Manual 14C Update

TOA-AC
July 6, 2016
Manual 14C Review Changes

- Manual 14C: Generation and Transmission Interconnection Facility Construction

- Administrative Updates
  - Updated names
  - Minor update to practices
  - New sections
    - Tie-line process
    - Project assignment
Order 1000 Changes

• Agreement Overviews
  – Designated Entity Agreement (DEA)
  – Interconnection Coordination Agreement (ICA)

• DEA Processes
  – Reporting requirements
  – Breach, Cure, Re-Evaluation and Default
  – DEA Upgrade Project Modification Process
• Comments were provided to PJM for language consistency and clarification

• Comments for language consistency were accepted and changed
  – See Appendix for details of changes

• Comments for clarification will be included in the fall Manual 14C update
Tie Line Process Update
• PJM has encountered deficiencies in the existing process for cutting in Tie Lines
  – Compliance Risk: Inaccurate external Tie Line modeling
    • PJM RTO ACE error and inadvertent after the Tie was placed into service
    • PJM over generation and Eastern Interconnection Time Error Corrections for fast clock were made until the Tie was added to the PJM model
    • Non-compliant with NERC Standard BAL-005 R12
  – Operational Risk
    • PJM delayed the energization of a critical new external transmission line due to the unavailability of required metering to support the interconnection
    • Not having reviewed the Interconnection Agreement with sufficient notice prior to the energization date led to significant concerns about operational control and outage coordination
Background and Recent History

- **Mainesburg Substation** – Tapping Homer City Watercure 345kV line
  - Tie line agreement was submitted weeks prior to schedule IS date
  - Required months to reach agreement on metering with NYSEG and resolve IA language
  - Project delayed 6 months

- **Bosserman Substation** - New 138kV substation tapping tie lines with NIPSCO
  - Project impacted multiple 138kV tie lines
  - Required over 4 months to clarify one line and resolve just the metering arrangement
  - Project IS delayed to accommodate additional metering installation work

- **Farragut-Marion 345 kV line** – modified an existing tie line
  - Tie line changes were not flagged in model change process until late in project
  - No wires agreement was submitted prior to energization
  - Multiple model issues due to inadequate time to address specific project modeling needs
After reevaluating the process, PJM identified opportunities for improvement and created an updated methodology. This will result in more accurate modeling and efficient cut-in of future Tie Lines.

- An internal focus group was created to holistically review and evaluate the Tie Line cut-in process
- Reviewed case studies and implemented recommendations resulting from an Apparent Cause Analysis
• Process Oversight
  – A PJM Client Manager oversees the process from the submittal of Interconnection Agreements through energization.

• Workflow Management
  – PJM will utilize a software tool to automate and communicate each step throughout the cut-in process.

• Increased communication
  – Continuation of the Tie Line focus group to analyze progress and any additional areas for improvement.
  – Monthly check-in meetings to review upcoming cut-ins
• Communication
  – Upon cut in, PJM hosts a conference call with all parties involved to confirm the accuracy of all data.

• Interconnection Agreement Submission
  – PJM has developed a web page (Tie Lines) for members to submit draft Interconnection Agreements

• Manual Updates – detailed on the next slide

• Timing of Interconnection Agreement submission
  – Timeline will be devised through the Stakeholder process to better align with the current requirements for Network Model updates
# Wires to Wires Agreement Process Flow

**Submit EMS Network Model ticket and draft Wires to Wires agreement**

- **PJM responds with comments**
- **TO submits Wires to Wires agreement for legal and technical review**
- **PJM returns Wires to Wires agreement and request for signatures**
- **TO submits executed copy of Wires to Wires agreement request for PJM signature**
- **TO files with FERC**

**PJM high-level technical review period**
- **240 Days**

**TO review period**
- **200 Days**

**PJM legal and technical review period**
- **100 Days**

**TO presents at SOS-T (60-90 days)**
- **70 Days**

**TO signature period**
- **40 Days**

**PJM legal signs and return to TO**
- **30 Days**

**File with FERC through PJM**

**In-Service Date**

*Green text - TO action
Blue text - PJM action*
• Manual 01 - Control Center and Data Exchange Requirements
  – Graphics updated for clarity
  – Table added to detail requirements for each category of Tie Line
• Manual 03A - Energy Management System (EMS) Model Updates and Quality Assurance (QA)
  – Removed definition information / added references to other manuals
• Manual 14C - Generation and Transmission Interconnection Facility Construction
  – Added construction process and timeline to coordinate Interconnection Agreements and Network Model Submission
• Tariff
  – Add Tie Line definition
Next Steps

- Manuals will be vetted through the stakeholder process

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<th>TASK</th>
<th>2016 TARGET DATE</th>
<th>COMMITTEE</th>
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<td>M01 - First Read</td>
<td>June</td>
<td>MTF/SIS/OC/MRC</td>
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<td>July/August</td>
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<td>October</td>
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<td>M14C - First Read</td>
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Language Consistency Comments and

• Section 2.2.3 Transmission Owner Facilities
  – Request to add the language ‘per the provisions of the agreement’
    • Change forwarded for inclusion in the fall Manual 14C revision

• Section 3.3.2 Transmission Owner Billing Guidelines
  – Inconsistent language between para 1 and para 3
    • Removed a deletion in paragraph 3 to make the two paragraphs agree

• Section 3.4 ICSA Generation and Merchant Transmission Project Agreement Scope Change Process
  – Reviewed and feel that the striking of the term ‘ISA/ICSA’ is consistent – no change

• Section 3.8.3 Project Meetings
  – Request to change ‘submitted’ to ‘submitting’
    • Change accepted

• Section 3.12 Assignment
  – Request to add the language ‘per the provisions of the agreement’
    • Change forwarded for inclusion in the fall Manual 14C revision
• Section 4.1 Transmission Owner Standards
  – Question the consistency of adding ‘merchant’ to transmission projects
    • Reviewed the section and determined that ‘merchant transmission project’ and ‘merchant transmission upgrade’ are used consistently in this Section
      – Additional note: the addition of the term ‘merchant’ to the first paragraph was done to differentiate queue projects from Order 1000 projects
• Section 5.1 Option to Build
  – Section 2.2.3 contains the same language that was modified differently than this section
    • Changed the language in Section 5.1 to align with Section 2.2.3
• Section 6.1.1.1 Designated Entity Agreement (DEA)
  – There are three references to ‘this Agreement’ in the list of the standard project milestones to the DEA
    • This has been change to ‘the DEA’