

Manual 13, Emergency Operations Revision 98 – Annual Review

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Reliability Standards &
Compliance Subcommittee
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Revision 98 (07/23/2026):

- Updated manual ownership from Kevin Hatch to Paul Dajewski
- Cover-to-cover changes: Corrected punctuation, spelling and grammar, and adjusted formatting for ease of use
- Updated Advisory description and added Capacity Advisory to Section 2.3 Capacity Shortages
- Added RCIS notification in Pre-Emergency Load Management Reduction Action
- Updated verbiage for Advanced Scheduled Resources under Section 3.3.2 Cold Weather Alert and 3.4 Hot Weather Alert

- Added note stating Section 5.2 Transmission Security Emergency Procedures do not trigger PAIs or EEAs and removed references to those triggers
- Added “Transmission Security” to a majority of Section 5.2 Emergency Procedures
- Split Maximum Generation Emergency / Load Management Alert in Section 5.2 into Transmission Security – Local Maximum Generation Emergency Alert and Transmission Security – Load Management Alert
- Added Attachment O, Emergency Use of Back-up Generators

- Removed specific time of notice for Heavy Load Voltage Schedule Warning Section 5.1.2
- Removed actions specific to capacity issues from all Section 5.2 Transmission Security Emergency Procedures
- Removed Step 3 Primary Reserve Warning from Section 5.2
- Updated Section 5.2 Maximum Generation Emergency Action to Transmission Security - Local Maximum Generation Emergency Action
- Updated Attachment D information
- Updated Attachment E and F tables

- Developed to address gap in Emergency Procedures that trigger from forecasted temperatures (Hot / Cold Weather Alert)
- Provides advanced notice to PJM Member companies of periods where generating capacity is forecasted to approach the operating requirement
- Advanced notice allows early communication from PJM to its member companies to assess the situation and develop a strategy to maximize system reliability
- Pulls actions from existing Emergency Procedures

- Added “Capacity Advisory” to Section 2.3

Capacity Advisory

The purpose of the Capacity Advisory is to provide advanced notice to stakeholders of projected system conditions where capacity is tightening and additional actions may be required such as recalling generation outages, rescheduling generation outages, calling generation out of market, recalling transmission outages to maximize generation deliverability, and/or notification to neighbors to anticipate less reliance on imports from PJM.

PJM will attempt to issue the Advisory as far in advance as possible, typically 3-5 days in advance but given fluctuating and changing capacity position, Capacity Advisories could be issued any time in advance of the operating period. PJM will issue a Capacity Advisory when available capacity is approaching the demand requirement.

PJM Actions

- PJM Dispatch notifies PJM management and members
- PJM Dispatch issues the Advisory to members via All-Call and Emergency Procedures Website, stating the Advisory period(s).
- PJM will assess the need to recall any generation and transmission outages
- Notify neighboring RTO/ISOs via Reliability Coordinator Information System (RCIS).
- PJM Dispatch cancels the Advisory, when appropriate

PJM Member Actions

- Transmission / Generation dispatchers notify management of the Advisory
- Transmission / Generation dispatchers advise all stations and key personnel
- Transmission / Generation dispatchers review and reschedule generation / transmission outages outside of advisory window
- Update generator availability in Markets Gateway for the next 7 days
- Review weather forecasts, determine any forecasted operational changes, and notify PJM of any changes
- Curtailment Service Providers to prepare and advise demand response resources to be in a state of readiness
- Members are to update Markets Gateway by entering unit specific operating limitations. Operating limitations include:
 - Generator capability and availability
 - Fuel supply and inventory concerns
 - Fuel switching capabilities
 - Environmental constraints

Note: Due to tightening reserves resulting from generation retirements and increasing system loads, PJM may find itself in situations where reserves are approaching or projected to be deficient when forecasted temperatures do not trigger Hot or Cold Weather Alerts.

