Compliance Requirements for Order 845

Special Planning Committee Meeting

August 20, 2018
• Order 845 became effective July 23, 2018

• Compliance deadline was extended to November 5, 2018

• Will discuss preliminary compliance approaches for all reforms

• Today's Focus:
  • Option to Build;
  • Reporting Requirement regarding Interconnection Study Deadlines; and
  • Surplus Interconnection Service.
“Low Hanging Fruit”- Little Work Needed For Compliance

Dispute Resolution: PJM proposes to revise Tariff Section 12.1 to include New Service Customers, to comply with Order 845. In addition, PJM will add Non Binding Dispute Resolution Procedures to the Tariff that allows disputing parties to unilaterally seek non-binding dispute resolution and requires TPs to appoint an independent 3rd party to preside over the proceedings.

Service Below Facility’s Capacity: Allow IC to request a level of interconnection service lower than its facility’s capacity. IC’s are currently able to do so pursuant to the Interconnection Service Agreement.

Provisional Service: TP must allow for provisional service prior to implementation for full interconnection service. IC’s are currently able to request Interim Capacity Interconnection Rights pursuant to the Interconnection Service Agreement.
“Low Hanging Fruit”- Little Work Needed For Compliance

- **Transparency Regarding Study Models and Assumptions:** Requires that TP detail all the network models and underlying assumptions used for interconnection studies in their pro forma LGIP and on OASIS. PJM currently lists study processes and assumptions for forming network models.

- **Definition of Generating Facility:** PJM will add the revised Commission definition of “Generating Facility to its Tariff”, which includes “storage for later injection”.

- **Technology Changes:** PJM will create a definition of “permissible technological advancements”. Under certain circumstances IC’s in PJM are currently permitted to change the technology included in the interconnection request at any point in the study phase.

- **Contingent Facilities:** TPs must publish method for identifying contingent facilities in Tariff’s interconnection procedures. PJM will add Commission’s definition of CF.
Focus of Today- Issues That Require More Discussion

- **Option to Build**: Expanded to allow IC to exercise option to build at its discretion with regard to TO’s interconnection facilities and stand alone network upgrades.

- **Reporting Requirement- Interconnection Study Deadlines**: TPs required to post interconnection study metrics on a quarterly basis. No automatic penalties for delayed studies.

- **Surplus Interconnection Service**: The Commission tasked the TP to provide a process that allows an Interconnection Customer to utilize or transfer Surplus Interconnection Service at an existing Point of Interconnection.
• Requirement: Order 845 requires a TP to adopt new Commission prescribed Non Binding Dispute Resolution Procedures that allows a disputing party to unilaterally seek non-binding dispute resolution.

• PJM proposes to revise its current Dispute Resolution/ADR process to include New Service Customers in order to comply with the Order 845 reference to section 13.5. of the LGIP.

• PJM proposes to add the Order 845 proposed Non Binding Dispute Resolution Procedures to the PJM Tariff.
12.1 Internal Dispute Resolution Procedures:

Any dispute between a Transmission Customer or New Service Customer, an affected Transmission Owner, or the Transmission Provider involving transmission or interconnection service under the Tariff (excluding applications for rate changes or other changes to the Tariff, or to any Service Agreement entered into under the Tariff, which shall be presented directly to the Commission for resolution) shall be referred to a designated senior representative of each of the parties to the dispute for resolution on an informal basis as promptly as practicable. In the event the designated representatives are unable to resolve the dispute within thirty (30) days (or such other period as the parties to the dispute may agree upon) by mutual agreement, such dispute may be submitted to arbitration and resolved in accordance with the arbitration procedures set forth below.
Proposed New Section to Tariff Under Order 845 – Dispute Resolution

