1. Introduction
This document provides the general procedures and requirements for connecting facilities to the Prairie Power, Inc. (PPI) Transmission System. The PPI transmission system consists of substations, switching stations, transmission lines and other facilities operating at voltages of 138 kV, 69 kV and 34.5 kV. Three types of facility connections as defined in Section 2 below can be made to the PPI transmission system: Transmission, Generation and End-Use Facilities. Some connections may involve one or more of these facility types. This document applies to all entities connecting to the PPI transmission system, including PPI itself, PPI member cooperatives and other entities. This document applies to any new transmission facility interconnections and generator or load interconnections of 1 MW or greater or when a material modification is made to any existing interconnections.

This document will be reviewed, at minimum, every 3 years and will comply with applicable NERC Reliability Standards, SERC Guidelines, and MISO Business Practices Manual (BPM-020) planning procedures, as well as PPI’s Reliability Planning Criteria.

2. Types of Facilities

A. Transmission Facilities
A Transmission System is defined as those electrical system facilities that do not satisfy the FERC seven-factor test for determining distribution facilities and, in addition, is not a generator step-up (GSU) transformer, lead line or associated equipment. PPI transmission facilities operate at voltages of 138 kV, 69 kV and 34.5kV.

B. Generation Facilities
Generation facilities are those facilities which are capable of producing electric energy and desire to be synchronized to the PPI transmission system.

C. End-Use Facilities
End-Use Facilities (loads) are those facilities that satisfy the FERC seven factor test for distribution facilities. End-Use Loads consume electrical energy for the purpose of providing lighting, heating, cooling or powering electrical equipment to perform other tasks. In this document, end-use Customer also refers to PPI member cooperatives.

3. General Requirements
These general requirements apply to all new facility connections made to the PPI Transmission System and material changes to existing connections, which involve load or generator interconnections of 1 MW or larger or any transmission interconnection. All types of facility connections start at the point of interconnection; that is, where PPI transmission facilities end and the requesting entity’s connection facilities begin. Such facility connections shall comply with all applicable codes, standards, government regulations, environmental regulations, siting requirements, contracts, operating agreements, and tariff requirements related to the proposed facilities. PPI follows applicable NERC Reliability Standards, SERC Guidelines, and MISO Business Practices Manual (BPM-020) planning procedures, as well as PPI’s Reliability Planning Criteria.
Impact studies will be performed for all new facility connections meeting the criteria above. The PPI Engineering Department will contact its interconnected neighbors to coordinate joint studies for radial and integrated portions of its system that may impact neighboring systems. Impact studies may include some or all of the following as appropriate:

- Powerflow and voltage drop studies
- Fault duty and protective device coordination studies
- System stability studies
- Transfer capability studies

Impact studies may be performed by Prairie Power and/or AmerenIL and/or CWLP either independently or jointly, as appropriate, depending on the location of the facility, its size, and potential effect upon the transmission system. The results of such studies will be provided as joint recommendations from all parties involved with the study. Study results shall be shared with all affected parties.

The owner/operator of the connecting facility will be responsible for providing, in a timely manner, all data necessary to perform these studies. Additionally, the owner/operator must notify PPI when any changes or modifications to the facility are planned or occur which may affect system operations or reliability.

4. Making Connection Request

To request interconnection to PPI’s Transmission System, a written request must be submitted to:
Vice-President, Engineering & Operations
Prairie Power, Inc.
3130 Pleasant Run
Springfield, IL  62711
Phone: (217) 245-6161
Fax: (217) 546-8929

The Transmission System facilities applicable to this procedure are those that are not classified as distribution facilities under the FERC seven-factor test. Voltage levels for consideration on the PPI system are 138 kV, 69 kV and 34.5kV. The interconnection request must include:

- Type of Interconnection:  Transmission, Generation or End-Use (Load)
- Location of the Customer facility
- Identification of the PPI Transmission System facility to which Customer desires to connect and the facility voltage
- Load MW, MVar, and power factor - The Customer is required to provide the maximum real power demand required for its facility, the actual peak real power demand for existing load that will be supplied at the new point of interconnection, and a ten-year load projection on an annual basis. The Customer is also required to provide the load power factor and maximum MVar requirement of the demand to be connected to PPI’s Transmission System.
- Power Factor Control - If the facility load power factor projections are not in the range of 95% lag to 95% lead, the Customer shall install controlled power factor correction device(s) on the

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1 Since the PPI system is embedded in the AmerenIL zone, AmerenIL may also want to perform its own studies for significant facility additions within PPI.
Customer-side of the meter to maintain the required load power factor range, consistent with Good Utility Practice and system needs.