- Pre-Emergency Load Management Reduction Action

PJM Actions

- PJM Dispatch notifies PJM management, PJM public information personnel, and members.
- PJM Dispatch notifies other Control Areas through the RCIS
- PJM Dispatch, via the DR Hub System and Emergency Procedures website, will post detailed instructions to the Curtailment Service Providers (CSP) to dispatch 30, 60 and/or 120 minute Pre-Emergency Load Management Reductions. An Action can be issued for the entire PJM RTO, specific Transmission Zone(s) or a Transmission Sub-zone(s) if transmission limitations exist. PJM dispatcher will also issue an ALL-CALL informing the Members and CSPs to check the DR Hub and Emergency Procedures postings for the detailed information pertaining to the Pre-Emergency Load Management that has been called.

- The Department of Energy issued a 202(c) Order for use during Winter Storm Fern, which allowed large loads to operate on the back-up generators.
- As this had not been utilized by PJM in the past, Attachment O: Emergency Use of Back-up Generation was developed to provide clear direction from the request of Transmission Owners in the event a future 202(c) Order was issued to allow large loads to operate on the back-up generators.
- This attachment is not a standing Emergency Procedure, but is an additional action to take to prevent or minimize firm load shed up the issuance of a 202© order.

- Attachment O, Emergency use of Back-up Generation

Purpose: PJM shall notify the Department of Energy when PJM issues or anticipates to issue a NERC EEA1 and expects an emergency warranting the potential issuance of an EEA3 to direct back-up generation facilities to run as a last resort avoiding potential firm load shed. Back-up generation facilities may be used after NERC EEA1 and EEA2 steps are issued, and all available generation resources and all load management procedures (pre-emergency and emergency demand response) have been exhausted.

PJM Dispatch notifies PJM management, PJM public information personnel, and PJM members of the expected period that system conditions warrant potential use of back-up generation at large load facilities.

Once PJM applies for and receives a 202(c) Order from the Department of Energy authorizing the use of back-up generation at data centers in the the PJM region, PJM will implement steps outlined below in coordination with member Transmission Owners (TOs) to allow large loads to operate on back-up generation and disconnect from Utility source power.

- Capacity Emergencies Procedure

PJM Actions

1. (Day-Ahead) PJM issues a Maximum Generation Emergency / Load Management Alert and NERC EEA 1 day ahead and provides notification to the DOE. PJM may issue additional Alerts Day-ahead depending on system projections.

Note: PJM will post as a Special Notice to the Emergency Procedures Posting Website that there is potential for requesting a 202(c) order to permit use of Emergency Back-up Generation to allow TOs to take necessary steps to coordinate with large loads in advance. This advanced notice will be based upon projected reserve values and can be issued at any point but no later than issuance of a Primary Reserve Alert.

2. (Real Time) PJM issues Pre-Emergency Load Management, Emergency Load Management and a Public Appeal to reduce Demand and NERC EEA 2 and provides notification to DOE indicating whether PJM anticipates they will be unable to meet their Contingency/Primary Reserve Requirements (i.e. NERC EEA 3 is anticipated).
3. PJM will issue all Capacity Emergency Procedures, up to Step 7 – Deploy All Resource Action but will not issue a Voltage Reduction Action since a Voltage Reduction relief provides Contingency Reserves.

4. Prior to issuing a Manual Load Dump Warning (NERC EEA 3), PJM will issue an Emergency Use of Back-up Generators Warning and communicate directly to the impacted Transmission Owners via the PJM ALL-CALL System notifying them of the expected MW amount of large load to be disconnected from utility source power and operate on Back-up Generation.

Note: PJM Dispatch determines which Transmission Owners are capacity deficient based on EMS calculations and the relative proportion of deficiency. PJM Dispatch requests the total amount of large load to be disconnected and utilizes the PJM EMS to determine deficient Control Zones and their share of responsibility. PJM will exhaust all large loads capable of being disconnected within the specified timeframe within the capacity short transmission zone before requesting large loads to disconnect in transmission zones with excess capacity.

