of the Sanction Guidelines states that assessing penalties on a per violation per day basis is the "default" for penalty calculations.

VRF Justification for FAC-001, Requirement R1

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R1

The VSL did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VRF Justification for FAC-001, Requirement R2

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R2

The VSL did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VRF Justification for FAC-001, Requirement R3

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R3

The VSL did not substantially change from the previously FERC approved FAC-001-3 Reliability Standard. The VSL has been revised to reflect clarification in the severe VSL language. The High and Moderate VSL did not change.

VRF Justification for FAC-001, Requirement R4

The VRF did not change from the previously FERC approved FAC-001-3 Reliability Standard.

VSL Justification for FAC-001, Requirement R4

The VSL did not substantially change from the previously FERC approved FAC-001-3 Reliability Standard. The VSL has been revised to reflect clarification in the severe VSL language. The High and Moderate VSL did not change.

VSLs for FAC-001, Requirement R3			
Lower	**Moderate**	**High**	**Severe**
N/A	The Transmission Owner failed to address one part of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address two parts of Requirement R3 (Part 3.1 through Part 3.3).	The Transmission Owner failed to address three parts of Requirement R3 (Part 3.1 through Part 3.3).

VSL Justifications for FAC-001 Requirement R3	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, only reflect the update to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The requirement is for the Responsible Entity to address items in its Facility interconnection requirements as specified in Requirement R3. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language. The moderate VSL addresses where the Responsible Entity failed to include one of the applicable parts of the plan as specified in Requirement R3. The high VSL addresses where the Responsible Entity failed to include two of the applicable parts of the plan as specified in Requirement R3. The severe VSL addresses where the Responsible Entity but failed to include three of the applicable parts of the plan as specified in Requirement R3.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-001, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
N/A	The Generator Owner failed to address one part of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address two parts of Requirement R4 (Part 4.1 through Part 4.3).	The Generator Owner failed to address three parts of Requirement R4 (Part 4.1 through Part 4.3).

VSL Justifications for FAC-001 Requirements R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, only reflect the update to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The requirement is for the Generator Owner to address items in its Facility interconnection requirements as specified in Requirement R4. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language. The moderate VSL addresses where the Generator Owner failed to include one of the applicable parts of the plan as specified in Requirement R4. The high VSL addresses where the Generator Owner failed to include two of the applicable parts of the plan as specified in Requirement R4. The severe VSL addresses where the Generator Owner to include three of the applicable parts of the plan as specified in Requirement R4.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VRF Justification for FAC-002, Requirement R1
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R1
The VSL has been revised to reflect modified standards language.

VRF Justification for FAC-002, Requirement R2
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R2
The VSL has been revised to reflect modified standards language.

VRF Justification for FAC-002, Requirement R3
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R3
The VSL has been revised to reflect clarification in the Severe, High, Moderate, and Lower VSL language.

VRF Justification for FAC-002, Requirement R4
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R4
The VSL has been revised to reflect clarification in the Severe, High, Moderate, and Lower VSL language.

VRF Justification for FAC-002, Requirement R5
The VRF did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VSL Justification for FAC-002, Requirement R5
The VSL did not change from the previously FERC approved FAC-002-3 Reliability Standard.

VRF Justification for FAC-002, Requirement R6
Requirement R6 is a proposed new requirement. The proposed VRF is Lower and is consistent with other requirements in the standard.

VSL Justification for FAC-002, Requirement R6
Requirement R6 is a purposed new requirement, with only a severe VSL.

VSLs for FAC-002, Requirement R1			
Lower	**Moderate**	**High**	**Severe**
The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study two of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator studied the reliability impact of: (i) interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, but failed to study three of the Parts (R1, 1.1-1.4).	The Transmission Planner or Planning Coordinator failed to study the reliability impact of: interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) ~~materially modifying~~ existing interconnections of, generation, transmission, or electricity end-user Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6.

study one of the Parts (R1, 1.1-1.4).			

VSL Justifications for FAC-002 Requirement R1	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-002, Requirement R2			
Lower	**Moderate**	**High**	**Severe**
The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6,~~,~~ coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Generator Owner seeking to interconnect new generation Facilities, ~~materially modifying~~ or existing interconnections of generation Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.

VSL Justifications for FAC-002 Requirement R2	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

VSLs for FAC-002, Requirement R3			
Lower	**Moderate**	**High**	**Severe**
The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Transmission Owner or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Transmission Owner, or Distribution Provider seeking to interconnect new transmission Facilities or electricity end-user Facilities, or ~~materially modifying~~ existing interconnections of transmission Facilities seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6, or electricity end-user Facilities, failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.

VSL Justifications for FAC-002 Requirement R3	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-002, Requirement R4			
Lower	**Moderate**	**High**	**Severe**
The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in one of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in two of the Parts (R1, 1.1-1.4).	The Transmission Owner coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities, but failed to provide data necessary to perform studies as described in three of the Parts (R1, 1.1-1.4).	The Transmission Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested new or ~~materially modifying~~ existing interconnections seeking to make a qualified change as defined by the Planning Coordinator under Requirement R6 to its Facilities.

VSL Justifications for FAC-002 Requirement R4	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The proposed VSL does not have the unintended consequence of lowering the level of compliance, it was revised to reflect the updates to the requirement language.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	The VSL only reflect the update to the requirement language. Guideline 2a is not applicable as these VSLs are not binary. The VSLs do not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	Each VSL is based on a single violation and not cumulative violations.

VSLs for FAC-002, Requirement R6			
Lower	**Moderate**	**High**	**Severe**
N/A	N/A	N/A	The Planning Coordinator did not maintain a publicly available definition of qualified change for the purposes of facility interconnection.

VSL Justifications for FAC-002 Requirement R6	
FERC VSL G1 Violation Severity Level Assignments Should Not Have the Unintended Consequence of Lowering the Current Level of Compliance	The severe level VSL is the only new proposed VSL for this new requirement; therefore, the purposed VSL does not have the unintended consequence of lowering the current level of compliance.
FERC VSL G2 Violation Severity Level Assignments Should Ensure Uniformity and Consistency in the Determination of Penalties Guideline 2a: The Single Violation Severity Level Assignment Category for "Binary" Requirements Is Not Consistent Guideline 2b: Violation Severity Level Assignments that Contain Ambiguous Language	"Severe" is the only level of noncompliance for this "binary" requirement, consistent with this Guideline. The VSL does not contain ambiguous language.
FERC VSL G3 Violation Severity Level Assignment Should Be Consistent with the Corresponding Requirement	The proposed VSL uses the same terminology as used in the associated requirement and is, therefore, consistent with the requirement.

