NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Meeting Agenda
Project 2010-02 – Connecting New Facilities to the Grid

March 19, 2014 | 8 a.m.-5 p.m. Eastern
March 20, 2014 | 8 a.m.-3 p.m. Eastern

NERC Offices
1325 G Street NW, Suite 600
Washington, DC 20005

Dial-in: 866.740.1260 | Access Code: 6191629 | Security Code: 031914
Web Access: www.readytalk.com; enter access code 6191629

Administrative

1. **NERC Antitrust Compliance Guidelines, Public Announcement, Participant Conduct Policy, and Email List Policy***
2. **Introductions**
3. **Meeting Agenda and Objectives**

Agenda Items

1. **Standard Drafting Team Orientation**
    a. NERC Standards Process
    b. Standard Drafting Team Roles and Responsibilities
    c. Q&A
2. **Comments and Input for Review**
    a. Standard Authorization Request (SAR) Comments*
        i. ReliabilityFirst's proposed redlines*
    b. FERC Directives*
    c. Independent Expert Review Panel Recommendations*
    d. Paragraph 81 Suggestions*
    e. Intergration of Variable Generation Task Force's Recommendations*
        i. Full Report: http://www.nerc.com/files/2012_IVGTF_Task_1-3.pdf

3. **Develop Redline Standards and Supporting Documents**
    a. FAC-001-2*
    b. FAC-002-2*
    c. Implementation Plan
    d. Mapping Document
    e. VRF/VSL Justifications
    f. Consideration of Issues/Directives
    g. Comment Form
    h. Finalized SAR*
4. **Next Steps**
    a. Review Action Plan*
    b. 45-Day Comment and Ballot Period
5. **Informational Items**
    a. Roster*
6. **Adjourn**

*Background materials included.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Antitrust Compliance Guidelines

I. General

It is NERC's policy and practice to obey the antitrust laws and to avoid all conduct that unreasonably restrains competition. This policy requires the avoidance of any conduct that violates, or that might appear to violate, the antitrust laws. Among other things, the antitrust laws forbid any agreement between or among competitors regarding prices, availability of service, product design, terms of sale, division of markets, allocation of customers or any other activity that unreasonably restrains competition.

It is the responsibility of every NERC participant and employee who may in any way affect NERC's compliance with the antitrust laws to carry out this commitment.

Antitrust laws are complex and subject to court interpretation that can vary over time and from one court to another. The purpose of these guidelines is to alert NERC participants and employees to potential antitrust problems and to set forth policies to be followed with respect to activities that may involve antitrust considerations. In some instances, the NERC policy contained in these guidelines is stricter than the applicable antitrust laws. Any NERC participant or employee who is uncertain about the legal ramifications of a particular course of conduct or who has doubts or concerns about whether NERC's antitrust compliance policy is implicated in any situation should consult NERC's General Counsel immediately.

II. Prohibited Activities

Participants in NERC activities (including those of its committees and subgroups) should refrain from the following when acting in their capacity as participants in NERC activities (e.g., at NERC meetings, conference calls and in informal discussions):

- Discussions involving pricing information, especially margin (profit) and internal cost information and participants' expectations as to their future prices or internal costs.
- Discussions of a participant's marketing strategies.
- Discussions regarding how customers and geographical areas are to be divided among competitors.
- Discussions concerning the exclusion of competitors from markets.
- Discussions concerning boycotting or group refusals to deal with competitors, vendors or suppliers.

- Any other matters that do not clearly fall within these guidelines should be reviewed with NERC's General Counsel before being discussed.

III. Activities That Are Permitted

From time to time decisions or actions of NERC (including those of its committees and subgroups) may have a negative impact on particular entities and thus in that sense adversely impact competition. Decisions and actions by NERC (including its committees and subgroups) should only be undertaken for the purpose of promoting and maintaining the reliability and adequacy of the bulk power system. If you do not have a legitimate purpose consistent with this objective for discussing a matter, please refrain from discussing the matter during NERC meetings and in other NERC-related communications.

You should also ensure that NERC procedures, including those set forth in NERC's Certificate of Incorporation, Bylaws, and Rules of Procedure are followed in conducting NERC business.

In addition, all discussions in NERC meetings and other NERC-related communications should be within the scope of the mandate for or assignment to the particular NERC committee or subgroup, as well as within the scope of the published agenda for the meeting.

No decisions should be made nor any actions taken in NERC activities for the purpose of giving an industry participant or group of participants a competitive advantage over other participants. In particular, decisions with respect to setting, revising, or assessing compliance with NERC reliability standards should not be influenced by anti-competitive motivations.

Subject to the foregoing restrictions, participants in NERC activities may discuss:

- Reliability matters relating to the bulk power system, including operation and planning matters such as establishing or revising reliability standards, special operating procedures, operating transfer capabilities, and plans for new facilities.
- Matters relating to the impact of reliability standards for the bulk power system on electricity markets, and the impact of electricity market operations on the reliability of the bulk power system.
- Proposed filings or other communications with state or federal regulatory authorities or other governmental entities.

Matters relating to the internal governance, management and operation of NERC, such as nominations for vacant committee positions, budgeting and assessments, and employment matters; and procedural matters such as planning and scheduling meetings.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Public Announcements

REMINDER FOR USE AT BEGINNING OF MEETINGS AND CONFERENCE CALLS THAT HAVE BEEN PUBLICLY NOTICED AND ARE OPEN TO THE PUBLIC

Conference call version:
Participants are reminded that this conference call is public. The access number was posted on the NERC website and widely distributed. Speakers on the call should keep in mind that the listening audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation by industry stakeholders.

Face-to-face meeting version:
Participants are reminded that this meeting is public. Notice of the meeting was posted on the NERC website and widely distributed. Participants should keep in mind that the audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation by industry stakeholders.

For face-to-face meeting, with dial-in capability:
Participants are reminded that this meeting is public. Notice of the meeting was posted on the NERC website and widely distributed. The notice included the number for dial-in participation. Participants should keep in mind that the audience may include members of the press and representatives of various governmental authorities, in addition to the expected participation by industry stakeholders.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Development Process Participant Conduct Policy

I. General

To ensure that the standards development process is conducted in a responsible, timely and efficient manner, it is essential to maintain a professional and constructive work environment for all participants. Participants include, but are not limited to, members of the standard drafting team and observers.

Consistent with the NERC Rules of Procedure and the NERC Standard Processes Manual, participation in NERC's Reliability Standards development balloting and approval processes is open to all entities materially affected by NERC's Reliability Standards. In order to ensure the standards development process remains open and to facilitate the development of reliability standards in a timely manner, NERC has adopted the following Participant Conduct Policy for all participants in the standards development process.

II. Participant Conduct Policy

All participants in the standards development process must conduct themselves in a professional manner at all times. This policy includes in-person conduct and any communication, electronic or otherwise, made as a participant in the standards development process. Examples of unprofessional conduct include, but are not limited to, verbal altercations, use of abusive language, personal attacks or derogatory statements made against or directed at another participant, and frequent or patterned interruptions that disrupt the efficient conduct of a meeting or teleconference.

III. Reasonable Restrictions in Participation

If a participant does not comply with the Participant Conduct Policy, certain reasonable restrictions on participation in the standards development process may be imposed as described below.
If a NERC Standards Developer determines, by his or her own observation or by complaint of another participant, that a participant's behavior is disruptive to the orderly conduct of a meeting in progress, the NERC Standards Developer may remove the participant from a meeting. Removal by the NERC Standards Developer is limited solely to the meeting in progress and does not extend to any future meeting. Before a participant may be asked to leave the meeting, the NERC Standards Developer must first remind the participant of the obligation to conduct himself or herself in a professional manner and provide an opportunity for the participant to comply. If a participant is requested to leave a meeting by a NERC Standards Developer, the participant must cooperate fully with the request.

Similarly, if a NERC Standards Developer determines, by his or her own observation or by complaint of another participant, that a participant's behavior is disruptive to the orderly conduct of a

teleconference in progress, the NERC Standards Developer may request the participant to leave the teleconference. Removal by the NERC Standards Developer is limited solely to the teleconference in progress and does not extend to any future teleconference. Before a participant may be asked to leave the teleconference, the NERC Standards Developer must first remind the participant of the obligation to conduct himself or herself in a professional manner and provide an opportunity for the participant to comply. If a participant is requested to leave a teleconference by a NERC Standards Developer, the participant must cooperate fully with the request. Alternatively, the NERC Standards Developer may choose to terminate the teleconference.

At any time, the NERC Director of Standards, or a designee, may impose a restriction on a participant from one or more future meetings or teleconferences, a restriction on the use of any NERC-administered list server or other communication list, or such other restriction as may be reasonably necessary to maintain the orderly conduct of the standards development process. Restrictions imposed by the Director of Standards, or a designee, must be approved by the NERC General Counsel, or a designee, prior to implementation to ensure that the restriction is not unreasonable. Once approved, the restriction is binding on the participant. A restricted participant may request removal of the restriction by submitting a request in writing to the Director of Standards. The restriction will be removed at the reasonable discretion of the Director of Standards or a designee.

Any participant who has concerns about NERC's Participant Conduct Policy may contact NERC's General Counsel.

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

NERC Email List Policy

NERC provides email lists, or "listservs," to NERC committees, groups, and teams to facilitate sharing information about NERC activities; including balloting, committee, working group, and drafting team work, with interested parties. All emails sent to NERC listserv addresses must be limited to topics that are directly relevant to the listserv group's assigned scope of work. NERC reserves the right to apply administrative restrictions to any listserv or its participants, without advance notice, to ensure that the resource is used in accordance with this and other NERC policies.

Prohibited activities include using NERC-provided listservs for any price-fixing, division of markets, and/or other anti-competitive behavior.[1] Recipients and participants on NERC listservs may not utilize NERC listservs for their own private purposes. This may include announcements of a personal nature, sharing of files or attachments not directly relevant to the listserv group's scope of responsibilities, and/or communication of personal views or opinions, unless those views are provided to advance the work of the listserv's group. Use of NERC's listservs is further subject to NERC's Participant Conduct Policy for the Standards Development Process.

- *Updated April 2013*

[1] Please see NERC's Antitrust Compliance Guidelines for more information about prohibited antitrust and anti-competitive behavior or practices. This policy is available at http://www.nerc.com/commondocs.php?cd=2

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Comments

Project 2010-02 Connecting New Facilities to the Grid

The FAC FYR Drafting Team thanks all commenters who submitted comments on the SAR. These standards were posted for a 30-day public comment period from December 12, 2013 through January 17, 2014. Stakeholders were asked to provide feedback on the standards and associated documents through a special electronic comment form. There were 26 sets of comments, including comments from approximately 100 different people from approximately 72 companies representing 9 of the 10 Industry Segments as shown in the table on the following pages.

All comments submitted may be reviewed in their original format on the standard's project page.