5. PJM will issue an Emergency Use of Back-up Generators Action directly to the impacted Transmission Owners via the PJM ALL-CALL System, communicating expected MW amount of large load to be disconnected from utility source power and operate on Back-up Generation in order to maintain Contingency/Primary Reserves. Transmission Owners shall coordinate with large loads and disconnect them from utility source power so that they can automatically begin to switch to back-up on-site generation.
6. PJM will issue a Manual Load Dump Warning (NERC EEA3) upon issuance of Emergency Use of Back-up Generators Action.

Note: Emergency procedure steps may escalate and some steps could be issued simultaneously due to system conditions

Member Actions

1. Transmission Owners make notification to Large Loads of potential need to operate on Back-up Generators as directed by PJM to maintain Contingency/Primary Reserve levels for specified alert/warning period as communicated on Emergency Procedure Posting website.
2. Transmission Owners report to PJM the MW amount of large load that can be disconnected from Utility Power and time required to disconnect and operate on Back-up Generation.
3. Transmission Owners / DPs prepare to disconnect large loads from Utility Power via SCADA or by staffing necessary stations.
4. Transmission Owners coordinate with large loads and implement Back-up Generation Action procedure as directed by PJM.
5. Transmission Owners coordinate with PJM to restore Utility Power to applicable large loads when appropriate as directed by PJM.

- Transmission Emergencies Procedure

PJM Actions

1. (Day-Ahead) PJM issues a Transmission Security – Local Maximum Generation Emergency Alert, Transmission Security - Load Management Alert, and provides notification to the DOE. PJM may issue additional Alerts Day-ahead depending on system projections.

Note: If applicable, PJM will post as a Special Notice to the Emergency Procedures Posting Website that there is potential for requesting a 202(c) order to allow use of Emergency Back-up Generation to allow impacted TOs to take necessary steps to coordinate with large loads in advance. This advanced notice will be based upon Day Ahead Transmission Analysis. PJM Dispatch must quickly act to mitigate constrained facilities in accordance with operating procedures identified in PJM's Manual for Transmission Operations (M-03), Section 2: Thermal Operating Guidelines and Section 3: Voltage & Stability Operating Guidelines, and PJM's Manual for Emergency Operations (M-13) Section 5: Transmission Security Emergencies.

2. (Real Time) PJM issues Pre-Emergency Load Management, Emergency Load Management and a Public Appeal to reduce Demand in impacted Transmission Zone(s). PJM provides notification to DOE indicating whether PJM anticipates additional emergency procedures up to and including Manual Load Shed.
3. PJM will issue all Transmission Security Emergency Procedures up to Step 7 – Transmission Security - Deploy All Resource Action.
4. Prior to issuing a Transmission Security - Manual Load Dump Warning, PJM will issue an Emergency Use of Back-up Generators Warning and communicate directly to the impacted Transmission Owners notifying them of the expected MW amount of large load to be disconnected from Utility Source Power and operate on Back-up Generation.

Note: PJM Dispatch determines which Transmission Owners are impacted based on EMS calculations and Load Distribution Factors (dFax). PJM Dispatch requests the total amount of large load to be disconnected and utilizes the PJM EMS to determine impacted Control Zones and their share of responsibility. PJM will exhaust all large loads capable of being disconnected within the specified timeframe within the impacted transmission zone based on impact to constrained Transmission Facility.

5. PJM will issue an Emergency Use of Back-up Generators Action directly to the impacted Transmission Owners, communicating expected MW amount of large load to be disconnected from Utility Source Power and operate on Back-up Generation in order to maintain Transmission facilities within applicable limits. Transmission Owners shall coordinate with large loads and disconnect them from utility source power so that they can automatically begin to switch to back-up on site generation. PJM will issue a Transmission Security – Manual Load Dump Warning upon issuance of Emergency Use of Back-up Generators Action.
6. When conditions improve, PJM will communicate directly with impacted Transmission Owners and reestablish utility source power to large loads incrementally based on MW amount in order to maintain reliability and balancing requirements.

Note: Emergency procedure steps may escalate and some steps could be issued simultaneously due to system conditions.

Note: Utilities may disconnect large loads via SCADA control. If a large load cannot be isolated via SCADA, the utility may elect to send staff to the location to manually open up equipment to place the large load on back-up generation.

