



Manual 03: Transmission Operations Updates – Version 50

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➤ Manual First Reads:

- September 28th – SOS Joint
- October 4th – OC
- October 5th – MIC (Info Only)
- October 6th – PC (Info Only)
- October 26th -- SOS-T (Section 5 only)
- October 27th - MRC



- **Manual Second Reads/Endorsement:**
 - October 26th – SOS Joint
 - November 1st – OC
 - November 17th – MRC
 - November 30th – SOS-T (Approval Section 5 only)
 - December 1st, 2016 Implementation



- Periodic Review
- References – Added NYISO PJM Joint Operating Agreement
- Section 1.7 – Revised RAS/SPS review process. Added RAS term throughout manual
- Section 3.4 – Removed PCLLRW pertaining to NPIR voltages
- Section 3.8 – Updated Reactive Interface definitions for Cleveland, CE-East, and AP South



- Section 5 – Updated ‘Voltage Control at Nuclear Stations’ Table and procedure for PJM day-ahead and real-time actions.
- Section 5 – Updated the BC/PEPCO Operating Procedure
- Section 5 – Removed Artificial Island Cross Trip SPS due to retirement
- Section 5 – Updated various procedures as needed



- Section 5 and Attachment A - Removed Bath County Thermal SPS and all references
- Attachment B – Added new attachment ‘Transmission Outage ‘Cut-In’ Ticket Guidelines



- Detailed changes on Section 5 can be reviewed on the M03 secure page:

<http://www.pjm.com/documents/manuals/private-m03.aspx>

- Specific questions on Section 5 changes can be sent to M03_Change@pjm.com.



Appendix: Manual-03: Throughout and Sections 1-4

- **Throughout Manual – Periodic Review**
 - Corrected typos and grammar
 - Revised terms for consistency
 - Updated graphics, tables, and exhibits
- **References – Added NYISO PJM Joint Operating Agreement**
- **Section 1.1 – Listed ITCI as TOP for its facilities**
- **Section 1.4 – Clarified language**



Appendix: Manual-03: Throughout and Sections 1-4

- Section 1.7 – Revised RAS/SPS review process; added RAS term throughout manual
- Sections 2 and 3 – Replaced ‘Load Shed Operating Instruction’ with ‘Load Shed Directive’ to align with terminology in M-13: Emergency Procedures
- Section 2.1.3 – Revised language in table – ‘PJM Actual Overload Thermal Operating Policy’ on limit exceedance
- Section 3, Exhibit 5 – Updated SMECO integration date to Q1 2017 and voltage limits. Corrected PJM baseline voltage limits to one decimal place and the corresponding TO limits.



Appendix: Manual-03: Throughout and Sections 1-4

- Section 3.3.3 – Clarified generator voltage exemption basis and updated baseline voltage table notes.
- Section 3.4 – Removed PCLLRW pertaining to NPIR voltages
- Section 3.5.3 – Juniata capacitor bank update



Appendix: Manual-03: Throughout and Sections 1-4

- **Section 3.8 – Updated the Cleveland Interface definition by adding new facilities and renaming facilities**
 - Lake Avenue #1 and #2 345/138 kV transformers
 - Renaming Black River – Lorain 138 kV to Charleston – Lorain 138 kV
- **Section 3.8 – Updated the CE-East Interface definition by renaming facilities**
 - Renamed Olive – University Park to Olive – University Park North 345 kV line
- **Section 3.8 – Updated the AP South Interface definition from Mt. Storm-Doubs to Bismark-Doubs**



Appendix: Manual-03: Throughout and Sections 1-4

- Section 4 – Clarified language and distinguished between transmission outage denial and cancellation
- Section 4 – Removed reference to outages submitted after 0800 three days prior to requested start date
- Section 4.2.2 – Updated relay work reporting to include 230 kV and other facilities near generating plants and timeline
- Section 4.2.9 – Revised language on rescheduling outages for clarity and added information about modifying equipment list on tickets
- Section 4.2.11 – Updated Nuclear Circuit Breaker table