FERC VSL G4 Violation Severity Level Assignment Should Be Based on A Single Violation, Not on A Cumulative Number of Violations	The serve VSL is based on a single violation and not cumulative violations.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Announcement

Project 2020-05 Modifications to FAC-001 and FAC-002

Final Ballots Open through April 22, 2022

Now Available

Final ballots are open through **8 p.m. Eastern, Friday, April 22, 2022** for the following:

- FAC-001-4 – Facility Interconnection Requirements
- FAC-002-4 – Facility Interconnection Studies
- Implementation Plan

Balloting

In the final ballot, votes are counted by exception. Votes from the previous ballot are automatically carried over in the final ballot. Only members of the applicable ballot pools can cast a vote. Ballot pool members who previously voted have the option to change their vote in the final ballot. Ballot pool members who did not cast a vote during the previous ballot can vote in the final ballot.

Members of the ballot pool(s) associated with this project can log into the Standards Balloting and Commenting System (SBS) and submit votes here.

- *Contact NERC IT support directly at https://support.nerc.net/ (Monday – Friday, 8 a.m. - 5 p.m. Eastern) for problems regarding accessing the SBS due to a forgotten password, incorrect credential error messages, or system lock-out.*
- *Passwords expire every **6 months** and must be reset.*
- *The SBS **is not** supported for use on mobile devices.*
- *Please be mindful of ballot and comment period closing dates. We ask to **allow at least 48 hours** for NERC support staff to assist with inquiries. Therefore, it is recommended that users try logging into their SBS accounts **prior to the last day** of a comment/ballot period.*

Next Steps

The voting results will be posted and announced after the ballots close. If approved, the standard will be submitted to the Board of Trustees for adoption and then filed with the appropriate regulatory authorities.

For more information on the Standards Development Process, refer to the Standard Processes Manual.

For more information or assistance, contact Senior Standards Developer, Alison Oswald (via email) or at 404-446-9668.

North American Electric Reliability Corporation
3353 Peachtree Rd, NE
Suite 600, North Tower
Atlanta, GA 30326
404-446-2560 | www.nerc.com

Ballot Results

Ballot Name: 2020-05 Modifications to FAC-001 and FAC-002 FAC-001-4 and FAC-002-4 FN 2 ST
Voting Start Date: 4/13/2022 9:09:11 AM
Voting End Date: 4/22/2022 8:00:00 PM
Ballot Type: ST
Ballot Activity: FN
Ballot Series: 2
Total # Votes: 240
Total Ballot Pool: 253
Quorum: 94.86
Quorum Established Date: 4/13/2022 10:21:59 AM
Weighted Segment Value: 85.64

Actions

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 1	71	1	54	0.857	9	0.143	0	4	4
Segment: 2	7	0.7	6	0.6	1	0.1	0	0	0
Segment: 3	59	1	44	0.846	8	0.154	0	4	3
Segment: 4	15	1	10	1	0	0	0	1	4
Segment: 5	58	1	41	0.788	11	0.212	0	5	1
Segment: 6	38	1	27	0.818	6	0.182	0	4	1
Segment: 7	0	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0	0

Segment: 9	0	0	0	0	0	0	0	0	0
Segment: 10	5	0.5	4	0.4	1	0.1	0	0	0
Totals:	253	6.2	186	5.31	36	0.89	0	18	13

Ballot Pool Members

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	DTE Energy	patricia ireland		Affirmative	N/A
6	PPL - Louisville Gas and Electric Co.	Linn Oelker		Affirmative	N/A
5	AEP	Thomas Foltz		Negative	N/A
4	MGE Energy - Madison Gas and Electric Co.	Joseph DePoorter		Affirmative	N/A
6	OGE Energy - Oklahoma Gas and Electric Co.	Sing Tay		None	N/A
1	Dominion - Dominion Virginia Power	Candace Marshall		None	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Affirmative	N/A
3	PPL - Louisville Gas and Electric Co.	James Frank		Affirmative	N/A
10	ReliabilityFirst	Lindsey Mannion		Negative	N/A
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Affirmative	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Affirmative	N/A
1	PPL Electric Utilities Corporation	Michelle Longo		Affirmative	N/A
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Affirmative	N/A
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
1	Hydro-Qu?bec TransEnergie	Nicolas Turcotte		Affirmative	N/A
5	Platte River Power Authority	Tyson Archie		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Negative	N/A
3	Dominion - Dominion Resources, Inc.	Connie Schroeder		Affirmative	N/A
3	Omaha Public Power District	David Heins		Affirmative	N/A
2	PJM Interconnection, L.L.C.	Tom Foster	Elizabeth Davis	Affirmative	N/A
5	PPL - Louisville Gas and Electric Co.	JULIE HOSTRANDER		Affirmative	N/A
1	Allete - Minnesota Power, Inc.	Jamie Monette		Affirmative	N/A
1	AEP - AEP Service Corporation	Dennis Sauriol		Negative	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Affirmative	N/A
1	Western Area Power Administration	sean erickson		Affirmative	N/A
4	Utility Services, Inc.	Brian Evans-Mongeon		None	N/A
5	Ameren - Ameren Missouri	Sam Dwyer		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Affirmative	N/A
6	Con Ed - Consolidated Edison Co. of New York	Michael Foley		Affirmative	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard		Abstain	N/A
6	Platte River Power Authority	Sabrina Martz		Abstain	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A

