



Primary Frequency Response Sr. Task Force Update and PJM Recommended Next Steps

Glen Boyle, Manager Operations Analysis and Compliance
Markets and Reliability Committee
December 20, 2018

Evaluate need for generator Primary Frequency Response (PFR) requirement in PJM

- Primary frequency response is essential for reliability of the Interconnection and is:
 - the first line of defense
 - critical for system restoration
 - needed for accurate modelling and event analysis
 - necessary for compliance to BAL-003-1
- Key work activities:
 - Education on PFR
 - Evaluation of existing state of PFR in PJM and other areas
 - Discussions on eligibility, measurement and verification requirements
 - Discussions on potential compensation issues and mechanisms
 - Evaluation of PJM OA, OATT and Manuals

- Began work in July 2017
- Conducted 17 PFRSTF meetings to work the issues
- February 15, 2018 - FERC Order 842 issued
 - Put PFR requirements on all newly interconnecting large and small resources
 - Incorporated into PJM Interconnection Service Agreement as of 10/1/18
- March 16, 2018 - PJM requests clarification on Order 842 as it pertains to existing resources
 - In response to stakeholder feedback
 - Low polling support for solution packages
- August 24, 2018 – FERC issues clarification on Order 842
 - Does not create prohibition for PFR requirements on existing resources
- November 28 – December 3 - Vote conducted at PFRSTF
 - 3 solution packages and non-binding status quo question
 - Originally 5 solution packages; 2 withdrawn



Solution Packages and PFRSTF Voting Results

Solution Attribute	Package A (PJM)	Package B (IMM)	Package E (Calpine)
PFR Requirement for existing resources	Yes (20 MW and greater)	Yes (10 MW and greater)	If currently capable; Includes new units on WMPA. Option to purchase bilaterally
Exemption Process	Yes (nuclear and technical exemption)	Yes (nuclear and technical exemption)	Nuclear and existing units exempt
“Headroom”, “Footroom” Requirement	No	No	In system restoration only
Compensation	One time capital recovery for PFR upgrades for existing units (PJM and IMM review)	No additional – included in Capacity Market	May file for FERC rate
Performance Evaluation	Yes	Yes	Yes
Implementation	2 years from approved OATT changes	2 years from approved OATT changes	Upon FERC approval
PFRSTF Support	25%	21%	34%

Non-binding Status Quo question: 73% prefer status quo over any change.

PJM requests the MRC endorse the following:

1. PFRSTF goes on hiatus for one year;
2. PJM continues to monitor unit PFR performance during 2019 using criteria described in PFRSTF and document in M-12;
3. PJM provide quarterly updates to Operating Committee on 2019 PFR performance; and
4. In January 2020, the MRC considers whether to reconvene or sunset PFRSTF based on performance trends observed and reported during 2019.