Proposed New Section to Tariff Under Order 845

Non-binding dispute resolution procedures. If a Party has submitted a Notice of Dispute pursuant to Tariff section 12.1.4.1.1, and the Parties are unable to resolve the claim or dispute through unassisted or assisted negotiations within the thirty (30) Calendar Days (or such other period as the parties to the dispute may agree upon) provided in that section, and the Parties cannot reach mutual agreement to pursue Tariff section 12.2.4.4.5 External Arbitration Procedures arbitration process, a Party may request that Transmission Provider engage in Non-binding Dispute Resolution pursuant to this section by providing written notice to Transmission Provider (“Request for Non-binding Dispute Resolution”). Conversely, either Party may file a Request for Non-binding Dispute Resolution pursuant to this section without first seeking mutual agreement to pursue the Tariff section 12.2.4.4.5 External Arbitration Procedures arbitration process. The process in this section shall serve as an alternative to, and not a replacement of, the Tariff section 12.2.4.4.5 External Arbitration Procedures arbitration process. Pursuant to this process, a transmission provider must within 30 days of receipt of the Request for Non-binding Dispute Resolution appoint a neutral decision-maker that is an independent subcontractor that shall not have any current or past substantial business or financial relationships with either Party. Unless otherwise agreed by the Parties, the decision-maker shall render a decision within sixty (60) Calendar Days of appointment and shall notify the Parties in writing of such decision and reasons therefor. This decision-maker shall be authorized only to interpret and apply the provisions of the LGIP and LGIA and shall have no power to modify or change any provision of the LGIP and LGIA in any manner. The result reached in this process is not binding, but, unless otherwise agreed, the Parties may cite the record and decision in the non-binding dispute resolution process in future dispute resolution processes, including in section 12.2.2 arbitration, or in a Federal Power Act section 206 complaint. Each Party shall be responsible for its own costs incurred during the process and the cost of the decision-maker shall be divided equally among each Party to the dispute.
Contingent Facilities

- Requirements: TPs will add a new Commission provided definition of Contingent Facility to the Tariff and publish a method for identifying contingent facilities in the Tariff.

- PJM currently identifies contingent facilities needed by a new service project during the System Impact Study and lists those facilities in the IC’s system impact study report, which information includes:

  - all local and network upgrades that must be constructed to interconnect the project and ensure deliverability and which contingent facilities the IC will be allocated costs for.

- Addition of new Contingent Facilities definition to the Tariff:

“Contingent Facilities shall mean those unbuilt interconnection facilities and network upgrades upon which the interconnection request’s Interconnection Customer’s costs, timing, and study findings are dependent, and if not built, could cause a need for interconnection restudies or reassessments of the network upgrades, costs or timing.”

- PJM’s proposed addition of “Identification of Contingent Facilities” process to the Tariff:

“PJM shall identify Contingent Facilities in the System Impact Study by reviewing unbuilt Network Upgrades or those still subject to cost allocation pursuant to Manual 14A, Attachment B, associated with another Interconnection Customer with a higher Queue priority upon which the Interconnection Customer’s cost, timing and study findings are dependent, and if delayed or not built could cause a need for interconnection restudies or reassessment of the unbuilt Network Upgrades, costs or timing.”
• Changes to Manual 14A, section 4.3.1:

**Manual 14A – § 4.3.1**

The System Impact Study will include identification of Contingent Facilities and cost allocation towards previously identified Contingent Facilities (if applicable) by performing includes AC powerflow analysis, short circuit analysis, and stability analysis. The powerflow analysis can include different sets of analyses at various load levels such as summer peak, light load, and winter peak. All powerflow analysis is performed consistent with PJM Reliability Planning Criteria as described in PJM Manual 14B Attachment D. Similarly, the stability analysis can include different sets of analyses at various load levels such as summer peak, light load, and winter peak.
Compliance Approach – Definition of Generating Facility

• Requirement: Order 845 requires the definition of “Generating Facility” to be revised to include “and/or storage for later injection”.

• PJM’s Tariff does not currently define the term “Generating Facility”, but instead uses the terms “Capacity Resource”, “Customer Facility” and “Energy Resource”.

• PJM will add the Order 845 definition for Generating Facility with proposed revisions:

“Generating Facility shall mean Interconnection Customer’s device for the production and/or storage for later injection of electricity identified in the Interconnection Request, but shall not include any portion of the Interconnection Customer's Interconnection Facilities. Generating Facility can be either a Capacity Resource and/or an Energy Resource.”
Order 845 - Modifications After Submitting a valid Interconnection Request

• Order 845 requires two ways in which an Interconnection Customer or New Service Customer can change a valid Interconnection Request:

• 1) Incorporation of advanced technologies that will not be deemed a Material Modification – during study phase.
• 2) Request Interconnection Service below the capability of the Generating Facility- prior to execution of ISA.

