

## Standard Development Timeline

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*This section is maintained by the drafting team during the development of the standard and will be removed when the standard becomes effective.*

### Development Steps Completed

1. SAR posted for comment (December 18, 2013-January 17, 2014).
2. SC authorized moving the SAR forward to standard development (March 31, 2014)
- 2.3.45-day Formal Comment Period with Parallel Initial Ballot (April 1-May 15, 2014)

### Description of Current Draft

Anticipated Actions	Anticipated Date
45-day Formal Comment Period with Parallel Initial Ballot	April 2014
<del>45-day Formal Comment Period with Parallel Additional Ballot</del>	<del>June 2014</del>
<del>Recirculation ballot</del> <u>Final Ballot</u>	<del>July</del> <u>June</u> 2014
BOT <u>A</u> adoption	August 2014

## Effective Dates

The first day of the first calendar quarter that is one year after the date that this standard is approved by an applicable governmental authority or as otherwise provided for in a jurisdiction where approval by an applicable governmental authority is required for a standard to go into effect. Where approval by an applicable governmental authority is not required, the standard shall become effective on the first day of the first calendar quarter that is one year after the date this standard is adopted by the NERC Board of Trustees or as otherwise provided for in that jurisdiction.

## 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

### Definitions of Terms Used in Standard

*This section includes all newly defined or revised terms used in the proposed standard. Terms already defined in the Reliability Standards Glossary of Terms are not repeated here. New or revised definitions listed below become approved when the proposed standard is approved. When the standard becomes effective, these defined terms will be removed from the individual standard and added to the Glossary.*

None.

When this standard has received ballot approval, the text boxes will be moved to the Application Guidelines Section of the Standard.

## A. Introduction

1. **Title:** Facility Interconnection Studies
2. **Number:** FAC-002-2
3. **Purpose:** To ~~study~~evaluate the impact of interconnecting new or materially modified Facilities on the Bulk Electric System ~~by conducting and coordinating studies.~~
4. **Applicability:**

### 4.1. Functional Entities:

**4.1.1** Planning Coordinator

~~4.1.2~~ Transmission Planner

~~4.1.24.1.3~~ Transmission Owner

~~4.1.34.1.4~~ Distribution Provider

~~4.1.44.1.5~~ Generator Owner

~~4.1.54.1.6~~ Applicable Generator Owner

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

~~4.1.5.14.1.7~~ Load-Serving Entity

5. ~~Load-Serving Entity~~ **Background:**

~~The objective of FAC-002 is to ensure that the entities involved in the integration of new or materially modified Facilities conduct and coordinate studies before any interconnection occurs so that the interconnection is determined to be technically feasible and reliable. This objective supports reliability principle 1, which states that "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 Reliability Standards."~~

Rationale for Changes:  
"Interconnected Transmission systems" was changed to "Transmission system" in accordance with the change in the FAC-001-2 Applicability section.

## B. Requirements and Measures

- R1. Each Transmission Planner and each Planning Coordinator shall ~~conduct studies on~~study the reliability impact of: integrating (i) interconnecting new or materially

~~modified~~ generation, transmission, or electricity end-user Facilities and (ii) materially modifying existing interconnections of generation, transmission, or electricity end-user Facilities. ~~The following shall be studied. The studies shall include:~~ [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]

- 1.1. ~~Evaluation of~~ The reliability impact of the new interconnection, or materially modified existing interconnection, Facilities on affected system(s);
- 1.2. ~~Evaluation of e~~ Adherence to compliance with 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. ~~Documentation that the assessment included s~~ 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.

Rationale for Changes: To keep terminology consistent, the SDT changed “integrating” to “interconnecting.” The SDT tightened the main requirement language by changing “conduct studies on” to “study” and removing the redundant “Evaluation of” and “Documentation that...” in the Parts. The SDT added “existing” to descriptions of material modification to draw a better distinction between new interconnections and materially modified existing interconnections.

Because “compliance” has a specific connotation in the NERC environment and, even when it comes to NERC Reliability Standards, the standard should not give the impression that the Transmission Planner or Planning Coordinator is responsible for the interconnecting entity’s future compliance with NERC Standards. The SDT has changed “compliance” to “adherence” to retain the original intended meaning but reflect the fact that the entities cannot actually enforce future compliance with the Reliability Standards.

**M1.** Each Transmission Planner ~~and 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, shall coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator, including but not limited to the provision of data as

Rationale for Changes: To better connect with the reference to “material modifications” in R1, the SDT has added references to material modifications in R2, R3, and R4. It has also changed the references to subrequirements to “R1, Parts 1.1-1.4.”

described in R1, Parts ~~R~~1.1-~~R~~1.43. [*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, each Distribution Provider, and each Load-Serving Entity 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, 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 ~~R~~1.1-~~R~~1.43. [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]
- M3.** Each Transmission Owner, each Distribution Provider, and each Load-Serving Entity 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 ~~and each applicable Generator Owner~~ shall coordinate and cooperate with its Transmission Planner or Planning Coordinator on studies regarding requested new or materially modified interconnections to its Facilities, including but not limited to the provision of data as described in R1, Parts ~~R~~1.1-~~R~~1.43. [*Violation Risk Factor: Medium*] [*Time Horizon: Long-term Planning*]
- M4.** Each Transmission Owner ~~and 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 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*]

Rationale for Changes: The requirements for both Transmission Owners and applicable Generator Owners remain exactly the same, but the addition of R5 makes clearer that applicable Generator Owners need not be concerned with addressing materially modified interconnections.

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.

## C. Compliance

### 1. Compliance Monitoring Process

#### 1.1. Compliance Enforcement Authority

As defined in the NERC Rules of Procedure, “Compliance Enforcement Authority” (CEA) means NERC or the Regional Entity in their respective roles of monitoring and enforcing compliance with the NERC Reliability Standards.

