

System Operations Subcommittee
PJM Operations Summary
July 2015 Operations (Complete Month)

There were 20 PCLLRWs and 3 High System Voltage events in July

CPS1: 153.0%, BAAL: 99.7% PJM (NERC 100%) ¹, CPS2: (86.1%), DCS: 100%

¹PJM directly measures the total number of BAAL excursions in minutes compared to the total number of minutes within a month with a target value for this performance goal at 99% on a daily and monthly basis. NERC rules limit the recovery period to no more than 30 minutes for a single event.

²PJM is participating in the BAAL field trial which substitutes for CPS2 compliance.

Manual Load Dump Warning (0 Events)

HLV Schedule Warning (0 Events)

HLV Schedule Action (0 Events)

Hot/Cold Weather Alert (4 Events)

07/17/15 09:35	07/21/15 15:41	Hot Weather Alert	- MIDATL-Region, DOM-Control Area As of 09:35 on 07.17.2015 hours, a Hot Weather Alert has been issued for 07.20.2015
07/20/15 10:01	07/21/15 20:22	Hot Weather Alert	- MIDATL-Region As of 10:01 on 07.20.2015 hours, a Hot Weather Alert has been issued for 07.21.2015
07/27/15 09:11	07/30/15 21:02	Hot Weather Alert	- MIDATL-Region, DOM-Control Area As of 09:00 on 07.27.2015 hours, a Hot Weather Alert has been issued for 07.30.2015
07/27/15 09:12	07/29/15 21:00	Hot Weather Alert	- DOM-Control Area, MIDATL-Region As of 09:00 on 07.27.2015 hours, a Hot Weather Alert has been issued for 07.29.2015

Max Emergency Gen Alert (1 Event)

07/28/15 19:56	07/28/15 20:33	Max Emergency Gen Alert	- DOM-Control Area As of 19:56 on 07.28.2015 hours, an EEA1 and a Maximum Emergency Generation Alert has been issued for 07.29.2015 Maximum Emergency Generation has been called into the operating capacity. Additional Comments: This alert is for a sub-zone of Dominion for local transmission. NO max emergency generation should be synchronized to the grid or loaded unless specified by PJM
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Primary Reserve Warning (0 Events)

Voltage Reduction Warning (0 Events)

Voltage Reduction (0 Events)

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Emergency Energy Request (0 Events)

Max Emergency Generation (0 Events)

Min Gen Declaration (0 Events)

Min Gen Event (0 Events)

Local Min Gen Event (0 Events)

Spinning (1 Event)

07/30/15 10:04 07/30/15 10:14 Spinning Spinning in PJM for Unit Trip Gavin #2 loaded at 1300MW

High System Voltage (3 Events)

07/04/15 23:48	07/05/15 09:30	Emergency Procedure	- Issued High System Voltage for PJM-RTO-RTO As of 23:48 on 07.04.2015 hours, all companies shall take the following actions on the Bulk Electric System: 1. All switchable capacitors are out of service. 2. All reactors are in service. 3. TOs are requested to review and adjust LTC settings as appropriate. All LTC (230 kV and above) and voltage schedule adjustments shall be coordinated with PJM Dispatch. 4. All SVCs are absorbing reactive power. 5. Generation Owners shall operate generators at the lower bandwidth of their voltage schedule when possible. 6. Generation Owners shall communicate with PJM and the TO restrictions to their generator's ability to absorb MVARs if that capability varies from the existing "D" curve. Target: Distribution Companies/Transmission Owners/Generation
07/04/15 01:32	07/04/15 09:10	Emergency Procedure	- Issued High System Voltage for PJM-RTO-RTO As of 01:20 on 07.04.2015 hours, all companies shall take the following actions on the Bulk Electric System: 1. All switchable capacitors are out of service. 2. All reactors are in service. 3. TOs are requested to review and adjust LTC settings as appropriate. All LTC (230 kV and above) and voltage schedule adjustments shall be coordinated with PJM Dispatch. 4. All SVCs are absorbing reactive power. 5. Generation Owners shall operate generators at the lower bandwidth of their voltage schedule when possible. 6. Generation Owners shall communicate with PJM and the TO restrictions to their generator's ability to absorb MVARs if that capability varies from the existing "D" curve. Target: Distribution Companies/Transmission Owners/Generation
07/02/15 22:32	07/03/15 09:30	Emergency Procedure	- Issued High System Voltage for PJM-RTO-RTO As of 22:32 on 07.02.2015 hours, all companies shall take the following