- Interconnection customers shall meet PPI’s steady-state voltage criteria of maintaining bus voltage between 0.95 and 1.05 per unit at the point of interconnection.
- Proposed In-service Date
- Customer generation, if any, and its intended use, i.e., wholesale or co-generation
- Other information as appropriate.

5. Transmission Interconnections

Transmission connections to PPI transmission facilities will be negotiated and studied individually. Transmission connections to PPI’s transmission facilities under MISO jurisdiction (PPI network system) will be submitted to MISO for evaluation in the Mid-Continent Transmission Expansion Plan (MTEP) process. Transmission connections to PPI transmission facilities that are not under MISO jurisdiction (PPI non-network system) will be evaluated by PPI. The PPI Engineering Manager will inform the transmission interconnection customer of the proper procedures to follow.

6. Generator Interconnections

Generator connections to PPI transmission facilities under MISO jurisdiction must be submitted to MISO. More information on MISO process can be found at this link: [https://www.misoenergy.org/Planning/GeneratorInterconnection/Pages/GeneratorInterconnection.aspx](https://www.misoenergy.org/Planning/GeneratorInterconnection/Pages/GeneratorInterconnection.aspx).

Generator connections to PPI transmission facilities not under MISO jurisdiction are submitted to PPI using the PPI Generation Facility Interconnection Request Application. The PPI Engineering Manager will inform the generator interconnection customer of the proper procedures to follow.

7. End Use (Load) Interconnections

End-use load connection requests to PPI’s transmission network facilities will be submitted to MISO for evaluation in the Mid-Continent Transmission Expansion Plan (MTEP) process. End-Use load connections to PPI’s non-network transmission system will be handled by PPI directly. Customer load is defined as any retail or wholesale load that takes service from the PPI Transmission System while utilizing interconnecting non-transmission facilities (as defined by the FERC seven-factor test) to supply Customer load.

In some cases the End-Use customer may be directed to one of PPI’s member distribution cooperatives. PPI will provide the Customer with the appropriate member contact information. PPI’s member distribution cooperatives are:

- Adams Electric Cooperative
- Coles-Moultrie Electric Cooperative
- Eastern Illini Electric Cooperative
- Illinois Electric Cooperative
- Jo-Carroll Energy
- McDonough Power Cooperative
- Menard Electric Cooperative
- Shelby Electric Cooperative
- Spoon River Electric Cooperative
- Western Illinois Electrical Cooperative
The PPI Engineering Manager will inform the end-use interconnection customer of the proper procedures to follow.

8. Cost to Study Customer Requested Connection
PPI will provide the Customer with an estimate of the cost to perform the interconnection study. The interconnection study agreement will contain the assumptions of the engineering study and the work to be performed by PPI and the Customer. If Customer desires to have the interconnection study performed, then PPI will provide the customer with an agreement outlining Customer’s obligations and request that the Customer sign the agreement. Engineer-hour charges will be assessed at the prevailing rate for such engineering work. Depending on the amount and type of work involved, the Customer may be required to pay a deposit prior to commencement of the interconnection study and may be charged the actual costs of the interconnection study.

9. Receiving Request and Agreement to Perform Study
Upon PPI’s receipt of the executed study agreement and the information outlined in Section 4 above from the Customer, PPI will execute the study agreement and return a fully executed copy to the Customer. PPI will then perform the interconnection study in a timely manner as described in the interconnection study agreement.

Customer interconnections are handled on a case by case basis. The initial analysis will consist of power flow modeling. This modeling will test the interconnection for thermal and voltage impacts on the system. The system performance evaluation will be based on NERC Reliability Standard TPL-001-4, or its successor, as a minimum.