1. Transmission Owners make notification to large loads of potential need to operate on Back-up Generators as directed by PJM to maintain Transmission facilities within applicable limits for specified alert/warning period as communicated on Emergency Procedure Posting website.
2. Transmission Owners report to PJM the MW amount of large load that can be disconnected from Utility Power and time required to disconnect and operate on Back-up Generation.
3. Transmission Owners / DPs prepare to disconnect large loads from Utility Power via SCADA or by staffing necessary stations.
4. Transmission Owners coordinate with large loads and implement Use of Back-up Generators Action procedure as directed by PJM.
5. Transmission Owners coordinate with PJM to restore Utility Power to applicable large loads when appropriate as directed by PJM.

Note: Emergency procedure steps may escalate and some steps could be issued simultaneously due to system conditions.

- Updated verbiage for Advanced Scheduled Resources under Section 3.3.2 Cold Weather Alert and 3.4 Hot Weather Alert
 - Natural gas generating units:
 - PJM Dispatch will notify the generator owner that the unit is required to be online and ready to follow PJM Dispatch signals at XX:XX_hrs on XX day for reliability. The unit parameters and the offer will then be confirmed and the unit will be offer capped with the schedule being 'locked in' as indicated in PJM's Manual for [Energy & Ancillary Services Market Operations](#) (M-11). PJM Dispatch will inform the generator owner to run for the greater of:
 - The unit's Min Run time OR
 - The duration that PJM requires the unit to run for reliability reasons.
 - Generators ~~committed-scheduled~~ under this procedure will be run for the hours scheduled, assuming no reliability issues, and will be ~~included-considered~~ in the DA Market as ~~indicated-detailed~~ in [PJM M-11](#).
 - The PJM OATT does not allow for stranded fuel recovery for any reason to include forced outage, failure to meet start profiles, or ~~decommitted decommitted~~ due to reliability issues.
 - Non-natural gas generating units:
 - PJM Dispatch will notify the generator owner that the unit is required to be online and ready to follow PJM Dispatch signals at XX:XX_hrs on XX day for reliability. The unit parameters and the offer will then be confirmed and the unit will be offer capped. PJM Dispatch will NOT commit to run the unit longer than its Min Run time.
 - Generators ~~committed-scheduled~~ under this procedure will be run for the hours scheduled and will be ~~included-considered~~ in the DA Market as ~~indicated-detailed~~ in [PJM M-11](#).

- Review of Attachment 1 of EOP-011-4
 - Energy Emergency Alerts (EEAs) are declared based on capacity issues in the Balancing Authority.

1. EEA 1 — All available generation resources in use. Circumstances:

- The Balancing Authority is experiencing conditions where all available generation resources are committed to meet firm Load, firm transactions, and reserve commitments, and is concerned about sustaining its required Contingency Reserves.
- Non-firm wholesale energy sales (other than those that are recallable to meet reserve requirements) have been curtailed.

2. EEA 2 — Load management procedures in effect. Circumstances:

- The Balancing Authority is no longer able to provide its expected energy requirements and is an energy deficient Balancing Authority.
- An energy deficient Balancing Authority has implemented its Operating Plan(s) to mitigate Emergencies.
- An energy deficient Balancing Authority is still able to maintain minimum Contingency Reserve requirements.

3. EEA 3 — Firm Load interruption is imminent or in progress. Circumstances:

- The energy deficient Balancing Authority is unable to meet minimum Contingency Reserve requirements.

- Section 5 Transmission Security Emergencies updated to note EPs in Section 5.2 do not trigger PAIs or EEAs.

Note: Emergency Procedures within Section 5.2 of this manual do not trigger a Performance Assessment Interval (PAI) or an Energy Emergency Alert (EEA).

- Removed references to issuing EEAs from all Transmission Security EPs.

5.1.2 Heavy Load Voltage Schedule Warning

A Heavy Load Voltage Schedule Warning is issued to members via the ALL-CALL system (Generation and Transmission) to request members to prepare for maximum support of voltages on the bulk power system. This Warning can be issued for entire PJM RTO, specific Control Zone(s) or a subset of Control Zone(s).