1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	National Grid USA	Michael Jones		Affirmative	N/A
3	BC Hydro and Power Authority	Hootan Jarollahi		Affirmative	N/A
6	Powerex Corporation	Raj Hundal		Affirmative	N/A
1	BC Hydro and Power Authority	Adrian Andreoiu		Affirmative	N/A
1	Public Utility District No. 1 of Chelan County	Diane Landry		Negative	N/A
3	Ameren - Ameren Services	David Jendras		Affirmative	N/A
6	NiSource - Northern Indiana Public Service Co.	Joe O'Brien		Negative	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Negative	N/A
1	Sunflower Electric Power Corporation	Paul Mehlhaff		Affirmative	N/A
5	NiSource - Northern Indiana Public Service Co.	Kathryn Tackett		Negative	N/A
5	Public Utility District No. 1 of Chelan County	Meaghan Connell		Negative	N/A
1	NiSource - Northern Indiana Public Service Co.	Steve Toosevich		Negative	N/A
6	Public Utility District No. 2 of Grant County, Washington	LeRoy Patterson		Affirmative	N/A
1	Xcel Energy, Inc.	Dean Schiro	Amy Casuscelli	Affirmative	N/A
5	Sacramento Municipal Utility District	Nicole Goi	Tim Kelley	Affirmative	N/A
5	Xcel Energy, Inc.	Gerry Huitt		Affirmative	N/A
6	Xcel Energy, Inc.	Carrie Dixon		Affirmative	N/A
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Affirmative	N/A
3	Public Utility District No. 1 of Chelan County	Joyce Gundry		Negative	N/A
1	Wind Energy Transmission Texas, LLC	Manivone Vorabouth		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Affirmative	N/A
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
5	Southern Company - Southern Company Generation	James Howell		Affirmative	N/A
6	Southern Company - Southern Company Generation	Ron Carlsen		Affirmative	N/A
5	Santee Cooper	Marty Watson		Affirmative	N/A
6	Santee Cooper	Glenda Horne		Affirmative	N/A
1	Santee Cooper	Chris Wagner		Affirmative	N/A
3	Santee Cooper	James Poston		Affirmative	N/A
3	Platte River Power Authority	Wade Kiess		Abstain	N/A
4	Seattle City Light	Hao Li		Affirmative	N/A
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
3	Xcel Energy, Inc.	Nicholas Friebel		Affirmative	N/A
3	Tennessee Valley Authority	Ian Grant		Affirmative	N/A
1	American Transmission Company, LLC	LaTroy Brumfield		Negative	N/A
6	PSEG - PSEG Energy Resources and Trade LLC	Joseph Neglia		Affirmative	N/A
1	Tri-State G and T Association, Inc.	Donna Wood		Affirmative	N/A
5	Choctaw Generation Limited Partnership, LLLP	Rob Watson		Affirmative	N/A
1	Ameren - Ameren Services	Tamara Evey		Affirmative	N/A

3	Avista - Avista Corporation	Scott Kinney		Affirmative	N/A
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		Affirmative	N/A
5	Avista - Avista Corporation	Glen Farmer		Affirmative	N/A
6	Tennessee Valley Authority	Marjorie Parsons		Affirmative	N/A
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Arizona Electric Power Cooperative, Inc.	Jennifer Bray		Affirmative	N/A
3	National Grid USA	Brian Shanahan		Affirmative	N/A
3	Con Ed - Consolidated Edison Co. of New York	Peter Yost		Affirmative	N/A
5	Con Ed - Consolidated Edison Co. of New York	Haizhen Wang		Affirmative	N/A
5	Dominion - Dominion Resources, Inc.	Rachel Snead		Affirmative	N/A
1	NB Power Corporation	Nurul Abser		Affirmative	N/A
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		None	N/A
5	National Grid USA	Elizabeth Spivak		Negative	N/A
3	DTE Energy - Detroit Edison Company	Karie Barczak		Affirmative	N/A
3	Tri-State G and T Association, Inc.	Janelle Marriott Gill		Affirmative	N/A
5	DTE Energy - Detroit Edison Company	Adrian Raducea		Affirmative	N/A
6	Public Utility District No. 1 of Chelan County	Glen Pruitt		Negative	N/A
1	Georgia Transmission Corporation	Greg Davis	Stephen Stafford	Negative	N/A
1	IDACORP - Idaho Power Company	Mike Marshall		None	N/A
3	Georgia System Operations Corporation	Scott McGough		Negative	N/A
5	Oglethorpe Power Corporation	Donna Johnson		Negative	N/A
4	Seminole Electric Cooperative, Inc.	Jonathan Robbins		Abstain	N/A
5	Seminole Electric Cooperative, Inc.	Trena Haynes		Abstain	N/A
3	Nebraska Public Power District	Tony Eddleman		Affirmative	N/A
1	SaskPower	Wayne Guttormson		Affirmative	N/A
5	Nebraska Public Power District	Ronald Bender		Affirmative	N/A
6	APS - Arizona Public Service Co.	Marcus Bortman		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
5	APS - Arizona Public Service Co.	Michelle Amarantos		Affirmative	N/A
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	None	N/A
6	FirstEnergy - FirstEnergy Corporation	Tricia Bynum		Affirmative	N/A
3	Colorado Springs Utilities	Hillary Dobson		Affirmative	N/A
1	Lincoln Electric System	Josh Johnson		Affirmative	N/A
5	Lincoln Electric System	Jason Fortik		Affirmative	N/A
1	Colorado Springs Utilities	Mike Braunstein		Affirmative	N/A
1	FirstEnergy - FirstEnergy Corporation	Julie Severino		Affirmative	N/A
1	Sempra - San Diego Gas and Electric	Mo Derbas		Negative	N/A
3	Sempra - San Diego Gas and Electric	Bridget Silvia		Negative	N/A
5	Sempra - San Diego Gas and Electric	Jennifer Wright		Negative	N/A
6	Evergy	Thomas ROBBEN	Alan Kloster	Affirmative	N/A
5	PSEG - PSEG Fossil LLC	Tim Kucey		Affirmative	N/A

3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
3	NW Electric Power Cooperative, Inc.	John Stickley		Affirmative	N/A
5	Evergy	Derek Brown	Alan Kloster	Affirmative	N/A
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
6	Los Angeles Department of Water and Power	Anton Vu		Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Evergy	Allen Klassen	Alan Kloster	Affirmative	N/A
1	Eversource Energy	Quintin Lee		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
6	Lincoln Electric System	Eric Ruskamp		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Affirmative	N/A
6	Portland General Electric Co.	Daniel Mason		Affirmative	N/A
1	Nebraska Public Power District	Jamison Cawley		Affirmative	N/A
5	Berkshire Hathaway - NV Energy	Kevin Salsbury	Dwanique Spiller	Abstain	N/A
3	Owensboro Municipal Utilities	Thomas Lyons		Negative	N/A
3	Snohomish County PUD No. 1	Holly Chaney		Affirmative	N/A
4	Public Utility District No. 1 of Snohomish County	John Martinsen		Affirmative	N/A
6	Snohomish County PUD No. 1	John Liang		Affirmative	N/A
1	Public Utility District No. 1 of Snohomish County	Alyssia Rhoads		Affirmative	N/A
5	Public Utility District No. 1 of Snohomish County	Sam Nietfeld		Affirmative	N/A
5	FirstEnergy - FirstEnergy Corporation	Robert Loy		Affirmative	N/A
4	North Carolina Electric Membership Corporation	Richard McCall	Scott Brame	Affirmative	N/A
1	Northeast Missouri Electric Power Cooperative	Kevin White	Todd Bennett	Affirmative	N/A
5	Associated Electric Cooperative, Inc.	Brad Haralson		Affirmative	N/A
3	North Carolina Electric Membership Corporation	Chris DiMisa	Scott Brame	Affirmative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
3	Evergy	Marcus Moor	Alan Kloster	Affirmative	N/A
1	MEAG Power	David Weekley	Scott Miller	Abstain	N/A
5	NB Power Corporation	David Melanson		Affirmative	N/A
2	Southwest Power Pool, Inc. (RTO)	Charles Yeung		Affirmative	N/A
5	Colorado Springs Utilities	Jeff Icke		Affirmative	N/A
5	CMS Energy - Consumers Energy Company	David Greyerbiehl		Affirmative	N/A
1	Omaha Public Power District	Doug Peterchuck		Affirmative	N/A
4	CMS Energy - Consumers Energy Company	Aric Root		Affirmative	N/A
6	Omaha Public Power District	Shonda McCain		Affirmative	N/A
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Affirmative	N/A

