


ITC Facility Connection Requirements for Generation, Transmission and End-User Facilities Connected to the ITC Holdings Transmission Systems

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1. Introduction and General Comments

Scope

This document complies with NERC Planning Standard FAC-001. The NERC standard requires Transmission Owners to document, maintain, and publish facility connection requirements to avoid adverse impacts on transmission system reliability.

Technical requirements for facilities (transmission, generation and end-user or load) interconnecting to the ITC Holdings (“ITC”) transmission systems are covered in this document. These are the minimum set of requirements for new connections or for modifications to existing connections. Additional requirements may be imposed by ITC to address reliability concerns identified during an impact study for a facility.

The requirements contained in this document will be used as a guide by ITC when planning an interconnection; they are not design specifications and may not cover all details. Contractual matters such as cost, leasing options, scheduling, and billing are not the focus of this document; these matters are covered in contracts, interconnection agreements, operating agreements, and/or other legal documents applicable to each interconnection.

ITC performs the planning of its transmission systems in an open and transparent manner through its participation in the Midcontinent Independent System Operator (“MISO”) Transmission Expansion Planning process and the Southwest Power Pool (“SPP”) Integrated Transmission Planning (“ITP”) process. These processes verify that the system has been planned to achieve the required system performance as described in NERC TPL 001-4 Planning Reliability Standard and applicable Regional Reliability Organization, Subregional, Power Pool, and individual Transmission Owner planning criteria and facility connection requirements throughout the planning horizon. A written summary of the plans necessary to meet this performance level is provided and annually updated as part of the MISO MTEP process. The SPP ITP process determines plans necessary to meet this performance level within the SPP footprint. The PJM RTEP process determines plans necessary to meet this performance criteria for the ITCI footprint. All connection projects to the ITC transmission systems are included in the MTEP, ITP, and RTEP processes as part of our open and transparent stakeholder review.

These Facility Connection Requirements are subject to change and may be revised at any time by ITC Holdings. ITC will make a copy of the revised document available to the affected parties whenever any changes are made via ITC’s web site

The sections of this document regarding generator interconnections supplement the MISO, SPP, and PJM Open-Access Transmission Tariff (“OATT”) and other applicable MISO, SPP, and PJM manuals governing generator interconnections.

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Facility Connection Process

1. Customers seeking to interconnect generation, transmission, or load should contact ITC as early as possible in the planning process with the details of their project.
 - 1.1 Generation and external transmission connections are coordinated through MISO, SPP, or PJM and follow the appropriate MISO/ SPP/ PJM/FERC defined processes.
2. After receiving all pertinent information, ITC will perform studies of varying scope and complexity depending on the project. These studies will help determine the impact of the project on the Transmission System.
3. ITC requires at least a 60 day period to review load and internal transmission connections. The time is used to study the impact of these connections on the transmission system, identify any system upgrades necessary to accommodate the customer, and to propose a connection configuration. ITC may work with customers for these connections under special conditions when they are unable to provide the required 60 day review period. Customers should be able to demonstrate a need for the waiver of the 60 day review period.
4. Following the 60 day review period and after the final scope of the project has been agreed upon by all parties, a minimum of 12 months is required, for most load and internal transmission connections, for ITC to complete the required design, permitting, right-of-way acquisition, and construction of facilities. Many conditions, such as the following, may require projects to take more than 12 months:
 - a) The project requires significant ROW acquisition.
 - b) The project is in a sensitive area where significant community opposition is present.
 - c) The scope of the project is large.
5. If the customer decides to materially alter the connection once the scope has been set, the 12 month period may need to be reset.
6. For ITC generator interconnections - New switching stations or new substations constructed for the purpose of providing a Point of Interconnection for Generating Facilities will be sited on property owned by or under other terms acceptable to ITC.

Connection Configurations¹

Projects may be connected to the ITC system using one or more of the following configurations:

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1. Tapping an existing transmission line.
2. Connecting directly into an existing transmission station.
3. Creating a new transmission switching station connected to an existing transmission line.

Both radial and looped connections are possible for generator, transmission, and end-user interconnections. ITC uses various standard substation configurations, including but not limited to straight bus, ring bus, and breaker and one half bus designs. ITC evaluates projects on a case by case basis and determines the appropriate connection and substation configurations based upon the following factors:

1. The project's location relative to existing ITC facilities.
2. Size of the project.
3. System protection requirements.
4. Length of line exposures.
5. Reliability requirements of the interconnecting customer as determined by the customer and/or the load-serving entity ("LSE") and communicated to ITC.
6. The ability of ITC to own, operate, and maintain facilities that impact its line performance.
7. Other unique requirements of the project or the ITC system.

1.1. *Generating Facilities*

Lines from generation shall be protected by one or more circuit breaker(s) at the Point of Interconnection (POI) and shall have a circuit breaker on the high side of the generator step-up (GSU) transformer. For connections which are extremely short, where the generator's facilities are located adjacent to an existing line or station, ITC may, at its discretion, only require the circuit breaker on the high side of the GSU transformer as long as a separate ITC isolation device such as a disconnect switch is located at the POI.

A gang-operated isolation device, typically a disconnect switch or air break switch, will be required at the Point of Interconnection to isolate the ITC system from generation facilities. This device shall provide a visible air gap to establish clearances for maintenance and repair work of the ITC system. The disconnecting device shall be mechanically lockable in the open position with a ITC padlock and must be accessible at all times to ITC Holdings personnel and be clearly labeled.

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1.2. Transmission Facilities

Isolation device(s) for transmission connections will need to be installed at the point-of-interconnection to the ITC system. If the connection is a radial line connecting to an existing bus, a new breaker will be required unless determined otherwise by ITC due to the station configuration and the amount of line exposure. For these exceptions, the isolation device may either be an air break switch or a disconnect switch associated with a breaker. For radial connections tapping an existing line, the isolation devices will consist of air break switches on the ITC line sections on either side of tap. ITC may also require a switch on the new transmission line tap. This dependence will be determined by various factors including but not limited to the length of the radial section. If the radial section has 2 miles or more of line exposure, ITC will require the installation of a switch on the radial line owned by the customer. This switch will be installed, owned and operated by the interconnecting customer unless they request it be owned by ITC for a specific reason. ITC will then determine the reasonableness of the request.

For certain applications, air break switches may need to be motor-operated, may need to be able to interrupt load current, and/or may need to be operated remotely by supervisory control. Factors including but not limited to load magnitude, line exposure, and line reliability will be considered as ITC makes this determination.