Short circuit modeling, stability, or other analysis such as a switching study will be performed if applicable under an addendum to the study agreement. System performance evaluation of such additional analysis will also be based on NERC Reliability Standard TPL-001-4.

PPI will provide Customer a draft report of its analysis which will identify the Customer’s general interconnection requirements. The Customer will also be required to abide by the following requirements, as appropriate and applicable, and include in its facility design engineering specifications that will allow adherence to these requirements:2

1) System Configuration, Protection and Coordination
2) Insulation, Insulation Coordination, Surge Protection, and Shielding
3) Metering and Telecommunications
4) Power Quality Impacts
5) Equipment Ratings
6) Synchronizing of Facilities
7) Grounding and Safety Issues
8) Maintenance Coordination
9) Operational issues (jurisdictional and functional authority)
10) Inspection requirements for Existing or New facilities

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2 These requirements are based upon the Guidelines and Technical Basis established as part of NERC Reliability Standard FAC-001-2.
11) Communications and Procedures during Normal and Emergency Operating Conditions
12) Underfrequency Load Shedding
13) Undervoltage Load Shedding

See Appendix A to this document for a description of the above requirements.

PPI reserves the right to design, build, construct, own, operate, and/or maintain any equipment that becomes part of or has an impact on PPI's Transmission System as a result of the Customer connection.

10. Opportunity for Customer to Make Comments
The Customer will be given an opportunity to respond to PPI's draft report and requirements. Upon receiving the Customer's comments, PPI will work with Customer to resolve any issues resulting from Customer's comments, if possible. After resolving appropriate issues, PPI will issue a final report of the study and state the conditions under which the Customer connection will be allowed.

11. Customer Determines Value of Connection
If Customer wishes to continue with the interconnection, PPI will work with Customer to place the required facilities in service in accordance with a mutually agreed upon schedule. If the Customer does not wish to pursue the interconnection, the remaining charges for the engineering study will be billed to the Customer and PPI's involvement will end.

12. Customer Connection Agreement
Once Customer decides to proceed with the interconnection, PPI will prepare a written agreement ("Construction Agreement") for execution. The Construction Agreement identifies the specific facilities to be provided by both parties. The agreement will include the point of connection, a one-line diagram, and concurrence to adhere to the applicable requirements specified in Section 9 and detailed in Appendix A of this document.

13. Notification by Customer to PPI Regarding Material Changes to Existing Connection(s)
Customer shall notify PPI of any changes or modifications that occur or are planned to occur that may affect system operations or reliability. To facilitate updating system studies involving the interconnection(s), Customer is required to provide information regarding any such changes outlined under Section 4 above.
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<td>J. Dalton</td>
<td>Initial draft document for “Facility Connection Requirements and Coordination of Plans for New Facilities Ref: NERC Standard FAC-001-0, SERC Supplement to FAC-001, NERC Standard FAC-002-0, and USDA, Rural Utilities Service” for review and comment</td>
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<td>1</td>
<td>09/25/2007</td>
<td>J. Dalton</td>
<td>Update to PPI, expanded scope, attached Ameren document</td>
</tr>
<tr>
<td>2</td>
<td>07/20/2009</td>
<td>R. Reynolds</td>
<td>Added section regarding applicability to Member Coops. Updated to explicitly include notification and provision of document within 5 days</td>
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<tr>
<td>3</td>
<td>05/27/2010</td>
<td>A. Anker</td>
<td>Revisions to improve readability of document</td>
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<td>04/03/2012</td>
<td>K. Kohlrus</td>
<td>Complete recreation of PPI Facility Connection Requirement document, including removal of NERC Standard FAC-002 and USDA, Rural Utilities Service requirements and/or references; incorporation of Ameren’s procedures into PPI’s document but removal as attachment; renumbered document revision to begin at zero.</td>
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<td>05/07/2014</td>
<td>K. Kohlrus</td>
<td>Document review; added transmission and generator interconnection provisions</td>
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<td>2</td>
<td>08/15/2014</td>
<td>K. Kohlrus</td>
<td>Document review; minor revisions to correct typographical errors, further description of coordination with neighboring entities; addition of PPI Dispatch Information and reference to PPI Planning Criteria.</td>
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<td>K. Kohlrus</td>
<td>Document review; minor revisions including clarifying the costs of interconnection studies and interconnection requirements, updated references to current NERC standards</td>
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Appendix A
Description of Requirements for Connection