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actions on the Bulk Electric System: 1. All switchable capacitors are out of service. 2. All reactors are in service. 3. TOs are requested to review and adjust LTC settings as appropriate. All LTC (230 kV and above) and voltage schedule adjustments shall be coordinated with PJM Dispatch. 4. All SVCs are absorbing reactive power. 5. Generation Owners shall operate generators at the lower bandwidth of their voltage schedule when possible. 6. Generation Owners shall communicate with PJM and the TO restrictions to their generator's ability to absorb MVARs if that capability varies from the existing "D" curve. Target: Distribution Companies/Transmission Owners/Generation

Min. Gen Advisory (1 Event)

07/03/15 19:47	07/06/15 06:05	Emergency Procedure	- Issued Min Gen Advisory for PJM-RTO-RTO PJM is issuing a Minimum Generation Advisory for the valley periods 07.03.2015 through 07.06.2015. This advisory is being issued to provide advanced warning that due to mild weather and light loads, PJM may be entering into Min Gen Alerts and possibly Min Gen Actions during these periods. No action is required from the members at this time. This is an informational notice only. As we approach these valley periods, PJM will implement Min Gen Alerts/Actions on an as needed basis.
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Shared Reserves (4 Events)

07/30/15 14:56	07/30/15 15:15	Shared Reserve	-118 MW with NYISO - Osweago 6 - Regulation
07/24/15 15:33	07/24/15 15:42	Shared Reserve	-103 MW with NYISO - NEISO Lake Road Gen 720 mw - Regulation
07/08/15 14:29	07/08/15 14:45	Shared Reserve	-157 MW with NYISO - Indian point 3 loaded at 852 MW - Regulation
07/06/15 20:15	07/06/15 20:35	Shared Reserve	-85 MW with NYISO - NEISO loss 607 mw unit

Min Gen Alert (8 Events)

07/30/15 22:34	07/31/15 05:00	Min Gen Alert	- As of 22:25 on 07.30.2015 hours, a Minimum Generation Alert has been issued for the Midnight of 07.31.2015 Expected generation level is within 1968 MW of normal minimum energy limits.
07/25/15 21:27	07/26/15 08:00	Min Gen Alert	- As of 21:27 on 07.25.2015 hours, a Minimum Generation Alert has been issued for the Midnight of 07.26.2015 Expected generation level is within 2155 MW of normal minimum energy limits. Additional Comments: eDart Report # 33254 2671 in spots
07/22/15 22:21	07/23/15 05:20	Min Gen	- As of 22:11 on 07.22.2015 hours, a Minimum Generation Alert has been issued for the Midnight of 07.23.2015 Expected

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		Alert	generation level is within -2172 MW of normal minimum energy limits.
07/16/15 20:25	07/17/15 04:45	Min Gen Alert	- As of 20:25 on 07.16.2015 hours, a Minimum Generation Alert has been issued for the Midnight of 07.17.2015 Expected generation level is within -1627 MW of normal minimum energy limits.
07/11/15 20:48	07/12/15 08:30	Min Gen Alert	- As of 20:48 on 07.11.2015 hours, a Minimum Generation Alert has been issued for the Midnight of 07.11.2015 Expected generation level is within 1179 MW of normal minimum energy limits.
07/04/15 21:29	07/05/15 07:36	Min Gen Alert	- As of 21:29 on 07.04.2015 hours, a Minimum Generation Alert has been issued for the Midnight of 07.05.2015 Expected generation level is within -1977 MW of normal minimum energy limits.
07/03/15 20:01	07/04/15 07:09	Min Gen Alert	- As of 20:01 on 07.03.2015 hours, a Minimum Generation Alert has been issued for the Midnight of 07.04.2015 Expected generation level is within 2103 MW of normal minimum energy limits.
07/02/15 23:08	07/03/15 07:20	Min Gen Alert	- As of 23:05 on 07.02.2015 hours, a Minimum Generation Alert has been issued for the Midnight of 07.03.2015 Expected generation level is within 2427 MW of normal minimum energy limits.

PCLLRW (20 Events)

07/29/15 13:13	07/29/15 21:08	Post Contingency Local Load Relief Warning	- As of 13:10 on 07.29.2015 a PCLLRW to maintain WBELLAI2 . 1 XFORMER at 539 MVA in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Load - No Generation or Switching available - NA
07/28/15 17:08	07/28/15 17:21	Post Contingency Local Load Relief Warning	- As of 17:03 on 07.28.2015 a PCLLRW to maintain BOYKINS -MURPHY 108A at 130 MVA in the Dominion area has been issued for Transmission Contingency Control. Additional Comments: Load - No Generation or Switching available - NA
07/28/15 15:52	07/28/15 16:06	Post Contingency Local Load Relief Warning	- As of 15:46 on 07.28.2015 a PCLLRW to maintain OHIOCENT-POWELSON at 255 MVA in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Generation - slow response - 4 thermals contingencies up all affected by the Dresden CC. Ohio Central-Powelson and S Millers-Buckhorn are both MP1. Dresden CC will take 30+ minutes to remove duct firing and reduce to a point where