Appendix: Manual-03 Section 5: RTO ISONE NYISO MISO

- RTO – Updated ‘Voltage Control at Nuclear Stations’ table for Cook (created separate table for Cook limits)
- RTO – Updated ‘Voltage Control at Nuclear Stations’ Procedure for PJM Day-Ahead and Real-Time study actions
- RTO – Updated the ‘BC/PEPCO Operating’ Procedure
- RTO - Added action for TO/GO to notify PJM of SPS/RAS unavailability to ‘Recognition of Automatic Sectionalizing Schemes’ Procedure.
- RTO - Added action for TO to notify PJM of Sectionalizing scheme unavailability or degradation to ‘Automatic Special Protection Scheme (RAS/SPS) Operating Criteria’ Procedure.



Appendix: Manual 3-Section 5: AEP

- AEP – Updated the Smith Mountain procedure
- AEP – Updated the AEP Gavin – Rolling Hills Stability procedure
- **AEP - Updated the AEP Rockport procedure**



Appendix: Manual 3-Section 5: FE-East, -West, -South

- FE-East – Updated the Conemaugh/Hunterstown Procedure
- FE-East – Updated the Homer City Procedure



Appendix: Manual-03 Section 5: Dominion

- Removed Bath County Thermal SPS and all references
- Removed outage timeframe from Bath County - Valley Stability SPS
- Added temperature set for Carolina 54 SPS
- Updated Clover SPS/RAS Procedure
- Removed references from table to both Cloverdale 500/345kV transformers **and updated Mt.Storm-Doubs for Bismark** in Bath County Stability Restrictions



Appendix: Manual-03 Section 5: AE & PPL

- AE – Updated directional ratings table
- PPL - Added the PJM Actions to the PPL Steel City – Hosensack 500 kV Reclosing procedure



Appendix: Manual-03 Section 5: PSEG

- PSEG – Updated the Artificial Island Procedure due to the Cross Trip SPS retirement
- PSEG – Updated the Bergen Procedure



Artificial Island Cross-Trip Retirement

- The Artificial Island Cross-Trip was installed after a barge hit the 5015 on March 1, 1987 causing a long-term outage of the 5015.
- The purpose of the Cross-Trip was to allow the Artificial Island nuclear units to operate at full-load with the 5015 out due to instability.
- The Cross-Trip was installed and armed on the 5021 (later moved to the 5038) and if the 5021 tripped while the 5015 was out, the Cross-Trip would TRIP (SCRAM) a nuclear unit.
- After the 5015 returned at the end of 1987, the Cross-Trip was kept available.
- Since 1987, the Cross-Trip was only used approximately six times.
- The last time the Cross-Trip was used was approximately 11 years ago.
- The Cross-Trip requires cut-off switches at five stations. Three of the stations are tie-company stations and out of PSE&G's control.
- Due to the risk of a TRIP (SCRAM) of a nuclear unit and to ensure the safety, reliability, and operating performance of the units, and potential cyber attacks, PSE&G and PSEG Nuclear retired the Artificial Island Cross-Trip.



Appendix: Manual-03 Section 5: ComEd

- ComEd – Updated the Kincaid Stability Procedure
- ComEd – Updated the East Frankfort SPS Procedure
- **ComEd - Updated the Byron SPS procedure**
- ComEd – Removed the Northbrook/Highland Park Transfer Trip SPS due to retirement
- ComEd – Added retirement dates for the Quad Cities/Cordova SPS



Appendix: Manual-03 Attachment A

- Removed PSEG Cross Trip SPS (Artificial Island) due to retirement
- Removed ComEd Northbrook/Highland Park Transfer Trip SPS due to retirement
- Modified the PECO Planebrook SPS description
- **Modified the PECO Linwood SPS description**
- Removed Bath County Thermal SPS
- Rename title of Clover Generator Shed Scheme to Clover RAS/SPS Scheme



Appendix: Manual-03 Attachment B and Revision History

- Attachment B – Added new attachment ‘Transmission Outage ‘Cut-In’ Ticket Guidelines
- Revision History (V49) – Corrected history to add ‘removal of Load Shed Directive procedure and placement in M-13: Emergency Procedures