Manual 36, System Restoration

Glen Boyle
Manager, System Operator Training
RSCS
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Summary of Changes

- Annual Review per EOP-005-2, R3 and EOP-006-2, R3
- Minor formatting and clarifying changes throughout
- Consistency in title “Transmission Owner operator” and “Generation Owner dispatcher” throughout manual
- Section 3.1.2 Ascertain System Status
  - Clarification of responsibilities for report submittals and communications during restoration between TOs, GOs, and plant operators

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Summary of Changes

- Section 3.1.7, PJM Assumes Balancing Authority Role
  - Clarification on load shedding during system restoration
- Section 4.1.1, Voice Communication and Logging Protocols
  - Additional detail on communication protocols during system restoration
- Section 6.2.1, Units Requiring Cranking Power
  - Clarification on responsibility for tabulation of unit status

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Summary of Changes

- Section 7.2.1, Synchronizing Process Phases
  - Updated Exhibit 10, PJM Table of Major Synchronization Devices based on most recent TO Restoration plans
  - Added clarifying requirement on establishment of tie schedule between interconnected areas
- Section 8, System Restoration Plan Guideline
  - Minor clarifications and updated references

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Summary of Changes

- Attachment A, Minimum Critical Black Start Requirement
  - Noted that critical nuclear safe shutdown power is defined in NPIRs
  - Updated dates for Black Start RTO wide RFP. Removed transitional verbiage
  - Added EOP-005-2, R-15 requirement for notification of change to Black Start unit ability to meet TO restoration plan within 24 hours
- Attachment B, Restoration Forms
  - Added SMECO to Exhibits 11 and 13
- Attachment D, Restoration Drill Guide
  - Change from System Restoration Coordinators Task Force to Subcommittee

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Summary of Changes

- Attachment F, Transmission Owner and Black Start Supporting Documentation References
  - Updated Figure 1 – TO restoration document references
- Attachment G, Coordination of Restoration Plan with PJM Internal and External Neighboring Entities; PJM Approval Process for TO Restoration Plans
  - Clarification of eDART Restoration Plan coordination process
  - Clarification on completion of Attachment G-2
  - Added SMECO and updated EKPC on annual update timeline
  - Added new subsection G-4 *Dynamic Study and Restoration Plan Updates (see next slide)*
- Attachment H, Under Frequency Load Shed (UFLS) Tables – annual update

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Attachment G-4 Dynamic Study and Restoration Plan Updates

Added in response to FERC/NERC Joint Review of Restoration and Recovery plans recommendation

PJM Black Start Study and Restoration Plan Update Guidelines

Event #	Event Description	Dynamic Study Required	Restoration Plan Update Required
1	New Black Start Unit - Incremental RFP - 5 Year RTO wide RFP - Interim Cross zonal solution	Yes - develop cranking paths and complete studies (prior to Black Start unit or cross zonal solution going into service)	Yes - prior to Black Start unit or cross zonal solution going into service
2	Replacement Black Start Unit (Same Site)	If needed due to different unit characteristics or connection bus (prior to BS unit going into service)	Yes - prior to replacement black start unit into service
3	Black Start Unit Retirement or Termination	Only if there is no other studied path to critical load (prior to retirement or termination)	Yes - prior to unit retirement or terminated
4	New Critical Load Unit	Yes - include in Restoration Plan Annual Update - develop cranking paths with TOs and complete studies	Yes - during Annual Update (1 month prior)
5	Criticial Load Unit Retirement	Only if critical load unit is used to feed other critical load a.k.a. "daisychaining" (prior to unit retirement)	Yes - prior to unit retirement
6	Unplanned Permanent Change impacting Restoration Plan	Only if it impact a cranking path (No later than 90 days after unplanned permanent change occurs)	Yes - updates need to be made within 90 days of unplanned permanent change
7	Planned BES Transmission Change	Yes - annual Restoration Plan Update or as-needed	Yes - if implementation of a planned BES modification changes the implementation of a restoration plan. To be complete prior to in-service. (Cut-in process)
8	Unplanned/Planned Temporary Change(i.e. maintenance outage)	No	No

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Next Steps

- SOS
  - First Read – March 30, 2016
  - Endorsement – April 27, 2016
- OC
  - First Read – April 5, 2016
  - Endorsement – May 10, 2016
- MRC
  - First Read – April 28, 2016
  - Endorsement – May 26, 2016

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