1. System Configuration, Protection, and Coordination
PPI requires that its transmission system be protected and that customer reliability and system integrity be maintained when customer connections are made to its transmission system. As part of this requirement, PPI will unilaterally determine what configuration will be utilized for connections. PPI will also unilaterally determine what protection and coordination facilities are required and the ownership of these protection facilities for all connections to PPI's transmission system. Such coordination, including any remote tripping schemes, underfrequency or undervoltage load shedding schemes, or remedial action schemes, will be required regardless of the location of the Customer's connection. PPI would perform or cause to be performed all appropriate study work related to Customer's connection.

General principles to be followed in designing and operating the protection system equipment include:

- Public safety
- Prevention/minimization of equipment damage
- Minimization of equipment outage time
- Minimization of system area exposed to outage
- Minimization of system voltage disturbances
- Adequate protective system coverage for abnormal conditions

For the following devices, the Customer is responsible for paying for the following facilities, but PPI may be the ultimate owner. For those facilities owned by PPI and for which the Customer pays, PPI will perform installation, operation, and maintenance. The following are typical requirements for system configuration and protection devices:

a. **System Configuration**: Load connections to the PPI transmission system will have as a minimum the facilities in part (b) below. Depending on the type, location and size of the interconnection, PPI may require that a breaker station be installed. If it is expected the new station is likely to become a major transmission hub, a ring bus, straight bus or breaker-and-a-half configuration may be required.

b. **Disconnecting and Interrupting Devices**: Customer shall provide, at a location or locations agreed to by PPI, a disconnecting and interrupting device or devices which:

1) Provide a manually operated visible disconnecting device as a means of electrically isolating Customer's facility from PPI's Transmission System. The manually operated disconnecting device shall have a means for locking the device in the open position with PPI's padlocks.
2) Provide automatic isolation of the Customer's system from PPI's Electric System for faults or abnormal conditions on the Customer's system so as to maintain network flow and reliability to the transmission system, and
3) Provide automatic isolation of the Customer's system from PPI's Electric System for faults or abnormal conditions on PPI's Electric system so as to
protect customer facilities from faults or abnormal condition on the transmission system.

Interrupting devices must have sufficient interrupting capacity to interrupt the maximum available fault current at each device location. PPI reserves the right to require Customer to open all interrupting devices PPI deems necessary to fulfill the power and authority granted to PPI under the terms of the "Construction Agreement", and upon such a request by PPI, Customer shall open such interrupting devices immediately.

c. Fault and Loss of Utility Protection: Customer shall provide, install, operate and maintain all of the Protection System and Control Devices required by PPI, in accordance with Good Utility Practice, to safely, efficiently and reliably integrate Customer's facility with PPI's Transmission System. The Protection and Control Devices required by PPI shall include but not be limited to the following:

1) main fault protection relay(s) and associated equipment capable of detecting a fault within Customer's facility and automatically isolating Customer's facility from PPI's Transmission System when such faults occur;
2) fault protection relay(s) and associated equipment capable of detecting faults on PPI's Transmission System and automatically isolating Customer's facility from PPI's Transmission System to prevent the facility from contributing to such faults; and
3) Loss of PPI's Transmission System supply relay(s) and associated equipment capable of detecting PPI's Transmission System isolation events and isolating Customer's facility from PPI's Transmission System to prevent unsafe or unreliable feedback from Customer's facility into the PPI Transmission System.

All of the relays required for safe, efficient and reliable operation of the facility with PPI's Transmission System shall be equipped with built-in test provisions. Customer's Protection Systems shall be designed with adequate redundancy to meet the above requirements under the single contingency loss of a protective relay, CT or VT circuit, DC circuit, auxiliary or lockout relay, or Protection System communications equipment.

d. Additional Protection for Customer's Facility: If Customer desires a greater level of reliability, additional protection system equipment required would be installed at Customer's expense.

