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|  | Facility Connection Requirements | Document #: VER-FAC-001-0-3 | Owned by: W. Ted Fletcher |
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| NERC Standard: FAC-001-1 | | Review Cycle: Annual | Reviewed by: Robert Doty |

1. Purpose

These requirements are placed on the City of Vero Beach (COVB) transmission users to ensure that the COVB transmission system remains compliant with NERC, FRCC and COVB standards. Compliance with these standards is necessary to ensure a safe and reliable power transmission system.

2. Scope

This document applies to non-COVB entities who wish to connect to the COVB transmission system and refers to them as “transmission user.” It also applies to all new generation, transmission and end user facilities that directly connect to the COVB transmission system and are not owned by COVB. COVB’s facilities meet or exceed the following specifications. This document becomes applicable to all transmission users upon publication on the COVB website (www.covb.org). This document is available on the COVB website in Adobe format.

This document does not supersede NERC, FRCC, FERC, OATT, NESC, NEC, IEEE and COVB standards. In the event of a conflict, the other document should be considered the ruling document. Throughout the document, the phrase “industry standards” is used. This term refers to NERC, FRCC, FERC, OATT, NESC, OSHA, NEC, IEEE and COVB standards as well as best practices.

3. Facility Connection Requirements Description

The COVB Facility Connection Requirements serves as a general outline for generation, transmission and end user facilities that connect to the COVB transmission system. This document is based on NERC standard FAC-001-0. This document is not intended to be a detailed manual but a general overview of procedural and technical requirements.

COVB recommends that a transmission user keep their entire facility compliant with industry standards. COVB requires new transmission user facilities that can affect the performance of the COVB and neighboring transmission systems comply with this document. During project negotiations, a determination will be made as to which facilities impact COVB’s transmission and which do not. The specifications listed in this document are the same requirements that COVB facilities meet or exceed. During studies and technical review, no preference is made between COVB and non-COVB facilities.

3.1 Procedure for Connection Studies

For all connections to the transmission system, there will generally be several steps that will vary based on the type of unit:

1. Request for connection. Requests for connection or questions regarding the process should be forwarded to:

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3455 Airport West Drive
Vero Beach, FL 32960

2. Feasibility meetings between COVB and the transmission user to determine further steps are required for connection including cost, studies and required agreements.
3. Conduct detailed studies and establish required agreements.
4. Execute the agreements.
5. Complete pre-connection inspections (if any) and connection.
6. Conduct ongoing maintenance of connection.

Study work, inspections and facilities built by COVB or a third party on COVB's behalf may be at the cost of the customer. Details of cost responsibilities will be established during the process.

3.2 Procedure for FRCC Notification and Others of Proposed Project

3.2.1 Project Notification for Joint Study

If the proposed project meets certain criteria established by the FRCC and COVB, COVB will contact the FRCC to set up a joint study. A review of the project will then be initiated per FRCC Procedures. If the project does not meet the level of FRCC review, COVB may still contact entities that may be impacted and have them review the project.

3.2.2 Project Notification for Modeling

Once the connection agreement is in place, COVB or the projects representative will report the necessary information to the FRCC databank and project schedule per current FRCC guidelines. Depending on the project, this information may be reported prior to the completion of the connection agreement.

3.3 Voltage Level, MW and MVAR Capacity at Point of Connection

The transmission user and COVB will discuss the available voltages, MW and MVAR capacity at the point of connection during the feasibility and impact studies. This information will be used to perform the studies and will be forwarded to the FRCC at the appropriate time per Section 3.2 (Procedure for FRCC Notification and Others of Proposed Project).

3.4 Breaker Duty and Surge Protection

The transmission user's equipment that affects the performance of COVB's transmission system will meet or exceed COVB's requirement for similar equipment and coordinate with COVB's own system. Consideration should be given for forecasted system growth in the selection of equipment.

3.5 System Protection and Coordination

The transmission user's equipment that affects the performance of COVB's transmission system will meet or exceed COVB's requirement for similar equipment and coordinate with COVB's own system. Consideration should be given for forecasted system growth in the selection of equipment.

3.6 Metering and Telecommunications

3.6.1 Metering

The metering equipment required will be determined by the rate, size and type of facility. Any metering equipment provided by the transmission user for COVB use will meet or exceed applicable COVB and industry standards.

3.6.2 Telecommunications

The transmission user shall provide telecommunications facilities sufficient to meet COVB's telephone, radio, system protection, remote meter reading, EMS and SCADA requirements. COVB will specify the type, speed and characteristics of the communication channel equipment so that compatibility with existing communications, supervisory control, relaying and telemetering equipment is maintained. The specific type of communication equipment to be furnished by the requesting entity will be reviewed and approved by COVB. The requesting entity may have to reimburse COVB for the costs of any additional facilities provided by COVB.