If you feel that your comment has been overlooked, please 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, you can contact the Vice President and Director of Standards, Mark Lauby, at 404-446-2560 or at mark.lauby@nerc.net. In addition, there is a NERC Reliability Standards Appeals Process.[1]

[1] The appeals process is in the Standard Processes Manual: http://www.nerc.com/comm/SC/Documents/Appendix_3A_StandardsProcessesManual.pdf

Index to Questions, Comments, and Responses

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

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
1.	Group	Janet Smith	Arizona Public Service Company	X		X		X	X				
No Additional Responses													
2.	Group	Guy Zito	Northeast Power Coordinating Council										X

	Additional Member	Additional Organization	Region	Segment Selection
1.	Alan Adamson	New York State Reliability Council, LLC	NPCC	10
2.	David Burke	Orange and Rockland Utilities	NPCC	3
3.	Greg Campoli	New York Independent	NPCC	2

Group/Individual		Commenter	Organization		Registered Ballot Body Segment									
					1	2	3	4	5	6	7	8	9	10
		System Operator												
4.	Sylvain Clermont	Hydro-Quebec TransEnergie	NPCC	1										
5.	Chris de Graffenried	Consolidated Edison Co. of New York, Inc.	NPCC	1										
6.	Gerry Dunbar	Northeast Power Coordinating Council	NPCC	10										
7.	Mike Garton	Dominion Resources Services, Inc.	NPCC	5										
8.	Kathleen Goodman	ISO - New England	NPCC	2										
9.	Michael Jones	National Grid	NPCC	1										
10.	Mark Kenny	Northeast Utilities	NPCC	1										
11.	Christina Koncz	PSEG Power LLC	NPCC	5										
12.	Helen Lainis	Independent Electricity System Operator	NPCC	2										
13.	Michael Lombardi	Northeast Power Coordinating Council	NPCC	10										
14.	Alan MacNaughton	New Brunswick Power	NPCC	9										
15.	Bruce Metruck	New York Power Authority	NPCC	6										
16.	Silvia Parada Mitchell	NextEra Energy, LLC	NPCC	5										
17.	Lee Pedowicz	Northeast Power Coordinating Council	NPCC	10										

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
18.	Roberto Pellgrini	The United Illuminating Company	NPCC	1									
19.	Si Truc Phan	Hydro-Quebec TransEnergie	NPCC	1									
20.	David Ramkalawan	Ontario Power Generation, Inc.	NPCC	5									
21.	Brian Robinson	Utility Services	NPCC	8									
22.	Ayesha Sabouba	Hydro One Networks Inc.	NPCC	1									
23.	Brian Shanahan	National Grid	NPCC	1									
24.	Wayne Sipperly	New York Power Authority	NPCC	5									
25.	Ben Wu	Orange and Rockland Utilities Inc.	NPCC	1									
26.	Peter Yost	Consolidated Edison Co. of New York, Inc.	NPCC	3									
3.	Group	Russel Mountjoy	NERC Standards Review Forum	X	X	X	X	X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Alice Ireland	Xcel Energy	MRO	1, 3, 5, 6
2.	Chuck Wicklund	Otter Tail Power Company	MRO	1, 3, 5
3.	Dan Inman	Minnkota Power Cooperative	MRO	1, 3, 5, 6
4.	Dave Rudolph	Basin Electric Power Cooperative	MRO	1, 3, 5, 6

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
5.	Kayleigh Wilkerson	Lincoln Electric System	MRO	1, 3, 5, 6									
6.	Jodi Jensen	Western Area Power Administration	MRO	1, 6									
7.	Joseph DePoorter	Madison Gas & Electric	MRO	3, 4, 5, 6									
8.	Ken Goldsmith	Alliant Energy	MRO	4									
9.	Mahmood Safi	Omaha Public Power District	MRO	3, 4, 5, 6									
10.	Marie Knox	MISO	MRO	2									
11.	Mike Brytowski	Great River Energy	MRO	1, 3, 5, 6									
12.	Randi Nyholm	Minnesota Power	MRO	1, 5									
13.	Scott Bos	Muscatine Power & Water	MRO	1, 3, 5, 6									
14.	Scott Nickles	Rochester Public Utilities	MRO	4									
15.	Terry Harbor	MidAmerican Energy	MRO	1, 3, 5, 6									
16.	Tom Breene	Wisconsin Public Service	MRO	3, 4, 5, 6									
17.	Tony Eddleman	Nebraska Public Power District	MRO	1, 3, 5									
4.	Group	Brandy Spraker	Tennessee Valley Authority	X		X		X	X				

	Additional Member	Additional Organization	Region	Segment Selection
1.	Joshua David		SERC	1

Group/Individual	Commenter	Organization	Registered Ballot Body Segment									
			1	2	3	4	5	6	7	8	9	10

2.	Josh Lewey		SERC	1
3.	David Deloach		SERC	1
4.	Dennis Sears		SERC	1
5.	Lee Thomas		SERC	5
6.	Tony Segovia		SERC	5
7.	Tom Vandervort		SERC	5

5.	Group	David Thorne	Pepco Holdings Inc. & Affiliates	X		X						

	Additional Member	Additional Organization	Region	Segment Selection
1.	Michael Mayer	Pepco Holdings	RFC	1, 3

6.	Group	Lousi Slade	Dominion NERC Compliance Policy	X		X		X	X			

	Additional Member	Additional Organization	Region	Segment Selection
1.	Randi Heise	Dominion	MRO	6
2.	Connie Lowe	Dominion	RFC	5, 6
3.	Michael Crowley	Dominion	SERC	1, 3
4.	Mike Garton	Dominion	NPCC	5, 6
5.	Louis Slade	Dominion	SERC	5, 6

7.	Group	Colby Bellville	Duke Energy	X		X		X	X			

	Additional Member	Additional Organization	Region	Segment Selection
1.	Doug Hils	Duke Energy	RFC	1
2.	Lee Schuster	Duke Energy	FRCC	3
3.	Dale Goodwine	Duke Energy	SERC	5
4.	Greg Cecil	Duke Energy	RFC	6

8.	Group	Jason Masrhall	ACES Standards Collaborators						X			

Group/Individual	Commenter	Organization	Registered Ballot Body Segment									
			1	2	3	4	5	6	7	8	9	10

	Additional Member	Additional Organization	Region	Segment Selection
1.	Scott Brame	North Carolina Electric Membership Corporation	SERC	1, 3, 4, 5
2.	John Shaver	Arizona Electric Power Cooperative	WECC	4, 5
3.	Alisha Anker	Prairie Power	SERC	3
4.	Noman Williams	Sunflower Electric Power Corporation	SPP	1
5.	Mark Ringhausen	Old Dominion Electric Cooperative	SERC	3, 4
6.	Mohan Sachdeva	Buckeye Power	RFC	3, 4
7.	Bob Solomon	Hoosier Energy	RFC	1
8.	Shari Heino	Brazos Electric Power Cooperative	ERCOT	1, 5
9.	Patrick Woods	East Kentucky Power Cooperative	SERC	1, 3, 5
10.	John Shaver	Southwest Transmission Cooperative	WECC	1

9.	Group	Pamela Hunter	Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	X		X		X	X				
No Additional Responses													
10.	Group	Robert Rhodes	SPP Standards Review Group		X								

	Additional Member	Additional Organization	Region	Segment Selection
1.	Mo Awad	Westar Energy	SPP	1, 3, 5, 6
2.	Greg Froehling	Rayburn Country Electric Cooperative	SPP	3
3.	Bo Jones	Westar Energy	SPP	1, 3, 5, 6

Group/Individual		Commenter	Organization	Registered Ballot Body Segment									
				1	2	3	4	5	6	7	8	9	10
4.	Shannon Mickens	Southwest Power Pool	SPP 2										
5.	James Nail	City of Independence, MO	SPP 3										
6.	Kevin Nincehelser	Westar Energy	SPP 1, 3, 5, 6										
7.	Mahmood Safi	Omaha Public Power District	MRO 1, 3, 5										
8.	Ashley Stringer	Oklahoma Municipal Power Authority	SPP 4										
9.	Harold Wyble	Kansas City Power & Light	SPP 1, 3, 5, 6										
11.	Individual	Jonathan Appelbaum	The United Illuminating Company	X									
12.	Individual	Ashley Stringer	Oklahoma Municipal Power Authority				X						
13.	Individual	Chuck Matthews	BPA/TPP	X								X	
14.	Individual	Anthony Jablonski	ReliabilityFirst										X
15.	Individual	Michael Falvo	Independent Electricity System Operator		X								
16.	Individual	Shirley Mayadewi	Manitoba Hydro	X		X		X	X				
17.	Individual	Andrew Z. Pusztai	American Transmisiion Company, LLC	X									
18.	Individual	Michelle D'Antuono	Occidental Energy Ventures Corp.					X					
19.	Individual	Chris Scanlon	Exelon Companies	X		X	X	X	X				
20.	Individual	Thomas Foltz	American Electric Power	X		X		X	X				
21.	Individual	Patti Metro	National Rural Electric Cooperative Association (NRECA)	X		X	X						
22.	Individual	Mitch Colburn	Idaho Power Co.	X									
23.	Individual	Scott Langston	City of Tallahassee	X									
24.	Individual	Bill Fowler	City of Tallahassee			X							
25.	Individual	Ayesha Sabouba	Hydro One	X		X							
26.	Individual	Christina Conway	Oncor Electric Company, LLC	X									

If you support the comments submitted by another entity and would like to indicate you agree with their comments, please select "agree" below and enter the entity's name in the comment section (please provide the name of the organization, trade association, group, or committee, rather than the name of the individual submitter).

Summary Consideration:

Organization	Agree	Supporting Comments of "Entity Name"
N/A	N/A	N/A

1. Do you agree with this scope? If not, please explain.

Summary Consideration:

Organization	Yes or No	Question 1 Comment
Northeast Power Coordinating Council	No	Requirement R1.1should be modified "to ensure that the impact on third parties is appropriately addressed" and include the definition of who the impacted third parties include.
Dominion NERC Compliance Policy	No	Dominion believes that the phrase 'power pool' should be removed from FAC-002-1 as we believe that any such planning criteria should have been incorporated into NERC, regional, subregional or Transmission Owner planning criteria by now.
ACES Standards Collaborators	No	(1) We question the need for these two standards at all because of the minimal benefit to reliability of the Bulk Electric System. Nearly all TPs and PCs are subject to performing facility connection studies and having facility connection requirements in a FERC-approved tariff. Even most of those TPs and PCs that traditionally have not been subject to FERC wholesale power regulation have approved tariffs due to the reciprocity requirements that FERC established in the pro forma tariff. That is if they don't have a reciprocal arrangement (i.e. a tariff), their associated PSE, LSE, and other applicable functions do not qualify for transmission service on a FERC-approved tariff. For the few areas where this is not true, the areas tend to have minimal impact on the BES. Thus, all of the requirements in FAC-001 and FAC-002 would appear to meet Paragraph 81 (criterion B7 - Redundant) because these requirements are already covered by another governmental regulation that requires tariff. We recommend that the SAR be modified to

Organization	Yes or No	Question 1 Comment
		consider other alternatives, such as retirement of these requirements, as these standards are not needed at all.(2) In addition, we do have issues with specific scope items identified in the SAR regarding FAC-002 and discussed below. We do not believe that R1 should be split into separate requirements. Rather, if FAC-002 persists, we think R1 should be revised to refocus the need for the TP and PC to perform assessments on the integration of new or modified facilities. We do not believe additional requirements are necessary to "coordinate and cooperate" because coordination and cooperation are vague and problematic for measuring compliance. These activities are essentially about supplying information. There are already FERC approved tariff requirements that compel the sharing of this information. Thus, the SAR scope should be adjusted accordingly. (3) The scope should be modified to remove the reference in the FAC standards to the TPL standards. PCs and TPs must comply with the TPL standards regardless of what this standard requires. Thus, stating that an evaluation is required per the TPL standards will result in double jeopardy. Because failure to comply with the TPL standards for new or modified facilities will result in a compliance violation of FAC-002. (4) FAC-002 is redundant with the TPL standards and the SAR should be modified to remove these redundancies. TPL-001-4, R1, Part 1.1.3 and R1.3.8 of TPL-001-0.1, TPL-002-0b, and TPL-003-0b already require the PC and TP to evaluate the impacts of new or modified facilities in their TPL assessments. The SAR should be modified to consider the continued need for separate standards and requirements given these TPL requirements are already in existence. The SAR should be clear that if the standards are maintained that technical justification for retaining the requirements should be supplied given the apparent redundancies. (5) We support that the SAR calls for the elimination of redundancy and retirement of requirements with no impact to the reliable operation of the BES through application of the Paragraph 81 criteria. However, we are concerned that the P81 criteria

Organization	Yes or No	Question 1 Comment
		may have not been applied to all requirements based on the posted redline standard. Existing FAC-002-1 R2 would appear to meet Paragraph 81 (criteria B2 - Data Collection/Data Retention, B3 - Documentation, and B4-Reporting). Furthermore, some of the new proposed requirements appear to do little to support reliability. We understand that the redlined standards were written for illustrative purposes and are not an official proposed draft standard. Thus, we will not belabor the point further but encourage the ultimate standards drafting team to include a thorough review of existing and proposed new requirements against Paragraph 81 criteria. If the standards drafting team retains any requirements that appear to meet Paragraph 81 criteria, then significant technical justification should be provided.
SPP Standards Review Group	No	In R1 of FAC-002-1 modification of Facilities is a trigger for conducting assessments of the impact on affected Transmission systems. Has the drafting team given any consideration to providing criteria to use to determine specifically which modifications would be included? For example, changing CTs/PTs on a Facility may have an impact on the BES and need to be factored into interconnection assessments. Would line uprates, such as reconductoring, trigger a similar assessment even though the impact on the BES would in general be positive? Do we need to include clarification within the standard to help the industry decide when to initiate assessments?
The United Illuminating Company	No	Add For FAC-001 R1.1 thru R1.3 should be removed. Add For proposed FAC-002 R5 should be removed since its documentation and data retention. If it must be retained then it should be split up by Entity Type for clarity.
ReliabilityFirst	No	ReliabilityFirst submits the following comment on SAR Under the third bullet under the “Per the FAC Five-Year Review Team Recommendation to Revise FAC-002-1, the drafting team should consider:” section,

