Coordinating without the ConEd/ PSEG Wheel

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Agenda

- Background
- Proposal Summary
- Impacted NYISO Tariff Sections
- Tariff Revisions
  - *MST 17.1*
- Timeline/Next Steps
- Appendix I - Proposed Interchange Percentages

Background

Background

PJM/NYISO Wheel Replacement Protocol Project Overview	
Why was the project started?	ConEdison notified involved parties of intention to terminate non-conforming wheeling service on April 28, 2016. PJM and NYISO are working jointly to develop a replacement protocol to address the operational, planning, and market impacts.
What is the wheeling service that is currently in place?	The non-conforming wheeling service has historically been implemented by NYISO and PJM by modeling a fixed 1000 MW flowing from NYISO to PJM over the JK (Ramapo-Waldwick) interface and from PJM to NYISO over the ABC (Hudson-Farragut and Linden-Goethals) interface
When does the replacement protocol have to be in place?	• Current non-conforming wheeling service will end on April 30, 2017. • New protocol must be in place for use on May 1, 2017
What is the impact to Market Participants?	• Primary impact to PSE&G and ConEdison as facility owners • Beyond the revised protocol/ market impacts, no changes to OASIS/ Energy Transaction bidding processes

Background

- **Current protocol**
  - ***Real-time Operations***
    - **61% of NY-PJM AC interchange, and 80% of RECo load is applied to the 5018 desired (i.e., target) flow calculation in Real-time Operations**
  - ***Markets:***
    - **NYISO Markets model 61% of the NY-PJM AC Interchange injected at 5018, and 39% at the Western Ties for scheduling and pricing**
    - **PJM Markets model 80% of the NY-PJM AC Interchange injected at the Roseton bus, and 20% injected at the Dunkirk bus for scheduling and pricing**
  - ***Planning:***
    - **Both NYISO and PJM Planning consider NY-PJM interchange and RECo load deliveries consistent with their market models**

Critical Factors for a Near-Term Solution

- Supports reliable operation of the transmission system
- Effectively manages congestion across the region
- Provides for open access and utilization of the facilities to serve the public interest and provide benefit to consumers
- Does not hinder use of the facilities to respond to emergencies in real-time
- Preserves competitive market behaviors
- Can be facilitated with the Phase Angle Regulator (PAR) technology at the ABC, JK, and 5018 interfaces (current equipment for May 1, 2017 implementation)
- Can be implemented in both PJM and NYISO market models

Proposal Summary

Solution Overview

- **Include ABC and JK as part of the NY-PJM AC Interface for interchange scheduling**
  - ***ABC and JK interfaces will be completely incorporated into overall NY-PJM AC Interface for interchange scheduling and pricing purposes***
  - ***A percentage of the overall NY-PJM AC Interchange, as well as a flow offset (referred to as the Operational Base Flow) will be modeled in the NYISO and PJM Markets, and will be included in the real-time desired flow calculations of those facilities***
- **Add the PARs on ABC and JK to the Market-to-Market PAR Coordination process between NYISO and PJM**
- **PJM to redefine its NYIS Interface definition**

Solution Overview

- **This proposal of combining ABC, JK, 5018 and the Western ties into one aggregate PJM-NY AC Proxy Bus presents several advantages**
  - ***It leverages existing market constructs in both the NYISO and PJM markets***
    - **This increases the likelihood of implementation by May 1st , 2017**
  - ***It can be supported by the PAR technology currently installed on these interfaces***
    - **These PARs are capable of facilitating an aggregate PJM-NY AC Proxy Bus interchange schedule across the ABC, JK, 5018, and the Western ties because when schedules are under- or over- delivered across an interface, the difference is made up across the other interfaces**

OBF and Interchange Percentages

- **The OBF will be applied to the JK and ABC interfaces as a starting point for determination of each Interface's Target Flow**
  - ***The Interchange Percentage* values will be applied on top of the OBF at all times to determine each Interface's Target Flow value***

***See Appendix I for the proposed Interchange Percentage values**

Impacted NYISO Tariff Sections

Impacted NYISO Tariff Sections

- Tariff revisions may be required in several sections, including but not necessarily limited to the following
- MST 17.1
  - *Revise sections discussing interchange schedules*