1.3. End-User Facilities

Load connections above 100 kV shall provide both a three-phase circuit interrupting device on the high side of the distribution transformer, a three-phase close device, and a device that provides a visible air gap for all three phases. These device functions can be incorporated into one device or more than one device. The interrupting device shall isolate the Distribution facilities from the ITC transmission system for all faults or abnormal operating conditions. The interrupting device may consist of a circuit breaker, circuit switcher, or transrupter. The protection system must include both primary and backup protection schemes. The backup protection scheme must interrupt faults on customer equipment should the primary protection scheme fail to operate. For load connections below 100 kV, ITC will make a determination on any requested deviation from the high side device requirements on a case-by-case basis using the size of the load as one of the primary determinants.

Isolation device(s) for load connections will need to be installed at the point-of-interconnection to the ITC system. If the connection is a radial line connecting to an existing bus, a new breaker will be required unless determined otherwise by ITC due to the station configuration and the amount of line exposure. For these exceptions, the isolation device may either be an air break switch or a disconnect switch associated with a breaker. For radial connections tapping an existing line, the isolation devices will consist of air break switches on the ITC line sections on either side of tap. ITC may also require a switch on the new end-user line tap. This dependence will be determined by various factors including but not limited to the length of the radial section. If the radial section has 2 miles or more of line exposure, ITC will require the installation of a switch on the radial line to be owned by the customer. This switch will be installed, owned and

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operated by the interconnecting customer unless they request it be owned by ITC for a specific reason. ITC will then determine the reasonableness of the request.

For certain applications, air break switches may need to be motor-operated, may need to be able to interrupt load current, and/or may need to be operated remotely by supervisory control. Factors including but not limited to load magnitude, line exposure, and line reliability will be considered as ITC makes this determination.

For looped connections involving a single distribution transformer, either air break switches or disconnect switches associated with breakers will be required on the line supplies at the load ends. For looped connections involving multiple transformers, section breaker(s) with disconnect switches will be required between each bus section.

The use of breakers vs. load interrupting air break switches vs. circuit switchers will be evaluated for industrial loads connections. These loads are defined as those loads that act only as sinks and never as a source serving primarily industrial type plants. The evaluation shall be based on a number of factors including the line exposures involved in connecting the substation to the grid.

¹Note: ITC Midwest connection requirements:

ITC Midwest will require a line breaker at each line terminal where the customer is connected at 100 kV or above. The requirement for line breakers may be waived, for direct load connections to a line or load connections via a radial line, when the existing line and new connection can be adequately protected without line breakers. Requests for temporary line taps to ITC Midwest at 100 kV and above will be evaluated by ITC Midwest on a case by case basis. Temporary line taps will only be allowed while upgrades identified as necessary for interconnection are being constructed. ITC will require supervisory control of a breaker solely dedicated to the customer's interconnecting line for a temporary line tap to be considered at 100 kV or above.

A ring bus or breaker and a half bus will be required for all interconnections connected to the ITC Midwest 345 kV system regardless of size. The maximum ring bus size will consist of 5 breakers.

2. Procedures for Coordinated Joint Studies of New Facilities and Their Impacts on the Interconnected Transmission Systems (R3.1.1)

2.1. Generating Facilities

ITC owns transmission facilities that are jurisdictional to the MISO OATT, the SPP OATT, and the PJM OATT & Operating Agreement. ITC-Transmission, ITC-METC, and ITC-Midwest facilities are jurisdictional to the MISO OATT while ITC Great Plains facilities are jurisdictional to the SPP OATT. The ITC-Interconnection facilities are jurisdictional to the PJM-OATT & Operating Agreement. Generation interconnections to

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ITC facilities will be evaluated and performed in accordance with the procedures of the appropriate OATT as described below.

2.1.1. Generation Interconnections – MISO

ITC, where facilities are jurisdictional to the MISO OATT, follows the MISO process for coordination of studies among the MISO and Affected System Owners for evaluation of new Generating Facility interconnections or upgrades of existing Generating Facility interconnections as outlined in the OATT Attachment X – Generator Interconnection Procedures.

Generally speaking, evaluation as outlined below will be required for generator connections to the Transmission System.

Feasibility Study - Preliminary assessment of the proposed project usually based on single contingency power flow thermal and voltage analysis only. The purpose of this study is to provide an initial assessment of the project's impact and to determine if any obvious constraints are present. Results of the Study indicate whether the project is directed to the System Planning and Analysis (SPA) Phase or the Definitive Planning Phase (DPP). A project will be allowed to proceed to the DPP if initial analysis indicates the Transmission System is capable of accommodating the Interconnection Request with minimal or no system upgrades. A project will be required to enter the SPA phase if the Transmission System cannot accommodate the request without significant system upgrades.

System Planning and Analysis Phase – The evaluation is designed to determine Network Upgrades that are necessary for the reliable and efficient integration of the project into the Transmission System. The System Planning and Analysis Phase will include a System Impact Study, and upon identification of necessary Network Upgrades, the project will advance to the DPP.

Definitive Planning Phase - A review of the SPA Phase System Impact Study will be performed as part of the DPP for projects entering this phase after a SPA phase. If the review of this study determines a re-study is required, a System Impact Study will be performed as part of the DPP. Once the necessary Network Upgrades have been finalized, a Facility Study will be performed for the project.

System Impact Study - A detailed evaluation of the proposed project along with a preliminary determination of the cost of interconnecting the project's new facilities and any required upgrades to the Transmission System. The study typically consists of detailed single and multiple contingency power flow thermal and voltage analysis, short circuit analysis, generator stability analysis and any other analyses as deemed necessary (such as power quality analysis) by ITC or MISO to ensure reliability. All applicable NERC, Regional Reliability Organization (RRO), and ITC reliability standards shall be considered.

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Facility Study – This study specifies the detailed equipment, engineering, and construction work needed to interconnect the facility with the Transmission System based on the finding of the System Impact Study. It also provides a more exact estimate of the cost of any connection facilities and Network Upgrades necessary to integrate the connection as well as an estimate of the time required to complete the construction and installation of such facilities.

The MISO GIP allows for the interconnection of new generation projects under Provisional GIAs. Under Provisional GIAs, only the minimum reliability studies have been performed for the projects by the MISO. Generation connected to the ITC Transmission System under Provisional GIAs via Interconnection Customer Interconnection Facilities shared with another project will be subject to additional Interconnection Studies, as necessary, to determine the reactive requirements for the project. The Interconnection Customer is required to provide detailed modeling information for the generating facility including but not limited to reactive capability of turbine generators, underground cable capacitance, VAR resources, transformer specifications, and tie line impedance information for Interconnection Study evaluation.