Organization	Yes or No	Question 1 Comment
		ReliabilityFirst has issues with using terms such as "coordinating and cooperating" within Reliability Standards. These terms are ambiguous and without being further prescribed, requirements with such terms will lead to confusion and interpretation. Instead of "coordinating and cooperating", the SAR should speak to the Entities seeking to interconnect to provide the necessary data to the applicable Transmission Planners and Planning Coordinators in order to perform an assessment. Following the assessment, a joint review (though sharing of the assessment results) should be undertaken. ReliabilityFirst has also supplied draft changes to the FAC-001-1 and FAC-002-1 standards for consideration under a separate email to the NERC standards coordinator - Mallory Huggins.
Exelon Companies	No	There are three considerations we would recommend the Standard Drafting Team consider. First, the proposed draft FAC-002 standard seems to change the scope from a requirement for entities seeking to modify the transmission system to coordinate with the Planning Authority and Planning Coordinator to a scope that requires the Planning Authority and Planning Coordinator to perform assessments of new or modified facilities. We believe this is addressed as a requirement for the Planning Authority and Planning Coordinator to perform these assessments in the TPL standards? We think that the primary focus of FAC-002 should remain coordination, as it was, and not the assessment, which is already addressed in the TPL standards. Second, we think consideration should be given to whether the requirement R1.4 (R1.3 in revised draft) in FAC-002 is necessary. Similar to the first comment, this is already addressed in the TPL standards and is redundant here. Requirement 1.2 in the revised draft should be sufficient, it states that compliance with all NERC Reliability Standards shall be maintained, which includes the TPL standards. Third, for requirement R3 in the revised draft of FAC-002, we recommend that additional wording be added to allow handling the addition of smaller end-user loads to the transmission system through the normal annual reliability analysis

Organization	Yes or No	Question 1 Comment
		performed by the Planning Authority or Planning Coordinator. We would recommend this for loads smaller than 20 MW. This would clarify that for these smaller end-user loads, it is not necessary for coordination to occur individually for each instance, but rather can be consolidated into the annual reliability analysis. We believe this is the most effective way to handle these smaller end-use additions.
National Rural Electric Cooperative Association (NRECA)	No	In general, NRECA agrees with the scope of the SAR in the context of completing Five-Year reviews of existing standards and in doing so eliminating redundancies, administrative burdens and addressing appropriate applicability concerns in standards. This being said, it appears that there are still improvements that can be made to address these areas as proposed in the red-line version of the standards included in this SAR. NRECA looks forward to commenting on these standards as the project continues through the development process.
BPA/TPP	Yes	However, it is not clear what is intended by the suggested guidance document referenced in the scope for FAC-001-1.
American Electric Power	Yes	AEP does not object to the proposed modifications if industry believes that these standards are indeed required for reliability. In fact, we find FAC-002-1 R1 through R4 to be much improved by clearly delineating what each functional entity is responsible for. As stated previously however, AEP believes these standards both have marginal (if any) benefit to the reliability of the BES. Entities would not and could not allow other entities to interconnect with them without the prescribed processes being met. As a result, we recommend that these two standards be eliminated in their entirety.
Idaho Power Co.	Yes	With the exception of the following: I do not agree that time horizons should be added to each requirement. I think the time horizon should be

Organization	Yes or No	Question 1 Comment
		left to the TP to determine. Future year base cases and/or projected future conditions are based on assumptions. Modeling new interconnected generation and other facilities is immediately contrary to the existing future year assumptions. The TOP knows the most limiting conditions on its system and is then responsible for operating its system with the interconnected facility based on the studied conditions. The proposal to split R1 into three requirements seems reasonable. However, depending on how the proposal is implemented, confusion and/or unnecessary or redundant reporting may be added for vertically integrated utilities. In regards to impact to third parties, I don't think that TPs should be responsible for identifying and resolving third parties issues caused by modeling issues (i.e. transient data in base cases). Some specificity of "impact" may be beneficial, but may also create incremental challenges to the TP conducting a study if "impacts" is narrowly defined. The other proposed revisions seem reasonable.
Oncor Electric Company, LLC	Yes	With respect to FAC-001-1, Oncor agrees with the FAC FYRT's recommendation to consider retirement of R3.1 and R3.1.3 through R3.1.16 under Paragraph 81 criteria. The FYRT states that R3.1 and R3.1.3 through R3.1.16 are not necessary for reliability (Criterion A) and are redundant (Criterion B7) or generally too prescriptive to be contained in a standard. Oncor agrees with this statement. Reagrding FAC-002-1, the proposed Purpose, "To avoid adverse impacts on reliability, assessments must be conducted and coordinated to determine whether a new or modified Facility meets Facility connection requirements", is written more like a measure than a purpose. Oncor recommends revising the language to better reflect the purpose of the Standard. It is Oncor's recommendation that the purpose of the Standard reflects that assessments must be conducted and coordinated to determine the impacts of integrating new or modified Facilities to the reliability of the Transmission system.

Organization	Yes or No	Question 1 Comment
Arizona Public Service Company	Yes	
NERC Standards Review Forum	Yes	
Tennessee Valley Authority	Yes	
Pepco Holdings Inc. & Affiliates	Yes	
Duke Energy	Yes	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	
Oklahoma Municipal Power Authority	Yes	
Independent Electricity System Operator	Yes	
Manitoba Hydro	Yes	
American Transmisiion Company, LLC	Yes	
Occidental Energy Ventures Corp.	Yes	
City of Tallahassee	Yes	

Organization	Yes or No	Question 1 Comment
City of Tallahassee	Yes	
Hydro One	Yes	

2. The SAR identifies a list of reliability functions that may be assigned responsibility for requirements in the set of standards addressed by this SAR. Do you agree with the list of proposed applicable functional entities? If no, please explain.

Summary Consideration:

Organization	Yes or No	Question 2 Comment
Dominion NERC Compliance Policy	No	Dominion suggests it include Transmission Service Provider. Given that authority for transmission planning (for a very large portion of the BES in the United States) has been turned over to ISO/RTOs, with governing provisions typically included in their respective tariffs, this entity needs to be included. See supporting comments in questions 4 & 5.
ACES Standards Collaborators	No	(1) For FAC-001 inclusion of the TO and GOs that own the interconnecting facility and receive an interconnection request is appropriate. However, we believe that the only applicable entities that should be included in the FAC-002 standard are the PC and TP. The PC and TP ultimately have the responsibility to plan for new facilities and already have existing FERC approved tariff processes to gather the necessary input from the TO, GO and LSE. Thus, requirements for TOs, GOs DPs, and LSEs to "coordinate and cooperate" are unnecessary and should be removed from the standard. (2) Inclusion of both the DP and LSE is redundant. It is the DP that will seek new end-user facilities because it provides and operates "electrical delivery facilities between the transmission system and the End-use Customer" per the NERC functional model. Furthermore, the Appendix 5B - Statement of Compliance Registry Criteria of the Rules of Procedure states very clearly that the DP will also be registered as the LSE "for all load directly connected to their distribution facilities" in Section III.a.4.

Organization	Yes or No	Question 2 Comment
National Rural Electric Cooperative Association (NRECA)	No	NRECA agrees that the applicability for FAC-001 is correct. For FAC-002, the applicability should be modified to include only the PC and TP. The PC and TP ultimately have the responsibility to plan for new facilities and already have existing FERC approved tariff processes to gather the necessary input from the TO, GO and LSE. Thus, requirements for TOs, GOs DPs, and LSEs to "coordinate and cooperate" are unnecessary and should be removed from the standard.
NERC Standards Review Forum	Yes	The NSRF noticed the statement under "Per the FAC Five-Year Review Team Recommendation to Revise FAC-001-1, the drafting team should consider: Modifying R3 to ensure that the impact on third parties is appropriately addressed". Please assure that the SDT incorporates this statement to be applicable to Functional Entities per the Functional Model. There should not be a Federal Law (i.e. a Requirement) to speaks of coordinating with non-Functional Entities.
American Electric Power	Yes	It is current practice for a regional Transmission Service Provider (e.g. RTO) to specify and require an "Interconnection Service Agreement" for any new Interconnection customer facility (e.g. GO) to be connected and eligible to receive Transmission services. AEP recommends including the TSP in FAC-001's "Applicability" scope, and making it subject to this standard requirement.
Arizona Public Service Company	Yes	
Northeast Power Coordinating Council	Yes	
Tennessee Valley Authority	Yes	
Pepco Holdings Inc. & Affiliates	Yes	

Organization	Yes or No	Question 2 Comment
Duke Energy	Yes	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	Yes	
SPP Standards Review Group	Yes	
The United Illuminating Company	Yes	
Oklahoma Municipal Power Authority	Yes	
BPA/TPP	Yes	
Independent Electricity System Operator	Yes	
Manitoba Hydro	Yes	
American Transmisiion Company, LLC	Yes	

Organization	Yes or No	Question 2 Comment
Occidental Energy Ventures Corp.	Yes	
Exelon Companies	Yes	
Idaho Power Co.	Yes	
City of Tallahassee	Yes	
City of Tallahassee	Yes	
Hydro One	Yes	

3. Are you aware of any regional variances that will be needed as a result of this project? If yes, please identify the regional variance:

Summary Consideration:

Organization	Yes or No	Question 3 Comment
Arizona Public Service Company	No	
Northeast Power Coordinating Council	No	
NERC Standards Review Forum	No	
Tennessee Valley Authority	No	
Pepco Holdings Inc. & Affiliates	No	
Dominion NERC Compliance Policy	No	
Duke Energy	No	
ACES Standards Collaborators	No	
Southern Company: Southern Company Services, Inc.; Alabama Power Company;	No	

Organization	Yes or No	Question 3 Comment
Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing		
SPP Standards Review Group	No	
The United Illuminating Company	Yes	For FAC-002 The revised standard should recognize that in organized markets like ISO-NE the Large Generator Interconnect Process and Process to integrate transmission Facilities is driven by ISO Procedures and Processes. Either in the measures or include in technical guidance to provide compliance guidance.
Oklahoma Municipal Power Authority	No	
BPA/TPP	No	
ReliabilityFirst		
Independent Electricity System Operator	No	
Manitoba Hydro	No	
American Transmisiion Company, LLC	No	

Organization	Yes or No	Question 3 Comment
Occidental Energy Ventures Corp.	No	
Exelon Companies	No	
American Electric Power	No	
National Rural Electric Cooperative Association (NRECA)	No	
Idaho Power Co.	No	
City of Tallahassee	No	
City of Tallahassee	No	
Hydro One	No	

4. Are you aware of any business practice that will be needed or that will need to be modified as a result of this project? If yes, please identify the business practice:

Summary Consideration:

Organization	Yes or No	Question 3 Comment
Arizona Public Service Company	No	
Northeast Power Coordinating Council	No	
Tennessee Valley Authority	No	
Pepco Holdings Inc. & Affiliates	No	
Duke Energy	No	
ACES Standards Collaborators	No	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company	No	

Organization	Yes or No	Question 3 Comment
Generation and Energy Marketing		
SPP Standards Review Group	No	
Oklahoma Municipal Power Authority	No	
BPA/TPP	No	
Independent Electricity System Operator	No	
Manitoba Hydro	No	
American Transmisiion Company, LLC	No	
Exelon Companies	No	
American Electric Power	No	
National Rural Electric Cooperative Association (NRECA)	No	
Idaho Power Co.	No	
City of Tallahassee	No	
City of Tallahassee	No	