2. Insulation, Insulation Coordination, Surge Protection, and Shielding

Basic Impulse Level (BIL) of substation and equipment shall be in accordance with PPI practices. Customer transmission tap and substation shall be shielded from direct lightning strikes in accordance with PPI practices and latest version of IEEE Standard 998 "Guide for Direct Lightning Stroke Shielding of Substations". Substation non self-restoring insulation should be protected against incoming surges per PPI practices and latest version of IEEE C62.22.

In addition, for customer transmission line taps and line structures with multi-grounded lightning protection wires, the individual structure footing resistances shall be commensurate with PPI standards. Also, it is preferred that appropriate number of shield wires be employed to shield transmission lines from direct lightning strikes.
3. **Metering and Telecommunications**
   
a. Metering equipment shall be installed in accordance with PPI service equipment specifications. PPI will install the meters, perform final wiring connections and verify proper metering installation. All metering equipment will be sealed with PPI seals and only PPI authorized personnel will have access to the metering equipment for other than reading the meter.

   For cases where PPI does not own, install, or maintain the metering equipment, metering equipment and metering design must be approved by PPI prior to purchase and installation.

   b. Customer will, at PPI's request and if required by Good Utility Practice, provide, install, own and maintain in accordance with Good Utility Practice equipment to telemeter the following data continuously from the Metering Equipment to PPI using PPI's specified protocol:
      
      - Real power in megawatts ("MW");
      - Reactive power in megavolt-ampere-reactive ("MVar");
      - Current in Amperes
      - Voltage in kV

   c. For customers owning and maintaining the metering equipment, the customer shall test the metering equipment at least one (1) time each calendar year at Customer's expense and at any other mutually agreeable and reasonable time requested by PPI at PPI's expense. Customer shall provide PPI with at least fourteen (14) calendar days advance notice of any testing to be performed on the Metering Equipment, and PPI shall have the right to be present during all such testing and shall be furnished with all testing results in a timely manner. PPI shall make no further dissemination of meter reading data to third parties other than MISO or the PPI Member to which they are associated. PPI may require that the meter and metering equipment be sealed with PPI provided seals along with any seals required by the Customer.

   d. For customers owning and maintaining the metering equipment, the metering equipment shall be considered accurate if the meter error percentage does not exceed plus or minus three tenths of one percent (+/- 0.3%). If testing of the metering equipment reveals any measurement inaccuracies greater than the meter error percentage permitted above, the affected metering equipment shall be recalibrated, repaired or replaced promptly by Customer such that any such measurement inaccuracies are rectified. If either Party believes that there has been a meter inaccuracy, failure, or stoppage, that Party shall immediately notify the other.

   Instrument transformer error percentage of the metering CTs and PTs should be less than +/- 0.3%.

   e. Additional design requirements that should be addressed with the System Control and Data Acquisition (SCADA) and metering equipment as appropriate for Customer's connection include:
      
      - Loss compensation
      - Bi-directionality
      - Ancillary equipment specifications (such as CTs and PTs)
• Mode of data transmission (such as fiber optic cable, phone line, etc.)
• Control functionality (breakers, switches, etc.)
• Provisions for maintaining continuity and meeting reliability criteria (such as dual DC sources, dual port RTUs)

f. If, for any reason, any metering equipment is out of service or malfunctions so that the amount of energy delivered cannot be ascertained or computed from the readings thereof, the energy delivered during the period of such outage shall be estimated and agreed to by both Customer and PPI upon the best data available, including but not limited to other meters, operational logs, and real-time communications data of the meter results, as mutually determined by the Parties.

g. At intervals requested by PPI and upon reasonable advance notice, Customer shall provide to PPI actual readings of the metering equipment to verify the accuracy of the metering equipment data being telemetered to PPI.

h. If a telecommunication connection is utilized for sending Customer Substation electrical metered quantities to a Control Center, different meters are required for the revenue meters and for those meters utilized for the Remote Telecommunication Units (RTUs).

