M-13 Emergency Procedures Rev. 96

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Operating Committee

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M13 Revision 96 Summary

- Revision 96 effective 8/20/2025
- All changes are associated with our periodic review
- Impacted Sections
  - Introduction – About This Manual
  - 2.2 Reserve Requirements
  - 2.3.1 Advanced Notice Emergency Procedures: Alerts
  - 2.3.2 Real-Time Emergency Procedures (Warnings and Actions)
  - 3.3.2 Cold Weather Alert
  - 3.4 Hot Weather Alert
  - 3.8.2 GMD Action
  - 5.2 Transmission Security Emergency Procedures
  - 5.5 Interconnection Reliability Operating Limit (IROL) Manual Load Dump Warning/Action
  - 6.4 Resource Limitation Reporting
  - Revision History

Introduction – About This Manual

- Updated the three bullets in the “About This Manual” section to align with “Section 1: Overview” defining what constitutes an “Emergency condition”
- Updated reference to correct number of sections and attachments in M-13

About This Manual

The ***PJM Manual for Emergency Operations*** focuses on how PJM and the PJM Members are expected to respond to emergency conditions and is the designated PJM RC, BA and TOP Operating Plan to mitigate operating Emergencies per EOP-011. Emergency conditions include:

- An~~y~~ abnormal condition requiring manual or automatic action to maintain system frequency or to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property.
- A fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel.
- A condition that requires implementation of emergency procedures as defined in the manuals.
- Capacity deficiency or capacity excess conditions.
- Abnormal natural events or man-made threats that would require conservative operations to posture the system in a more reliable state.
- An abnormal event external to the PJM service territory that may require PJM action.

The ***PJM Manual for Emergency Operations*** consists of seven~~six~~ sections and fourteen~~twelve~~ attachments. These sections are listed in the table of contents beginning on page 2.

Section 2.2 Reserve Requirements

- Removed reference to 33% interruptible load ceiling for contingency reserves and reference to outdated standard

Note:
PJM must schedule sufficient Regulating Reserves to satisfy control standards. Regulating Reserves shall be made up of not less than 75% Spinning Reserves, and resources allocated to regulating reserves shall not be included as part of Contingency Reserves.

PJM schedules sufficient Contingency Reserves to satisfy the Reliability *First* (RF) Regional Criteria. Contingency Reserves shall not be less than the largest contingency. Contingency Reserves must be made up of at least 50% Spinning Reserves. ~~No more than 33% of Contingency Reserves should be interruptible load. (NERC Standard BAL-002-3)~~

2.3.1 Advanced Notice Emergency Procedures: Alerts

- Max Gen/Load Management Alert -separated bullets under PJM and Member actions
- Voltage Reduction Alert
  - Updated Duquesne's Time to implement from 60 minutes to 10
  - Added Note to include average load reduction % from recent voltage reduction action test

Section 2.3.2 Real-Time Emergency Procedures (Warnings and Actions)

- Actions taken prior to entering into capacity related Emergency Procedures
  - Updated point #3 indicating that PJM will curtail non-firm exports as needed in accordance with EOP-011

Actions taken prior to entering into capacity related Emergency Procedures:

1. Review weather projections, load forecasts, reserve projections and generation performance.
2. Ensure LMPs are reflective of system conditions
3. Curtail all non-Firm exports, as needed, and issue an EEA1, as required by EOP-011 Attachment 1, via the RCIS and Emergency Procedures webpage.
4. Dispatch may elect to implement an interchange cap to stabilize the amount of interchange during peak hours to protect against volatility.

- Pre-Emergency Load Management Reduction Action:
  - added note to clarify pre-emergency load management is not a trigger for an EEA2
  - Separated bullet under “PJM Actions”

Note:
The minimum dispatch duration is 1 hour.

A Pre-Emergency Load Management Reduction Action is not a trigger for a NERC Energy Emergency Alert Level 2 (EEA2 = Alert Level 2

Section 2.3.2 Real-Time Emergency Procedures (Warnings and Actions)

- Emergency Load Management Reduction Action
  - Separated bullets under “PJM Actions”
  - Removed reference to “Long Lead Time”

- Primary Reserve Warning
  - Updated “equipment” to “generation”

- Maximum Generation Emergency Action
  - Clarified that PJM may suspend regulation
  - PJM Dispatch will curtail all non-pseudo tied export transactions as needed

- PJM Dispatch may instructs members to suspend Regulation on all resources, except hydro generation.
- PJM Dispatch will curtail all non-psuedo tied export transactions as needed
- ~~PJM Dispatch determines the feasibility recalling off-system capacity sales that are recallable (network resources).~~
  - PJM Dispatch will determine any limiting transmission constraints internal to PJM that would impact the ability to cut transactions to a specific interface.
  - PJM Dispatch will identify off-system capacity sales associated with the identified interfaces.
  - PJM Dispatch will contact the sink Balancing Authority to determine the impact of transaction curtailment.
  - If the net result of cutting off-system capacity sales would put the sink Balancing Authority into load shed then PJM will not curtail the transactions unless it would prevent load shedding within PJM.
  - If the net result of cutting off-system capacity sales would put PJM in a more severe capacity emergency than it is in currently in due to reciprocal transaction curtailments from the sink Balancing Authority, PJM will not initiate curtailing the transactions.

