

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~~March 31, 2013)

Description of Current Draft

Anticipated Actions	Anticipated Date
45-day Formal Comment Period with Parallel Initial Ballot	April 2014
45-day Formal Comment Period with Parallel Additional Ballot	June 2014
Final Ballot	July 2014
BOT adoption	August 2014

Effective Date

s

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

~~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.	

<u>2</u>		<u>Revisions to implement the recommendations of the FAC Five-Year Review Team.</u>	<u>Revision under Project 2010-02</u>
----------	--	---	---------------------------------------

Definitions of Terms Used in Standard

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

None.

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

A. Introduction

1. **Title:** Facility IntercConnection Requirements

~~2.~~ **Number:** FAC-001-24

~~2.~~

3. **Purpose:** To ensure that Transmission Owners and applicable Generator Owners document and make Facility connection requirements available so that Facilities seeking interconnection will have the information necessary for considering and pursuing that interconnection. To avoid adverse impacts on reliability, Transmission Owners and Generator Owners must establish Facility connection and performance requirements

~~3.~~

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 conduct a study 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~~The objective of FAC-001 is to ensure that Transmission Owners and applicable Generator Owners document Facility interconnection 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."

In the phrase "Facilities seeking interconnection," the SDT chose to use the NERC Glossary term "Facilities" rather than "entities" in order to refer to both NERC Registered Entities that own Facilities seeking interconnection and third parties that may not yet be NERC Registered entities that own Facilities seeking interconnection.

B. Requirements and Measures

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

Rationale for Changes: R1 was revised to remove elements that are redundant with FAC-002 and clarify the actions required.

- 1.1. Generation Facilities;
- 1.2. Transmission Facilities; and
- 1.3. End-user Facilities.

M1. ~~The Each~~ Transmission Owner shall ~~make available~~have evidence (such as dated, documented Facility interconnection requirements) (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 full execution of an executed~~ Agreement to ~~evaluate~~conduct a study on the reliability impact of interconnecting a third party Facility to the Generator Owner’s existing Facility that is used to interconnect to the 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 interconnection requirements and make them available upon request. [Violation Risk Factor: ~~Medium~~Lower] [Time Horizon: Long-term Planning]

Rationale for Changes: R2 was revised for clarity and consistency with R1.

M2. ~~Each Each applicable~~ Generator Owner shall have evidence (such as dated, documented Facility interconnection requirements) ~~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 interconnection requirements: [*Violation Risk Factor: Medium/Lower*] [*Time Horizon: Long-Term Planning*]

Rationale for Changes: The SDT determined that the subparts of R3 are too prescriptive for inclusion in a standard. The subparts have been moved to the “Guidelines and Technical Basis” section of the standard.

~~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 or materially modified Facilities and their impacts on ~~the interconnecte~~affected Transmission-system(s).~~

~~3.1.2.3.2. Procedures for notification of new or materially modified Facilities to ~~others~~ (those responsible for the reliability of ~~the interconnecte~~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~~Each Transmission Owner and each applicable Generator Owner (~~in accordance with Requirement R2~~) shall ~~make available (to its Compliance Enforcement Authority)~~have evidence (such as dated, documented Facility interconnection requirements addressing the procedures) 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: 7~~
- ~~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 Transmission Owner and applicable Generator Owner shall keep data or evidence to show compliance as identified below unless directed by its CEA to retain specific evidence for a longer period of time as part of an investigation:

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

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

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

1.3. Compliance Monitoring and 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	<u>Long-term Planning</u>	<u>LowerMedium</u>	<u>Not Applicable.N/A</u>	<p><u>The Transmission Owner documented Facility interconnection requirements and updated them as needed, but failed to make them available upon request. The Transmission Owner failed to do one of the following:</u></p> <p><u>Document or maintain or publish Facility connection requirements as specified in the Requirement</u></p> <p>OR</p> <p><u>The Transmission Owner documented Facility interconnection requirements and</u></p>	<p><u>The Transmission Owner documented Facility interconnection requirements, but failed to update them as needed and make them available upon request. The Transmission Owner failed to do one of the following:</u></p> <p><u>Failed to include (2) of the components as specified in R1.1, R1.2 or R1.3</u></p> <p><u>OR</u></p> <p><u>The Transmission Owner documented Facility interconnection requirements, updated them as needed, and made them available upon request, but failed to</u></p>	<p><u>The Transmission Owner did not develop document Facility interconnection requirements.</u></p>