5	Bonneville Power Administration	Scott Winner		Affirmative	N/A
5	Dairyland Power Cooperative	Tommy Drea		Affirmative	N/A
5	Orlando Utilities Commission	Dania Colon		Affirmative	N/A
1	OTP - Otter Tail Power Company	Charles Wicklund		Affirmative	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
4	LaGen	Wayne Messina		None	N/A
1	Bonneville Power Administration	Kammy Rogers-Holliday		Affirmative	N/A
3	Bonneville Power Administration	Ken Lanehome		Affirmative	N/A
6	Bonneville Power Administration	Andrew Meyers		Affirmative	N/A
6	AEP	JT Kuehne		Negative	N/A
5	Hydro-Qu?bec Production	Carl Pineault		Affirmative	N/A
3	Los Angeles Department of Water and Power	Tony Skourtas		None	N/A
3	CMS Energy - Consumers Energy Company	Karl Blaszkowski		Affirmative	N/A
1	Dairyland Power Cooperative	Steve Ritscher		Affirmative	N/A
3	OTP - Otter Tail Power Company	Wendi Olson		Affirmative	N/A
5	Los Angeles Department of Water and Power	Glenn Barry		None	N/A
1	Los Angeles Department of Water and Power	faranak sarbaz		None	N/A
3	M and A Electric Power Cooperative	Stephen Pogue		Affirmative	N/A
5	OTP - Otter Tail Power Company	Tammy Kubela		Affirmative	N/A
6	Florida Municipal Power Agency	Richard Montgomery	LaKenya VanNorman	Abstain	N/A
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	N/A
2	California ISO	Darcy O'Connell		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Affirmative	N/A
3	MEAG Power	Roger Brand	Scott Miller	Abstain	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
2	Midcontinent ISO, Inc.	Bobbi Welch		Affirmative	N/A
4	American Public Power Association	John McCaffrey		None	N/A
3	APS - Arizona Public Service Co.	Jessica Lopez		Affirmative	N/A
3	Ocala Utility Services	Neville Bowen	LaKenya VanNorman	Abstain	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
5	Pacific Gas and Electric Company	Frank Lee	Michael Johnson	Negative	N/A
6	Northern California Power Agency	Dennis Sismaet		Abstain	N/A
5	Herb Schrayshuen	Herb Schrayshuen		Affirmative	N/A
5	Ontario Power Generation Inc.	Constantin Chitescu		Affirmative	N/A
3	CPS Energy	Glenn Pressler		None	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		Affirmative	N/A
4	Northern California Power Agency	Marty Hostler		None	N/A
1	Manitoba Hydro	Nazra Gladu		Affirmative	N/A

1	Great River Energy	Gordon Pietsch		Affirmative	N/A
1	Pedernales Electric Cooperative, Inc.	Bradley Collard		Affirmative	N/A
1	Seminole Electric Cooperative, Inc.	Kristine Ward		Abstain	N/A
3	Seminole Electric Cooperative, Inc.	Blake Bennice		Abstain	N/A
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
5	Talen Generation, LLC	Donald Lock		Affirmative	N/A
6	Great River Energy	Donna Stephenson		Affirmative	N/A
5	U.S. Bureau of Reclamation	Wendy Kalidass		Negative	N/A
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
2	ISO New England, Inc.	John Pearson		Negative	N/A
6	Entergy	Julie Hall		Affirmative	N/A
3	Pacific Gas and Electric Company	Sandra Ellis	Michael Johnson	Negative	N/A
2	Independent Electricity System Operator	Leonard Kula		Affirmative	N/A
5	Omaha Public Power District	Mahmood Safi		Affirmative	N/A
3	Hydro One Networks, Inc.	Paul Malozewski		Affirmative	N/A
1	Hydro One Networks, Inc.	Sheraz Majid		Affirmative	N/A
5	BC Hydro and Power Authority	Helen Hamilton Harding		Affirmative	N/A
6	Southern Indiana Gas and Electric Co.	Erin Spence		Affirmative	N/A
5	Vistra Energy	Dan Roethemeyer		Affirmative	N/A
1	Exelon	Daniel Gacek		Affirmative	N/A
3	AEP	Kent Feliks		Negative	N/A
3	Southern Indiana Gas and Electric Co.	Ryan Abshier		Affirmative	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Affirmative	N/A
1	Salt River Project	Chris Hofmann		Negative	N/A
3	Exelon	Kinte Whitehead		Affirmative	N/A
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A
5	North Carolina Electric Membership Corporation	John Cook	Scott Brame	Affirmative	N/A
5	Salt River Project	Kevin Nielsen		Negative	N/A
1	Pacific Gas and Electric Company	Marco Rios	Michael Johnson	Negative	N/A
5	Black Hills Corporation	Derek Silbaugh	Jennifer Malon	Affirmative	N/A
3	Black Hills Corporation	Don Stahl	Jennifer Malon	Affirmative	N/A
1	Corn Belt Power Cooperative	larry brusseau		Affirmative	N/A
1	Black Hills Corporation	Seth Nelson	Jennifer Malon	Affirmative	N/A
5	Public Utility District No. 2 of Grant County, Washington	Amy Jones		Abstain	N/A
5	New York Power Authority	Zahid Qayyum		Affirmative	N/A
5	Florida Municipal Power Agency	Chris Gowder	LaKenya VanNorman	Abstain	N/A
6	Manitoba Hydro	Simon Tanapat-Andre		Affirmative	N/A
3	Manitoba Hydro	Mike Smith		Affirmative	N/A
10	Northeast Power Coordinating Council	Gerry Dunbar		Affirmative	N/A