Organization	Yes or No	Question 3 Comment
Hydro One	No	
NERC Standards Review Forum	Yes	Please see question 2. The NSRF is not aware of every Functional Entities' business practices when dealing with customers who wish connect to the electric system.
Dominion NERC Compliance Policy	Yes	Dominion believes that, in organized ISO/RTOs, where transmission planning has been turned over to that entity, interconnection requests are processed pursuant to the terms and conditions in the respective tariff. While we understand, and agree with the SDT, that a reliability standard is necessary to insure that no portion of the BES is excluded, we would like to see acknowledgement that, under these circumstances, the entity that has been delegated the planning authority bears some level of responsibility for compliance with these standards.
Occidental Energy Ventures Corp.	Yes	Although Occidental Energy Ventures Corp ("OEVC") believes that the intent of these two standards are already captured through other mandatory and enforceable mechanisms. In our view, the proposed streamlining of requirements and elimination of redundancy is a promising step in the right direction. Business practices and tariffs should be updated to address the minimum assessments of new Facilities that are necessary to assure that the reliability of the Bulk Electric System is not adversely affected. This would reflect the fact that existing interconnection obligations are very thorough - and the data showing that improper commissioning of facilities is not a major BES threat. At the same time, the two FAC standards could be retired under the Paragraph 81 criteria B7 item iii which states that the "Reliability Standard requirement is redundant with... (iii) a governmental regulation (e.g., Open Access Transmission Tariff, North American Energy Standards Board ("NAESB"), etc.). "

5. **Are you aware of any Canadian provincial or other regulatory requirements that may need to be considered during this project in order to develop a continent-wide approach to the standards? If yes, please identify the jurisdiction and specific regulatory requirements.**

Summary Consideration:

Organization	Yes or No	Question 4 Comment
Arizona Public Service Company	No	
NERC Standards Review Forum	No	
Tennessee Valley Authority	No	
Pepco Holdings Inc. & Affiliates	No	
Duke Energy	No	
ACES Standards Collaborators	No	
Southern Company: Southern Company Services, Inc.; Alabama Power Company; Georgia Power Company; Gulf Power Company; Mississippi Power Company; Southern Company Generation; Southern Company Generation and Energy Marketing	No	
SPP Standards Review Group	No	
Oklahoma Municipal Power Authority	No	
Independent Electricity System Operator	No	
American Transmisiion Company, LLC	No	
Occidental Energy Ventures Corp.	No	
Exelon Companies	No	
American Electric Power	No	
National Rural Electric Cooperative Association (NRECA)	No	

Organization	Yes or No	Question 4 Comment
Idaho Power Co.	No	
City of Tallahassee	No	
City of Tallahassee	No	
Hydro One	No	
Northeast Power Coordinating Council	Yes	FERC Tariff and Generator Interconnection Agreements include requirements that must be considered during this project. Specifically, section I.3.9 of the ISO-New England Tariff provides that new generation projects and project uprates, inter alia, must undergo a technical review by ISO-NE (with the assistance of NEPOOL task forces) to determine whether the project/uprate will have a "significant adverse effect on the stability, reliability or operating characteristics of the Transmission Owner's transmission facilities, the transmission facilities of another Transmission Owner, or the system of a Market Participant."
Dominion NERC Compliance Policy	Yes	Yes, certain FERC requirements related to Orders 888, 889, 1000 etc. which call for open transmission access. At the very least, the standards should acknowledge that, in some areas, the Transmission Owner has delegated the responsibility for planning of its Transmission system to another entity. Where this has been done, that entity may share some, or bear all, responsibility for compliance with these reliability standards.
BPA/TPP	Yes	The Large Generation Interconnection Procedures (LGIP) that have been put in place by applicable entities since FERC issued Order 2003-A need to be considered for consistency and possible redundancy.
Manitoba Hydro	Yes	This depends on the details that remain in the proposed "guidance document". For example, compliance of interconnections with Power Quality standards may be a provincial regulation administered by the local utility as opposed to a NERC standard requirement.

6. If you have any other comments on this SAR that you haven't already mentioned above, please provide them here:

Summary Consideration:

Organization	Question 4 Comment
Northeast Power Coordinating Council	"Modified" has been added to FAC-002-1 describing facilities. The word "new" is also used. "New" is clear, however, what constitutes a "modified" facility - 10% new, 50% new, 90% new? The Drafting Team should consider adding a Rationale Box explaining what is meant by "modified".
Dominion NERC Compliance Policy	Dominion does not agree with the SDT recommendation to change the phrase "the interconnected' to affected in FAC-001-1 @ R3.1 and R3.2. While Dominion believes the SDT wanted, and philosophically supports, the need to insure that the Facility connection requirements are coordinated with all whose Transmission system are affected by the interconnection of a new Facility, we believe the primary requirement should be that the entity's procedures require notification and coordination of the assessment of new Facilities on the Transmission system to which the new Facility is interconnected. We could support language that also requires notification and coordination with those entities whose Transmission system is expected to be, or has been shown to be, affected by the new Facility. As examples we offer the following: R3.1- Procedures for notification and coordination of joint studies of new Facilities and their impacts on the interconnected Transmission system(s).R3.2. - Procedures for notification and coordination of joint studies to those responsible for the reliability of Transmission system(s) that are expected to be, or that have been shown to be, affected by the new Facility. Dominion suggests the words "or modified' be struck from the purpose and requirements of FAC-002-1 as the SDT stated in the SAR that the intent of these FAC standards is to address only new facilities. According to the SAR, modifications are to be addressed through the TPL standards. Redline version of FAC-002-1; R5 should be removed per P81 (retirement of this requirement approved by FERC effective 1/21/14)

Organization	Question 4 Comment
BPA/TPP	In general, facility connection requirements may be more focused on what is acceptable from an equipment perspective and may be more applicable during the design and implementation phases of an interconnection. These requirements may differ from requirements to conduct an assessment (e.g. LGIP requirements). The revised Standard should give consideration to having multiple sources for requirements rather than having entities develop redundant requirements.
Oncor Electric Company, LLC	It is Oncor's understanding the intent and purpose of performing assessments under FAC-002-1 is to determine the impacts of the integration of new or modified Facilities to the reliability of the Transmission system. Oncor interprets and seeks consensus that the scope of such assessments is limited to steady-state, short-circuit, and dynamic studies as necessary. Additionally, the proposed FAC-002-1 R1.2 can be interpreted that the Transmission Planner and Reliability Coordinator performing the assessments would be responsible for ensuring that generation, transmission, and end-user entities seeking to connect to the Transmission system meet the stated reliability standards, planning criteria, and Facility connection requirements. However, the requirement needs to clarify that it is the responsibility of the entity seeking to interconnect to the Transmission system to ensure that it meets such reliability standards, planning criteria, and Facility connection requirements. Ultimately, it is the Transmission Planner's and Reliability Coordinator's responsibility to conduct the assessments in accordance with with applicable NERC Reliability Standards; regional, subregional, power pool, and Transmission Owner planning criteria; and Facility connection requirements.
Arizona Public Service Company	No Additional Comments
Exelon Companies	No additional. Thank you for the opportunity to comment.
City of Tallahassee	no other comments
Occidental Energy Ventures Corp.	OEVC recommends more substance around the conditions where a Generator Owner looks to add a third party to the GO-TO interconnection. Whether done voluntarily or involuntarily (e.g.; at the behest of a RTO to relieve congestion), there are reliability and economic considerations which

Organization	Question 4 Comment
	must be addressed. We believe the economic factors by their nature automatically incorporate reliability concerns, and should prevail. As such, interconnection studies related to the new Facility additions would fall under business practices and tariffs - not the FAC standards.
Oklahoma Municipal Power Authority	Requirement R5 (previously R2) should be removed entirely as this is one of the Paragraph 81 requirements that was approved on 12/06/13 by FERC for retirement effective 01/21/2014.
Manitoba Hydro	The drafting team should reference the NERC IVGTF group 1.3 who reviewed the FAC-001 standard and made recommendations for changes. http://www.nerc.com/files/2012_IVGTF_Task_1-3.pdf The guidance document should likely be attached as an appendix so the Responsible Entity knows the minimum set of interconnection requirements that are to be documented. Are there plans to monitor compliance with the interconnection requirements in the revised standard?
NERC Standards Review Forum	The NSRF wishes to thank the Five Year Review Team and NERC in establishing a very thorough SAR. By including items such as; “reliability principles” within the SAR, the reader is presented with all the information required to accomplish a good review.
The United Illuminating Company	The Purpose of FAC-001 and FAC-002 should be changed from the idea of avoiding adverse impact to the idea of supporting reliable operation or providing a adequate level of reliability.
Pepco Holdings Inc. & Affiliates	The revisions are beneficial in simplifying requirements and adding clarity.
Duke Energy	Upon further review of the proposed revision to FAC-001, Duke Energy agrees with the FAC FYRT on the removal of Requirements 3.1.1 - 3.1.14, but our agreement is contingent upon these sub-requirements being moved into a guidance document.
Hydro One	We are in agreement with the proposed changes to the 2 standards and to NPCC RSC comments. It will provide clarifications of the requirements.
ACES Standards Collaborators	We have no additional comments and thank you for the opportunity to comment.

END OF REPORT

A. Introduction

1. Title: **Facility Connection Requirements**

2. Number: FAC-001-1

3. Purpose: To avoid adverse reliability impacts, Transmission Owners and Generator Owners must establish Facility connection requirements.

4. Applicability:

4.1. Transmission Owner

4.2. Applicable Generator Owner

4.2.1 Generator Owner with an executed Agreement to evaluate 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.

B. Requirements

R1. Each Transmission Owner shall document its Facility connection requirements and provide the document to the applicable Registered Entities within 30 calendar days upon request. The Transmission Owner's Facility connection requirements document shall include connection requirements for new or modified:

1.1. Generation Facilities,

1.2. Transmission Facilities, and

1.3. End-user Facilities

[VRF – Lower] [Time Horizon – Long-term Planning]

R2. Each applicable Generator Owner shall document (within 45 days of having an executed Agreement to conduct an assessment on the reliability impact of interconnecting a third party Facility to the Generator Owner's existing Facility that is used to interconnect to the BES under FAC-002) its Facility connection requirements and provide them to other applicable Registered Entities upon request.

[VRF – Lower] [Time Horizon – Long-term Planning]

R3.

Each Transmission Owner and each applicable Generator Owner (in accordance with Requirement R2) shall address the following items in its Facility connection requirements:

3.1. Procedures for conducting joint studies of new or modified Facilities.

3.2. Procedures for the notification of new or modified Facilities to other impacted Registered Entities (e.g., Transmission Owners, Transmission Planners and Planning Coordinators).

[VRF – Lower] [Time Horizon – Long-term Planning]

A. Introduction

1. Title: **Assessments of New Generation, Transmission, and End-User Facilities**

2. Number: FAC-002-1

3. Purpose: Assessments must be conducted to determine whether a new or modified Facility meets Facility connection requirements and avoids any adverse reliability impacts to the BES.

4. Applicability:

4.1. Generator Owner

4.2. Transmission Owner

4.3. Distribution Provider

4.4. Load-Serving Entity

4.5. Transmission Planner

4.6. Planning Coordinator

B. Requirements

R1. Before interconnecting to the BES, the Transmission Planner and Planning Coordinator shall conduct assessments to determine the reliability impact of integrating new or modified generation, transmission, and electricity end-user Facilities. These assessments shall include:

1.1. Steady-state, dynamic, and short-circuit studies, as needed, to evaluate Transmission system performance in accordance with the applicable TPL Reliability Standard(s).

1.2. Study parameters and assumptions, alternatives considered, system performance results, and any recommendations developed jointly by the entities involved.

1.3. A statement of compliance with all applicable:

- NERC Reliability Standards;
- Regional, subregional, power pool, and Transmission Owner planning criteria; and
- Applicable Facility connection requirements.

1.4. A summary of the evaluation of the reliability impact of the new or modified Facilities on the connecting Transmission system.

[VRF – Medium] [Time Horizon – Long-term Planning]

R2. The Generator Owner, Transmission Owner, Distribution Provider, and Load-Serving Entity seeking to interconnect Facilities shall each provide the necessary steady-state, dynamic, and short-circuit data and any other necessary technical information to its Transmission Planner and Planning Coordinator, within 45 calendar days of request.