PJM Actions

- ~~Four hours prior to requesting the actual implementation of the Heavy Load Voltage Schedule,~~ PJM may give advance notice to members of the upcoming need for increased voltage support at the EHV level~~this schedule. At that time, impacted~~ Impacted members will be requested to verify that all actions have been taken on the distribution and sub-transmission systems to support the voltage at the EHV level.
- PJM dispatcher cancels the Heavy Load Voltage Schedule Warning, when appropriate.

- Updated a majority of Section 5.2 Transmission Security Emergency Procedures to be prefaced with “Transmission Security” to distinguish the difference in actions between those based on transmission issues and those based on capacity issues.

- Split Section 5.2 Maximum Generation Emergency / Load Management Alert into Transmission Security – Local Maximum Generation Emergency Alert and Transmission Security – Load Management Alert.

5.2.2 Transmission Security - Local Maximum Generation Emergency Alert

The purpose of the Transmission Security - Local Maximum Generation Emergency ~~Load Management~~ Alert ~~for Transmission Security~~ is to provide an early alert that Security Analysis projections indicate the need for generation in excess of economics to ensure Transmission Reliability. It is implemented when Maximum Emergency generation is called into the operating capacity on a portion of the PJM System ~~or if Demand Response is projected to be implemented to ensure Transmission Reliability.~~

5.2.3 Transmission Security - Load Management Alert

The purpose of the Transmission Security - Load Management Alert is to provide an early alert that Security Analysis projections indicate the potential need for the use of Demand Response to ensure Transmission Reliability. May be issued separately or in conjunction with Transmission Security - Local Maximum Generation Emergency Alert.

Triggers:

PJM Day-ahead Study analysis identifies Transmission Reliability issues that cannot be resolved via economic generation adjustments.

PJM Actions

- PJM Dispatch notifies PJM management and members
- PJM Dispatch issues the Alert to members, stating the Alert period(s) and the affected areas. An Alert can be issued for the RTO or specific Control Zone(s).

PJM Member Actions

- Transmission / Generation dispatchers notify management of the Alert
- Transmission / Generation dispatchers advise all stations and key personnel
- Curtailment Service Providers notify key personnel

- Removed references and actions specific to capacity issues from Transmission Security EPs in Section 5.2 such as:
 - Emergency Bid Process
 - Recalling Export Transactions
 - Capacity Load Shed
- Removed Step 3 (Real-time): Primary Reserve Warning from Section 5.2 Transmission Security Emergency Procedures

- Updated Section 5.2 Maximum Generation Emergency Action to Local Maximum Generation Emergency Action

5.2.7 Step 4A (Real-time): Transmission Security - Local Maximum Generation Emergency Action

Note:

~~Issuance of this procedure combined with a Primary Reserve shortage will trigger a capacity Performance Assessment Interval (PAI) as detailed in PJM Manual 18, PJM Capacity Market.~~

The purpose of the Transmission Security - Local Maximum Generation Emergency Action is to increase the PJM RTO generation in the affected transmission zone above the maximum economic level to maintain reliability of the transmission system. It is implemented whenever generation is needed that is greater than the highest incremental cost level.

Winter/Summer Required Manual Load Dump PJM Mid-Atlantic Region										
			Load Ratio Share %	Total Manual Load Shed (MW)						
				500	1000	1500	2000	3000	4000	5000
PJM Mid-Atlantic Region		PS	17.70%	88	177	265	354	531	708	885
		PE	14.71%	74	147	221	294	441	588	735
	PPL Zone	PPL	12.73%	64	127	191	255	382	509	637
		UGI	0.34%	2	3	5	7	10	14	17
		BC	11.45%	57	114	172	229	343	458	572
		FE-East	20.78%	104	208	312	416	623	831	1039
	PEPCO Zone	PEPCO	9.10%	46	91	137	182	273	364	455
		SMECO	1.46%	7	15	22	29	44	58	73
	AE	AECO	4.03%	20	40	61	81	121	161	202
		Vineland	0.16%	1	2	2	3	5	6	8
	DPL Zone	DPL	4.56%	23	46	68	91	137	182	228
		ODEC	1.46%	7	15	22	29	44	58	73
		DEMEC	0.46%	2	5	7	9	14	18	23
		Dover	0.26%	1	3	4	5	8	11	13
		Easton	0.09%	0	1	1	2	3	4	5
	Rockland	0.71%	4	7	11	14	21	28	35	

