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**Project QC-2015-01**

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**Standard FAC-001-1 – Facility Connection Requirements**

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**1. ASSESSMENT OF RELEVANCE**

The purpose of the FAC (Facilities, Design, Connections and Maintenance) standards is to standardize the ways of working in the North American electric power industry. They apply to all entities concerned with the reliability of the network that develop, connect or maintain production, transport or distribution facilities.

As its title indicates, this standard requires that the Transmission Owner (TO) document, maintain, and publish a document related to facility connection requirements. These connection requirements cover all sectors of activity affecting system reliability and prescribe a minimum level of performance that is to be respected by the connected facilities, whether they are new or modified.

The modifications to this version of the standard enhance reliability by extending the obligation to develop and make available facility connection requirements to Generator Operators (GO) who have executed an agreement to interconnect with a third party, which will assist in the transmission planning process. Furthermore, these modifications ensure that there is appropriate coordination and communication regarding the interconnection of facilities.

**2. PREREQUISITE FOR ADOPTION**

None

**3. MODIFICATIONS TO OTHER STANDARDS OR TO GLOSSARY DEFINITIONS****3.1. Standards or requirements to be retired upon enforcement:**

FAC-001-0

**3.2. New definitions to be added to the glossary:**

None

**3.3. Definitions to be modified in the glossary:**

None

**3.4. Definitions to be retired from the glossary:**

None

#### 4. APPLICABILITY

Requirements	Applicable entities	
	Transmission Owner	Generator Owner <sup>1</sup>
E1	X	
E2		X
E3	X	X
E4	X	

#### 5. PROVISIONS SPECIFIC TO QUÉBEC

None

#### 6. PROPOSED EFFECTIVE DATES

##### Effective Dates in the United States:

Since the requirements R1, R3 and R4 impose no changes for the TO compared to the previous version, they became effective upon approval of the FAC-001-1 standard. Requirements R2 and R3 that are now applicable to the GO became effective one year after approval of the standard. The enforcement date was set to November 25, 2013.

##### Effective Dates in Québec:

In a catch-up scenario of versions currently enforceable in the United States and in neighbouring provinces, the Coordinator suggests a rapid enforcement date of this standard in Québec.

Standard	Enforcement date in the USA	Proposed enforcement date in Québec	Justification
FAC-001-1	November 25, 2013	<p><b>For the TO:</b> The first day of the first calendar quarter one month after the adoption of the standard by the Régie de l'énergie.</p> <p><b>For the applicable GO:</b> The first day of the first calendar quarter, six months after the adoption of the standard by the Régie de l'énergie.</p>	Standardization of practices with other jurisdictions while allowing entities in Québec sufficient time to implement the standard.

<sup>1</sup> Only the GO that has an Agreement to evaluate the reliability impact of interconnecting a third party Facility to the GO's existing Facility that is used to interconnect to the interconnected Transmission systems are subject to the standard.

## 7. PRELIMINARY ASSESSMENT OF THE IMPACT

	Low	Moderate	High
Implementation of the standard	X		
Maintenance of the standard	X		
Compliance Monitoring	X		

**Legend:**

**Low:** Normal industry practice or standard involving minor adjustments to processes or practices in place.

**Moderate:** Changes that require an allocation of certain material, human or financial resources to implement, maintain and monitor compliance of the proposed standard.

**High:** Changes that require significant provision and allocation of material, human or financial resources to implement, maintain and monitor compliance of the proposed standard.

## 8. IMPACT ASSESSMENT

This section is to be completed upon reception of the impact assessment forms and at the end of the consultation process prior to the filing of the standards with the Régie de l'énergie.

**A. Introduction**

- 1. Title:**       **Facility Connection Requirements**
- 2. Number:**   FAC-001-1
- 3. Purpose:**   To avoid adverse impacts on reliability, Transmission Owners and Generator Owners must establish Facility connection and performance 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.
- 5. Effective Date:**
  - 5.1.** 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.
  - 5.2.** 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.

**B. Requirements**

- 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. The Transmission Owner's Facility connection requirements shall address connection requirements for:
  - 1.1.** Generation Facilities,
  - 1.2.** Transmission Facilities, and
  - 1.3.** End-user Facilities

*[VRF – Medium]*
- R2.** Each applicable Generator Owner shall, within 45 days of having 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 (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.

*[VRF – Medium]*

- 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.** 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.** Procedures for coordinated joint studies of new Facilities and their impacts on the interconnected Transmission systems.
  - 3.1.2.** Procedures for notification of new or modified Facilities to others (those responsible for the reliability of the interconnected Transmission systems) 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.