3	PSEG - Public Service Electric and Gas Co.	maria pardo		Affirmative	N/A
5	Boise-Kuna Irrigation District - Lucky Peak Power Plant Project	Mike Kukla		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	N/A
1	Seattle City Light	Michael Jang		Affirmative	N/A
2	Electric Reliability Council of Texas, Inc.	Dana Showalter		Affirmative	N/A
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Joseph Amato		Affirmative	N/A
6	New York Power Authority	Anirudh Bhimireddy		Affirmative	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
6	Austin Energy	Lisa Martin		Affirmative	N/A
1	Austin Energy	Thomas Standifur		Affirmative	N/A
4	Austin Energy	Jun Hua		Affirmative	N/A
5	Austin Energy	Michael Dillard		Affirmative	N/A
1	Sacramento Municipal Utility District	Wei Shao	Tim Kelley	Affirmative	N/A
6	Salt River Project	Bobby Olsen		Negative	N/A
3	Salt River Project	Zack Heim		Negative	N/A
3	Austin Energy	Michael Dieringer		Affirmative	N/A
3	Imperial Irrigation District	Glen Allegranza	Denise Sanchez	Affirmative	N/A
1	Portland General Electric Co.	Brooke Jockin		Affirmative	N/A
5	Portland General Electric Co.	Ryan Olson		Affirmative	N/A
5	Constellation	Alison Mackellar		Negative	N/A
6	Constellation	Kimberly Turco		Negative	N/A

Ballot Results

Ballot Name: 2020-05 Modifications to FAC-001 and FAC-002 Implementation Plan FN 2 OT
Voting Start Date: 4/13/2022 9:09:30 AM
Voting End Date: 4/22/2022 8:00:00 PM
Ballot Type: OT
Ballot Activity: FN
Ballot Series: 2
Total # Votes: 239
Total Ballot Pool: 252
Quorum: 94.84
Quorum Established Date: 4/13/2022 10:22:16 AM
Weighted Segment Value: 88.29

Actions

Segment	Ballot Pool	Segment Weight	Affirmative Votes	Affirmative Fraction	Negative Votes w/ Comment	Negative Fraction w/ Comment	Negative Votes w/o Comment	Abstain	No Vote
Segment: 1	71	1	55	0.887	7	0.113	0	5	4
Segment: 2	7	0.7	7	0.7	0	0	0	0	0
Segment: 3	59	1	43	0.843	8	0.157	0	5	3
Segment: 4	15	1	9	0.9	1	0.1	0	1	4
Segment: 5	57	1	40	0.8	10	0.2	0	6	1
Segment: 6	38	1	27	0.844	5	0.156	0	5	1
Segment: 7	0	0	0	0	0	0	0	0	0
Segment: 8	0	0	0	0	0	0	0	0	0

Segment: 9	0	0	0	0	0	0	0	0	0
Segment: 10	5	0.5	5	0.5	0	0	0	0	0
Totals:	252	6.2	186	5.474	31	0.726	0	22	13

Ballot Pool Members

Segment	Organization	Voter	Designated Proxy	Ballot	NERC Memo
4	DTE Energy	patricia ireland		Affirmative	N/A
6	PPL - Louisville Gas and Electric Co.	Linn Oelker		Affirmative	N/A
5	AEP	Thomas Foltz		Affirmative	N/A
4	MGE Energy - Madison Gas and Electric Co.	Joseph DePoorter		Affirmative	N/A
6	OGE Energy - Oklahoma Gas and Electric Co.	Sing Tay		None	N/A
1	Dominion - Dominion Virginia Power	Candace Marshall		None	N/A
3	Edison International - Southern California Edison Company	Romel Aquino		Negative	N/A
3	PPL - Louisville Gas and Electric Co.	James Frank		Affirmative	N/A
10	ReliabilityFirst	Lindsey Mannion		Affirmative	N/A
1	OGE Energy - Oklahoma Gas and Electric Co.	Terri Pyle		Affirmative	N/A
3	OGE Energy - Oklahoma Gas and Electric Co.	Donald Hargrove		Affirmative	N/A
1	PPL Electric Utilities Corporation	Michelle Longo		Affirmative	N/A
5	OGE Energy - Oklahoma Gas and Electric Co.	Patrick Wells		Affirmative	N/A
6	Dominion - Dominion Resources, Inc.	Sean Bodkin		Affirmative	N/A
1	Hydro-Qu?bec TransEnergie	Nicolas Turcotte		Affirmative	N/A
5	Platte River Power Authority	Tyson Archie		Abstain	N/A
6	Cleco Corporation	Robert Hirchak		Negative	N/A
3	Dominion - Dominion Resources, Inc.	Connie Schroeder		Affirmative	N/A
3	Omaha Public Power District	David Heins		Affirmative	N/A
2	PJM Interconnection, L.L.C.	Tom Foster	Elizabeth Davis	Affirmative	N/A
5	PPL - Louisville Gas and Electric Co.	JULIE HOSTRANDER		Affirmative	N/A
1	Allete - Minnesota Power, Inc.	Jamie Monette		Affirmative	N/A
1	AEP - AEP Service Corporation	Dennis Sauriol		Affirmative	N/A
1	Central Iowa Power Cooperative	Kevin Lyons		Affirmative	N/A
1	Western Area Power Administration	sean erickson		Affirmative	N/A
4	Utility Services, Inc.	Brian Evans-Mongeon		None	N/A
5	Ameren - Ameren Missouri	Sam Dwyer		Affirmative	N/A
1	Glencoe Light and Power Commission	Terry Volkmann		Affirmative	N/A
6	Con Ed - Consolidated Edison Co. of New York	Michael Foley		Affirmative	N/A
1	Minnkota Power Cooperative Inc.	Theresa Allard		Abstain	N/A
6	Platte River Power Authority	Sabrina Martz		Abstain	N/A
3	Sacramento Municipal Utility District	Nicole Looney	Tim Kelley	Affirmative	N/A