Manual Load Dump Allocation - PJM Mid-Atlantic Region

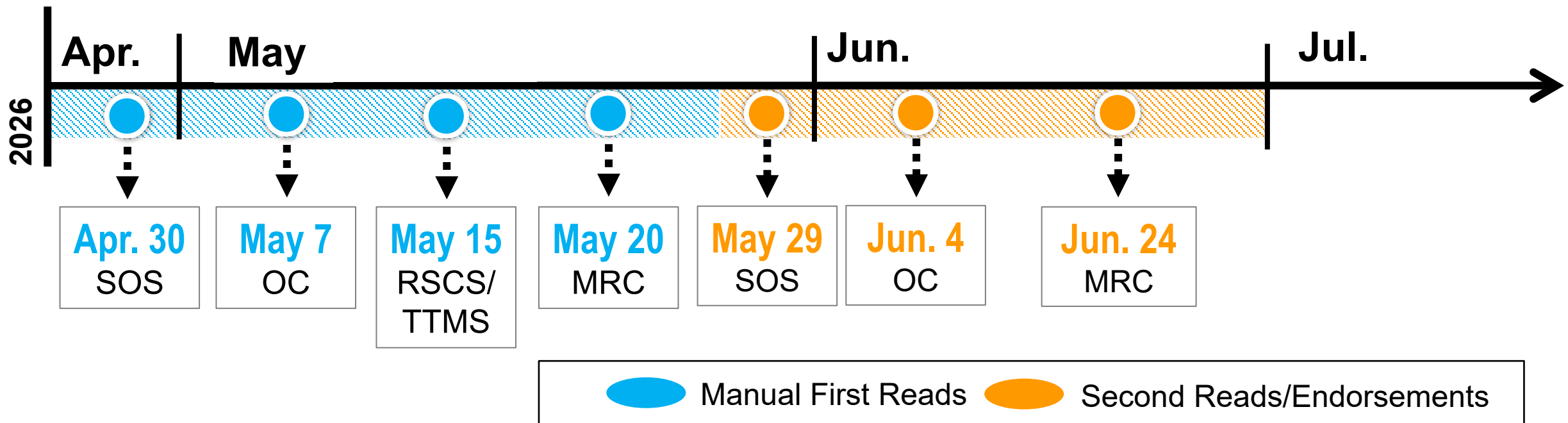
When issuing a manual Load Dump via All Call, the PJM Dispatcher will include the following information in the message:

- (1) Area (PJM Mid-Atlantic Region, Eastern Portion of PJM Mid-Atlantic Region, or a zone / company)
- (2) Total megawatts (refer to appropriate tables for allocation)
- (3) Allocation table to be used
- (4) Transmission Zone allocations will be handled separately based on PJM EMS capacity calculations

Allocation percentages are based on 2026 summer but applicable to both 2026 summer and 2026/2027 Winter Load conditions