[VRF – Medium] [Time Horizon – Long-term Planning]

R3. Each Transmission Planner and Planning Coordinator shall make available the assessment(s) to all Registered Entities involved with interconnecting new or modified Facilities, within 30 calendar days of the completion of the assessment.

[VRF – Medium] [Time Horizon – Long-term Planning]

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Consideration of Issues and Directives

Project 2010-02 – Connecting New Facilities to the Grid

There are two outstanding directives from FERC Order 693[1] that apply to FAC-002-0. The first directs NERC to consider incorporating a reference to TPL-004-0 in FAC-002-0. This directive is outdated. FERC has approved TPL-001-4 and it will become enforceable on January 1, 2015. It combines the four TPL previous standards, so the reference in FAC-002 will be changed to reference TPL-001-4 or TPL standards more generally. The second outstanding directive related to FAC-002-0 asked NERC to consider the comments of various entities asking for clarification of R1. For ease of review, the Project 2010-02 standard drafting team (SDT) has listed the comments of the various entities below, along with its response to those comments.

Project 2010-02 – Connecting New Facilities to the Grid		
Issue or Directive	**Source**	**Consideration of Issue or Directive**
APPA requested that the Reliability Standard be clarified to state that the required assessment must be performed only by the Transmission Planner and the Planning Authority. Related, TAPS expressed concern that Load-Serving Entities are not equipped to perform assessments. California Cogeneration expressed a similar concern about Generator Owners' ability to perform an assessment.	FERC Order 693	The SDT is addressing these concerns by splitting R1 into three requirements that better clarify the responsibilities of all entities involved. The new R1 focuses exclusively on the Transmission Planner and Planning Authority's responsibility for conducting assessments, and the new R2 and R3 separate out the requirement for Generator Owners, Transmission Owners, Distribution Providers, and Load-Serving Entities to simply coordinate and cooperate on those assessments.

[1] FERC Order No. 693, which approved 83 Reliability Standards as mandatory and effective, is available here: http://www.nerc.com/FilingsOrders/us/FERCOrdersRules/ORDER%20693.pdf.

Project 2010-02 – Connecting New Facilities to the Grid		
Issue or Directive	**Source**	**Consideration of Issue or Directive**
Xcel requested that the Commission clarify that only one required assessment needs to be done when new facilities are added, and that all the listed entities should participate in that single assessment.	FERC Order 693	The SDT agrees that it is possible that only one assessment may be necessary, and in that case all entities could simply participate and sign on to that assessment, but in other cases, multiple assessments might be conducted and later coordinated.
FirstEnergy requested that NERC clarify what is considered a new facility and asks if, for example, up-rates should be included as new facilities.	FERC Order 693	The SDT believes the determination of whether an up-rate needs to be assessed the same way as a new facility is up to the entity that is conducting the study, and that such decisions will vary by region.
Six Cities requested that this Reliability Standard clarify that all applicable entities must make available data necessary for all other responsible entities to perform the required assessment.	FERC Order 693	The SDT believes that the requirement to coordinate and cooperate requires the sharing of all data necessary for conducting an assessment.
Six Cities also suggested that the transmission operator be added as an entity to which this Reliability Standard is applicable, at least from the perspective that it make necessary data available to all other entities responsible for assessment.	FERC Order 693	The SDT believes that data from the Transmission Owner would account for the necessary data from the transmission side. It would be the responsibility of the Transmission Planner or Planning Authority to include any relevant operations data.
FirstEnergy stated that both MISO and PJM already have Large Generator Interconnection Procedures (LGIP) in place that provide a formal process that meets the requirements listed under R1, and asks that the Commission state that complying with the	FERC Order 693	The SDT points out that regardless of what is covered in a tariff, requirements for interconnecting new facilities still need to be addressed in NERC's Reliability Standards. The requirement for Open Access Transmission Tariffs varies from region to region. FERC handles market-related documents like tariffs differently

Project 2010-02 – Connecting New Facilities to the Grid		
Issue or Directive	**Source**	**Consideration of Issue or Directive**
interconnection agreement and/or OATT satisfies this requirement.		from reliability-related documents like standards, and reliability standards should not rely upon market-related documents to address reliability issues.

IERP Recommendations

In general, the IERP continued to support the reliability need for both FAC-001-1 and FAC-002-1. The standard drafting team (SDT) implemented the majority of their recommendations, but is proposing some changes that are different from the IERP recommendations in some cases where industry expertise and consensus suggested a different solution.

	IERP Recommendation	**SDT Response**
FAC-001-1, R1	Word published is not clear	The SDT has recommended the requirement to "publish" be changed to "make available upon written request."
FAC-001-1, R1 and R2	Team had long discussion on the fact that FAC-001 requires the TO to publish the Facility connection requirements, but it does not put a requirement on anyone wanting to interconnect to meet the requirements in the Facility connection requirements. NERC should work with industry to see if an enforcement on entities wanting to interconnect should be added to the NERC standards.	The SDT does not believe such a change is necessary. FAC-002-1, R1.2 requires that assessments of the impact of integrating new or modified Facilities ensure compliance with NERC Reliability Standards; applicable regional, subregional, power pool, and Transmission Owner planning criteria; and *Facility connection requirements.*
FAC-001-1, R1 and R2	Only R1 and R2 are relevant to reliability	As recommended in another IERP recommendation, while R1 and R2 are very important and much of R3 can be deleted, certain aspects of R3 are still necessary for reliability.
FAC-001-1, R3	R3: Streamline the items in 3.1 by removing- 3.1.1, 3.1.2,3.1.3,3.1.9,3.1.11,3.1.13,3.1.15, 3.1.16 – we disagree and think that all but 3.1.1 and 3.1.2 can be deleted. Necessary for reliability, but should be streamlined	The SDT believes that all subparts except R3.1.1 and R3.1.2 are too prescriptive to include in a standard.
FAC-001-1, R4:	Administrative; should be deleted	The SDT agrees.

FAC-002-1, R1:	Merge 1.1 and 1.4; retire 1.2, 1.3 and 1.5. The new 1.1 and 1.4 should say 'the assessment shall address requirements as identified in the FCR and the performance requirements as identified in the TPL stds."	Though the SDT does not agree with the specific recommendations of the IERP, the team agrees that there is room for improvement in the subparts of R1. The SDT has proposed modifications to R1.1-R1.5 for consistency and added clarity. The SDT recommends the original R1.3 be deleted and R1.5 modified to focus less on documentation and more on the content of the assessment.
FAC-002-1, R1	"…applicable Regional requirements" language is not clear	The SDT believes that the list of standards and criteria that assessments must consider catalogs some of the elements that must be considered in assessment of a new interconnection. Some regions have specific requirements that may inform Facility connection requirements, and those should be considered.
FAC-001-1 and FAC-002-1	The IERP suggested a new construct be adopted by the ERO for NERC Reliability Standards. Under this construct, FAC-001 and FAC-002 would be combined with TPL-001, MOD-010, MOD-012, MOD-025, MOD-026, and MOD-027 to "Assess Transmission Future Needs and Develop Transmission Expansion Plans - Not Operational Planning." Has the Five Year Review Team considered this construct?	While the SDT supports this general direction, transition to this new framework is premature and would need to be carefully coordinated across a variety of projects.

Paragraph 81 Phase 1 Recommendations

During Phase 1 of the Paragraph 81 (P81) process, stakeholder were asked to make suggestions about future candidates for P81 retirement. Below, the standard drafting team (SDT) addresses the stakeholder suggestions from P81 Phase 1 that related to FAC-001 and FAC-002. Note that duplicate suggestions have been consolidated.

	P81 Phase 1 Stakeholder Suggestion	**SDT Response**
FAC-001-0, R1 and R2	Retire R1 and R2; they relate to documentation	While the SDT agrees that many documentation requirements are not related to reliability, the team believes that this FAC-001 is about more than documentation; it requires the *establishment* of Facility connection requirements. The development and documentation of these Facility connection requirements facilitates the assessment process that takes place in FAC-002-1. Although Facility connection requirements for public utilities are typically covered in Open Access Transmission Tariffs (OATTs) under Sections 205 and 206 of the Federal Power Act, this leaves out electric utilities such as municipalities, cooperatives, and federal entities (e.g., the Bonneville Power Administration and the Tennessee Valley Authority), which are addressed under Section 215 of the Federal Power Act. OATTs also would not apply to non-jurisdictional entities that fall in NERC's footprint (e.g., Canadian entities). Ultimately, the team agreed that Facility connection requirements are necessary for reliability and should continue to be explicitly addressed in NERC standards.
FAC-002-1, R1	R1 assigns responsibility to the wrong functional entity	The SDT believes this concern could be addressed by trifurcating R1 into three requirements that better clarify the responsibilities of all entities involved, as considered below.

IVGTF Recommendations

The Integration of Variable Generation Task Force (IVGTF), a task force under the Planning Committee, was asked to make recommendations for how NERC Interconnection procedures and standards should be enhanced to address voltage and frequency ride-through, reactive and real power control, and frequency/inertial response criteria in light of the evolving range of technical characteristics and physical capabilities of variable generation equipment. This report documents the results of that project.

The excerpts below reflect the recommendations of the IVGTF that relate to FAC-001-1. The report provides additional support and context.

CHAPTER 2: REACTIVE POWER AND VOLTAGE CONTROL

2.7 Review of Existing Reactive Power Standards

Applicability of NERC standards to generators is defined in the current NERC Statement of Compliance Registry Criteria. Generators larger than 20 MVA, plant/facility larger than 75 MVA in aggregate, and any generator that is a blackstart unit is subject to NERC standards. Regional standards and other requirements supplement the NERC standards. An important consideration is that NERC standards, unlike some Regional grid codes, strive to be technology neutral. A good example of this philosophy is the PRC-024 standard on voltage and frequency tolerance, which is currently being drafted.

FAC-001 directs the Transmission Owner to define and publish connection requirements for facilities, including generators. The connection requirements must address reactive power capability and control requirements (R3.1.3 and R3.1.9). As stated in the previous section, the manner in which reactive power capability may be used affects interconnection requirements. In that regard, NERC VAR standards address operating requirements with respect to reactive power control, although the language used is more pertinent to synchronous generation and could be modified to better address variable generation. VAR-001 R3 states, "The Transmission Operator shall specify criteria that exempt generators from compliance with the requirements defined in Requirement 4 and Requirement 6.1." VAR-001 R4 and R6.1 refer to requirements to operate in automatic voltage control or reactive power control. VAR-002 indicates that generators with automatic voltage regulators must operate in voltage control mode unless directed otherwise by the Transmission Operator.

Interconnection standards issued by Transmission Operators pursuant to FAC-001 are not uniform. Some Transmission Operators address the reactive power requirements explicitly, and some just refer back to the FERC pro-forma LGIA/SGIA. For example, the Idaho Power document states in Section R2.1.9, "IPC's voltage, reactive power, and power factor control requirements for

generators are described in its generator interconnection agreements. The requirements for generators larger than 20 MW are listed in section 9.6 of IPC's Standard Large Generator Interconnection Agreement (LGIA). For generators smaller than 20 MW, Section 1.8 of IPC's Small Generator Interconnection Agreement (SGIA) describes the requirements."

In contrast, the PG&E Generation Interconnection Handbook states in Section G3.1.2.2, "Wind generating facilities must provide unity power factor at the point of interconnection (POI), unless PG&E studies specify a range. PG&E may further require the provision of reactive support equivalent to that provided by operating a synchronous generator anywhere within the range from 95 percent leading power factor (absorbing vars) to 90 percent lagging power factor (producing vars) within an operating range of ±5 percent of rated generator terminal voltage and full load. (This is typical, if the induction project is greater than 1,000 kW.)"

Further, in G3.1.3, the PG&E document states, "Inverter-based generating facilities need to provide reactive power (vars) to control voltage. It shall be measured at the facility side (generally the low-voltage side) of the step-up transformer that connects to PG&E. The facility reactive capability shall be at least capable of providing 43 percent of facility watt rating into the system and capable of accepting 31 percent of facility watt rating from the system." Other standards related to reactive power capability are reviewed below.

2.8: Specific Recommendations to Improve Interconnection Standards

NERC should consider revisions to FAC and VAR standards to ensure that reactive power requirements for all generators are addressed in a technically clear and technology-neutral manner. Where technically justified, Regional differences of these requirements may be necessary to maintain reliability. As with all new or changing requirements, appropriate consideration should be given to the applicability of existing generators.