1	Balancing Authority of Northern California	Kevin Smith	Tim Kelley	Affirmative	N/A
1	National Grid USA	Michael Jones		Affirmative	N/A
1	BC Hydro and Power Authority	Adrian Andreoiu		Abstain	N/A
3	BC Hydro and Power Authority	Hootan Jarollahi		Abstain	N/A
6	Powerex Corporation	Raj Hundal		Abstain	N/A
1	Public Utility District No. 1 of Chelan County	Diane Landry		Affirmative	N/A
3	Ameren - Ameren Services	David Jendras		Affirmative	N/A
6	NiSource - Northern Indiana Public Service Co.	Joe O'Brien		Affirmative	N/A
3	NiSource - Northern Indiana Public Service Co.	Steven Taddeucci		Affirmative	N/A
1	Sunflower Electric Power Corporation	Paul Mehlhaff		Affirmative	N/A
5	NiSource - Northern Indiana Public Service Co.	Kathryn Tackett		Affirmative	N/A
5	Public Utility District No. 1 of Chelan County	Meaghan Connell		Affirmative	N/A
1	NiSource - Northern Indiana Public Service Co.	Steve Toosevich		Affirmative	N/A
6	Public Utility District No. 2 of Grant County, Washington	LeRoy Patterson		Affirmative	N/A
1	Xcel Energy, Inc.	Dean Schiro	Amy Casuscelli	Affirmative	N/A
5	Xcel Energy, Inc.	Gerry Huitt		Affirmative	N/A
5	Sacramento Municipal Utility District	Nicole Goi	Tim Kelley	Affirmative	N/A
6	Xcel Energy, Inc.	Carrie Dixon		Affirmative	N/A
4	Alliant Energy Corporation Services, Inc.	Larry Heckert		Affirmative	N/A
3	Public Utility District No. 1 of Chelan County	Joyce Gundry		Affirmative	N/A
1	Wind Energy Transmission Texas, LLC	Manivone Vorabouth		Affirmative	N/A
6	Ameren - Ameren Services	Robert Quinlivan		Affirmative	N/A
1	Southern Company - Southern Company Services, Inc.	Matt Carden		Affirmative	N/A
3	Southern Company - Alabama Power Company	Joel Dembowski		Affirmative	N/A
5	Southern Company - Southern Company Generation	James Howell		Affirmative	N/A
6	Southern Company - Southern Company Generation	Ron Carlsen		Affirmative	N/A
5	Santee Cooper	Marty Watson		Affirmative	N/A
6	Santee Cooper	Glenda Horne		Affirmative	N/A
1	Santee Cooper	Chris Wagner		Affirmative	N/A
3	Santee Cooper	James Poston		Affirmative	N/A
3	Platte River Power Authority	Wade Kiess		Abstain	N/A
4	Seattle City Light	Hao Li		Affirmative	N/A
4	Sacramento Municipal Utility District	Foung Mua	Tim Kelley	Affirmative	N/A
3	Xcel Energy, Inc.	Nicholas Friebel		Affirmative	N/A
3	Tennessee Valley Authority	Ian Grant		Affirmative	N/A
1	American Transmission Company, LLC	LaTroy Brumfield		Affirmative	N/A
6	PSEG - PSEG Energy Resources and Trade LLC	Joseph Neglia		Affirmative	N/A
1	Tri-State G and T Association, Inc.	Donna Wood		Affirmative	N/A
5	Choctaw Generation Limited Partnership, LLLP	Rob Watson		Affirmative	N/A
1	Ameren - Ameren Services	Tamara Evey		Affirmative	N/A

3	Avista - Avista Corporation	Scott Kinney		Affirmative	N/A
1	PNM Resources - Public Service Company of New Mexico	Lynn Goldstein		Affirmative	N/A
5	Avista - Avista Corporation	Glen Farmer		Affirmative	N/A
6	Tennessee Valley Authority	Marjorie Parsons		Negative	N/A
1	Con Ed - Consolidated Edison Co. of New York	Dermot Smyth		Affirmative	N/A
1	Arizona Electric Power Cooperative, Inc.	Jennifer Bray		Affirmative	N/A
3	National Grid USA	Brian Shanahan		Affirmative	N/A
3	Con Ed - Consolidated Edison Co. of New York	Peter Yost		Affirmative	N/A
5	Con Ed - Consolidated Edison Co. of New York	Haizhen Wang		Affirmative	N/A
5	Dominion - Dominion Resources, Inc.	Rachel Snead		Affirmative	N/A
1	NB Power Corporation	Nurul Abser		Affirmative	N/A
3	PNM Resources - Public Service Company of New Mexico	Amy Wesselkamper		None	N/A
5	National Grid USA	Elizabeth Spivak		Negative	N/A
3	DTE Energy - Detroit Edison Company	Karie Barczak		Affirmative	N/A
3	Tri-State G and T Association, Inc.	Janelle Marriott Gill		Affirmative	N/A
5	DTE Energy - Detroit Edison Company	Adrian Raducea		Affirmative	N/A
6	Public Utility District No. 1 of Chelan County	Glen Pruitt		Affirmative	N/A
1	Georgia Transmission Corporation	Greg Davis	Stephen Stafford	Negative	N/A
1	IDACORP - Idaho Power Company	Mike Marshall		None	N/A
3	Georgia System Operations Corporation	Scott McGough		Negative	N/A
5	Oglethorpe Power Corporation	Donna Johnson		Negative	N/A
4	Seminole Electric Cooperative, Inc.	Jonathan Robbins		Abstain	N/A
5	Seminole Electric Cooperative, Inc.	Trena Haynes		Abstain	N/A
3	Nebraska Public Power District	Tony Eddleman		Affirmative	N/A
1	SaskPower	Wayne Guttormson		Affirmative	N/A
5	Nebraska Public Power District	Ronald Bender		Affirmative	N/A
6	APS - Arizona Public Service Co.	Marcus Bortman		Affirmative	N/A
4	FirstEnergy - FirstEnergy Corporation	Mark Garza		Affirmative	N/A
5	APS - Arizona Public Service Co.	Michelle Amarantos		Affirmative	N/A
1	Tacoma Public Utilities (Tacoma, WA)	John Merrell	Jennie Wike	None	N/A
6	FirstEnergy - FirstEnergy Corporation	Tricia Bynum		Affirmative	N/A
3	Colorado Springs Utilities	Hillary Dobson		Affirmative	N/A
1	Lincoln Electric System	Josh Johnson		Affirmative	N/A
5	Lincoln Electric System	Jason Fortik		Affirmative	N/A
1	Colorado Springs Utilities	Mike Braunstein		Affirmative	N/A
1	FirstEnergy - FirstEnergy Corporation	Julie Severino		Affirmative	N/A
1	Sempra - San Diego Gas and Electric	Mo Derbas		Negative	N/A
3	Sempra - San Diego Gas and Electric	Bridget Silvia		Negative	N/A
5	Sempra - San Diego Gas and Electric	Jennifer Wright		Negative	N/A
6	Evergy	Thomas ROBBEN	Alan Kloster	Negative	N/A
5	PSEG - PSEG Fossil LLC	Tim Kucey		Affirmative	N/A

