A. Introduction

1. **Title:** **Load Shedding Plans**

2. **Number:** EOP-003-1

3. **Purpose:** A Balancing Authority and Transmission Operator operating with insufficient generation or transmission capacity must have the capability and authority to shed load rather than risk an uncontrolled failure of the Interconnection.

4. **Applicability:**

   4.1. Transmission Operators.

   4.2. Balancing Authorities.

5. **Effective Date:** One year following the first day of the first calendar quarter after applicable regulatory approvals (or the standard otherwise becomes effective the first day of the first calendar quarter after NERC Board of Trustees adoption in those jurisdictions where regulatory approval is not required).

B. Requirements

R1. After taking all other remedial steps, a Transmission Operator or Balancing Authority operating with insufficient generation or transmission capacity shall shed customer load rathe than risk an uncontrolled failure of components or cascading outages of the Interconnection.

R2. Each Transmission Operator ~~and Balancing Authority~~ shall establish plans for automatic load shedding for ~~underfrequency or~~ undervoltage conditions if the Transmission Operator or its associated Transmission Planner(s) or Planning Coordinator(s) determine that an under-voltage load shedding scheme is required.

R3. Each Transmission Operator and Balancing Authority shall coordinate load shedding plans among other interconnected Transmission Operators and Balancing Authorities.

R4. A Transmission Operator ~~or Balancing Authority~~ shall consider one or more of these factors designing an automatic load shedding scheme: ~~frequency, rate of frequency decay,~~ voltage level, rate of voltage decay, or power flow levels.

R5. A Transmission Operator or Balancing Authority shall implement load shedding in steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.

R6. After a Transmission Operator or Balancing Authority Area separates from the Interconnection, if there is insufficient generating capacity to restore system frequency following automatic underfrequency load shedding, the Transmission Operator or Balancing Authority shall shed additional load.

R7. The Transmission Operator ~~and Balancing Authority~~ shall coordinate automatic undervoltage load shedding throughout their areas with ~~underfrequency isolation of generating units,~~ tripping of shunt capacitors, and other automatic actions that will occur under abnormal ~~frequency,~~ voltage, or power flow conditions

~~R6.~~**R8.** Each Transmission Operator or Balancing Authority shall have plans for operator controlled manual load shedding to respond to real-time emergencies. The Transmission Operator or Balancing Authority shall be capable of implementing the load shedding in a timeframe adequate for responding to the emergency.

R1/R3 Because this requirement is related to manual load shedding in addition to automatic load shedding, the drafting team did not modify the requirement. The UFLS standard is a planning standard and proposes requirements for automatic UFLS programs.

R2 The SDT reviewed R2 and thinks the original intent is to allow the TOP and BA to have a UFLS OR a UVLS program. If UFLS is deleted the original intent is modified such that the TOP has to have a UVLS program. This is why the SDT decided to add the additional language to the requirement. BA was deleted from the requirement because they are not responsible for voltage.

R4 BA was deleted from the requirement because they are not responsible for voltage and references to items to consider for UFLS were deleted.

R7 BA was deleted from the requirement because they are not responsible for voltage and "undervoltage" was added in the requirement because the TOP will have UFLS in its area and they should not be responsible for coordinating.

C. Measures

M1. Each Transmission Operator ~~and Balancing Authority~~ that has or directs the deployment of undervoltage ~~and/or underfrequency~~ load shedding facilities, shall have and provide upon request, its automatic load shedding plans.(Requirement 2)

M2. Each Transmission Operator and Balancing Authority shall have and provide upon request its manual load shedding plans that will be used to confirm that it meets Requirement 8. (Part 1)

D. Compliance

1. Compliance Monitoring Process

1.1. Compliance Monitoring Responsibility

Regional Reliability Organizations shall be responsible for compliance monitoring.