4. Power Quality Impacts
In general, the connection of the Customer to PPI's Transmission System should not unacceptably compromise or degrade the power quality provided to existing customers. If necessary, installation of power quality monitoring equipment by PPI at Customer's expense will be performed to verify compliance with power quality performance requirements.

a. Harmonic Requirements: The harmonic content of the voltage and current waveforms injected into PPI's Transmission System by a Customer's facility shall be restricted to levels that are in accordance with the latest version of IEEE Standard 519 or its replacement and which will not cause excessive distortion of PPI's waveform, telephone interference, carrier interference or equipment operating problems for PPI or other users of PPI's Transmission System. Customer will, if required by PPI and/or Good Utility Practice, reduce or eliminate the existence of any excessive harmonics caused by the operation of the Customer's facility at Customer's expense.

All equipment installed by Customer shall have operating characteristics, which enable PPI to maintain a satisfactory standard of service to both the Customer being served and all other Customers in the immediate area. Also, Customer's internal plant electrical system design should not restrict any mode of operation of Customer's facility within PPI's Transmission System allowable voltage range. In cases of higher motor starting current, Customer loads resulting in harmonic distortions or significant loads with wide and/or frequent fluctuations, etc., Customer shall install, on Customer side of PPI meter, all corrective equipment necessary to enable PPI to maintain the integrity of its electric system. If PPI determines it to be necessary, Customer shall permit PPI to install applicable power quality monitoring equipment at Customer's facility to permit verification of compliance with power quality requirements. For Customers not voluntarily complying with this requirement, PPI, where practical, may install corrective equipment on its side of the meter and charge Customer a lump sum amount for the cost of such equipment and the cost of any subsequent additions to or replacement of such equipment, whenever said future installations occur. Failure of Customer to install such corrective equipment or to
pay for that installed by PPI currently, or in the future, shall be grounds for the disconnection of electric service.

b. **Flicker Requirements**: The acceptability of the voltage fluctuations caused by varying or switched loads, switched capacitors, motor starts, and other normally occurring events, which produce a sudden change in voltage, depends upon the frequency and magnitude of the fluctuation of flicker. Most cases are evaluated with established flicker curves. Arc furnaces, however, are evaluated differently.

   i. Flicker sources other than arc furnaces - The flicker limits developed and published in the latest version of IEEE Standard 1453 are used as a general guide for evaluating the acceptability of expected flicker from causes other than arc furnaces. These limits show permissible flicker levels as a function of the frequency of occurrence.

   ii. The primary criteria for evaluation of the expected flicker from an arc furnace load added to the PPI system is based upon the charts presented in the AIEE paper "Survey of Arc Furnace Installation on Power Systems and Resulting Lamp Flicker," Transactions 57-9, September 1957. These charts indicate whether the resultant flicker would be objectionable, borderline, or non-objectionable based on the furnace size and system impedance supplying the furnace(s). For a furnace installation to be rated "acceptable", the flicker with normal system conditions must be in the "non-Objectionable Flicker Zone" on the charts. This method does not consider the electrical characteristics of the particular furnace involved, other than the basic load rating. An evaluation method developed and presented in the ASEA Journal 1976, Volume 49, factors in the electrical characteristics of the furnace by specifying a maximum allowable voltage drop on the critical bus during a transition from an unloaded furnace to a 3-phase fault at the furnace electrodes. According to this study a calculated voltage dip of 2.0% is considered marginal.

5. **Equipment Ratings**
   Equipment ratings shall be commensurate with customer load and consistent with standard sizes used by Customer. The MVA and current rating of all equipment from the PPI point of ownership to the Customer's first supply bus are required. This information is used to coordinate protection of PPI's supply. Applicable industry standards (ANSI/IEEE) would be used to determine ratings of the equipment. PPI's general design parameters and practices should be identified and adhered to. Any special requirements due to atmospheric, geological, seismic, or environmental conditions should also be addressed.