Additional studies of the potential impact of the proposed generator interconnections on the regional transmission systems may be required and affected system owners and neighboring utilities may also require studies to be performed according to their own procedures. The results of such independent studies should be coordinated among the various parties involved.

2.1.2. Generation Interconnections – SPP

Generation connections to the ITC system where the ITC facilities are jurisdictional to the SPP OATT will follow the SPP Generation Interconnection Procedures (Attachment V to the SPP OATT). ITC will participate in the evaluation of such generation interconnections under the direction of SPP as the Transmission Provider. For details regarding the SPP Generation Interconnection Procedures, refer to the SPP OATT, which can be found on the SPP public website (www.spp.org) under Documents & Filings within the Governing section.

2.1.3. Generation Interconnections – PJM

Generation connections to the ITC system where the ITC facilities are jurisdictional to the PJM OATT & PJM Operating Agreement will follow the PJM Generation Interconnection Procedures (Attachment S to the PJM OATT). ITC will participate in the evaluation of such generation interconnections under the direction of PJM as the Transmission Provider. For details regarding the PJM Generation Interconnection Procedures, refer to the PJM OATT, which can be found on the PJM public website (www.pjm.com) under Documents.

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2.2. Transmission Facilities

ITC follows the MISO Transmission Expansion Plan (MTEP) process the SPP Integrated Transmission Planning (“ITP”), and the PJM Regional Transmission Expansion Plan (RTEP) process to provide an open and transparent planning process and in order to coordinate studies of new transmission facilities and their impacts on the interconnected transmission system. Customers desiring to connect new transmission facilities or to upgrade existing transmission facilities must provide a written notification containing project details and modeling information sufficient for ITC to initiate required planning studies. Planning studies will determine if the requested facility connection to the ITC transmission system causes any reliability violations on the interconnected Transmission System. If the proposed facility causes any Transmission System violations, ITC will determine appropriate mitigation solutions to accommodate the connection. All applicable NERC, Regional Reliability Organization (RRO), and ITC reliability standards shall be considered. If the studies show that portions of the interconnected Transmission System owned by others or any sub-transmission systems owned by others are affected by the connection, ITC will contact those affected system owners, PJM, the Midwest ISO or SPP, and the local RRO as applicable and continue studies in coordination with all affected systems.

2.3. End-User Facilities

ITC follows the MTEP ITP, and RTEP processes to provide an open and transparent planning process and in order to coordinate studies of new end-user facilities and their impacts on the interconnected Transmission System. Customers desiring to connect new end-user facilities or to upgrade existing end-user facilities must provide a written notification or application containing project details and modeling information sufficient for ITC to initiate required planning studies. Planning studies will determine if the requested facility connection to the Transmission System causes any reliability violations on the interconnected Transmission System. If the proposed facility causes any Transmission System violations, ITC will determine appropriate mitigation solutions to accommodate the proposed connection. All applicable NERC, Regional Reliability Organization (RRO), and ITC reliability standards shall be considered. If the studies show that portions of the interconnected Transmission System owned by others or any sub-transmission systems owned by others are affected by the proposed connection, ITC will contact those Affected System Owners, the MISO, SPP, or PJM, and the local RRO as applicable and continue studies in coordination with all affected systems.

Note:

Article 7 of the Coordination and Interconnection Agreement between ITC Transmission and DTE sets forth standards for coordinating projects between the two companies which have a material effect on the other party.

Article 9 of the Distribution Transmission Interconnection Agreement between METC and Consumers Energy sets forth standards for coordinating projects between the two companies which have a material effect on the other party.

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Article 7 of the Distribution-Transmission Interconnection Agreement between ITC Midwest and Interstate Power and Light sets forth standards for coordinating projects between the two companies which have a material effect on the other party.

3. Procedures for Notification of New or Modified to Others (Those Responsible for the Reliability of the Interconnected Transmission Systems) As Soon As Feasible (R3.1.2)

3.1. Generating Facilities

ITC follows the MISO, SPP, and PJM processes for notification of new or modified facilities to others as found in the applicable GIP. In addition to the postings on OASIS, all new or modified Generating Facilities having filed applications to MISO, SPP, or PJM are summarized in a Generation Queue posting on the MISO public website (www.midwestiso.org) under the Planning/Generator Interconnection page, on the SPP public website (www.spp.org), or on the PJM public website (www.pjm.com) under the Generation Interconnection page, in the Generator Interconnection Studies section.

3.2. Transmission Facilities

ITC uses the MISO Sub-regional Planning Meetings and the Transmission Expansion Plan Appendix A to notify others of new or modified transmission facility plans within the MISO region. The SPP ITP process and corresponding ITP Appendix A and Appendix B, as well as the SPP quarterly project tracking report are used to notify others of new or modified transmission facility plans in SPP. ITC uses the PJM RTEP process to notify others of new or modified transmission facility plans within the PJM region.

3.3. End User Facilities

ITC uses the MISO Sub-regional Planning Meetings and Transmission Expansion Plan Appendix A to notify others of new or modified transmission facility plans within the MISO region. The SPP ITP process and corresponding ITP Appendix A, Appendix B, as well as the SPP quarterly project tracking report are used to notify others of new or modified transmission facility plans in SPP. ITC uses the PJM RTEP process to notify others of new or modified transmission facility plans within the PJM region

Note:

Article 7 of the Coordination and Interconnection Agreement between ITC Transmission and DTE sets forth standards for coordinating exchange of data and notification of new or modified facilities between the two companies.

Article 9 of the Distribution-Transmission Interconnection Agreement between METC and Consumers Energy sets forth standards for coordinating exchange of data and notification of new or modified facilities between the two companies.

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Article 7 of the Distribution-Transmission Interconnection Agreement between ITC Midwest and Interstate Power and Light (IPL) sets forth standards for coordinating exchange of data and notification of new or modified facilities between the two companies.

4. Voltage level and MW and MVAR capacity or demand at point on connection (R3.1.3)

4.1. Generating Facilities

The voltage level and MW and MVAR capacity of Generating Facilities are provided as part of the required data submittal in the MISO, SPP, or PJM Interconnection Request. The Interconnection Customer will provide Generating Facility and Interconnection Facility data sufficient for ITC to determine the impact of the Interconnection Customer equipment upon the transmission system voltage. ITC requires evaluation of the Interconnection Customer facilities to determine if the Generating Facility is capable of maintaining a voltage schedule at the Point of the Interconnection. The necessary evaluation will occur as part of the System Impact Study. If the Interconnection Customer has not provided explicit data for its facilities, ITC will use generally accepted data for the Interconnection Customer facilities as part of the ITC voltage criteria evaluation.