Section 2.3.2 Real-Time Emergency Procedures (Warnings and Actions)

Voltage Reduction Action

- Updated Note clarifying that Voltage reduction actions can be implemented to increase transfer capability

- Added note stating PJM may schedule up to 2 voltage reduction tests annually

Note:
Voltage reductions can also be implemented to increase transmission system voltages or to increase transfer capability across the system.

PJM Dispatch may perform bi-annual Voltage Reduction Action tests to ensure member companies and PJM Dispatch personnel are prepared to implement this procedure during real-time operations.

M13 Rev 96 - Section 2

Manual Load Dump Action

- Added note under PJM Member Actions to consider reducing the total number of customers impacted
- Added language around critical natural gas infrastructure to align with newest version of EOP-011-4

Note:
Member Load shed plans must recognize priority and critical load including: Essential health and public safety facilities such as hospitals, police, fire facilities, 911 facilities, wastewater treatment facilities; Facilities providing electric service to facilities associated with the Bulk Electric System including off-site power to generating stations, substation light and power; Critical natural gas infrastructure used to supply gas pipeline pumping plants, processing and production facilities; and Telecommunication facilities. Member load shed plans must recognize:

- Provisions for manual Load shedding capable of being implemented within 5 minutes for mitigating the Emergency
- Provisions to minimize the overlap of circuits that are designated for manual load shed, undervoltage load shed (UVLS), or underfrequency load shed (UFLS) and circuits that serve designated critical loads which are essential to the reliability of the BES;~~;~~
- Provisions to minimize the overlap of circuits that are designated for manual load shed and circuits that are utilized for ~~underfrequency load shed~~ (UFLS) or ~~undervoltage load shed~~ (UVLS); ~~and;~~
- Provisions for limiting the utilization of UFLS or UVLS circuits for manual load shed to situations where warranted by system conditions.[1]; and
- Provisions for the identification and prioritization of designated critical natural gas infrastructure loads which are essential to the reliability of the BES.
  - PJM considers the critical loads listed in M-36 Attachment A: Minimum Critical Black Start Requirement, as high priority.
  - PJM considers Critical Natural Gas Infrastructure as locations with electrical loads that are involved in natural gas production, processing, intrastate and interstate transmission and distribution pipeline facility, which if curtailed, will impact the delivery of natural gas to bulk-power system natural gas fired generation. Examples of such include but are not limited to, electric driven gas compressor stations, and gas processing facilities.

Plans should be reviewed and updated at least annually including Attachment F of M-13.

Consider using automated programs in member's EMS to facilitate shedding the specified amount of load with the required timeline.

Considerations should be given to limit the total number of customers impacted.

Rotate load that is shed when feasible to reduce impact to end use customers.

M13 Rev 96 - Section 3

Section 3.3.1 Cold Weather Advisory

- Added Verbiage to align with TOP-002-5 specifically calling out the need to communicate start-up issues

- Members are to update eDart/Markets Gateway by entering unit specific operation limitations associated with cold weather preparedness. Operating limitations include:
  - Generator capability and availability
  - Fuel supply and inventory concerns
  - Fuel switching capabilities
  - Environmental constraints
  - Generating unit minimums (design temperature, historical operating temperature or current cold weather performance temperature as determined by an engineering analysis
  - Start-up issues

Section 3.3.2 Cold Weather Alert

- Added bullet under PJM actions stating we will issue a Change Freeze

Section 3.4 Hot Weather Alert

- Added bullet under PJM actions stating we will issue a Change Freeze

- PJM may issue a Production System Change Freeze where PJM will refrain from updating business application systems, programs, data, systems software, hardware and other aspect of the information-processing environment at PJM.

Section 3.8.2 GMD Action

- Corrected spelling on “system” under 4th bullet of PJM Actions

Section 5.2 Transmission Security Emergency Procedures

- Pre-Emergency Load Management Reduction Action:
  - Added note to clarify pre-emergency load management does not trigger and EEA2
  - Separated bullet under “PJM Actions”

Note:
The minimum dispatch duration is 1 hour.