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			the contingencies are relieved.
07/28/15 15:26	07/29/15 01:47	Post Contingency Local Load Relief Warning	- As of 15:22 on 07.28.2015 a PCLLRW to maintain EDGEWOOD-SHELOCTA LSH 1036 at 160 MVA in the PN area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - Open the 115KV "B4" cb @ Shelocta
07/28/15 13:00	07/29/15 01:35	Post Contingency Local Load Relief Warning	- As of 12:57 on 07.28.2015 a PCLLRW to maintain WBELLA12 . 1 XFORMER at 539 MVA in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Load - No Generation or Switching available - NA
07/27/15 20:03	07/27/15 20:35	Post Contingency Local Load Relief Warning	- As of 20:01 on 07.27.2015 a PCLLRW to maintain EDGEWOOD-SHELOCTA LSH 1036 at 160 MVA in the PN area has been issued for Transmission Contingency Control. Additional Comments: Load - No Generation or Switching available - NA
07/27/15 10:54	07/27/15 13:13	Post Contingency Local Load Relief Warning	- As of 10:45 on 07.27.2015 a PCLLRW to maintain 02FORD 138 KV at 126.96 KV in the ATSI area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - Post-Contingency FE-W will segregate the 138kV system from the distribution system along the Q13 line by opening the high side of the Distribution transformers at Grovewood, Clinton, Hummel, GM Cleveland, and Ford Cleveland.
07/25/15 12:55	07/25/15 22:35	Post Contingency Local Load Relief Warning	- As of 12:52 on 07.25.2015 a PCLLRW to maintain BELLSMIL 121-11T XFORMER at 286 MVA in the PEPCO area has been issued for Transmission Contingency Control. Additional Comments: Load - No Generation or Switching available - NA
07/23/15 02:51	07/23/15 03:01	Post Contingency Local Load Relief Warning	- As of 02:46 on 07.23.2015 a PCLLRW to maintain 4MILEJCT-CORRYE 4MIL-COR at 203 MVA in the PN area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Generation redispatch available - Seneca Dump a pump protocol in effect.
07/22/15 09:51	07/22/15 11:43	Post Contingency Local Load Relief Warning	- As of 09:49 on 07.22.2015 a PCLLRW to maintain GOUDEY-LAURLAKE115 KVTIE at 128 MVA in the PN area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - NA

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07/20/15 15:34	07/20/15 15:54	Post Contingency Local Load Relief Warning	- As of 15:32 on 07.20.2015 a PCLLRW to maintain 08CRLISL 69 KV at 60.7 KV in the DEOK area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/18/15 10:17	07/18/15 12:35	Post Contingency Local Load Relief Warning	- As of 09:49 on 07.18.2015 a Post Contingency Local Load Relief Warning to maintain on LAGRANGE-N_LAGR_T LAG-NLA A 69 KV for the loss of Hydramatic-Flatbush-MoorePrk-Flowrfd 138KV line and Moorpark 69KV Transformer 1 at 41 MVA in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Switching Solution: 5MW to 10 MW Load Shed at Pigeon River & White Pigeon Area (AEP)
07/17/15 13:46	07/17/15 15:00	Post Contingency Local Load Relief Warning	- As of 13:43 on 07.17.2015 a PCLLRW to maintain DELAWARE-WATK TAP DEL-WAT at 220 MVA in the DAYTON area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - at Delaware (AEP) open Darby 104-138kv CB
07/17/15 12:52	07/17/15 20:08	Post Contingency Local Load Relief Warning	- As of 12:49 on 07.17.2015 a PCLLRW to maintain LAKIN-SPORNAEP at 168 MVA in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/16/15 15:03	07/16/15 19:50	Post Contingency Local Load Relief Warning	- As of 15:01 on 07.16.2015 a PCLLRW to maintain CNTRLHAR 138 KV at 127 KV in the EKPC area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/11/15 12:24	07/11/15 18:54	Post Contingency Local Load Relief Warning	- As of 12:22 on 07.11.2015 a PCLLRW to maintain METZTAP 163-4T XFORMER at 312 MVA in the PEPCO area has been issued for Transmission Contingency Control. Additional Comments: Load - No Generation or Switching available - NA
07/11/15 12:23	07/11/15 18:54	Post Contingency Local Load Relief Warning	- As of 12:21 on 07.11.2015 a PCLLRW to maintain METZTAP 163-3T XFORMER at 312 MVA in the PEPCO area has been issued for Transmission Contingency Control. Additional Comments: Load - No Generation or Switching available - NA
07/08/15 15:17	07/08/15 15:23	Post Contingency Local Load Relief Warning	- As of 15:16 on 07.08.2015 a PCLLRW to maintain SNOW 69 KV at 61.5 KV in the EKPC area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or