				<p><u>made them available upon request, but failed to update them as needed.</u></p> <p><u>OR</u></p> <p><u>The Transmission Owner documented Facility interconnection requirements, updated them as needed, and made them available upon request, but failed to address interconnection requirements for one of the Facilities as specified in R1.1, R1.2, or R1.3.</u>Failed to include one (1) of the components as specified in R1.1, R1.2 or R1.3.</p>	<p><u>address interconnection requirements for two of the Facilities as specified in R1.1, R1.2, or R1.3.</u></p> <p><u>OR</u></p> <p>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.</p>	
R2	<u>Long-term Planning</u>	<u>Lower</u> Medium	The <u>applicable</u> Generator Owner failed to document <u>Facility interconnection requirements and make them available upon request and</u>	The <u>applicable</u> Generator Owner failed to document <u>Facility interconnection requirements and make them available upon request and</u>	The <u>applicable</u> Generator Owner failed to document <u>Facility interconnection requirements and make them available upon request and</u>	The <u>applicable</u> Generator Owner failed to document <u>Facility interconnection requirements and make them available upon request and</u>

			<p>publish Facility connection requirements until more than 45 calendar days but less than or equal to 60 calendar days after <u>full execution of having</u> an Agreement to <u>evaluate</u> <u>conduct a study on</u> 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.</p>	<p>publish Facility connection requirements until more than 60 calendar days but less than or equal to 70 calendar days after <u>full execution of having</u> an Agreement to <u>conduct a study</u> <u>onevaluate</u> 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.</p>	<p>publish Facility connection requirements until more than 70 calendar days but less than or equal to 80 calendar days after <u>full execution of having</u> an Agreement to <u>conduct a study</u> <u>onevaluate</u> 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.</p>	<p>publish Facility connection requirements until more than 80 days after <u>full execution of having</u> an Agreement to <u>conduct a study</u> <u>onevaluate</u> 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.</p>
R3	<u>Long-term Planning</u>	<u>Medium</u> Lower	<p>N/AThe 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.</p>	<p>N/AThe 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.</p>	<p>The Transmission Owner or applicable Generator Owner addressed either R3.1 or R3.2 in its Facility interconnection requirements, but did not address both.The responsible entity’s Facility connection requirements failed to</p>	<p>The Transmission Owner or applicable Generator Owner addressed neither R3.1 nor R3.2 in its Facility interconnection requirements.responsible entity’s Facility connection requirements failed to</p>

					address three of the parts listed in Requirement R3, parts 3.1.1 through 3.1.16.	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 10 business days after a request.	The responsible entity made the requirements available more than 10 business days but less than or equal to 20 business days after a request.	The responsible entity made the requirements available more than 20 business days less than or equal to 30 business days after a request.	The responsible entity made the requirements available more than 30 business days after a request.

D. Regional Variances

None.

E. Interpretations

None.

F. Associated Documents

None.

Guidelines and Technical Basis

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

Requirement R1:

Requirement R2:

Requirement R3:

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

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

- Procedures for requesting a new Facility interconnection
- Data required to properly study the new interconnection
- Voltage level and MW and MVAR capacity or demand at point of interconnection
- Breaker duty and surge protection
- System protection and coordination
- Metering and telecommunications
- Grounding and safety issues
- Insulation and insulation coordination
- Voltage, Reactive Power (including specifications for minimum static and dynamic reactive power requirements), and power factor control
- Power quality impacts
- Equipment ratings
- Synchronizing of Facilities
- Maintenance coordination

Application Guidelines

- Operational issues (abnormal frequency and voltages)
- Inspection requirements for existing or new Facilities
- Communications and procedures during normal and emergency operating conditions

The Transmission Owner's or applicable Generator Owner's Facility interconnection requirements should ensure that by the time of interconnection, the interconnecting Facility will be able to comply with all applicable NERC Reliability Standards.