#### 1.2. Evidence Retention

The following evidence retention periods 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 may ask an entity to provide other evidence to show that it was compliant for the full time period since the last audit.

The Planning Coordinator, Transmission Planner, Transmission Owner, Distribution Provider, Generator Owner, applicable Generator Owner, and Load-Serving Entity 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 Assessment Processes:

Compliance Audit

Self-Certification

Spot Check

Compliance Investigation

Self-Reporting

Complaint

#### 1.4. Additional Compliance Information

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 <del>conducted studies on</del> <u>studied</u> the reliability impact of: <u>(i) integrating interconnecting new generation, transmission, or electricity end-user Facilities, or</u> <del>and (ii) materially modified modifying existing interconnections of</del> generation, transmission, or electricity end-user Facilities, <del>but failed to include study in its studies</del> <u>one of the Pparts (R1, in R1.1-R1.4).</u>	The Transmission Planner or Planning Coordinator <del>conducted studies on</del> <u>studied</u> the reliability impact of: <u>(i) integrating interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) or</u> <del>materially modified modifying existing interconnections of</del> generation, transmission, or electricity end-user Facilities <del>but failed to include study in its studies</del> <u>two of the Pparts (R1, in R1.1-R1.4).</u>	The Transmission Planner or Planning Coordinator <del>conducted studies on</del> <u>studied</u> the reliability impact of: <u>(i) integrating interconnecting new generation, transmission, or electricity end-user Facilities, and (ii) or</u> <del>materially modifying existing interconnections of</del> <del>modified</del> generation, transmission, or electricity end-user Facilities <del>but failed to include study in its studies</del> <u>three of the Pparts (R1, in R1.1-R1.4).</u>	The Transmission Planner or Planning Coordinator failed to <del>conduct studies or</del> <u>study</u> the reliability impact of: <u>interconnecting integrating new generation, transmission, or electricity end-user Facilities, and (ii) or</u> <del>materially modifying existing interconnections of</del> <del>modified</del> generation, transmission, or electricity end-user Facilities.
R2	Long-term Planning	Medium	The Generator Owner seeking to interconnect <u>new generation Facilities, or to materially modify existing</u>	The Generator Owner seeking to interconnect <u>new generation Facilities, or to materially modify existing</u>	The Generator Owner seeking to interconnect <u>new generation Facilities, or to materially modify existing</u>	The Generator Owner seeking to interconnect <u>new generation Facilities, or to materially modify existing</u>



			<u>interconnections of generation Facilities</u> , 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 <del>P</del> parts (R1, <del>in R1.1-R1.4</del> ).	<u>interconnections of generation Facilities</u> , 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 <del>P</del> parts (R1, <del>in R1.1-R1.4</del> ).	<u>interconnections of generation Facilities</u> , 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 <del>P</del> parts <del>in</del> (R1, R1.1-R1.4).	<u>interconnections of generation Facilities</u> , failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.
R3	Long-term Planning	Medium	The Transmission Owner, Distribution Provider, or Load-Serving Entity seeking to interconnect <u>new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities</u> , coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform	The Transmission Owner, Distribution Provider, or Load-Serving Entity seeking to interconnect <u>new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities</u> , coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform	The Transmission Owner, Distribution Provider, or Load-Serving Entity seeking to interconnect <u>new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities</u> , coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator, but failed to provide data necessary to perform	The Transmission Owner, Distribution Provider, or Load-Serving Entity seeking to interconnect <u>new transmission Facilities or electricity end-user Facilities, or to materially modify existing interconnections of transmission Facilities or electricity end-user Facilities</u> , failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator.

			studies as described in one of the <del>P</del> parts (R1, <del>in R1.1-R1.4</del> ).	studies as described in two of the <del>P</del> parts (R1, <del>in R1.1-R1.4</del> ).	studies as described in three of the <del>P</del> parts (R1, <del>in R1.1-R1.4</del> ).	
R4	Long-term Planning	Medium	The Transmission Owner <del>or applicable Generator Owner</del> coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested <u>new or materially modified</u> interconnections to its Facilities, but failed to provide data necessary to perform studies as described in one of the <del>P</del> parts (R1, <del>in R1.1-R1.4</del> ).	The Transmission Owner <del>or applicable Generator Owner</del> coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested <u>new or materially modified</u> interconnections to its Facilities, but failed to provide data necessary to perform studies as described in two of the <del>P</del> parts (R1, <del>in R1.1-R1.4</del> ).	The Transmission Owner <del>or applicable Generator Owner</del> coordinated and cooperated on studies with its Transmission Planner or Planning Coordinator regarding requested <u>new or materially modified</u> interconnections to its Facilities, but failed to provide data necessary to perform studies as described in three of the <del>P</del> parts (R1, <del>in R1.1-R1.4</del> ).	The Transmission Owner <del>or applicable Generator Owner</del> failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested <u>new or materially modified</u> interconnections to its Facilities.
R5	<u>Long-term Planning</u>	<u>Medium</u>	<u>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</u>	<u>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</u>	<u>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</u>	<u>The applicable Generator Owner failed to coordinate and cooperate on studies with its Transmission Planner or Planning Coordinator regarding requested interconnections to its Facilities.</u>

			<u>described in one of the Parts (R1, 1.1-1.4).</u>	<u>described in two of the Parts (R1, 1.1-1.4).</u>	<u>described in three of the Parts (R1, 1.1-1.4).</u>	
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**D. Regional Variances**

None.

**E. Interpretations**

None.

**F. Associated Documents**

None.

## Application Guidelines

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### Guidelines and Technical Basis

Entities should have documentation to support the technical rationale for determining whether an existing Facility 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.