Suggested update to FAC-001: Consider adding clarification or an appendix to FAC-001 expanding R.2.1.3 and stating that interconnection standards for reactive power must cover specifications for minimum static and dynamic reactive power requirements at full power and at partial power, and how terminal voltage should affect the power factor or reactive range requirement (see Section 0 below for technical guidelines).

2.8.2: General Recommendations for Standards Development and Reconciliation

For the most part, existing NERC and FERC Interconnection standards were developed with a class of equipment in mind (synchronous generators), and do not fully define performance requirements for reactive power support. This has resulted in

unclear, inconsistent, and sometimes inappropriate interconnection reactive power requirements for generators, especially variable generation. Specific recommendations are as follows:

- NERC should promote greater uniformity and clarity of reactive power requirements contained in connection requirements that Transmission Owners have issued pursuant to FAC-001. NERC, FERC, and other applicable Regional standards should be reconciled.
- NERC should consider initiating a Standards Authorization Request (SAR) to establish minimum reactive power capability standards for interconnection of all generators and provide clear definitions of acceptable control performance (see Section 2.8.3 for technical guidelines).

CHAPTER 3: PERFORMANCE DURING AND AFTER DISTURBANCES

3.4.2: NERC Standard FAC-001

The existing NERC Standard FAC-001-0 covers fault ride-through and frequency ride-through in a very general way.

> "R2. The Transmission Owner's facility connection requirements shall address, but are not limited to, the following items:
>
> *R2.1.14 Operational Issues (abnormal frequency and voltages)."*

The above sub-requirement, as with all of the sub-requirements in FAC-001, leaves it up to the Transmission Owner to "fill in the blanks" or develop specific requirements that will be applied to facilities wishing to interconnect to their network. This can lead to inconsistencies across North America.

3.5.2 Disturbance Ride-Through

Fault ride-through and frequency ride-through capability of generators will be covered by the NERC standards under development. TPL-001-213 will cover the planning assessment for new and existing generators to ensure that grid performance reliability standards are met. PRC-024-1 will provide additional clarity to the generator industry in terms of uniform requirements. No additional requirements are needed for FAC-001-0.

3.5.4: Recovery after System-Caused Plant Outage

Disturbances more severe than the established criteria for ride-through, or disturbances causing tripping of a radial tie line, can result in shutdown of a facility. It is reasonable to clarify the restart expectations of a generator facility following such a disturbance. In some cases, the Transmission Operator provides a signal to the facility that prohibits automatic restarting after a severe grid event. FAC-001 could be modified to include a facility connection requirement to address generator facility restarting.

NERC IVGTF 1-1 reviewed the MOD standards to determine gaps in the annual NERC model development process and ongoing model validation process. Task Force 1-1 recommended several changes to the MOD standards and also recommended that FAC-001 be reviewed and expanded to clearly cover modeling requirements for the joint study phase of the facility connection process.

Figure 26 gives a high-level overview of a typical facility connection process. Interconnection studies are defined in the FERC interconnection process as consisting of three stages. The Feasibility Study phase includes short circuit and power flow investigations. The System Impact Study is more detailed and includes additional power flow and short circuit analysis, as well as dynamics analysis. The final Facilities Study phase is typically more of a preliminary engineering design phase in order to derive accurate cost estimates to include in any facility construction agreements. NERC Standard FAC-002-0 requires evidence that assessments included steady-state, short-circuit, and dynamics studies as necessary to confirm compliance with NERC Standard TPL-001-0.

The Facility Study may include electromagnetic transient simulation if deemed necessary. As mentioned in Chapter 5, subsynchronous interactions may be an issue for installations near series-compensated lines. Wind and solar plant manufacturers are encouraged to develop detailed electromagnetic transient models. However, it is not recommended to modify FAC-001 to address electromagnetic transient modeling at this time. The models are not widely available and the technical issues requiring such modeling are not continent-wide.

CHAPTER 6: MODELS FOR FACILITY INTERCONNECTION STUDIES

NERC Standard FAC-001-0 should be expanded to ensure the Transmission Owner documents modeling requirements during the coordinated joint study phase of the facility connection process. Preliminary power flow and dynamic models may be adequate for the preliminary assessment of interconnection impacts, or to represent existing and proposed projects that are not in the immediate electrical vicinity of the facility being studied. However, detailed models for the specific equipment may be needed for the System Impact Study (SIS) and Facilities Study (FS) to represent the facility and other equipment in the electrical vicinity. Generic non-proprietary and publicly available models are more appropriate for the NERC model building process covered by existing MOD standards, although validated generic models with specifically tuned parameters may also be adequate for interconnection studies. The models for interconnection studies must be acceptable to the TO in terms of simulation platform, usability, documentation, and

performance. Validation of the generic and detailed model parameters may be needed during commissioning. The generic non-proprietary model with associated parameters feeds into the NERC model building process covered by existing MOD standards.

6.1: Discussion of Generator Unit/Facility Size Applicability

Accurate models are required for all generator facilities that are connected to or are planning to connect to the Bulk Electric System (100 kV and higher) regardless of size. However, NERC's current Statement of Registry Criteria is the governing document that defines applicability of entities to NERC standards.

Ongoing model revalidation is currently covered by:

- MOD-024-1: Verification of Generator Gross and Net Real Power Capability
- MOD-025-1: Verification of Generator Gross and Net Reactive Power Capability
- MOD-026-1: Verification of Models and Data for Generator Excitation System Functions
- MOD-027-1: Verification of Models and Data for Turbine/Governor and Load Control

These standards were reviewed and reported in the NERC Special Report "Standard Models for Variable Generation." The ongoing detailed model validation may evolve to cover generator units or generator facilities 75 MVA or larger. This breakpoint covers at least 80 percent of the currently installed generation in North America and matches the NERC Statement of Compliance Registry Criteria, which is approved by FERC.

Generator facilities smaller than the 75 MVA threshold—especially variable generation facilities—may experience rapid changes in control performance over their lifetimes due to equipment upgrades and replacements. These changes should be captured in updated models. However, substantial modifications on facilities less than 75 MVA may not be captured by the FAC-001 standard or MOD standards.

It is recommended to modify FAC-001-0 to:

> "R2: The Transmission Owner's facility connection requirements shall address, but are not limited to, the following items:

R2.1.1: Procedures for coordinated joint studies of new or substantially modified facilities[1] and their impacts on the interconnected transmission systems."

6.2: NERC Standard FAC-001-0 Modifications

Currently, submittal of generator model data is covered via the following requirement in FAC-001-0:

"R2: The Transmission Owner's facility connection requirements shall address, but are not limited to, the following items:

R2.1.1: Procedures for coordinated joint studies of new facilities and their impacts on the interconnected transmission systems."

Transmission Owners make reference to the interconnection procedures in their respective Open Access Interconnection Tariff, such as the FERC Large Generator Interconnection Procedures.

The existing NERC Standard FAC-001-0 could be modified to include an explicit requirement related to generator facility modeling for all generators, including variable generation and also including model validation.

"R2: The Transmission Owner's facility connection requirements shall address, but are not limited to, the following items:

R2.1.17: Generation facility modeling data, including appropriate power flow, short circuit and dynamic models, and verification requirements."

Modeling needs for the interconnection process are different than modeling needs for evaluation of regional grid performance. To clarify this point, we recommend that the following statement be added to FAC-001-0 as an appendix for clarifying R2.1.17:

"Preliminary or approximate power flow and dynamic models may be adequate for the preliminary assessment of interconnection impacts, or to represent existing and proposed projects that are not in the immediate electrical vicinity of the facility being studied. However, detailed dynamic (and possibly transient) models for the specific equipment may be

[1] A generator modification is considered substantial if it results in a change in the net real power output by more than 10% of the original nameplate rating or more than 20 MW, whichever is less or includes any of the following: generator rewind, rotor replacement, new or refurbished excitation system, or turbine replacement. Replacement of failed equipment with identical spare units is not a substantial modification. A substantially modified generator is a generator that receives Planning Coordinator agreement to make the generator modification after the effective date of this standard.

needed for the System Impact Study and Facilities Study, to represent the facility and other equipment in the electrical vicinity. Generic non-proprietary publicly available models are more appropriate for the NERC model building process covered by existing MOD standards, although validated generic models with specifically tuned parameters may be adequate for interconnection studies. The models for interconnection studies must be acceptable to the Transmission Owner in terms of simulation platform, usability, documentation, and performance."

The above recommended sub-requirement R2.1.17, as with all of the sub-requirements in FAC-001-0, leave it up to the Transmission Owner to "fill in the blanks" or develop specific requirements that will be applied to facilities intending to interconnect to their network. This can lead to inconsistencies across North America. In order to avoid inconsistencies, several Facility Interconnection requirement documents or grid codes were reviewed to try to develop a recommended best practice to aid Transmission Owners.

Standard Development Timeline

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 (~~Dates of posting~~December 18, 2013-January 17, 2014).
2. SC authorized moving the SAR forward to standard development (SC meeting date when authorized).

Description of Current Draft

~~(Describe the type of action associated with this posting such as 30-day informal comment period, 30-day formal comment period, 45-day formal comment period with parallel initial ballot, 30-day formal comment period with parallel successive ballot, recirculation ballot)~~

Anticipated Actions	Anticipated Date
~~30-day Formal Comment Period~~	
45-day Formal Comment Period with Parallel Initial Ballot	April 2014
~~30~~45-day Formal Comment Period with Parallel ~~Successive~~ Additional Ballot	June 2014
~~Recirculation~~ Final B~~b~~allot	July 2014
BOT adoption	August 2014

Effective Dates

In those jurisdictions where regulatory approval is required, all requirements applied to the Transmission Owner become effective upon regulatory approval. In those jurisdictions where no regulatory approval is required, all requirements applied to the Transmission Owner and Regional Entity become effective upon Board of Trustees' adoption.

In those jurisdictions where regulatory approval is required, all requirements applied to the Generator Owner become effective on the first calendar day of the first calendar quarter one year after the date of the order approving the standard from applicable regulatory authorities. In those jurisdictions where no regulatory approval is required, all requirements applied to the Generator Owner become effective on the first calendar day of the first calendar quarter one year after Board of Trustees' adoption.

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 becomes 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

Formatted: Normal, Indent: First line: 0.5"

Formatted: Normal

Formatted: Centered

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.

Term: definition.

Formatted: Highlight

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 Connection Requirements**
2. **Number:** FAC-001-21
3. **Purpose:** To avoid adverse impacts on reliability, Transmission Owners and Generator Owners must establish Facility connection and performance requirements.
4. **Applicability:**
   - **4.1. Functional Entities:**
     - **4.1.1** Transmission Owner
     - **4.1.2** Applicable Generator Owner
       - **4.1.2.1** Generator Owner with an executed Agreement to evaluate 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.
5. **Background:**

   Text

B. Requirements and Measures

R1. The Transmission Owner shall document, maintain, and publish Facility connection requirements to ensure compliance with NERC Reliability Standards and applicable Regional Entity, subregional, Power Pool, and individual Transmission Owner planning criteria and Facility connection requirements. Facility connection requirements, update them as needed, and make them available upon request. The Transmission Owner's Facility connection requirements shall address connection requirements for: *[Violation Risk Factor: Medium Lower] [Time Horizon: Long-term Planning]*

Rationale for R1:

- **1.1.** Generation Facilities,
- **1.2.** Transmission Facilities,
- **1.3.** End-user Facilities

M1. The Transmission Owner shall make available (to its Compliance Enforcement Authority) evidence that it met all the requirements stated in Requirement R1.

R2. Each applicable Generator Owner shall, within 45 days of having an executed Agreement to ~~evaluate~~ conduct an assessment 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 (under FAC-002-1), document ~~and publish its Facility connection requirements to ensure compliance with NERC Reliability Standards and applicable Regional Entity, subregional, Power Pool, and individual Transmission Owner planning criteria and Facility connection requirements.~~Facility connection requirements and make them available upon request. *[Violation Risk Factor: ~~Medium~~Lower] [Time Horizon: Long-term Planning]*

Rationale for R2:

M2. Text Each Generator Owner that has an executed Agreement to evaluate 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 shall make available (to its Compliance Enforcement Authority) evidence that it met all requirements stated in Requirement R2.