*[VRF – Medium]*

- 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).

*[VRF – Medium]*

**C. Measures**

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

- M2.** 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.
- 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.
- M4.** The Transmission Owner shall make available (to its Compliance Enforcement Authority) evidence that it met all the requirements stated in Requirement R4.

**D. Compliance**

**1. Compliance Monitoring Process**

**1.1. Compliance Enforcement Authority**

Compliance Monitor: Regional Entity

**1.2. Compliance Monitoring and Enforcement Processes:**

Compliance Audits

Self-Certifications

Spot Checking

Compliance Violation Investigations

Self-Reporting

Complaints

**1.3. Data Retention**

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

- The Transmission Owner shall retain evidence of Requirement R1, Measure M1, Requirement R3, Measure M3, and Requirement R4, Measure M4 from its last audit.

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

- The Generator Owner shall retain evidence of Requirement R2, Measure M2, and Requirement R3, Measure M3 from its last audit.

The Compliance Enforcement Authority shall keep the last audit records and all requested and submitted subsequent audit records.

**1.4. Additional Compliance Information**

None.

## 2. Violation Severity Levels

R #	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1	Not Applicable.	<p>The Transmission Owner failed to do one of the following:</p> <p>Document or maintain or publish Facility connection requirements as specified in the Requirement</p> <p>OR</p> <p>Failed to include one (1) of the components as specified in R1.1, R1.2 or R1.3.</p>	<p>The Transmission Owner failed to do one of the following:</p> <p>Failed to include (2) of the components as specified in R1.1, R1.2 or R1.3</p> <p>OR</p> <p>Failed to document or maintain or publish its Facility connection requirements as specified in the Requirement <b>and</b> failed to include one (1) of the components as specified in R1.1, R1.2 or R1.3.</p>	The Transmission Owner did not develop Facility connection requirements.
R2	The Generator Owner failed to document and publish Facility connection requirements until more than 45 calendar 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.	The Generator Owner failed to document and publish Facility connection requirements until more than 60 calendar 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.	The Generator Owner failed to document and publish Facility connection requirements until more than 70 calendar 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.	The Generator Owner failed to document and publish Facility connection requirements until more than 80 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.
R3	The responsible entity's Facility	The responsible entity's Facility	The responsible entity's Facility	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.	connection requirements failed to address two of the parts listed in Requirement R3, parts 3.1.1 through 3.1.16.	connection requirements failed to address three of the parts listed in Requirement R3, parts 3.1.1 through 3.1.16.	connection requirements failed to address four or more of the parts listed in Requirement R3, parts 3.1.1 through 3.1.16.
R4	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.

## E. Regional Differences

1. None identified.

## 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.	



## Standard FAC-001-1 — Facility Connection Requirements

### Appendix QC-FAC-001-1

#### Provisions specific to the standard FAC-001-1 applicable in Québec

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This appendix establishes specific provisions for the application of the standard in Québec. Provisions of the standard and of its appendix must be read together for the purposes of understanding and interpretation. Where the standard and appendix differ, the appendix shall prevail.

#### A. Introduction

1. **Title:** Facility Connection Requirements
2. **Number:** FAC-001-1
3. **Purpose:** No specific provision
4. **Applicability:** No specific provision
5. **Effective Date:**
  - 5.1. Adoption of the standard by the Régie: Month xx, 201x
  - 5.2. Adoption of the appendix by the Régie: Month xx, 201x
  - 5.3. Effective date of the standard and its appendix in Québec: Month xx, 201x

#### B. Requirements

No specific provision

#### C. Measures

No specific provision

#### D. Compliance

##### 1. Compliance Monitoring Process

###### 1.1. Compliance Enforcement Authority

The Régie de l'énergie is responsible, in Québec, for compliance enforcement with respect to the reliability standard and its appendix that it adopts.

###### 1.2. Compliance Monitoring and Enforcement Process

No specific provision

###### 1.3. Data Retention

No specific provision

###### 1.4. Additional Compliance Information

No specific provision

##### 2. Violation Severity Levels

No specific provision

#### E. Regional Differences

No specific provision

**Standard FAC-001-1 — Facility Connection Requirements**

**Appendix QC-FAC-001-1**

**Provisions specific to the standard FAC-001-1 applicable in Québec**

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**Revision History**

<b>Revision</b>	<b>Adoption Date</b>	<b>Action</b>	<b>Change Tracking</b>
0	Month xx, 201x	New appendix	New