At a minimum, Generating Facilities will be designed to not cause voltage criteria violations at both zero and full generator output. If necessary, Generating Facilities will be required to construct facilities to mitigate voltage criteria violations caused by VAR injections from the Generating Facility and from the Interconnection Facility equipment during periods of off-peak transmission system loadings with no generator output.

4.2. Transmission Facilities

The voltage level of a new transmission facility interconnection will be driven by the point of interconnection to the ITC system. The MW and MVAR capacity needs of the new facilities will be determined based upon joint studies.

4.3. End User Facilities

Any entity wishing to connect end-user facilities to an ITC system must fill out a load interconnection request which includes information such as but not limited to: in-service dates, project descriptions, location and voltage level of proposed interconnection, transformer size, load projections, and project justification.

5. Breaker Duty and Surge Protection (R3.1.4)

5.1. Generating Facilities

Lines from generation shall be protected by one or more circuit breaker(s) at the Point of Interconnection (POI) to isolate the Generating Facilities from the ITC Transmission System for all faults or abnormal operating conditions. For extremely short distance

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connections where Generating Facilities are located adjacent to an existing line or station, ITC may, at its discretion, only require a circuit breaker on the high side of the GSU transformer as long as a separate ITC isolation device such as a disconnect switch is located at the POI. All three phases shall be interrupted simultaneously and the tripping control of the circuit breaker shall be powered independently of the Transmission System or facility AC sources in order to permit operation upon loss of the Transmission System connection or the facility AC power supply. Isolation of Generating Facilities shall not result in the interruption of any ITC transmission line except as deemed acceptable by ITC.

Minimum ampacity requirements according to ANSI C37.5 standard for asymmetrically rated breakers and ANSI C37.010 standard for symmetrically rated breakers must be met. Facility equipment and interrupting devices shall be sized at a rating which exceeds the maximum available fault current at their location by a reasonable margin. ITC will not be responsible for the cost of upgrading customer owned equipment should fault levels rise in the future due to system changes.

Surge protection shall be provided by surge arresters that shall be selected to coordinate with the BIL rating of major equipment components.

5.2. *Transmission Facilities*

Other transmission facility owner shall provide a circuit breaker(s) or other three-phase circuit interrupting device at the POI to isolate their transmission facilities from the ITC transmission system for all faults or abnormal operating conditions. All three phases shall be interrupted simultaneously and the tripping control of the circuit breaker(s) shall be powered independently of the Transmission System or facility AC sources in order to permit operation upon loss of the Transmission System connection or the facility AC supply. Isolation of other transmission facility owner's facilities shall not result in the interruption of any ITC transmission line except as deemed acceptable by ITC.

Minimum ampacity requirements according to ANSI C37.5 standard for asymmetrically rated breakers and ANSI C37.010 standard for symmetrically rated breakers must be met. Facility equipment and interrupting devices shall be sized at a rating which exceeds the maximum available fault current at their location by a reasonable margin. ITC will not be responsible for the cost of upgrading other transmission facility owner's equipment should fault levels rise in the future due to system changes.

Surge protection shall be provided by surge arresters that shall be selected to coordinate with the BIL rating of major equipment components.

5.3. *End User Facilities*

End-user projects connected at 100 kV and above shall provide a three-phase circuit interrupting device on the high side of their distribution transformer to isolate the end-user facilities from the ITC transmission system for all faults or abnormal operating conditions. The interrupting device may consist of a circuit breaker, circuit switcher, or

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transrupter. For load connections below 100 kV, ITC will make a determination on any requested deviation from the high side device requirements on a case-by-case basis using the size of the load as one of the primary determinants.

For all three-phase interrupting devices employed, all phases shall be interrupted simultaneously and the tripping control of the interrupting devices shall be powered independently of the Transmission System or facility AC power sources in order to permit operation upon loss of the Transmission System connection or the facility AC supply. Isolation of the end-user facilities shall not result in the interruption of any ITC transmission line except as deemed acceptable by ITC.

Minimum ampacity requirements according to ANSI C37.5 standard for asymmetrically rated breakers and ANSI C37.010 standard for symmetrically rated breakers must be met. Facility equipment and interrupting devices shall be sized at a rating which exceeds the maximum available fault current at their location by a reasonable margin. ITC will not be responsible for the cost of upgrading end-user's equipment should fault levels rise in the future due to system changes.

Surge protection shall be provided by surge arresters that shall be selected to coordinate with the BIL rating of major equipment components.

6. System Protection and Coordination (R3.1.5)

6.1. *Generating Facilities*

It is ITC's policy to not install new Special Protection Systems (SPS) or Remedial Action Schemes (RAS) on the ITC system or support the installation of a new SPS or RAS on any system where the purpose of the SPS or RAS is to mitigate a constraint on the ITC system.

In general, ITC will construct a protective relaying scheme to protect the Transmission System from faults occurring on a customer's Interconnection or Generating Facility and from faults occurring on the Transmission Owner's Interconnection Facilities and the Transmission System. Reclosing of generation to the ITC transmission systems is typically not allowed. At the developer's request, reclosing may be considered by ITC provided the Operations of the system, the Protection of the system, and all other system constraints can be adjusted to accommodate the reclosing. This will be done solely at the developer's liability.

The Interconnection Customer will be responsible for providing protection for its Generating Facility from faults occurring on its facilities and from faults occurring on either the ITC transmission system or any interconnected system.

All relays specified by the Interconnection Customer for the protection of the ITC system shall be approved by ITC and be connected to instrument transformers with acceptable accuracy. The protection or relay inputs the Interconnection Customer shall provide include but are not limited to relaying for over- and under-frequency protection, over-

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and under-voltage protection, bus differential protection, and generator high-side circuit breaker failure protection.

ITC may determine instances when pilot relaying, high speed transmission line, or transfer trip protection scheme(s) are required to adequately protect its system as a result of the generator interconnection. Transfer trip receivers, transmitters, and other associated equipment will then need to be installed along with communication channels between the Generating Facility and associated ITC locations. Fiber optic cable is the preferred means of communication for new installations. Other types of communication links could include, but are not limited to, power line carrier, radio, and pilot wire. ITC reserves the right to determine, based on geographical location and system constraints, when a specialized relaying scheme is necessary and to specify the type of communication channel in order to ensure compatibility with existing protection schemes.

