5.7 Load Shed Directive Procedure

Load Shed Directive

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

For a facility exceeding its LTE, STE or LD thermal rating, PJM and TO Operators should utilize the following steps to determine when to Shed Load:

**STEP 1:** Contact between the PJM and TO should be made immediately. In particular for a facility exceeding its LD rating, there is minimal time for delay outside of the initial recognition of the event.

**STEP 2:** Compare real-time (RT) flows to state estimator (SE) flows.

- If there are no discrepancies, move on to **STEP 3**.
- For any discrepancies:
  - If the reason for the discrepancies is NOT immediately obvious, PJM and TO shall agree upon the most-conservative values.
  - If the reason for the discrepancies is immediately obvious, and the facility is determined not to be in an LTE, STE or LD overload:
    ▪ PJM and TO should work together as needed to resolve the discrepancy.
    ▪ PJM and TO operators should log the discrepancy.
    ▪ Cease Load Shed Determination Procedure if it is determined that the facility is not in an overload situation. Otherwise, go to next step.

**STEP 3:** Compare LD and Emergency (LTE and STE, if both are provided) ratings between PJM and TO.

- If there are no ratings discrepancies, move on to **STEP 4**.
- For any discrepancies:
  - If the reason for the discrepancies is NOT immediately obvious, PJM and TO shall agree upon the most-conservative/lowest values.
  - If the reason for the discrepancies is immediately obvious, and the facility is determined not to be in an LTE, STE or LD overload:
    ▪ PJM and TO should work together as needed to resolve the discrepancy.
    ▪ PJM and TO operators should log the discrepancy.
    ▪ Cease Load Shed Determination Procedure if it is determined that the facility is not in an overload situation. Otherwise, go to next step.

**STEP 4:** Switching and or Generation Option

**Step 4A:** Flow exceeds LD
• There are only 3 options available to alleviate to ensure flow is brought below limits within 5 minutes:
  • A reclose attempt on a facility that just tripped and caused the present Load Dump overload; and/or
  • A Pre-Studied Switching Solution; and/or
  • ONLINE Generation Redispatch; Provided the generation has significant enough ramp-rate and relief potential to alleviate the overload within the given time constraints (5 minutes for a LD overload from the time Flow exceeded the LD rating). If reducing generation or shedding load are both options, generation should be reduced or tripped offline before shedding load.
  • If a Pre-Studied Switching Solution or ONLINE Generation Redispatch is not immediately implemented ... Go to STEP 5.

Step 4B: Flow exceeds STE but not LD (including if STE = LTE)
  • Operators have some time to study Switching Solutions and/or Generation Redispatch.
  • If no controlling actions are identified or if the actions will not alleviate the overload within 15 minutes from identification of the overload...Go to STEP 5.

Step 4C: Flow exceeds LTE but not STE
  • Operators may have additional time to study Switching Solutions and/or Generation Redispatch. The additional time is dependent upon the STE time based rating for the facility as documented in Manual M-03 Attachment F and posted on at this OASIS site (typically 30 mins – 2 hours).
  • http://www.pjm.com/~/media/etools/oasis/system-information/m03-attachment-f-ste-rating-list.ashx
  • However, if flow is above the LTE rating and 5 minutes away from becoming a Violation of the STE time based rating AND if a Switching Solution and/or Generation Redispatch is not expected to alleviate the overload ...Go to STEP 5.

STEP 5: PJM will initiate a Load Shed Directive to the Transmission Owner(s) immediately and without delay.

  • Transmission Owner may coordinate with BtMG facility interconnected to the transmission system, or through the relevant electric distribution utility, during expected prolonged emergency load dump/shed or as otherwise necessary to help mitigate a grid emergency. As BtMG facilities do not participate in the wholesale energy market, any request to operate for the purpose of helping to mitigate a wholesale market issue is on a voluntary basis at the discretion of the BtMG owner. Any request to operate to mitigate a wholesale market issue will be communicated to the BtMG as a voluntary request at the discretion of the BtMG owner. Refer to Manual 14D Appendix A for more information regarding BtMG.
Load Shed Determination Flow Chart For a Facility Exceeding Rating

Recognition of Event
PJM/TO Communication

Compare RT versus SE flows

Cause for Discrepancy obvious?
Yes

If no overload, work to resolve data problem

No

Use most conservative/highest value

Log

PJM/TO compare LD, STE, LTE Ratings

Causing for Disagreement obvious?
Yes

If no overload, work to resolve rating problem

No

Use most conservative/lowest rating

Log

Over LD Rating?

Yes

Possible switching or generation solutions?

Yes

Implement within 30 min if over LTE, 25 min if over LTE

No

No

Implement Load Shed Directive

Yes

Predicted shedding of online generation to fix problem in 5 min?

No

Implement within 5 minutes