PJM Manual Load Dump Capability							
	1	2	3	4	5	6	7
Transmission Owner	2026 Summer System Peak Load Est. (MW)	Maximum Manual Load Shedding Capability based on System Peak Load Estimate (MW)	Load Shed Cap (%) (Percent = #2 ÷ #1)	Overlap of Load Shedding and Under frequency Loads (MW)	Overlap of Load Shedding and Under frequency Loads (%) (Percent = #4 ÷ #2)	Manual Load Shedding if Under frequency relays have operated (MW) (MW = #2 - #4)	Manual Load Shedding if Under frequency relays have operated (%) (Percent = #6 ÷ #1)
DPL	2,753	461	16.75%	175	37.96%	286	10.39%
DPL - Dover	146	61	41.48%	35	58.16%	25	17.35%
DPL - DEMEC	252	0	0.00%	0	-	0	0.00%
DPL - Easton	52	18	34.62%	3	16.67%	15	28.85%
DPL - ODEC	805	47	5.84%	0	0.00%	47	5.84%
AE	2,476	792	31.99%	143	18.06%	649	26.22%
AE - Vineland	88	75	85.71%	51	67.79%	24	27.61%
PS	10,046	1313	13.07%	0	0.00%	1313	13.07%
RECO	406	406	100.00%	129	31.77%	277	68.23%
PE	8,539	1141	13.36%	315	27.61%	826	9.67%
FE East - JC	6,044	1917	31.72%	0	0.00%	1917	31.72%
PL	7,359	5001	67.96%	2545	50.89%	2456	33.37%
UGI	202	202	100.00%	63	30.94%	140	69.06%
FE East - ME	3,013	1050	34.85%	0	0.00%	1050	34.85%
FE East - PN	2,820	1725	61.17%	20	1.17%	1705	60.45%
BC	6,471	2042	31.56%	0	0.00%	2042	31.56%
PEPCO	5,198	2921	56.20%	1501	51.39%	1420	27.32%
PEP - SMECO	805	469	58.24%	179	38.15%	290	36.03%
FE South	8,206	2566	31.27%	245	9.54%	2321	28.29%
FE South-ODEC	608	64	10.52%	0	0.00%	64	10.52%
Dom	21,080	9505	45.09%	2172	22.85%	7333	34.79%
Dom - ODEC	1,372	92	6.71%	0	0.00%	92	6.71%
Dom - NCEMC	273	0	0.00%	0	-	0	0.00%
Dom - NOVEC	2,275	265	11.64%	78	29.41%	187	8.22%
AEP	24,635	6320	25.65%	166	2.63%	6154	24.98%
DLCO	2,674	823	30.78%	462	56.14%	361	13.50%
Dayton	3,357	821	24.46%	0	0.00%	821	24.46%
FE West	11,790	3590	30.45%	682	19.01%	2908	24.66%
CPP	279	110	39.35%	77	69.73%	33	11.91%
Com Ed	20,808	12516	60.15%	3616	28.89%	8900	42.77%
DEOK	5,323	4221	79.30%	2509	59.44%	1712	32.16%
EKPC	2,124	1305	61.45%	433	33.21%	872	41.04%
OVEC	80	85	106.25%	0	0.00%	85	106.25%
Neptune	660	0	0.00%	0	-	0	0.00%
HTP	660	0	0.00%	0	-	0	0.00%



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Manual 13, Rev. 98 – Periodic Review



Member Hotline

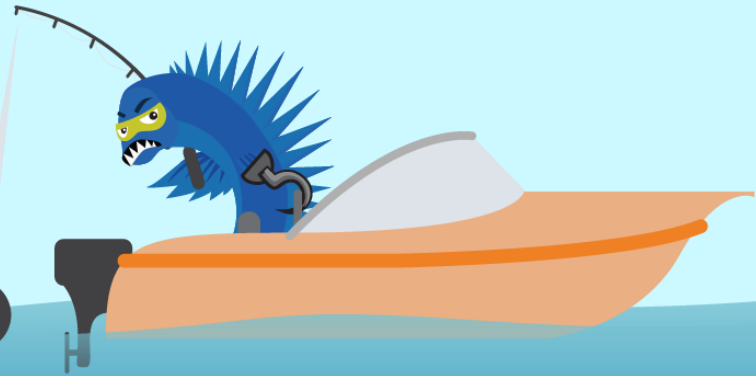
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POWER GRID**

**THINK BEFORE
YOU CLICK!**



**BE ALERT TO
MALICIOUS PHISHING
EMAILS**



**Report suspicious email activity to PJM.
Call (610) 666-2244 or email it_ops_ctr_shift@pjm.com**