If not already supplied by the generator, ITC may require the use of power system stabilizers for certain generators (depending on the plant size, excitation system type and settings, facility location, area transmission system configuration, and other factors).

6.2. Transmission Facilities

Specific protection requirements are contingent upon the final configuration as mutually agreed upon by transmission facility owners and ITC

It is ITC's policy to not install new Special Protection Systems (SPS) or Remedial Action Schemes (RAS) on the ITC system or support the installation of a new SPS or RAS on any system where the purpose of the SPS or RAS is to mitigate a constraint on the ITC system.

ITC shall be solely responsible for the design and definition of protective relaying for the ITC transmission system. Other transmission facility owners shall assume complete responsibility for the protection of their facilities.

Protective relaying systems designed by other transmission facility owners shall be coordinated with ITC to ensure that the proposed relaying permits satisfactory protective system coordination at the Point of Interconnection.

6.3. End User Facilities

Specific protection requirements are contingent upon the final configuration as mutually agreed upon by end-user facility owners and ITC.

It is ITC's policy to not install new Special Protection Systems (SPS) or Remedial Action Schemes (RAS) on the ITC system or support the installation of a new SPS or RAS on any system where the purpose of the SPS or RAS is to mitigate a constraint on the ITC system.

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ITC shall be solely responsible for the design and definition of protective relaying for the ITC transmission system. End-user facility owner assumes complete responsibility for the protection of its facilities.

The protective relaying systems designed by end-user facility owners are subject to ITC review and approval. ITC shall determine whether the proposed relaying provides satisfactory protective system coordination at the POI. End-user facility owner shall obtain ITC approval prior to ordering protective equipment.

ITC shall specify the design and all settings for those end-user owned relays required for the protection of the ITC transmission system. The end-user facility owner is to obtain prior approval from ITC, which will not be unreasonably withheld or delayed, for any revision to the specified relay settings.

7. Metering and Telecommunications (R3.1.6)

7.1. *Generating Facilities*

ITC will not own, supply or maintain revenue meter(s). The Interconnection Customer shall supply, install and maintain revenue class, wound-type current transformers and potential transformers as well as revenue meters that are acceptable to ITC. The accuracy of the instrument transformers shall be 0.3 percent or better, and the accuracy of the meters and transducers shall be 0.2 percent or better. The Interconnection Customer shall provide to ITC records of meter testing and accuracy for each interconnection point upon request.

Unless otherwise agreed upon, the location of the metering equipment shall be at the Point of Interconnection (POI). Meters shall typically be placed on the Interconnection Customer side of the POI to minimize their effect on the operation of the Transmission System and the effects of ferro-resonance. For approved cases where the metering point and the POI differ, the metering equipment shall account for losses occurring between the two points.

Telemetry/SCADA is required for the monitoring, control, and status of Interconnection Customer's and ITC equipment. Interconnection Customer shall install and pay the installation cost and monthly communication costs of all required telemetry equipment. Telemetry equipment will generally consist of all required transducers, remote terminal units (RTU), modems, telecommunication lines, and any other equipment of the same function. A reliable, dedicated communications circuit meeting the approval of ITC shall be utilized to transmit SCADA information from the generating facility site. The communications circuit typically consists of leased phone line, microwave channel, or fiber-optics. Details of the specific telemetry requirements will be provided during the detailed design of the facilities. In general, ITC requires continuous telemetry of the following where applicable:

- Status of all circuit breaker(s) capable of disconnecting the Generating Facility

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from the ITC system.

- Instantaneous MW and MVAR of each generating unit.
- Instantaneous revenue quality MW and MVAR and cumulative revenue quality MWhr and MVARhr at all (or possibly corrected to) Points of Interconnection and from the Generating Facility.
- Transfer trip communication and generation site transfer trip communication status.

As stated in Section 6, telecommunication channels may also be required for pilot relay/high speed protection or for direct transfer trip schemes. The types of communication links can include, but are not limited to, power line carrier, fiber optic cable, radio, and pilot wire. ITC reserves the right to specify the type and characteristics of the communication channel to ensure compatibility with its existing protection.

7.2. Transmission Facilities

Tele-metering and telecommunications requirements of a new transmission interconnection shall be mutually agreed upon as part of the interconnection study process. Data points such as status of transmission facility owner's equipment and real and reactive flows on the line will be expected to be included in the telecommunications (SCADA) design.

Except where prior agreements exist, ITC will own revenue meters at:

1. Tie lines between an ITC Balancing Authority and other Balancing Authorities
2. Tie lines between ITCT and METC sub-control areas.

ITC will not own revenue meters at:

1. Tie lines with other Balancing Authorities where ITC is not the Balancing Authority (e.g. on the ITC Midwest system)
2. Tie lines with municipalities or cooperatives

The Interconnection Customer shall supply, install and maintain revenue class meters and revenue class, wound-type current transformers and potential transformers that are acceptable to ITC. The accuracy of the instrument transformers shall be 0.3 percent or better, and the accuracy of the meters and transducers shall be 0.2 percent or better. The Interconnection Customer shall provide to ITC records of meter testing and accuracy for each interconnection point upon request.

Unless otherwise agreed upon, the location of the metering equipment shall be at the Point of Interconnection (POI). Meters shall typically be placed on the Interconnection

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Customer side of the POI to minimize their effect on the operation of the Transmission System and the effects of ferro-resonance. For approved cases where the metering point and the POI differ, the metering equipment shall account for losses occurring between the two points.

7.3. End User Facilities

Except where prior agreements exist, ITC will not own revenue meters at any end-user Facilities. If ITC requires, the end user shall supply, install and maintain revenue class meters and revenue class, wound-type current transformers and Potential Transformers that are acceptable to ITC. The accuracy of the instrument transformers shall be 0.3 percent or better and the accuracy of the meters and transducers shall be 0.2 percent or better. The Interconnection Customer shall provide to ITC records of meter testing and accuracy for each interconnection point upon request.

Unless otherwise agreed upon, the location of the metering equipment shall be at the Point-of-Interconnection (POI). Meters shall typically be placed on the Interconnection Customer side of the POI to minimize their effect on the operation of the Transmission System and the effects of ferro-resonance. For approved cases where the metering point and the POI differ, the metering equipment shall account for losses occurring between the two points.

Telecommunications/SCADA of the following data may be required at the end-user facility:

- Net real and reactive power flow from the ITC system to the end-user facility.
- Status (open-closed) of the end-user transformer primary protection device and secondary breaker.