3	Associated Electric Cooperative, Inc.	Todd Bennett		Affirmative	N/A
1	Associated Electric Cooperative, Inc.	Mark Riley		Affirmative	N/A
1	N.W. Electric Power Cooperative, Inc.	Mark Ramsey		Affirmative	N/A
3	NW Electric Power Cooperative, Inc.	John Stickley		Affirmative	N/A
5	Evergy	Derek Brown	Alan Kloster	Negative	N/A
3	Central Electric Power Cooperative (Missouri)	Adam Weber		Affirmative	N/A
3	Northeast Missouri Electric Power Cooperative	Skyler Wiegmann		Affirmative	N/A
6	Los Angeles Department of Water and Power	Anton Vu		Abstain	N/A
1	KAMO Electric Cooperative	Micah Breedlove		Affirmative	N/A
1	Evergy	Allen Klassen	Alan Kloster	Negative	N/A
1	Eversource Energy	Quintin Lee		Affirmative	N/A
3	KAMO Electric Cooperative	Tony Gott		Affirmative	N/A
6	Lincoln Electric System	Eric Ruskamp		Affirmative	N/A
10	Western Electricity Coordinating Council	Steven Rueckert		Affirmative	N/A
6	Portland General Electric Co.	Daniel Mason		Affirmative	N/A
1	Nebraska Public Power District	Jamison Cawley		Affirmative	N/A
5	Berkshire Hathaway - NV Energy	Kevin Salsbury	Dwanique Spiller	Abstain	N/A
3	Owensboro Municipal Utilities	Thomas Lyons		Negative	N/A
3	Snohomish County PUD No. 1	Holly Chaney		Affirmative	N/A
4	Public Utility District No. 1 of Snohomish County	John Martinsen		Affirmative	N/A
6	Snohomish County PUD No. 1	John Liang		Affirmative	N/A
1	Public Utility District No. 1 of Snohomish County	Alyssia Rhoads		Affirmative	N/A
5	Public Utility District No. 1 of Snohomish County	Sam Nietfeld		Affirmative	N/A
5	FirstEnergy - FirstEnergy Corporation	Robert Loy		Affirmative	N/A
4	North Carolina Electric Membership Corporation	Richard McCall	Scott Brame	Negative	N/A
1	Northeast Missouri Electric Power Cooperative	Kevin White	Todd Bennett	Affirmative	N/A
5	Associated Electric Cooperative, Inc.	Brad Haralson		Affirmative	N/A
3	North Carolina Electric Membership Corporation	Chris DiMisa	Scott Brame	Negative	N/A
10	SERC Reliability Corporation	Dave Krueger		Affirmative	N/A
6	Associated Electric Cooperative, Inc.	Brian Ackermann		Affirmative	N/A
3	Evergy	Marcus Moor	Alan Kloster	Negative	N/A
1	MEAG Power	David Weekley	Scott Miller	Abstain	N/A
2	Southwest Power Pool, Inc. (RTO)	Charles Yeung		Affirmative	N/A
5	Colorado Springs Utilities	Jeff Icke		Affirmative	N/A
5	CMS Energy - Consumers Energy Company	David Greyerbiehl		Affirmative	N/A
1	Omaha Public Power District	Doug Peterchuck		Affirmative	N/A
4	CMS Energy - Consumers Energy Company	Aric Root		Affirmative	N/A
6	Omaha Public Power District	Shonda McCain		Affirmative	N/A
1	APS - Arizona Public Service Co.	Daniela Atanasovski		Affirmative	N/A
5	Bonneville Power Administration	Scott Winner		Affirmative	N/A

5	Dairyland Power Cooperative	Tommy Drea		Affirmative	N/A
5	Orlando Utilities Commission	Dania Colon		Affirmative	N/A
1	OTP - Otter Tail Power Company	Charles Wicklund		Affirmative	N/A
3	FirstEnergy - FirstEnergy Corporation	Aaron Ghodooshim		Affirmative	N/A
4	LaGen	Wayne Messina		None	N/A
1	Bonneville Power Administration	Kammy Rogers-Holliday		Affirmative	N/A
3	Bonneville Power Administration	Ken Lanehome		Affirmative	N/A
6	Bonneville Power Administration	Andrew Meyers		Affirmative	N/A
6	AEP	JT Kuehne		Affirmative	N/A
5	Hydro-Qu?bec Production	Carl Pineault		Affirmative	N/A
3	Los Angeles Department of Water and Power	Tony Skourtas		None	N/A
3	CMS Energy - Consumers Energy Company	Karl Blaszkowski		Affirmative	N/A
1	Dairyland Power Cooperative	Steve Ritscher		Affirmative	N/A
3	OTP - Otter Tail Power Company	Wendi Olson		Affirmative	N/A
5	Los Angeles Department of Water and Power	Glenn Barry		None	N/A
1	Los Angeles Department of Water and Power	faranak sarbaz		None	N/A
3	M and A Electric Power Cooperative	Stephen Pogue		Affirmative	N/A
5	OTP - Otter Tail Power Company	Tammy Kubela		Affirmative	N/A
6	Florida Municipal Power Agency	Richard Montgomery	LaKenya VanNorman	Abstain	N/A
1	U.S. Bureau of Reclamation	Richard Jackson		Negative	N/A
2	California ISO	Darcy O'Connell		Affirmative	N/A
1	Avista - Avista Corporation	Mike Magruder		Affirmative	N/A
3	MEAG Power	Roger Brand	Scott Miller	Abstain	N/A
10	Texas Reliability Entity, Inc.	Rachel Coyne		Affirmative	N/A
2	Midcontinent ISO, Inc.	Bobbi Welch		Affirmative	N/A
4	American Public Power Association	John McCaffrey		None	N/A
3	APS - Arizona Public Service Co.	Jessica Lopez		Affirmative	N/A
3	Ocala Utility Services	Neville Bowen	LaKenya VanNorman	Abstain	N/A
1	M and A Electric Power Cooperative	William Price		Affirmative	N/A
5	Pacific Gas and Electric Company	Frank Lee	Michael Johnson	Negative	N/A
6	Northern California Power Agency	Dennis Sismaet		Abstain	N/A
5	Herb Schrayshuen	Herb Schrayshuen		Affirmative	N/A
5	Ontario Power Generation Inc.	Constantin Chitescu		Affirmative	N/A
3	CPS Energy	Glenn Pressler		None	N/A
3	Great River Energy	Michael Brytowski		Affirmative	N/A
1	Berkshire Hathaway Energy - MidAmerican Energy Co.	Terry Harbour		Affirmative	N/A
4	Northern California Power Agency	Marty Hostler		None	N/A
1	Manitoba Hydro	Nazra Gladu		Affirmative	N/A
1	Great River Energy	Gordon Pietsch		Affirmative	N/A