6. **Synchronizing of Facilities**
   Synchronization of facilities is not necessary for the Customer connection application unless Customer has generation. If the Customer has generation, then the requirements identified in the MISO Generator Interconnection Procedure are superior to these "Facility Connection Requirements to PPI's Transmission System."

7. **Grounding and Safety Issues**
   PPI has minimum requirements that the Customer must meet to ensure that the Customer operates its facility in accordance with National Electric Safety Code (NESC). System grounding design requirements, to be addressed as appropriate for Customer's connection, include:
   - Grounding study
• Compatibility with PPI's transmission system
• Interconnection of grounding system to PPI's grounding system(s)
• Transmission line shielding provisions
• Arrester applications
• Cathodic protection

8. Maintenance Coordination
PPI is responsible for regular maintenance on all PPI-owned transmission system equipment. Customer's maintenance practices for their transmission-connected equipment should be performed at a level that ensures the reliability of the interconnected transmission system. Definition of maintenance programs and performance objectives, as appropriate, should be addressed with Customer's connection. All necessary authorizations, notifications, and clearances relevant to the maintenance work to be performed must be obtained.

The facility owner, whether PPI or the Customer, is responsible for the regularly scheduled calibration and/or maintenance of its equipment associated with the connection, as applicable, including, but not limited to:
• Circuit breakers
• Power transformers
• Protective relays
• Revenue metering
• Communications
• Trip circuits
• Interrupters
• Power DC sources
• Grounding system
• Transmission facilities

Relevant records of maintenance work performed should be maintained.

9. Operational Issues (jurisdictional and functional authority)
PPI or MISO will have jurisdictional authority over the equipment to the Customer side of the first breaker separating the Customer's load from PPI's Transmission System.

• In general, the Customer will have functional authority on its equipment in its substation and in its facility.
• PPI will have functional authority on all PPI equipment, except as conferred in writing to Customer by PPI.
10. Inspection Requirements for Existing or New Facilities - Commissioning Testing and Inspection

PPI reserves the right to witness testing of relays, breakers, instrument transformers, communications equipment, and DC station service prior to commencement of commercial operation. PPI reserves the right to specify additional testing as appropriate, with Customer to modify operations as necessary to reasonably comply with PPI's testing requirements. Customer's electrical equipment will be made available to PPI for inspection upon two days' written request during nonemergency conditions, but will have immediate accessibility during emergency conditions.

11. Communications and Procedures during Normal and Emergency Operating Conditions

The Customer shall provide PPI with contact names and information for normal conditions and emergency situations, keeping the information up-to-date at all times. These contact person(s) shall have the authority and capability to operate Customer's facilities according to the instructions of the appropriate operating authority. The Customer shall obtain proper clearances from the PPI dispatcher before commencing any work on the transmission facilities.

**PPI Dispatch Center Contact Information**

<table>
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<tr>
<th>E-mail</th>
<th><a href="mailto:Dispatch@ppi.coop">Dispatch@ppi.coop</a></th>
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<tr>
<td>Direct Line</td>
<td>217-883-4250</td>
</tr>
<tr>
<td>Fax</td>
<td>217-546-8929</td>
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</table>

Customer shall communicate and cooperate with PPI to support recovery efforts during emergency conditions. Customer may be called upon to take such actions including, but not limited to, implementation of emergency communications procedures, switching operations, changes to status of reactive power support devices, and transmission facility restoration efforts.

12. Underfrequency Load Shedding

In accordance with the SERC Guideline on Underfrequency Load Shedding, underfrequency load-shedding (UFLS) relays are installed on selected feeder positions to drop load and prevent system collapse. Approximately 10% of the PPI system load should be dropped at each of three frequencies (59.3, 59.0, and 58.7 Hz).

PPI reserves the right to unilaterally decide if load shedding for a Customer is initially required, and PPI has the right to require Customer load shedding retrofits or modification in the future.

13. Undervoltage Load Shedding

At present, there are no undervoltage load shedding relay schemes associated with load connections to PPI's transmission system. Such installations would be considered on a case-by-case basis as needed to maintain reliability of the transmission system as interim solutions prior to implementation of an upgrade to the transmission system.