8. Grounding and Safety Issues (R3.1.7)

8.1. Generating Facilities

The grounding system design shall be in accordance with IEEE Standard 80. The facility must have a ground grid that is solidly connected to all metallic structures and other non-energized metallic equipment and which maintains coordination with ITC protective relaying systems.

8.2. Transmission Facilities

The grounding system design shall be in accordance with IEEE Standard 80. The facility must have a ground grid that is solidly connected to all metallic structures and other non-energized metallic equipment and which maintains coordination with ITC protective relaying systems.

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8.3. End User Facilities

The grounding system design for end-user facilities at new stations shall be in accordance with IEEE Standard 80. The facility must have a ground grid that is solidly connected to all metallic structures and other non-energized metallic equipment and which maintains coordination with ITC protective relaying systems.

The grounding system design for new end-user facilities at existing stations owned by DTE shall be defined by DTE's Grounding Specifications for such existing facilities.

The grounding system design for new End-user facilities at existing stations owned by Consumers Energy shall be defined by CE's Grounding Specifications for such existing facilities.

The grounding system design for new End-user facilities at existing stations owned by Interstate Power and Light shall be defined by IPL's Grounding Specifications for such existing facilities.

9. Insulation and Insulation Coordination (R3.1.8)

9.1. Generating Facilities

Equipment insulation and insulation coordination must be designed according to Good Utility Practice. In general, facilities shall be protected against lightning and switching surges. This typically includes station shielding against direct lightning strikes, surge arresters, and shielding on all incoming transmission lines. Basic Impulse Level (BIL) ratings of interconnected facilities shall be equal to, or exceed, the BIL ratings of ITC equipment.

9.2. Transmission Facilities

Equipment insulation and insulation coordination must be designed according to Good Utility Practice. In general, facilities shall be protected against lightning and switching surges. This typically includes station shielding against direct lightning strikes, surge arresters, and shielding on all incoming transmission lines. Basic Impulse Level (BIL) ratings of interconnected facilities shall be equal to, or exceed, the BIL ratings of ITC equipment.

9.3. End User Facilities

Equipment insulation and insulation coordination must be designed according to Good Utility Practice. In general, facilities shall be protected against lightning and switching surges. This typically includes station shielding against direct lightning strikes, surge arresters, and shielding on all incoming transmission lines. Basic Impulse Level (BIL) ratings of interconnected facilities shall be equal to, or exceed, the BIL ratings of ITC equipment.

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10. Voltage, Reactive Power, and Power Factor Control (R3.1.9)

10.1. Generating Facilities

In general, all synchronous generators are responsible for regulating the voltage and reactive flow at their Point of Interconnection to the ITC transmission system. The generators may be asked to maintain a prescribed voltage schedule to support voltage and VAR requirements in their local area. The voltage schedule typically varies according to the time of year and the time of day and is subject to change by ITC at any time to meet transmission system requirements.

Additionally, generators are subject to the ITC power factor criteria. In the ITC Transmission, METC, and ITC Interconnection systems Generating Facilities must maintain stability through an operating range of 0.90 lagging PF and 0.93 leading PF. Where the generator does not have the capability to achieve the entire power factor range described above, it must be able to maintain stability throughout the actual feasible power factor range at the minimum generator voltage.

Wind farms and induction generators are usually not required to operate to a specific power factor range unless ITC can show through study work that such a requirement is necessary to ensure safety or reliability (i.e. the proposed generator is determined to have adverse impacts on system voltages based on its inherent reactive capability). At a minimum, these machines would be expected to supply their own reactive needs and maintain a unity power factor. However, wind farms and induction generators will be asked to maintain a prescribed voltage schedule to support voltage and VAR requirements in their local area. As such, wind farms and induction generators shall have continuous monitoring and remote adjustment capabilities of their reactive compensation facilities to insure that prescribed voltage schedules are maintained in a timely manner as system conditions fluctuate. Interconnection studies will determine the actual reactive power capability that will be necessary to insure that voltage schedules are maintained and/or unity power factor is maintained at the POI. The ITC Midwest planning criteria specifies that Generating Facilities be able to operate within a range of 0.95 lagging PF and 0.95 leading PF when called upon to do so.

In cases where multiple projects are connected via shared facilities to a common POI, the reactive compensation necessary for the collective operation of the projects for the Interconnection Customer will be determined by the RTO protocols.

10.2. Transmission Facilities

Each Party recognizes and agrees that it has a responsibility for maintaining voltage and VAR support at each Interconnection Point in accordance with applicable RTO protocols and policies. ITC is responsible for maintaining Transmission System voltage and VAR flows on its system. Transmission facility owners are responsible for controlling Transmission System voltage and VAR flows on their respective systems. Each Party shall use a combination of static and dynamic reactive sources at various locations to

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address reactive power supply issues. Each Party shall operate its system in such manner that the voltage levels on the system are maintained at reliable levels.

10.3. End User Facilities

Each Party recognizes and agrees that it has a responsibility for maintaining voltage and VAR support at each interconnection point in accordance with applicable RTO protocols and policies and subject to any specific requirements imposed in the relevant interconnection agreement between the two parties where applicable.

Note:

Article 2.4 of the Coordination and Interconnection Agreement between ITC Transmission and DTE sets forth requirements for voltage and VAR support at interconnection points between the two companies.

Article 2.4.2 and Article 8 of the Distribution-Transmission Interconnection Agreement between METC and Consumers Energy sets forth requirements for voltage and VAR support at interconnection points between the two companies.

Various agreements set forth requirements for VAR support at interconnection points between METC and various other companies.

Article 2.4.2 of the Distribution-Transmission Interconnection Agreement between ITC Midwest and Interstate Power and Light sets forth requirements for voltage and VAR support at interconnection points between the two companies. ITC Midwest requires the end-user to maintain a minimum 98% power factor, at peak load, at the low voltage side of the end-user's transformer.

ITC is responsible for maintaining Transmission System voltage and VAR flows. The end-user facility owner is responsible for controlling Distribution System voltage and VAR flows. Each Party shall use a combination of static and dynamic reactive sources at various locations to address reactive power supply issues.

11. Power Quality Impacts (R3.1.10)

11.1. Generating Facilities

The Generating Facility shall not cause excessive voltage flicker or harmonic distortion on the electric facilities of the ITC. IEEE Standard 519 provides definitions and limits on acceptable levels of voltage fluctuation and harmonic distortion. Generating facilities connecting to the ITC transmission system shall comply with the limits set by IEEE 519.

The Generating Facility switched loads and capacitor banks shall not result in a voltage step change greater than 3% on the ITC transmission system, regardless of the frequency of occurrence.