1	Pedernales Electric Cooperative, Inc.	Bradley Collard		Negative	N/A
1	Seminole Electric Cooperative, Inc.	Kristine Ward		Abstain	N/A
3	Seminole Electric Cooperative, Inc.	Blake Bennice		Abstain	N/A
3	Sho-Me Power Electric Cooperative	Jarrod Murdaugh		Affirmative	N/A
5	Talen Generation, LLC	Donald Lock		Affirmative	N/A
6	Great River Energy	Donna Stephenson		Affirmative	N/A
5	U.S. Bureau of Reclamation	Wendy Kalidass		Negative	N/A
6	Sacramento Municipal Utility District	Charles Norton	Tim Kelley	Affirmative	N/A
1	International Transmission Company Holdings Corporation	Michael Moltane	Allie Gavin	Abstain	N/A
2	ISO New England, Inc.	John Pearson		Affirmative	N/A
6	Entergy	Julie Hall		Affirmative	N/A
3	Pacific Gas and Electric Company	Sandra Ellis	Michael Johnson	Negative	N/A
2	Independent Electricity System Operator	Leonard Kula		Affirmative	N/A
5	Omaha Public Power District	Mahmood Safi		Affirmative	N/A
3	Hydro One Networks, Inc.	Paul Malozewski		Affirmative	N/A
1	Hydro One Networks, Inc.	Sheraz Majid		Affirmative	N/A
5	BC Hydro and Power Authority	Helen Hamilton Harding		Abstain	N/A
6	Southern Indiana Gas and Electric Co.	Erin Spence		Affirmative	N/A
5	Vistra Energy	Dan Roethemeyer		Affirmative	N/A
1	Exelon	Daniel Gacek		Affirmative	N/A
3	AEP	Kent Feliks		Affirmative	N/A
3	Southern Indiana Gas and Electric Co.	Ryan Abshier		Affirmative	N/A
1	CenterPoint Energy Houston Electric, LLC	Daniela Hammons		Affirmative	N/A
1	Salt River Project	Chris Hofmann		Negative	N/A
3	Exelon	Kinte Whitehead		Affirmative	N/A
5	Southern Indiana Gas and Electric Co.	Larry Rogers		Affirmative	N/A
5	North Carolina Electric Membership Corporation	John Cook	Scott Brame	Negative	N/A
5	Salt River Project	Kevin Nielsen		Negative	N/A
1	Pacific Gas and Electric Company	Marco Rios	Michael Johnson	Negative	N/A
5	Black Hills Corporation	Derek Silbaugh	Jennifer Malon	Affirmative	N/A
3	Black Hills Corporation	Don Stahl	Jennifer Malon	Affirmative	N/A
1	Corn Belt Power Cooperative	larry brusseau		Affirmative	N/A
1	Black Hills Corporation	Seth Nelson	Jennifer Malon	Affirmative	N/A
5	Public Utility District No. 2 of Grant County, Washington	Amy Jones		Abstain	N/A
5	New York Power Authority	Zahid Qayyum		Affirmative	N/A
5	Florida Municipal Power Agency	Chris Gowder	LaKenya VanNorman	Abstain	N/A
6	Manitoba Hydro	Simon Tanapat-Andre		Affirmative	N/A
3	Manitoba Hydro	Mike Smith		Affirmative	N/A
10	Northeast Power Coordinating Council	Gerry Dunbar		Affirmative	N/A
3	PSEG - Public Service Electric and Gas Co.	maria pardo		Affirmative	N/A

5	Boise-Kuna Irrigation District - Lucky Peak Power Plant Project	Mike Kukla		Affirmative	N/A
5	Duke Energy	Dale Goodwine		Negative	N/A
1	Seattle City Light	Michael Jang		Affirmative	N/A
2	Electric Reliability Council of Texas, Inc.	Dana Showalter		Affirmative	N/A
3	Berkshire Hathaway Energy - MidAmerican Energy Co.	Joseph Amato		Affirmative	N/A
6	New York Power Authority	Anirudh Bhimireddy		Affirmative	N/A
1	Imperial Irrigation District	Jesus Sammy Alcaraz	Denise Sanchez	Affirmative	N/A
6	Austin Energy	Lisa Martin		Affirmative	N/A
1	Austin Energy	Thomas Standifur		Affirmative	N/A
4	Austin Energy	Jun Hua		Affirmative	N/A
5	Austin Energy	Michael Dillard		Affirmative	N/A
1	Sacramento Municipal Utility District	Wei Shao	Tim Kelley	Affirmative	N/A
6	Salt River Project	Bobby Olsen		Negative	N/A
3	Salt River Project	Zack Heim		Negative	N/A
3	Austin Energy	Michael Dieringer		Affirmative	N/A
3	Imperial Irrigation District	Glen Allegranza	Denise Sanchez	Affirmative	N/A
1	Portland General Electric Co.	Brooke Jockin		Affirmative	N/A
5	Portland General Electric Co.	Ryan Olson		Affirmative	N/A
5	Constellation	Alison Mackellar		Negative	N/A
6	Constellation	Kimberly Turco		Negative	N/A

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Exhibit G

Standard Drafting Team Roster
Project 2020-05 Modifications to FAC-001 and FAC-002

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standard Drafting Team Roster

Project 2020-05 Modifications to FAC-001-3 and FAC-002-2

	Name	Entity
Chair	Delyn Kilpack	LG&E and KU Energy
Vice Chair	Mohit Singh	Exelon Utilities
Members	David Brauch	Midcontinent ISO
	Rajat Majumder	Siemens Gamesa Renewable Energy
	David Daniels	American Electric Power
	Deborah Currie	Southwest Power Pool
	John Bernecker	Electric Reliability Council of Texas, Inc. (ERCOT)
	Kellen Kinard	Southern Company
	Debby Hammack	Bonneville Power Administration
	Jianwei (Jay) Liu	PJM Interconnection LLC
PMOS Liaison	Anthony Westenkirchner	Evergy
NERC Staff	Alison Oswald – Senior Standards Developer	North American Electric Reliability Corporation
	Lauren Perotti – Legal	North American Electric Reliability Corporation