A Pre-Emergency Load Management Reduction Action is not a trigger for a NERC Energy Emergency Alert Level 2 (EEA2 = Alert Level 2

- Emergency Load Management Reduction Action
  - Separated bullets under “PJM Actions”

- Primary Reserve Warning
  - Updated “equipment” to “generation”

M13 Rev 96 - Section 5

Section 5.2 Transmission Security Emergency Procedures

- Maximum Generation Emergency Action
  - Clarified that PJM may suspend regulation
  - PJM Dispatch will curtail all non-pseudo tied export transactions as needed
  - Updated “equipment” to “generation” in PJM Actions Section

- Voltage Reduction Action
  - Updated Note clarifying that Voltage reduction actions can be implemented to increase transfer capability
  - Added note stating PJM may schedule up to 2 voltage reduction tests annually

- PJM Dispatch may instructs members to suspend Regulation on all resources, except hydro generation.
- PJM Dispatch will curtail all non-psuedo tied export transactions as needed
- ~~PJM Dispatch determines the feasibility recalling off-system capacity sales that are recallable (network resources).~~
  - PJM Dispatch will determine any limiting transmission constraints internal to PJM that would impact the ability to cut transactions to a specific interface.
  - PJM Dispatch will identify off-system capacity sales associated with the identified interfaces.
  - PJM Dispatch will contact the sink Balancing Authority to determine the impact of transaction curtailment.
  - If the net result of cutting off-system capacity sales would put the sink Balancing Authority into load shed then PJM will not curtail the transactions unless it would prevent load shedding within PJM.
  - If the net result of cutting off-system capacity sales would put PJM in a more severe capacity emergency than it is in currently in due to reciprocal transaction curtailments from the sink Balancing Authority, PJM will not initiate curtailing the transactions.

Note:
Voltage reductions can also be implemented to increase transmission system voltages or to increase transfer capability across the system.

PJM Dispatch may perform bi-annual Voltage Reduction Action tests to ensure member companies and PJM Dispatch personnel are prepared to implement this procedure during real-time operations.

Section 5.2 Transmission Security Emergency Procedures

Manual Load Dump Action

- Added language around critical natural gas infrastructure to align with newest version of EOP-011-4

PJM Member Actions

- Generation dispatchers suspend remaining regulation, when directed by PJM prior to shedding load.
- Transmission dispatchers/DPs promptly shed an amount of load equal to or in excess of the amount requested by PJM dispatcher (Mid-Atlantic Region operators refer to Attachment E for specific allocation). The load shed plan must consider/recognize:
  - Provisions for manual Load shedding capability of being implemented within 5 minutes for mitigating the Emergency
  - Provisions to minimize the overlap of circuits that are designated for manual load shed, undervoltage load shed (UVLS), or underfrequency load shed (UFLS) and circuits that serve designated critical loadswhich are essential to the reliability of the BES;
  - Provisions to minimize the overlap of circuits that are designated for manual load shed and circuits that are utilized for ~~underfrequency load shed~~ (UFLS) or ~~undervoltage load shed~~ (UVLS); and;
  - Provisions for limiting the utilization of UFLS or UVLS circuits for manual load shed to situations where warranted by system conditions. [2]; and
  - Provisions for the identification and prioritization of designated critical natural gas infrastructure loads which are essential to the reliability of the BES.
    - PJM considers the critical loads listed in M-36 Attachment A: Minimum Critical Black Start Requirement, as high priority.
    - PJM considers Critical Natural Gas Infrastructure as locations with electrical loads that are involved in natural gas production, processing, intrastate and interstate transmission and distribution pipeline facility, which if curtailed, will impact the delivery of natural gas to bulk-power system natural gas fired generation. Examples of such include but are not limited to, electric driven gas compressor stations, and gas processing facilities.

M13 Rev 96 - Section 5

Section 5.5 Interconnection Reliability Operating Limit (IROL) Manual Load Dump Warning/Action

- Added note under PJM Member Actions to consider reducing the total number of customers impacted
- Added language around critical natural gas infrastructure to align with newest version of EOP-011-4

Revision History

- Corrected Revision 93 bullet #5 to correct standard EOP-011-4

Note:
Member Load shed plans must recognize priority and critical load including: Essential health and public safety facilities such as hospitals, police, fire facilities, 911 facilities, wastewater treatment facilities; Facilities providing electric service to facilities associated with Bulk Electric System including off-site power to generating stations, substation light and power; Critical natural gas infrastructure used to supply gas pipeline pumping plants, processing and production facilities; and Telecommunication facilities. Member load shed plans must recognize:

- Provisions for manual Load shedding capable of being implemented within 5 minutes for mitigating the Emergency
- Provisions to minimize the overlap of circuits that are designated for manual load shed, undervoltage load shed (UVLS), or underfrequency load shed (UFLS) and circuits that serve designated critical loads which are essential to the reliability of the BES;
- Provisions to minimize the overlap of circuits that are designated for manual load shed and circuits that are utilized for (UFLS) or (UVLS);
- Provisions for limiting the utilization of UFLS or UVLS circuits for manual load shed to situations where warranted by system conditions. ; and
- Provisions for the identification and prioritization of designated critical natural gas infrastructure loads which are essential to the reliability of the BES.
  - PJM considers the critical loads listed in M-36 Attachment A: Minimum Critical Black Start Requirement, as high priority.
  - PJM considers Critical Natural Gas Infrastructure as locations with electrical loads that are involved in natural gas production, processing, intrastate and interstate transmission and distribution pipeline facility, which if curtailed, will impact the delivery of natural gas to bulk-power system natural gas fired generation. Examples of such include but are not limited to, electric driven gas compressor stations, and gas processing facilities.

Plans should be reviewed and updated at least annually including Attachment N of M-13.

Consider using automated programs in member's EMS to facilitate shedding the specified amount of load with the required timeline.

Considerations should be given to limit the total number of customers impacted.

Rotate load that is shed when feasible to reduce impact to end use customers.

6.4 Resource Limitation Reporting

- Updated the Table in Section 6.4 to reflect the correct tab in Market's Gateway- Unit Limitations

Resource Limited Unit (Type)	Resource Limitaitons					PJM Member Actions
	On-Site Fuel Only	Emissions	Colling Water	Demin Water	Other	
CT	<72 hours					Report remaining run hours in the "Unit Limitations" page in Markets Gateway
	<24 hours					Update Max Run Field in Market's Gateway
	<16 hours					Verbally notify PJM Master Coordinator
	<16 hours					Offer as Maximum Emergency (if PJM issues Cons. Ops/Hoy/Cold Weather Alert) and report as detaild in the "Maximum Emergency Reporting and Documentation" section above
Steam	<240 hours (coal units only*)					Can be offered as Maximum Emegency consistent with the requiremented noted below
	<72 hours					Report remaining run hours in the "Unit Limitations" page in Markets Gateway
	<32hours					Verbally notify PJM Master Coordinator
	<32 hours					Offer as Maximum Emergency (if PJM issues Cons. Ops/Hoy/Cold Weather Alert) and report as detaild in the "Maximum Emergency Reporting and Documentation" section above
	<24 hours					Update Max Run Field in Market's Gateway

Yellow Highlighting - Minimum Level Thresholds for Resource Limited Units

Gas-Only Units with Fuel Limitations:

1) These are not considered Resource Limited Units, and should not be reported as Resource Limited in Market's Gateway
2) These should not be placed in Max Emergency, following PJM Cons. Ops/Hot/Cold Weather Alerts, but remain Economic, unless directed otherwise by PJM.
3) Gas-Only Units with other Resource Limitations (emissions, etc.) should report as indicated in the above table.

Dual Fuel (Gas/Other) Units:

1) These should be reported as Resource Limited for only on-site fuel restrictions or other Resource Limitations as indicated in the above table. They should not report natural gas fuel restrictions.
2) These may be placed in Max Emergency, following PJM Cons. Ops/Hot/Cold Weather Alerts, for only on-site fuel restrictions (when unavailable on natural gas and on-site fuel falls below Minimum Level Thresholds) or other Resource Limitations as indicated in the above table

***Coal units with less than 240 hours remaining:**

1) Coal Units with less than 240 hours but more than 32 hours can be offered as Maximum Emergency by the generation owner unless:
   a. PJM has issued a hot Weather Alert, Cold Weather Alert, or declares Conservative Operators, or
   b. PJM denies the use of Maximum Emergency for any reason, including but not limited to a potential thermal or voltage violation, to avoid running CEJA limited units with no economic hours remaining, a black start concern, tornado/hurricanes, extreme weather, GMD activity, etc.
2) If a coal unit is offered into the Maximum Emergency state under the above conditions, it may remain in that state until one of the following is true:
   a. The generation owner elects to offer the unit as economic
   b. The remaining run hours reaches 21 days
   c. PJM has issued Hot Weather Alert, Cold Weather Alert, or declares Conservative Operations, or
   d. PJM denies the use of Maximum Emergency for any reason, including but not limited to a potential thermal or voltage violation, to avoid running CEJA limited units with no economic hours remaining, a black start concern, tornado/hurricanes, extreme weather, GMD activity, etc.

Timeline

First Reads

- July 1st SOS
- July 10th OC
- July 23rd MRC

Second Reads

- August 1st SOS
- August 7th OC
- August 20th MRC (Endorsement)

Contact

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M-13 Version 96 Revisions

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