R3. Each Transmission Owner and each applicable Generator Owner (in accordance with Requirement R2) shall address the following items in its Facility connection requirements: *[Violation Risk Factor: ~~Medium~~Lower] [Time Horizon: Long-Term Planning]*

Rationale for R3:

~~**3.1.** Provide a written summary of its plans to achieve the required system performance as described in Requirements R1 or R2 throughout the planning horizon:~~

~~**3.1.1.**~~**3.1.** Procedures for coordinated joint studies of new Facilities and their impacts on ~~the interconnected~~affected Transmission system(s).

Formatted

~~**3.1.2.**~~**3.2.** Procedures for notification of new or modified Facilities to others (those responsible for the reliability of ~~the interconnected~~affected Transmission system(s)) ~~as soon as feasible~~.

~~**3.1.3.** Voltage level and MW and MVAR capacity or demand at point of connection.~~

~~**3.1.4.** Breaker duty and surge protection.~~

~~**3.1.5.** System protection and coordination.~~

~~**3.1.6.** Metering and telecommunications.~~

~~**3.1.7.** Grounding and safety issues.~~

~~**3.1.8.** Insulation and insulation coordination.~~

~~**3.1.9.** Voltage, Reactive Power, and power factor control.~~

~~**3.1.10.** Power quality impacts.~~

~~**3.1.11.** Equipment Ratings.~~

~~**3.1.12.** Synchronizing of Facilities.~~

~~**3.1.13.** Maintenance coordination.~~

~~**3.1.14.** Operational issues (abnormal frequency and voltages).~~

~~**3.1.15.** Inspection requirements for existing or new Facilities.~~

~~**3.1.16.** Communications and procedures during normal and emergency operating conditions.~~

M3. Each Transmission Owner and each applicable Generator Owner (in accordance with Requirement R2) shall make available (to its Compliance Enforcement Authority) evidence that it met all requirements stated in Requirement R3.

~~**R4.** The Transmission Owner shall maintain and update its Facility connection requirements as required. The Transmission Owner shall make documentation of these requirements available to the users of the transmission system, the Regional Entity, and ERO on request (five business days). *[Violation Risk Factor: Medium] [Time Horizon:]*~~

~~**M4.** The Transmission Owner shall make available (to its Compliance Enforcement Authority) evidence that it met all the requirements stated in Requirement R4.~~

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 Reliability Coordinator and Transmission Operator 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	Lower~~Medium~~	Not Applicable.	The Transmission Owner failed to do one of the following: Document or maintain or publish Facility connection requirements as specified in the Requirement OR Failed to include one (1) of the components as specified in R1.1, R1.2 or R1.3.	The Transmission Owner failed to do one of the following: Failed to include (2) of the components as specified in R1.1, R1.2 or R1.3 OR Failed to document or maintain or publish its Facility connection requirements as specified in the Requirement and failed to include one (1) of the components as specified in R1.1, R1.2 or R1.3.	The Transmission Owner did not develop Facility connection requirements.
R2	Long-term Planning	Lower~~Medium~~	The Generator Owner failed to document and publish Facility connection requirements until more than 45 calendar	The Generator Owner failed to document and publish Facility connection requirements until more than 60 calendar	The Generator Owner failed to document and publish Facility connection requirements until more than 70 calendar	The Generator Owner failed to document and publish Facility connection requirements until more than 80 days

Formatted: Font: Not Bold

			days but less than or equal to 60 calendar days after having an Agreement to evaluate 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.	days but less than or equal to 70 calendar days after having an Agreement to evaluate 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.	days but less than or equal to 80 calendar days after having an Agreement to evaluate 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.	after having an Agreement to evaluate 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.
R3	Long-term Planning	~~Medium~~Lower	The responsible entity's Facility connection requirements failed to address one of the parts listed in Requirement R3, parts 3.1.1 through 3.1.16.	The responsible entity's Facility connection requirements failed to address two of the parts listed in Requirement R3, parts 3.1.1 through 3.1.16.	The responsible entity's Facility connection requirements failed to address three of the parts listed in Requirement R3, parts 3.1.1 through 3.1.16.	The responsible entity's Facility connection requirements failed to address four or more of the parts listed in Requirement R3, parts 3.1.1 through 3.1.16.
~~**R4**~~		~~Medium~~	~~The responsible entity made the requirements available more than five business days but less than or equal to~~	~~The responsible entity made the requirements available more than 10 business days but less than or equal to~~	~~The responsible entity made the requirements available more than 20 business days less than or equal to 30~~	~~The responsible entity made the requirements available more than 30 business days after a request.~~

			10 business days after a request.	20 business days after a request.	business days after a request.	

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

Application Guidelines

Guidelines and Technical Basis

Requirement R1:

Requirement R2:

Requirement R3:

Standard Development Timeline

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~~Dates of posting~~).
2. SC authorized moving the SAR forward to standard development (SC meeting date when authorized).

Formatted: Not Highlight

Formatted: Not Highlight

Description of Current Draft

~~(Describe the type of action associated with this posting such as 30-day informal comment period, 30-day formal comment period, 45-day formal comment period with parallel initial ballot, 30-day formal comment period with parallel successive ballot, recirculation ballot)~~

Anticipated Actions	Anticipated Date
~~30-day Formal Comment Period~~	
45-day Formal Comment Period with Parallel Initial Ballot	April 2014
~~30~~45-day Formal Comment Period with Parallel ~~Successive~~ Additional Ballot	June 2014
Recirculation ballot	July 2014
BOT adoption	August 2014

Effective Dates

The first day of the first calendar quarter six months after applicable regulatory approval; or in those jurisdictions where no regulatory approval is required, the first day of the first calendar quarter six months after Board of Trustees' adoption.

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.

Term: definition.

Formatted: Highlight

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:** **Coordination of Plans for New Generation, Transmission, and End-User Facilities**
2. **Number:** FAC-002-~~2~~1
3. **Purpose:** To avoid adverse impacts on reliability~~, Generator Owners and Transmission Owners and electricity end-users~~ assessments must ~~meet facility~~be conducted and coordinated to determine whether a new or modified Facility meets Facility connection ~~and performance~~ requirements.
4. **Applicability:**
   - **4.1. Functional Entities:**
     - **4.1.1** Generator Owner
     - **4.1.2** Transmission Owner
     - **4.1.3** Distribution Provider
     - **4.1.4** Load-Serving Entity
     - **4.1.5** Transmission Planner
     - **4.1.6** Planning ~~Authority~~ Coordinator
5. **Background:**

   Text

B. Requirements and Measures

R1. The ~~Generator Owner, Transmission Owner, Distribution Provider, and Load-Serving Entity seeking to integrate~~Transmission Planner and Planning Coordinator shall conduct assessments on the reliability impact of integrating new or modified generation ~~facilities~~, transmission ~~facilities~~, ~~and~~ or electricity end-user ~~facilities shall each coordinate and cooperate on its assessments with its Transmission Planner and Planning Authority~~Facilities. ~~-~~The assessments shall include: *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

Rationale for R1:

~~1.1.~~ Evaluation of the reliability impact of the new or modified Facilities on affected Transmission system(s). ~~facilities and their connections on the interconnected transmission systems.~~

~~1.2. Ensurance of compliance with NERC Reliability Standards and applicable Regional, subregional, Power Pool, and individual system planning criteria and facility connection requirements.~~

~~1.3.~~1.1. ~~Evidence that the parties involved in the assessment have coordinated and cooperated on the assessment of the reliability impacts of new facilities on the interconnected transmission systems.~~ While these studies may be performed independently, the results shall be jointly evaluated and coordinated by the entities involved.

1.2. Ensurance of compliance with NERC Reliability Standards; applicable regional, subregional, power pool, and Transmission Owner planning criteria; and Facility connection requirements.

~~1.4.~~1.3. ~~Evidence that the assessment included s~~Steady-state, short-circuit, and dynamics studies as necessary to evaluate system performance under both normal and contingency conditions in accordance with the TPL Reliability Standards ~~TPL-001-0, TPL-002-0, and TPL-003-0~~, as applicable.

~~1.5.~~1.4. ~~Documentation that the assessment included s~~Study assumptions, system performance, alternatives considered, and jointly coordinated recommendations.

M1. The Planning Authority, Transmission Planner, Generator Owner, Transmission Owner, Load-Serving Entity, and Distribution Provider's documentation of its assessment of the reliability impacts of new facilities shall address all items in Reliability Standard FAC-002-0_R1.

R2. The Generator Owner seeking to interconnect generation Facilities shall coordinate and cooperate on assessments with its Transmission Planner and Planning Coordinator. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M2. Text

Rationale for R2:

Formatted: Font: Not Italic

R3. The Transmission Owner, Distribution Provider, and Load-Serving Entity seeking to interconnect transmission Facilities or electricity end-user Facilities shall each coordinate and cooperate on assessments with its Transmission Planner and Planning Coordinator. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M3. Text

Rationale for R~~3~~2:

Formatted: Font: Not Italic

R4. The Transmission Owner or applicable Generator Owner (under FAC-001-1) shall coordinate and cooperate with its Transmission Planner and Planning Coordinator on assessments regarding requested interconnections to its Facilities. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

M4. Text

Rationale for R~~4~~2:

Formatted: Font: Not Italic

~~**R2.** The Planning Authority, Transmission Planner, Generator Owner, Transmission Owner, Load-Serving Entity, and Distribution Provider shall each retain its documentation (of its evaluation of the reliability impact of the new facilities and their connections on the interconnected transmission systems) for three years and shall provide the documentation to the Regional Reliability Organization(s) and NERC on request (within 30 calendar days). (Retirement approved by FERC effective January 21, 2014.) *[Violation Risk Factor:] [Time Horizon:]*~~

~~**M2.** The Planning Authority, Transmission Planner, Generator Owner, Transmission Owner, Load-Serving Entity, and Distribution Provider shall each have evidence of its assessment of the reliability impacts of new facilities and their connections on the interconnected transmission systems is retained and provided to other entities in accordance with Reliability Standard FAC-002-0_R2. (Retirement approved by FERC effective January 21, 2014.)~~

Rationale for R~~5~~2:

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 Reliability Coordinator and Transmission Operator 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 Responsible Entity failed to include in their assessment one of the subrequirements.	The Responsible Entity failed to include in their assessment two of the subrequirements	The Responsible Entity failed to include in their assessment three of the subrequirements.	The Responsible Entity failed to include in their assessment four or more of the subrequirements.
~~R1.1~~			~~Not Applicable.~~	~~Not Applicable.~~	~~Not Applicable.~~	~~The responsible entity's assessment did not include the evaluation.~~
~~R1.2~~			~~Not Applicable.~~	~~Not Applicable.~~	~~Not Applicable.~~	~~The responsible entity's assessment did not include the ensurance of compliance.~~
~~R1.3~~			~~Not Applicable.~~	~~Not Applicable.~~	~~Not Applicable.~~	~~The responsible entity's assessment did not include the evidence of coordination.~~
~~R1.4~~			~~Not Applicable.~~	~~Not Applicable.~~	~~Not Applicable.~~	~~The responsible entity's assessment did not include the evidence of the studies.~~
~~R1.5~~			~~Not Applicable.~~	~~Not Applicable.~~	~~Not Applicable.~~	~~The responsible entity's assessment did~~

Formatted Table

Formatted: Font: Not Bold

						~~not include the documentation.~~
R2	Long-term-Planning	Medium				
R3	Long-term-Planning	Medium				
R4	Long-term-Planning	Medium				
~~**R2**~~			~~The responsible entity provided the documentation more than 30 calendar days, but not more than 45 calendar days, after a request.~~	~~The responsible entity provided the documentation more than 45 calendar days, but not more than 60 calendar days, after a request.~~	~~The responsible entity provided the documentation more than 60 calendar days, but not more than 120 calendar days, after a request.~~	~~The responsible entity provided the documentation more than 120 calendar days after a request or was unable to provide the documentation.~~

Formatted: Font: Not Bold

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

Application Guidelines

Guidelines and Technical Basis

Requirement R1:

Requirement R2:

Requirement R3:

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Standards Authorization Request Form

When completed, please email this form to:
sarcomm@nerc.com

NERC welcomes suggestions to improve the reliability of the Bulk-Power System through improved Reliability Standards. Please use this form to submit your request to propose a new or a revision to a NERC's Reliability Standard.

