

Manual 14-D: Generator Operational Requirements Periodic Review

Madalin How Analyst, Generation, PJM System Operations Subcommittee November 26, 2024

First Read Summary



- (New) Section 8.4: Wind Farm Rebuild / Repower
 - <u>Removed</u> based on stakeholder feedback
 - Requirements now documented in pertinent sections
 - Attachment E and Section 8.2.1
- Attachment D: PJM Generating Unit Reactive Capability Curve Specification and Reporting Procedures
 - Changes to reactive capability must be reported within 30 minutes
- Attachment N: Cold Weather Preparation Guideline and Checklist
 - Minor language changes based on stakeholder feedback
 - Additional documentation posted with meeting materials

Manual 14D: Generator Operational Requirements, Revision 66



- Periodic cover-to-cover review
- Corrected typos, capitalization and references throughout
- References
 - Added reference to PJM Manual for Rules and Procedures for Determination of Generating Capability (M-21B)



- Section 4.3.4 Data Exchange and Management Requirements
 - Updated communication protocol for registering Phasor Measurement Units (PMU)
- Section 6.3.4 Other Requirements
 - Clarified requirement for all Generating Facilities to provide reactive capability curves to PJM prior to commercial operation
 - Clarified requirement for applicable Generating Facilities to complete reactive testing no later than 90 days after commercial operations



- Section 7.3.6 Generation Owner Periodic Tasks and Data Submittals
 - Updated the Guideline: Generation Owner Periodic Tasks and Data Submittals
 - Added task to provide data in support of Black Start RFP
 - Removed the task covering Real Time Values no longer applicable
 - Updated Temporary Parameter Limits Exceptions to align with current business rules in PJM manuals

https://www.pjm.com/~/media/documents/manuals/manual-links/m14d/go-periodic-tasks.ashx



- Section 7.3.6 Generation Owner Periodic Tasks and Data Submittals
 - Currently accessed from Section 6.3.4 in M-14D or
 - The Generation Onboarding Section of PJM website <u>https://www.pjm.com/markets-and-operations/ops-</u> <u>analysis/generation-onboarding</u> or
 - New link that has been added to the Generation section of PJM website for ease of reference
 - <u>https://www.pjm.com/markets-and-operations/ops-analysis</u>



- Section 8 Wind Farm Requirements
 - Removed specific references to wind speed and wind direction to generalize to other meteorological parameters
- Section 8.2.1 Data Requirements for Wind Forecast Set Up
 - Added clarification regarding data needed for wind farm rebuild / repower



- Section 8.3.3 Real-time Operating Reserve Settlement
 - Updated language to reflect the wind back cast usage in settlements for wind as well as the applicability to hybrid resources
- Section 9.1.1 Generator Deactivation Notice
 - Updated information that may be posted publically



- Section 10.1 Black Start Selection Process
 - Added note to enhance awareness that Black Start information is CEII and Member Confidential
- Section 11.1 Generator Data Confidentiality Procedures
 - Clarified language specifically naming cold weather operating limits in generator parameter data sharing procedures



- Section 12.3.3 Real-time Operating Reserve Settlement
 - Added new subsection with language to reflect the solar backcast usage in settlements as well as the applicability to hybrid resources
- Section 13.1 Marketing and Classification of Mixed Technology Facilities
 - Add reference to Manual 21B, Section 2.6



- Attachment D: PJM Generating Unit Reactive Capability Curve Specification and Reporting Procedures
 - Removed reference to AVR status from since it is already covered in Section 7: Generator Operations
 - Clarified requirements and process for submitting and updating reactive capability curves
 - Clarified requirements for wind farms that rebuilt/repowered to submit reactive capability curves within 6 months of rebuild/repower



- Attachment E: PJM Generator and Synchronous Condenser Reactive Capability Testing
 - Added reference to PJM Manual, 21B Rules and Procedures for Determination of Generating Capability
 - Added clarification that new reactive test is needed following wind farm rebuild / repower, even if wind farm previously performed a reactive test within the last 66 months



- Attachment N: Cold Weather Preparation Guideline and Checklist
 - Reformatted and reordered content into additional sections and subsections to increase readability and usability
 - Added the language taken from NERC Generating Unit Winter Weather Readiness Guideline:
- <u>https://www.nerc.com/comm/RSTC_Reliability_Guidelines/Reliability_</u>
 <u>Guideline_Generating_Unit_Winter_Weather_Readiness_v4.pdf</u>



- Attachment N: Cold Weather Preparation Guideline and Checklist
 - Section N.2 Management Roles and Expectations <u>new</u> language taken directly from the NERC Guideline
 - Section N.3 Pre-Winter Seasons Items All Generating Facilities, Safety combination of existing language and the NERC Guideline
 - Section N.4 Equipment Preparation Conventional Generating Facilities, Evaluation of Critical Components is combination of existing language and NERC Guideline
 - Section N.5 Equipment Preparation Inverter-Based Resources is combination of existing language and NERC Guideline



- Attachment N: Cold Weather Preparation Guideline and Checklist (continued)
 - Replaced references to "generator" with either generation resource or Generating Facility where applicable
 - References section updated to reflect latest industry best practices and lessons learned
 - Added footnote with link to NOAA map of locational first frost date
 - Copies of current and updated versions of Attachment N are posted with meeting materials



Appendix A: Behind the Meter Generation Business Rules

- Revised multiple rules to reflect current business practices
 - Removed references to submitting changes using a template via email
 - Clarified methodology for determining Summer Net Capability for NRBTMG
 - Updated date for PJM posting NRBTMG from 11/30 to 10/31
 - Updated date PJM shall open the Coincident Peak Hours screen in the Capacity Exchange from 11/1 to 10/22
 - Clarified reporting dates associated with response to a performance compliance event
 - Updated rule #49 to reflect current method to determine summer rated ICAP based on historic capacity factors



Manual 14-D: Gen. Op. Requirements Timeline

	Committee	Sep	Oct	Nov	Dec
Manual 14-D Generator Operational Requirements Revision 66	SOS		10/2 10/3		
	OC		10/10	11/08	
	MRC			10/30 🔶	11/21
	RSCS		0 10/18		

First Read
Endorsement
Info Only

17



Facilitator: Kevin Hatch, <u>Kevin.Hatch@pjm.com</u>

Secretary: Matt Wharton, <u>Matthew.Wharton@pjm.com</u>

Presenter: Madalin How, <u>Madalin.How@pjm.com</u>

SME: Vince Stefanowicz, <u>Vincent.Stefanowicz@pjm.com</u>

Manual 10: Pre-Scheduling Operations, Rev.45 Periodic Review