1.2. Compliance Monitoring Period and Reset Timeframe

One or more of the following methods will be used to assess compliance:

- Self-certification (Conducted annually with submission according to schedule.)
- Spot Check Audits (Conducted anytime with up to 30 days notice given to prepare.)
- Periodic Audit (Conducted once every three years according to schedule.)
- Triggered Investigations (Notification of an investigation must be made within 60 days of an event or complaint of noncompliance. The entity will have up to 30 days to prepare for the investigation. An entity may request an extension of the preparation period and the extension will be considered by the Compliance Monitor on a case-by-case basis.)~~The Performance-Reset Period shall be 12 months from the last finding of noncompliance.~~

1.3. Additional Reporting Requirement

No additional reporting required.

1.4. Data Retention

Each Balancing Authority and Transmission Operator shall have its current, in-force load shedding plans.

If an entity is found non-compliant the entity shall keep information related to the noncompliance until found compliant or for two years plus the current year, whichever is longer.

Evidence used as part of a triggered investigation shall be retained by the entity being investigated for one year from the date that the investigation is closed, as determined by the Compliance Monitor.

The Compliance Monitor shall keep the last periodic audit report and all requested and submitted subsequent compliance records.

1.5. Additional Compliance Information

None

2. Violation Severity Levels

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	N/A	N/A	N/A	The Transmission Operator or Balancing Authority failed to shed customer load.
R2	N/A	N/A	N/A	The Transmission Operator ~~responsible entity~~ did not establish plans for automatic load shedding for undervoltage conditions as directed by the requirement.
R3.	The responsible entity did not coordinate load shedding plans, as directed by the requirement, affecting 5% or less of its required entities.	The responsible entity did not coordinate load shedding plans, as directed by the requirement, affecting more than 5% up to (and including) 10% of its required entities.	The responsible entity did not coordinate load shedding plans, as directed by the requirement, affecting more than 10%, up to (and including) 15% or less, of its required entities.	The responsible entity did not coordinate load shedding plans, as directed by the requirement, affecting more than 15% of its required entities.
R4.	N/A	N/A	N/A	The Transmission Operator ~~responsible entity~~ failed to consider at least one of the ~~five~~ three elements ~~(frequency, rate of frequency decay,~~voltage level, rate of voltage decay, or power flow levels) listed in the requirement.
R5.	N/A	N/A	N/A	The Transmission Operator or Balancing Authority failed to implement load shedding in

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
				steps established to minimize the risk of further uncontrolled separation, loss of generation, or system shutdown.
R6.	N/A	N/A	N/A	The Transmission Operator or Balancing Authority failed to shed additional load after it had separated from the Interconnection when there was insufficient generating capacity to restore system frequency following automatic underfrequency load shedding.
R7.	The Transmission Operator ~~responsible entity~~ did not coordinate automatic undervoltage load shedding with 5% or less of the types of automatic actions described in the Requirement. ~~Coordination with individual generating units is considered as one automatic action for purposes of determining Violation Severity Levels.~~	The Transmission Operator ~~responsible entity~~ did not coordinate automatic undervoltage load shedding with more than 5% up to (and including) 10% of the types of automatic actions described in the Requirement. ~~Coordination with individual generating units is considered as one automatic action for purposes of determining Violation Severity Levels.~~	The Transmission Operator ~~responsible entity~~ did not coordinate automatic undervoltage load shedding with more than 10% up to (and including) 15% of the types of automatic actions described in the Requirement. ~~Coordination with individual generating units is considered as one automatic action for purposes of determining Violation Severity Levels.~~	The Transmission Operator ~~responsible entity~~ did not coordinate automatic undervoltage load shedding with more than 15% of the types of automatic actions described in the Requirement. ~~Coordination with individual generating units is considered as one automatic action for purposes of determining Violation Severity Levels.~~
R8.	N/A	The responsible entity did not have plans for operator controlled manual load shedding, as directed by the requirement.	The responsible entity has plans for manual load shedding but did not have the capability to implement the load shedding, as directed by the requirement.	The responsible entity did not have plans for operator controlled manual load shedding, as directed by the requirement nor had the capability to implement the load

R#	Lower VSL	Moderate VSL	High VSL	Severe VSL
				shedding, as directed by the requirement.

E. Regional Differences

None identified.

Version History

Version	Date	Action	Change Tracking