Impacted NYISO Tariff Sections

- Joint Operating Agreement:
  - *NYISO OATT Sections 35.2, 35.6, 35.12, 35.21, 35.22, 35.23*
    - Include definition and description of the OBF
    - Modify the PAR target calculations and PAR settlement formulas
    - Refer more generally to “PARs,” as opposed to Ramapo, especially in settlement formulas
    - Include language that continues to address PAR tap limitations
    - Include language that continues to address emergencies

Tariff Revisions

Tariff Revisions

- **The NYISO continues to discuss tariff updates for OATT sections 35.2, 35.6, 35.12, 35.21, 35.22, and 35.23 internally and with PJM**
  - ***These sections will be discussed at November stakeholder meetings***
- **Today's discussion will focus on MST 17.1**

MST 17.1

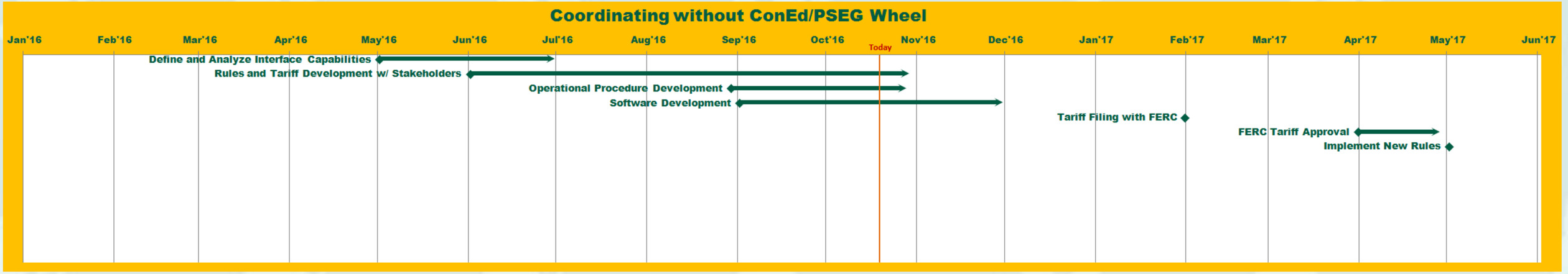
- **Section 17.1.1.1.2**
  - ***Delete reference to ConEdison's DA market hourly election under OATT 35.22 Attachment CC, Schedule C***
  - ***Update reference from Branchburg-Ramapo to Hopatcong-Ramapo throughout***

MST 17.1

- **Further revisions to section 17.1.1.1.2**
  - ***Include that the expected flow over the ABC and JK interfaces will be adjusted by the Operational Base Flow (OBF) as described in the JOA***
  - ***Include that the NYISO will post the interchange percentages and OBF***

Timeline/ Next Steps

Timeline



Date	Task
5/1/2016	Define and Analyze Interface Capabilities
6/1/2016	Rules and Tariff Development w/ Stakeholders
8/29/2016	Operational Procedure Development
9/1/2016	Software Development
1/31/2017	Tariff Filing with FERC
3/31/2017	FERC Tariff Approval
5/1/2017	Implement New Rules

Next Steps

- **October MIWG**
  - ***Discuss draft tariff language***
- **November MIWG**
  - ***Continue discussion of draft tariff language***
- **PJM's November/ December Committee Meetings**
  - ***Review PJM/NYISO JOA language updates***
- **December BIC/MC**
  - ***Vote on draft tariff language***
- **January 2017**
  - ***Seek Board Approval***
  - ***File with FERC (Joint Filing)***
- **May 1, 2017 Implementation**

Appendix I – Proposed Interchange Percentages

Interchange Percentages

- **Proposing a combination of two concepts:**
  - ***Account for an Operational Base Flow (OBF) as a starting point***
  - ***Apply an interchange percentage distributed to each PAR:***

Line	Line Percent Distribution	PAR	PAR Percent Distribution
5018	32%	3500	16%
		4500	16%
A	21%	A	7%
B		B	7%
C		C	7%
JK	15%	E	5%
		F	5%
		O	5%
Western Ties	32%	N/A	N/A

- **The percentages above would change absent an OBF based on current system topology**

The Mission of the New York Independent System Operator, in collaboration with its stakeholders, is to serve the public interest and provide benefit to consumers by:

- ***Maintaining and enhancing regional reliability***
- ***Operating open, fair and competitive wholesale electricity markets***
- ***Planning the power system for the future***
- ***Providing factual information to policy makers, stakeholders and investors in the power system***

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