Fiber optic additions to new or existing COVB transmission lines will be considered on a case-by-case basis. Technical analysis of clearances, structural loads and electrical field effects may limit applications. Outage restriction and maintenance responsibilities may also impact potential paths. COVB reserves the right to charge a fee for ROW, pole attachments and/or acquire individual optical fibers on the circuit, per agreement between the interconnecting entity and COVB.

3.7 Grounding and Safety

The transmission user's equipment that affect the performance of COVB's transmission system or the safety of COVB personnel will meet or exceed COVB's requirement for similar equipment and coordinate with COVB's own system. Consideration should be given for forecasted system growth in the selection of equipment.

3.8. Insulation

The transmission user's equipment that affects the performance of COVB's transmission system will meet or exceed COVB's requirement for similar equipment and coordinate with COVB's own system. Consideration should be given for forecasted system growth in the selection of equipment.

3.9 Voltage, Reactive Power and Power Factor Control

3.9.1 Generating Stations

Voltage

Generating Stations are responsible for regulating the voltage at their interconnection point. All voltage regulation equipment for the generating station will be approved by COVB and will be compliant with industry standards and best practices. Installations where the combined generation exceeds 50 MVA and some smaller installations may be required to install a power system stabilizer.

Reactive Power

All generating stations will be expected to provide or absorb reactive power as requested by COVB and the security coordinator to support local voltage. COVB reserves the right to directly review or have a third party review the reactive power equipment at the expense of the transmission user.

Power Factor

Power plants are expected to provide and absorb reactive power as required.

3.9.2 Transmission Facilities

Transmission facilities that generate power should refer to Section 3.9.1 (Generating Stations). Those that use power should refer to Section 3.9.3 (End users).

3.9.3 End Users

Voltage

Transmission facility additions may be studied and monitored for their impact on system voltage levels during the impact study, facility study and post installation. Voltage studies may include both steady state and fluctuations due to load characteristics. Transmission users may be required to pay for system improvements due to unacceptable steady state voltage and/or unacceptable voltage fluctuations caused by their facility.

Reactive Power

Transmission users are expected to provide the majority of their reactive power requirements. Excessive reactive power requirements and/or rapidly changing reactive power requirements may require system improvements at the transmission user's expense.

Power Factor

Transmission users are expected to maintain a power factor as close to 100% as practical.

3.10 Power Quality

The power quality impact of a facility may be assessed during the connection process and post installation. The cost to remedy power quality problems generated by the transmission user will be the responsibility of the transmission user.

3.11 Equipment Ratings

The transmission user's equipment that affects the performance of COVB's transmission system will need to meet or exceed COVB's requirement for similar equipment and coordinate with COVB's own system. Consideration should be given for forecasted system growth in the selection of equipment.

3.12 Synchronizing of Facilities

All facilities with generation that intend to connect to the grid with their generation operating will be required to have at least one functional synchronizing check relay (IEEE Device 25) that supervises the connection and prevents asynchronous closing. Additional synchronizing requirements will be negotiated in the agreement.

3.13 Maintenance Coordination

If the transmission user requires an outage to perform maintenance, they should contact COVB as far in advance as possible.

For equipment that is designated as having an impact on COVB transmission performance, the transmission user is required to perform maintenance as recommended in COVB, manufacturer and industry standards. COVB reserves the right to inspect equipment and maintenance records to ensure the equipment is being properly maintained.

3.14 Abnormal Frequency and Voltage

The transmission system in Florida generally experiences voltages between 90% and 106% of nominal, and frequencies between 59.9 and 60.1 hz. It is possible during a rare system event that voltages and/or frequency exceed these limits. The transmission user is responsible for installing any protective devices necessary to protect their system from these rare excursions.

3.15 Inspection Requirements

Inspection requirements will vary depending on the type and size of the facility. These requirements will be established during the connection process and adjusted as needed during implementation. In general, COVB reserves the right to inspect, as needed, any user facilities that can impact the COVB transmission system. These inspections may be routine, random or based on a system event or complaint.

3.16 Communication and Procedures for Normal and Emergency Operating Conditions

During normal and emergency operating conditions, the COVB operations groups and the State Security Coordinator are charged with maintaining a safe and reliable transmission system in Florida. All transmission users are expected to immediately follow directives issued by the COVB operations groups, the State Security Coordinator or their designee when those directives are considered critical to maintaining the transmission system.

Specific details on communication and procedures will vary depending on the type, size and location of the facility and will be established on a case-by-case basis.