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Switching available - NA

07/08/15 15:17	07/08/15 15:23	Post Contingency Local Load Relief Warning	- As of 15:15 on 07.08.2015 a PCLLRW to maintain ALBANYE 69 KV at 61.5 KV in the EKPC area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/07/15 14:45	07/07/15 14:54	Post Contingency Local Load Relief Warning	- As of 14:43 on 07.07.2015 a PCLLRW to maintain LAKVEW-GREENFOE at 319 MVA in the ATSI area has been issued for Transmission Contingency Control. Additional Comments: Generation - slow response - NA

Non-PCLLRW (13 Events)

07/29/15 19:27	07/29/15 20:24	Non-Market Post Contingency Local Load Relief Warn	- As of 19:25 on 07.29.2015 a Non-Market PCLLRW to maintain WMILTON-09GRNVIL at 165 MVA in the DAYTON area has been issued for Transmission Contingency Control. Additional Comments: BES 2 Facility - NA
07/28/15 16:03	07/28/15 20:10	Non-Market Post Contingency Local Load Relief Warn	- As of 15:56 on 07.28.2015 a Non-Market PCLLRW to maintain HILLVIEW-NEWCOMER at 250 MVA in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Generation - slow response - The Dresden CC is removing duct firing to relieve this contingency and the overload on the Buckhorn-W Coshocton line (MP2)
07/27/15 12:14	07/27/15 14:42	Non-Market Post Contingency Local Load Relief Warn	- As of 12:10 on 07.27.2015 a Non-Market PCLLRW to maintain JAY 138 KV at 126.96 KV in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/23/15 14:53	07/23/15 20:11	Non-Market Post Contingency Local Load Relief Warn	- As of 14:51 on 07.23.2015 a Non-Market PCLLRW to maintain HUFFMAN 138 KV at 126.96 KV in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - place in service @Hoffman 138 kv cap AA
07/22/15 15:26	07/22/15 20:14	Non-Market Post Contingency Local Load Relief Warn	- As of 15:23 on 07.22.2015 a Non-Market PCLLRW to maintain HUFFMAN 138 KV at 126.96 KV in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - Place 138 kv cap in service at Huffman AA

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07/21/15 21:37	07/21/15 23:44	Non-Market Post Contingency Local Load Relief Warn	- As of 21:35 on 07.21.2015 a Non-Market PCLLRW to maintain ADAMSAEP 138 KV at 126.96 KV in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/21/15 13:14	07/21/15 15:17	Non-Market Post Contingency Local Load Relief Warn	- As of 13:12 on 07.21.2015 a Non-Market PCLLRW to maintain GREENCO -GREENSBU TIE at 71 MVA in the EKPC area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/20/15 21:33	07/21/15 01:27	Non-Market Post Contingency Local Load Relief Warn	- As of 21:31 on 07.20.2015 a Non-Market PCLLRW to maintain ADAMSAEP 138 KV at 126.96 KV in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/20/15 15:09	07/20/15 15:57	Non-Market Post Contingency Local Load Relief Warn	- As of 15:07 on 07.20.2015 a Non-Market PCLLRW to maintain STUART2 138 KV at 126.96 KV in the DAYTON area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/19/15 15:19	07/19/15 18:32	Non-Market Post Contingency Local Load Relief Warn	- As of 15:17 on 07.19.2015 a Non-Market PCLLRW to maintain GLENVIEW-SWOYERSVILLE at 42 MVA in the UGI area has been issued for Transmission Contingency Control. Additional Comments: Load -No Generation or Switching available - NA
07/07/15 16:48	07/07/15 22:02	Non-Market Post Contingency Local Load Relief Warn	- As of 16:45 on 07.07.2015 a Non-Market PCLLRW to maintain BUCKHORN-TAZEWELL at 211 MVA in the AEP area has been issued for Transmission Contingency Control. Additional Comments: BES 2 Facility - NA
07/06/15 16:31	07/06/15 19:45	Non-Market Post Contingency Local Load Relief Warn	- As of 16:27 on 07.06.2015 a Non-Market PCLLRW to maintain BIXBY-GROVES at 204 MVA in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - Open 138 KV CB 104 at Groves
07/06/15 15:52	07/06/15 19:45	Non-Market Post Contingency Local Load Relief Warn	- As of 15:39 on 07.06.2015 a Non-Market PCLLRW to maintain HUFFMAN 138 KV at 126.96 KV in the AEP area has been issued for Transmission Contingency Control. Additional Comments: Post Contingency Switching available - place 138 KV 'AA' cap in service at Huffman