• Note: the Commission uses the term “generating facility capacity”. Under the Tariff “capacity” is a market product. Consequently, PJM replaces the term “capacity” with “capability” to avoid confusion.
• Requirement: Commission proposes to permit modifications to an Interconnection Request during the Study Phase. Modifications specific to incorporating technological advancements are permitted prior to submitting an executed Facility Study Agreement:

4.4.2 Prior to the return of the executed Interconnection Facility Study Agreement to the Transmission Provider, the modifications permitted under this Section shall include specifically:
(a) additional 15 percent decrease of electrical output of the proposed project through either (1) a decrease in in plant size (MW) or (2) a decrease in interconnection service level (consistent with the process described in Section 3.1) accomplished by applying transmission provider-approved injection-limiting equipment; and (b) Large Generating Facility technical parameters associated with modifications to Large Generating Facility technology and transformer impedances; provided, however, the incremental costs associated with those modifications are the responsibility of the requesting Interconnection Customer; and (c) a Permissible Technological Advancement for the Large Generating Facility after the submission of the interconnection request. Section 4.4.4 specifies a separate technological change procedure including the requisite information and process that will be followed to assess whether the Interconnection Customer’s proposed technological advancement under Section 4.4.2(c) is a Material Modification. Section 1 contains a definition of Permissible Technological Advancement.
Per the requirements of Order 845, PJM proposes to add a definition for “Permissible Technological Advancement” and add a Technological Change Procedure.

- Factors to be considered in defining “Permissible Technological Advancement”:
  o Must be submitted prior to submitting an executed Facilities Study Agreement to PJM;
  o May not include changes in fuel type;
  o Must result in electrical performance equal or better than the electrical performance expected prior to the requested technology change; and
  o Must not cause any reliability concerns.

- Order 845 requires that the Technological Change Procedure must:
  o Specify what technological advancements may be incorporated at various stages of the interconnection study process
  o ii) Require submittal of a technological advancement request
  o iii) Specify the information that the Interconnection Customer must submit with its technological advancement request.
  o iv) Specify the conditions under which a study will or will not be necessary to determine whether a proposed technological advancement is a material modification.
• Requirement: Order 845 requires that an IC can request Interconnection Service Below Generating Facility capability.

• TP’s must create and file in the Tariff a process in accordance with the following directive:

Transmission Provider shall have a process in place to consider requests for Interconnection Service below the Generating Facility Capacity. These requests for Interconnection Service shall be studied at the level of Interconnection Service requested for purposes of Interconnection Facilities, Network Upgrades, and associated costs, but may be subject to other studies at the full Generating Facility Capacity to ensure safety and reliability of the system, with the study costs borne by the Interconnection Customer. Any Interconnection Facility and/or Network Upgrade costs required for safety and reliability also would be borne by the Interconnection Customer. Interconnection Customers may be subject to additional control technologies as well as testing and validation of those technologies consistent with Article 6 of the LGIA. The necessary control technologies and protection systems as well as any potential penalties for exceeding the level of Interconnection Service established in the executed, or requested to be filed unexecuted, LGIA shall be established in Appendix C of that executed, or requested to be filed unexecuted, LGIA.
PJM currently permits an Interconnection Customer to request interconnection service below the Generating Facility capability under certain circumstances. Specifically, PJM requires:

- additional studies at both the capability level and requested level of service (requested Maximum Facility Output (MFO)); and
- Interconnection Customer may be required to install appropriate power flow monitoring and control technologies as determined by PJM and/or the affected Interconnected Transmission Owner.

PJM will create and file in the Tariff a process to consider requests for Interconnection Service below the Generating Facility capability.

In accordance with Order 845 (Paragraphs 347-350) PJM proposes changes to sections of the Tariff applicable to the Interconnection Feasibility Study, System Impact Study and Facilities Study to include language specifying the TP shall study at the level requested, unless otherwise required to study the units full Generating Facility capability due to safety or reliability concerns and that the TP shall identify control equipment required to ensure the IC does not exceed the MFO.
• Requirement: Order 845 requires that Interconnection Customers are allowed to enter into provisional agreements for limited interconnection service prior to the completion of the full interconnection process.

• There is no requirement to adopt a separate *pro forma* Provisional Large Generator Interconnection Agreement.

Order 845 Required Definition to be added to Section 1 of the LGIP and article 1 of the LGIA:

Provisional Interconnection Service shall mean interconnection service provided by the Transmission Provider associated with interconnecting the Interconnection Customer's Generating Facility to the Transmission Provider's Transmission System and enabling that Transmission System to receive electric energy and capacity from the Generating Facility at the Point of Interconnection, pursuant to the terms of the Provisional Large Generator Interconnection Agreement and, if applicable, the Tariff.
Proposed section to be added as article 5.9.2 of the LGIA:

Provisional Interconnection Service. Upon the request of Interconnection Customer, and prior to completion of requisite Network Upgrades, the Transmission Provider may execute a Provisional Large Generator Interconnection Agreement or Interconnection Customer may request the filing of an unexecuted Provisional Large Generator Interconnection Agreement with the Interconnection Customer for limited interconnection service at the discretion of Transmission Provider based upon an evaluation that will consider the results of available studies. Transmission Provider shall determine, through available studies or additional studies as necessary, whether stability, short circuit, thermal, and/or voltage issues would arise if Interconnection Customer interconnects without modifications to the Generating Facility or Transmission Provider’s system. Transmission Provider shall determine whether any Network Upgrades, Interconnection Facilities, Distribution Upgrades, or System Protection Facilities that are necessary to meet the requirements of NERC, or any applicable Regional Entity for the interconnection of a new, modified and/or expanded Generating Facility are in place prior to the commencement of interconnection service from the Generating Facility. Where available studies indicate that such Network Upgrades, Interconnection Facilities, Distribution Upgrades, and/or System Protection Facilities that are required for the interconnection of a new, modified and/or expanded Generating Facility are not currently in place, Transmission Provider will perform a study, at the Interconnection Customer’s expense, to confirm the facilities that are required for provisional interconnection service. The maximum permissible output of the Generating Facility in the Provisional Large Generator Interconnection Agreement shall be studied and updated on an annual quarterly basis. Interconnection Customer assumes all risk and liabilities associated with such Provisional Interconnection Service, with respect to changes between the Provisional Large Generator Interconnection Agreement and the Large Generator Interconnection Agreement, including changes in output limits and Network Upgrades, Interconnection Facilities, Distribution Upgrades, and/or System Protection Facilities cost responsibilities.

PJM proposes redline changes to the Commission’s language deleting out references to new provisional agreements in order to allow PJM to continue to use its pro forma Interconnection Service Agreement. PJM believes this fully complies with the Order 845 requirements, as the final rule determined a new provisional agreement is not required.
PJM allows provisional interconnection service today and utilizes its *pro forma* Interconnection Service Agreement, including a non-conforming provision that permits such provisional service.

Provisional interconnection service is available to all Interconnection Customers in the queue and is predicated on their request that PJM perform interim deliverability studies necessary to receive such service.

PJM proposes to continue to utilize its’ *pro forma* Interconnection Service Agreement to facilitate the provision of Provisional Interconnection Service.
Requirement: To increase transparency and ensure consistency in the analysis of Interconnection Requests Order 845 requires that TP’s detail all the network models and underlying assumptions used for interconnection studies in their pro forma LGIP and on OASIS.

The Final Rule DOES NOT require the posting of “shift factors, dispatch assumptions, load power factors and power flows”.

PJM currently lists study processes and assumptions for forming network models used for studies which are available to the IC subject to appropriate CEII and/or confidentiality requirements (NDA’s) on PJM’s password-protected website. PJM will ensure such information represents data used during the most recent interconnection study and representative of current system conditions, and will make Tariff revisions, as appropriate.
Revisions to section 2.3 of the LGIP:

Base Case Data. Transmission Provider shall maintain base power flow, short circuit and stability databases, including all underlying assumptions, and contingency list on either its OASIS site or a password protected website, subject to confidentiality provisions in LGIP Section 13.1. In addition, Transmission Provider shall maintain network models and underlying assumptions on either its OASIS site or a password-protected website. Such network models and underlying assumptions should reasonably represent those used during the most recent interconnection study and be representative of current system conditions. If Transmission Provider posts this information on a password-protected website, a link to the information must be provided on Transmission Provider’s OASIS site. Transmission Provider is permitted to require that Interconnection Customers OASIS site users, and password-protected website users sign a confidentiality agreement before the release of commercially sensitive information or Critical Energy Infrastructure Information in the Base Case data. Such databases and lists, hereinafter referred to as Base Cases, shall include all (1) generation projects and (2)[ii)] transmission projects, including merchant transmission projects that are proposed for the Transmission System for which a transmission expansion plan has been submitted and approved by the applicable authority.
• Requirement: Option to build expanded to allow IC to exercise option to build *at its discretion* with regard to TO’s interconnection facilities and stand alone network upgrades. Order 845 removed the limitation that IC’s may only exercise the Option to Build when the TP cannot meet the dates proposed by the IC.

• Attachment P, Appendix 2, section 3.2.2 (Negotiated Option) allows an Interconnection Customer and Interconnected Transmission Owner to mutually agree to terms different to those included in the Standard Option, i.e payment provisions, use of third party contractors etc.