Request to propose a new or a revision to a Reliability Standard			
Title of Proposed Reliability Standard:	Connecting New Facilities to the Bulk Electric System (FAC-001-1 – Facility Connection Requirements and FAC-002-1 – Coordination of Plans for New Generation, Transmission, and End-User Facilities)		
Date Submitted:	December 3, 2013		
SAR Requester Information			
Name:	The FAC Five-Year Review Team (Roster)		
Organization:	N/A		
Telephone:	N/A	E-mail:	N/A
SAR Type (Check as many as applicable)			
☐ New Reliability Standard		☐ Withdrawal of existing Reliability Standard	
☒ Revision to existing Reliability Standards		☐ Urgent Action	

SAR Information
Industry Need (What is the industry problem this request is trying to solve?):
The Standards Committee assigned six subject matter experts to review the FAC family of Reliability Standards as part of NERC's obligation to conduct periodic reviews of its Reliability Standards. The Five-Year Review Team determined that FAC-001-1 and FAC-002-1 remain necessary for reliability to ensure that entities establish Facility connection requirements and then conduct assessments using those

SAR Information
requirements before integrating new Facilities. Both Reliability Standards, however, require revision to refocus industry effort on those tasks that have a true impact on reliability.
Purpose or Goal (How does this request propose to address the problem described above?):
This SAR proposes revising FAC-001-1 and FAC-002-1 in line with the recommendations of the FAC Five-Year Review Team to add clarity, remove redundancy, retire requirements with no impact on the reliable operation of the Bulk Electric System (based on application of the Paragraph 81 criteria), and bring compliance elements in accordance with NERC guidelines.
Identify the Objectives of the proposed Reliability Standard's requirements (What specific reliability deliverables are required to achieve the goal?):
The objective of FAC-001-1 is to ensure that Transmission Owners and Generator Owners establish Facility requirements so that Facilities seeking interconnection will have the information necessary for considering and pursuing that interconnection. This objective supports reliability principle 3, which states that "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." The objective of FAC-002-1 is to ensure that the entities involved in the integration of new Facilities conduct assessments – using the connection requirements established in FAC-001-1 – 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."
Brief Description (Provide a paragraph that describes the scope of this Reliability Standard action.)
FAC-001-1 should be revised to retire a requirement (R4) that is redundant with obligations already captured in the Rules of Procedure, to remove subparts of a requirement (R3) that are too prescriptive for inclusion in a Reliability Standard, and to remove parts of the requirement (R1) that are redundant or have no impact on reliability. The VRFs should also be modified for conformance with NERC's VRF guidelines.

SAR Information
FAC-002-1 should be revised to make clear the responsibilities of the various entities to whom the Reliability Standard is applicable. R1 should also be revised to retire parts of the requirement that are redundant or have no impact on reliability. It may be determined, during the execution of this project, that FAC-001-1 and FAC-002-1 should be combined into one Reliability Standard.
Detailed Description (Provide a description of the proposed project with sufficient details for the standard drafting team to execute the SAR. Also provide a justification for the development or revision of the Reliability Standard, including an assessment of the reliability and market interface impacts of implementing or not implementing the Reliability Standard action.)
Per the *FAC Five-Year Review Team Recommendation to Revise FAC-001-1*, the drafting team should consider: • Revising the title and purpose of the Reliability Standard to reflect the language in the requirements. • Retiring the following reference in R1: "…compliance with NERC Reliability Standards and applicable Regional Entity, subregional, Power Pool, and individual Transmission Owner planning criteria and Facility connection requirements" because it is redundant with FAC-002-1, R1.2 and built into the ERO framework established in Order 672. • Retiring all of the subparts in R3, except for R3.1.1 and R3.1.2, and moving them to a guidance document. • Modifying R3 to ensure that the impact on third parties is appropriately addressed. • Retiring R4. • Modifying the VRFs for conformance with NERC's VRF guidelines. • Adding Time Horizons to each requirement. Per the *FAC Five-Year Review Team Recommendation to Revise FAC-002-1*, the drafting team should consider: • Revising the title and purpose of the Reliability Standard to reflect the language in the requirements. • Changing "Planning Authority" in the applicability section to "Planning Coordinator" to reflect the Functional Model, as well as the recently revised TPL-001-4.

SAR Information
• Splitting R1 into three requirements to add clarity and better distinguish the actions required of the applicable entities. One requirement should describe the Transmission Planner and Planning Coordinators' responsibility for conducting assessments. A second requirement should describe the Generator Owners' responsibility for coordinating and cooperating with the Transmission Planner and Planning Coordinator as those assessments are conducted. A third requirement should describe the Transmission Owners', Distribution Providers', and Load-Serving Entities' responsibility for coordinating and cooperating with the Transmission Planner and Planning Coordinator as those assessments are conducted. • Revising the subparts of R1 to remove elements that are more appropriate for Measures. • Modifying R1.1 to ensure that the impact on third parties is appropriately addressed. • Modifying R1.4 to update the reference to the TPL Reliability Standards to reflect the changes in proposed TPL-001-4. • Adding Time Horizons to each requirement.

Reliability Functions	
The Reliability Standards will Apply to the Following Functions (Check each one that applies.)	
☐ Reliability Coordinator	Responsible for the real-time operating reliability of its Reliability Coordinator Area in coordination with its neighboring Reliability Coordinator's wide area view.
☐ Balancing Authority	Integrates resource plans ahead of time, and maintains load-interchange-resource balance within a Balancing Authority Area and supports Interconnection frequency in real time.
☐ Interchange Authority	Ensures communication of interchange transactions for reliability evaluation purposes and coordinates implementation of valid and balanced interchange schedules between Balancing Authority Areas.
☒ Planning Coordinator	Assesses the longer-term reliability of its Planning Coordinator Area.
☐ Resource Planner	Develops a >one year plan for the resource adequacy of its specific loads within a Planning Coordinator area.

Reliability Functions		
☒	Transmission Planner	Develops a >one year plan for the reliability of the interconnected Bulk Electric System within its portion of the Planning Coordinator area.
☐	Transmission Service Provider	Administers the transmission tariff and provides transmission services under applicable transmission service agreements (e.g., the pro forma tariff).
☒	Transmission Owner	Owns and maintains transmission facilities.
☐	Transmission Operator	Ensures the real-time operating reliability of the transmission assets within a Transmission Operator Area.
☒	Distribution Provider	Delivers electrical energy to the End-use customer.
☒	Generator Owner	Owns and maintains generation facilities.
☐	Generator Operator	Operates generation unit(s) to provide real and reactive power.
☐	Purchasing-Selling Entity	Purchases or sells energy, capacity, and necessary reliability-related services as required.
☐	Market Operator	Interface point for reliability functions with commercial functions.
☒	Load-Serving Entity	Secures energy and transmission service (and reliability-related services) to serve the End-use Customer.

Reliability and Market Interface Principles	
Applicable Reliability Principles (Check all 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 Reliability 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.

Reliability and Market Interface Principles	
☐	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.

Does the proposed Reliability Standard 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 Reliability 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

Related Reliability Standards	
Reliability Standard No.	Explanation
TPL Family	FAC-002-1, R1.4 references TPL-001-0, TPL-002-0, and TPL-003-0. R1.4 requires that assessments include: "Evidence that the assessment included steady-state, short-circuit, and dynamics studies as necessary to evaluate system performance under both normal and contingency conditions in accordance with Reliability Standards TPL-001-0, TPL-002-0, and TPL-003-0." These Reliability Standards have been revised and combined in TPL-001-4, which will become enforceable on January 1, 2015. The drafting team should ensure that this reference is updated to either refer to TPL-001-4 or TPL Reliability Standards more generically.

Related SARs – N/A	
SAR ID	Explanation

Regional Variances – N/A	
Region	Explanation
ERCOT	
FRCC	
MRO	
NPCC	
RFC	
SERC	
SPP	
WECC	

Project 2010-02 Action Plan

Task	Description	Lead	Deliverables	Estimated Completion
Propose Standard Drafting Team (SDT) members	Review SDT nominations and recommend SDT members to the Standards Committee (SC)	Staff	SDT recommendation for SC	Complete
Finalize SDT	Obtain SC approval of SDT members	SC	SC approval	Complete
Advise SDT members	Advise SDT members and leadership of status and share logistical information	Staff	Email to SDT including rosters, action plan, first conference call date, Doodle poll for first in-person meeting, and other pertinent information	Complete
Kickoff Conference Call	Discuss contents of logistical email; answer questions; discuss scope of project and SAR comments	Staff and SDT	Meeting agenda and notes Follow-up email regarding next steps	February 21, 2014
Kickoff Meeting (In Person)	Review SAR comments, develop responses to SAR comments; develop redlines to FAC-001-1 and FAC-002-1	Staff and SDT	Meeting agenda and notes Consideration of Comments form Final SAR Redline and clean FAC-001-1 and FAC-002-1 Implementation Plan Mapping Document Consideration of Issues and Directives VRF/VSL Justification document Comment Form	March 19-20, 2014
Obtain SC Approval for Initial Comment and Ballot Period	Present standards to SC for approval before first posting	SC	SC approval	April 9, 2014 (or possibly sooner, in a dedicated conference call)

Task	Description	Lead	Deliverables	Estimated Completion
Initial Comment and Ballot Period	Post FAC-001-1 and FAC-002-1 for 45-day industry comment and ballot period	Staff	After staff review, final versions of: Consideration of Comments form Final SAR Redline and clean FAC-001-1 and FAC-002-1 Implementation Plan Mapping Document Consideration of Issues and Directives VRF/VSL Justification document Comment Form	Mid-April 2014
Webinar	Advise industry of SDT's proposed changes	SDT Chair; Staff	PowerPoint Presentation	TBD – during posting period
SDT Meeting	Review and respond to comments; revise as necessary	SDT	Meeting agenda and notes Consideration of Comments form Redline and clean FAC-001-1 and FAC-002-1 Implementation Plan Mapping Document Consideration of Issues and Directives VRF/VSL Justification document Comment Form	Mid-June 2014
Additional Comment and Ballot Period – ONLY IF NEEDED	Post FAC-001-1 and FAC-002-1 for additional 45-day industry comment and ballot period	Staff	After staff review, final versions of: Consideration of Comments form Final SAR Redline and clean FAC-001-1 and FAC-002-1 Implementation Plan Mapping Document Consideration of Issues and Directives VRF/VSL Justification document Comment Form	Early July 2014
Webinar	Advise industry of SDT's proposed changes	SDT Chair; Staff	PowerPoint Presentation	TBD – during posting period

Task	Description	Lead	Deliverables	Estimated Completion
SDT Meeting	Review and respond to comments; prepare documents for final ballot	SDT	Meeting agenda and notes Consideration of Comments form Redline and clean FAC-001-1 and FAC-002-1 Implementation Plan Mapping Document Consideration of Issues and Directives VRF/VSL Justification document	September 2014
Final Ballot	Post FAC-001-1 and FAC-002-1 for 10-day final ballot	Staff		September 2014
Board of Trustees Adoption	Present standards to Board for adoption	Staff	Final standards, Implementation Plan, Mapping Document, Consideration of Issues and Directives, and VRF/VSL Justification Document (all posted) Board write-up	November 2014
FERC Filing	File standards with FERC for approval	Legal Staff	Petition for Approval	TBD

NERC
NORTH AMERICAN ELECTRIC RELIABILITY CORPORATION

Team Roster

Project 2010-02 Standard Drafting Team

	Participant	Entity
Chair	Michael Steckelberg	Great River Energy
Vice Chair	Jeff Gindling	Duke Energy
Member	Zakia El Omari	Georgia Transmission Corporation
Member	John Hagen	Pacific Gas & Electric
Member	Joseph Hay	PJM
Member	Ruth Kloecker	ITC Holdings
Member	Zelalem Tekle	Baltimore Gas and Electric, An Exelon Company
Member	Ganesh Velummylum	Northern Indiana Public Service Co.
NERC Staff	Mallory Huggins (Lead Standards Developer)	NERC
NERC Staff	Erika Chanzes (Supporting Standards Developer)	NERC
NERC Staff	Laura Hussey (Director of Standards Development)	NERC

Version	Date	Description
1.0	02/12/2014	Initial posting