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All three-phase generation shall produce balanced voltages. Voltage unbalance shall not exceed 1.0% measured at the point-of-interconnection. The allowable limit applies to normal steady-state operating conditions and is measured by the formula:

$$\text{Voltage Unbalance (\%)} = (\text{Max. Deviation from Avg. Voltage} \div \text{Avg. Voltage}) \times 100$$

Average voltage is defined as the sum of the three phase voltages divided by three.

11.2. Transmission Facilities

Transmission facilities shall not cause excessive voltage flicker or harmonic distortion on the electric facilities of the ITC. IEEE Standard 519 provides definitions and limits on acceptable levels of voltage fluctuation and harmonic distortion. Transmission facilities connecting to the ITC transmission system shall comply with the limits set by IEEE 519.

Transmission facility switched loads, capacitor banks, and reactors shall not result in a voltage step change greater than 3% on the ITC transmission system, regardless of the frequency of occurrence.

Voltage unbalance shall not exceed 1.0% measured at the point-of-interconnection. The allowable limit applies to normal steady-state operating conditions and is measured by the formula:

$$\text{Voltage Unbalance (\%)} = (\text{Max. Deviation from Avg. Voltage} \div \text{Avg. Voltage}) \times 100$$

Average voltage is defined as the sum of the three phase voltages divided by three.

11.3. End User Facilities

The end-user facility shall not cause excessive voltage flicker or harmonic distortion on the electric facilities of the ITC. IEEE Standard 519 provides definitions and limits on acceptable levels of voltage fluctuation and harmonic distortion. End-user facilities connecting to the ITC transmission system shall comply with the limits set by IEEE 519.

The end-user facility switched loads and capacitor banks shall not result in a voltage step change greater than 3% on the ITC transmission system, regardless of the frequency of occurrence.

Voltage unbalance shall not exceed 1.0% measured at the point-of-interconnection. The allowable limit applies to normal steady-state operating conditions and is measured by the formula:

$$\text{Voltage Unbalance (\%)} = (\text{Max. Deviation from Avg. Voltage} \div \text{Avg. Voltage}) \times 100$$

Average voltage is defined as the sum of the three phase voltages divided by three.

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Note:

Exhibit 3 of the Coordination and Interconnection Agreement also provides further detailed requirements for power quality for interconnection points between ITC Transmission and DTE.

12. Equipment Ratings (R3.1.11)

12.1. Generating Facilities

ITC will determine the individual equipment ratings for specific Transmission Owner's Interconnection Facilities and Network Upgrades during the detailed design of the facilities. Interconnection Customer shall size the Interconnection Customer's Interconnection Facilities using applicable Reliability Standards, Good Utility Practice and the information provided in the Interconnection Evaluation Study in order to ensure that the customer's Interconnection Facilities appropriately coordinate with ITC's Interconnection Facilities.

ITC will determine the required short circuit ratings for all Transmission Owner's Interconnection Facilities and Network Upgrades during the detailed design of such items. Interconnection Customer agrees to provide appropriately sized or short circuit-rated Interconnection Customer's Interconnection Facilities comparable to those required by Transmission Owner using applicable Reliability Standards, Good Utility Practice, and the information provided in the Interconnection Evaluation Study. The Interconnection Customer shall provide the GSU transformer impedance data and its line conductor impedance data to the POI including the positive, negative, and zero sequence values to be used in calculating fault impedance values.

Equipment must meet minimum ratings required to operate the facility at full load under normal ratings of the equipment. This includes, but is not limited to, voltage class, ampacity, available fault current rating, fault closing rating, and basic impulse level (BIL).

12.2. Transmission Facilities

Equipment ratings of transmission facilities are determined by the owner of such facilities. The ratings for a transmission interconnection with ITC shall be jointly coordinated to determine the most limiting elements so that one set of ratings for the circuit can be obtained.

12.3. End User Facilities

Equipment ratings of end-user facilities are determined by the owner of such facilities. Any end-user equipment that could impact ratings of series-connected transmission facilities should not limit transmission facility ratings.

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13. Synchronizing of Facilities (R3.1.12)

13.1. *Generating Facilities*

Generating facilities are responsible for providing the necessary controls to synchronize generation to the ITC system across any generating unit breaker or the Point of Interconnection to the ITC system. Generating Facilities will be required to have at least one functional synchronizing check relay that supervises the connection and prevents asynchronous closing.

13.2. *Transmission Facilities*

Transmission facility owner agrees that their system and the ITC system will be operated in synchronism at the interconnection points.

13.3. *End User Facilities*

End-user facility owner agrees that their system and the ITC system will be operated in synchronism at the interconnection points.

14. Maintenance Coordination (R3.1.13)

14.1. *Generating Facilities*

ITC shall maintain the Transmission Owner's Interconnection Facilities in a safe and reliable manner and in accordance with the Interconnection Agreement and all Applicable Laws and Regulations. Interconnection Customer shall maintain the Generating Facility and the Interconnection Customer's Interconnection Facilities in a safe and reliable manner and in accordance with the Interconnection Agreement and all Applicable Laws and Regulations.

ITC and the Interconnection Customer shall confer regularly to coordinate the planning, scheduling and performance of preventive and corrective maintenance on the Generating Facility and the Interconnection Facilities. Each Party shall cooperate with the other in the inspection, maintenance, and testing of control or power circuits including, but not limited to, any hardware, control or protective devices, cables, conductors, electric raceways, secondary equipment panels, transducers, batteries, chargers, and voltage and current transformers that directly affect the operation of a Party's facilities and equipment which may reasonably be expected to impact another Party. Each Party shall provide advance notice to the other Party before undertaking any work on such circuits, especially on electrical circuits involving circuit breaker trip and close contacts, current transformers, or potential transformers.

14.2. *Transmission Facilities*

ITC facilities shall be maintained (i) in a safe and reliable manner; (ii) in accordance with Good Utility Practice; (iii) in accordance with applicable operational and/or reliability

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criteria, protocols, and directives, including those of the Applicable Reliability Council; (iv) in accordance with Applicable Laws and Regulations; and (v) to reasonably protect other transmission systems from the adverse impact from the operation of their facilities.

Other transmission facility owners shall maintain their transmission facilities (i) in a safe and reliable manner; (ii) in accordance with Good Utility Practice; (iii) in accordance with applicable operational and/or reliability criteria, protocols, and directives, including those of the Applicable Reliability Council; (iv) in accordance with Applicable Laws and Regulations; and (v) to reasonably protect other transmission systems from the adverse impact from the operation of their facilities.