• Order 845 requires the that the “Negotiated Option” can be elected if the Interconnection Transmission Owner cannot meet the Interconnection Customers in-service date for the work specified.
Proposed Compliance - Option to Build

- Compliance Proposal: PJM proposes revisions to Tariff, Attachment P, Appendix 2, section 3.2.2 (Negotiated Option) and 3.2.3 (Option to Build), as directed by Order 845 to allow the IC to elect the option to build regardless of whether the TO can meet the IC’s proposed milestone dates.
3.2.2 Negotiated Contract Option:

As an alternative to the Standard Option set forth in Section 3.2.1 of this Appendix 2, if the Interconnected Transmission Owner cannot meet Interconnection Customers in-service date for the work specified in Schedule C of this Agreement, the Interconnected Transmission Owner and the Interconnection Customer may mutually agree to a Negotiated Contract Option for the Interconnected Transmission Owner’s design, procurement, construction and installation of the Transmission Owner-Interconnection Facilities work set forth in Schedule C of this Agreement.

Under the Negotiated Contract Option, the Interconnection Customer and the Interconnected Transmission Owner may agree to terms different from those included in the Standard Option of Section 3.2.1 above and the corresponding standard terms set forth in the applicable provisions of Part VI of the Tariff and this Appendix 2.

Under the Negotiated Contract Option, negotiated terms may include the work schedule applicable to the Interconnected Transmission Owner’s construction activities and changes to same (Section 3.3 of this Appendix 2); payment provisions, including the schedule of payments; incentives, penalties and/or liquidated damages related to timely completion of construction (Section 3.2.1 of this Appendix 2); use of third party contractors; and responsibility for Costs, but only as between the Interconnection Customer and the Interconnected Transmission Owner that are parties to this Interconnection Construction Service Agreement; no other Interconnection Customer’s responsibility for Costs may be affected (Section 217 of the Tariff). No other terms of the Tariff or this Appendix 2 shall be subject to modification under the Negotiated Contract Option. The terms and conditions of the Tariff that may be negotiated pursuant to the Negotiated Contract Option shall not be affected by use of the Negotiated Contract Option except as and to the extent that they are modified by the parties’ agreement pursuant to such option. All terms agreed upon pursuant to the Negotiated Contract Option shall be stated in full in an appendix Schedule H to this Interconnection Construction Service Agreement.

If the Parties are unable to reach agreement on such terms and conditions, then pursuant to Section 3.2.1 (Standard Option), Interconnected Transmission Owner shall assume responsibility for the design, procurement and construction of all facilities other than those facilities identified in Schedule D of this Agreement.
3.2.3 Option to Build

3.2.3.1 Option:

In the event that the Interconnected Transmission Owner and the Interconnection Customer are unable to agree upon the terms of an Interconnection Construction Service Agreement (a) on or before the date that is 30 days after Interconnection Customer’s execution of the Interconnection Service Agreement, or (b) by such other date as is reasonable in the light of the schedule for construction of, or the case may be, the Transmission Owner Interconnection Facilities, as set forth in the Facilities Study, subject to the terms and conditions set forth in Sections 2 and 3 of this Appendix 2, or if mutually agreed by and between the Interconnection Customer and the Transmission Owner, the Interconnection Customer shall have the right, but not the obligation (“Option to Build”), to design, procure, construct and install all or any portion of the Transmission Owner Interconnection Facilities that are Direct Connection Network Upgrades or Transmission Owner Attachment Facilities, on the dates specified in Schedule J. Interconnected Transmission Owner and Interconnection Customer must agree as to what constitutes Direct Connection Network Upgrades or Transmission Owner Attachment Facilities and identify such Direct Connection Network Upgrades or Transmission Owner Attachment Facilities in Schedule D. Except for Direct Connection Network Upgrades or Transmission Owner Attachment Facilities, Interconnection Customer shall have no right to construct Network Upgrades or Local Upgrades under this option.

In order to exercise this Option to Build, the Interconnection Customer must provide Transmission Provider and the Interconnected Transmission Owner with written notice of its election to exercise the option by no later than 30 days after its receipt of the Facilities Study, seven days after the date that is 30 days after Interconnection Customer’s execution of the Interconnection Service Agreement, specifying either that a mutual agreement has been reached between the Interconnection Customer and the Interconnected Transmission Owner that the Interconnection Customer will exercise the Option to Build, or the specific terms and conditions of the Interconnection Construction Service Agreement upon which the Interconnected Transmission Owner and the Interconnection Customer are unable to agree and the efforts undertaken by the Interconnection Customer to resolve such disagreement, provided, however, that the Interconnection Customer and the Interconnected Transmission Owner may by mutual agreement extend the time period for exercise of the option.