14.3. End User Facilities

ITC shall maintain the ITC transmission systems (i) in a safe and reliable manner; (ii) in accordance with Good Utility Practice; (iii) in accordance with applicable operational and/or reliability criteria, protocols, and directives, including those of the Applicable Reliability Council; (iv) in accordance with Applicable Laws and Regulations; and (v) to reasonably protect end-user facilities from adverse impact from the operation of its facilities.

End-user facility owner shall maintain the End-user Facilities (i) in a safe and reliable manner; (ii) in accordance with Good Utility Practice; (iii) in accordance with applicable operational and/or reliability criteria, protocols, and directives, including those of the Applicable Reliability Council; (iv) in accordance with Applicable Laws and Regulations; and (v) to reasonable protect transmission owner facilities from adverse impact from the operation of its facilities.

Note:

Article 3 of the Coordination and Interconnection Agreement between ITC Transmission and DTE and Article 3 of the Distribution-Transmission Interconnection Agreement between METC and Consumers Energy sets forth further standards for maintenance coordination among these companies.

15. Operational Issues (Abnormal Frequency and Voltages) (R3.1.14)

15.1. Generating Facilities

ITC and the Interconnection Customer will work together to establish appropriate procedures, protocols and operating guides (if necessary) to account for and manage abnormal frequency, voltages or other operating limits in accordance with the ITC Planning Criteria, all appropriate industry standards, Mandatory Reliability Standards, and Good Utility Practice.

Voltage Schedules shall be followed according to the applicable Generator Interconnection Agreement or other applicable Interconnection Agreements. ITC may, at

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any time request a variance from the normal voltage schedule in response to system operating/security requirements.

Frequency changes shall be limited to ± 0.5 Hz.

15.2. Transmission Facilities

ITC and the Interconnection Customer will work together to establish appropriate procedures, protocols and operating guides (if necessary) to account for and manage abnormal frequency, voltages or other operating limits in accordance with the ITC Planning Criteria, all appropriate industry standards, Mandatory Reliability Standards, and Good Utility Practice.

Frequency changes shall be limited to ± 0.5 Hz.

15.3. End User Facilities

ITC and the Interconnection Customer will work together to establish appropriate procedures, protocols and operating guides (if necessary) to account for and manage abnormal frequency, voltages or other operating limits in accordance with the ITC Planning Criteria, all appropriate industry standards, Mandatory Reliability Standards, and Good Utility Practice.

Frequency changes shall be limited to ± 0.5 Hz. End-user facilities will be asked to participate in any UVLS (under voltage load shedding) or UFLS (under frequency load shedding) programs as needed for system security.

16. Inspection Requirements for Existing or New Facilities (R3.1.15)

16.1. Generating Facilities

Interconnection Customer and ITC have rights to inspect facilities as stipulated by Article 6.4 of the Standard Generator Interconnection Agreement (Appendix 6 to the GIP) which specifically states that each Party shall have the right, but shall have no obligation to: (i) observe Transmission Owner's and Interconnection Customer's tests and/or inspection of any of their respective System Protection Facilities and other protective equipment, including power system stabilizers; (ii) review the settings of the System Protection Facilities and other protective equipment; and (iii) review the maintenance records relative to the Interconnection Facilities, the System Protection Facilities and other protective equipment.

16.2. Transmission Facilities

ITC shall have the right, but no obligation or responsibility to inspect that portion of the other transmission owner's electrical system that connects directly to ITC facilities and

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transmission system. ITC shall provide reasonable notice to the Transmission Owner of its intent to perform an inspection. This includes, but is not limited to:

1. Witness operational tests of interconnection breakers and disconnects.
2. Witness operational tests of SCADA telemetry with the ITC Transmission Operations Center.
3. Witness operational testing of the other Transmission owner's protective relaying that is designed to clear faults from the ITC system to ensure that relays trip interconnection devices.

16.3. End User Facilities

ITC shall have the right, but no obligation or responsibility to inspect that portion of end-user's electrical system that connects directly to ITC facilities and transmission system. ITC shall provide reasonable notice to the End User of its intent to perform an inspection. This includes, but is not limited to:

1. Witness operational tests of interconnection breakers and disconnects.
2. Witness operational tests of SCADA telemetry with the ITC Transmission Operations Center.
3. Witness operational testing of End-user's protective relaying that is designed to clear faults from the ITC system to ensure that relays trip interconnection devices.
4. Review on site test data of transformers directly connected to the ITC system.
5. Review on site test data of cables directly connected to the ITC system.
6. Inspection of the station ground grid and review of ground grid resistance test results.

17. Communications and Procedures During Normal and Emergency Operating Conditions (R3.1.16)

17.1. Generating Facilities

Communications during normal and emergency conditions shall follow stipulations as stated in Articles 8 and 13 respectively of the Standard Generator Interconnection Agreement (Appendix 6 to the GIP).

A communication link must be established between the Generation Facility and ITC. This path will normally be via telephone, with phone numbers and contact personnel agreed upon by the Interconnection Customer and ITC. ITC and the Interconnection

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Customer shall identify the contact personnel and provide phone numbers for 24-hour, year-round contact capability.

Interconnection Customer will communicate with ITC prior to re-establishing connection to the ITC system after any interruption of the interconnection due to scheduled or unscheduled interruptions. ITC contact phone numbers will be provided.

17.2. *Transmission Facilities*

A communication link must be established between the other transmission facility owners and ITC. This path will normally be via telephone, with phone numbers and contact personnel agreed upon by transmission facility owners and ITC. ITC and the other transmission facility owners shall identify the contact personnel and provide phone numbers for 24-hour, year-round contact capability.

Transmission facility owner will communicate with ITC prior to re-establishing connection to the ITC system after any interruption of the interconnection due to scheduled or unscheduled interruptions. ITC contact phone numbers will be provided.

17.3. *End User Facilities*

A communication link must be established between the end-user facilities owner and ITC. This path will normally be via telephone, with phone numbers and contact personnel agreed upon by the End-user facilities owner and ITC. ITC and the End-user facilities owner shall identify the contact personnel and provide phone numbers for 24-hour, year-round contact capability.

End-user facilities owner will communicate with ITC prior to re-establishing connection to the ITC system after any interruption of the interconnection due to scheduled or unscheduled interruptions. ITC contact phone numbers will be provided.

18. Revision History

Effective Date	Revision Number	Individual Making Edits	Reason / Comments
05/27/16	0001	John Andree	Updated for ITCI, added language related to primary and backup protection requirements.

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