

## Standard Development Timeline

This section is maintained by the drafting team during the development of the standard and will be removed when the standard is adopted by the NERC Board of Trustees (Board).

### Description of Current Draft

This is the third draft of the proposed standard posted for a 15-day formal comment period with additional ballot.

Completed Actions	Date
Standards Committee approved Standard Authorization Request (SAR) for posting	July 19, 2023
SAR posted for comment	August 8–September 27, 2023
45-day formal comment period with initial ballot	March 20–May 3, 2024
38-day formal comment period with additional ballot	July 16–August 22, 2024

Anticipated Actions	Date
15-day formal comment period with additional ballot	October 7–21, 2024
15-day formal comment period with additional ballot	November 7–21, 2024
5-day final ballot	December 2–6, 2024
Board adoption	December 11, 2024

## **New or Modified Term(s) Used in NERC Reliability Standards**

This section includes all new or modified terms used in the proposed standard that will be included in the *Glossary of Terms Used in NERC Reliability Standards* upon applicable regulatory approval. Terms used in the proposed standard that are already defined and are not being modified can be found in the *Glossary of Terms Used in NERC Reliability Standards*. The new or revised terms listed below will be presented for approval with the proposed standard. Upon Board adoption, this section will be removed.

### **Term(s):**

**Extreme Temperature Assessment** – Documented evaluation of future Bulk Electric System performance for extreme heat and extreme cold benchmark temperature ~~benchmark~~ events.

## A. Introduction

1. **Title:** Transmission System Planning Performance Requirements for Extreme Temperature Events
2. **Number:** TPL-008-1
3. **Purpose:** Establish Transmission system planning performance requirements to develop a Bulk Power System (BPS) that will operate reliably during extreme heat and extreme cold temperature events.
4. **Applicability:**
  - 4.1. **Functional Entities:**
    - 4.1.1. Transmission Planner
    - 4.1.2. Planning Coordinator
5. **Effective Date:** See Implementation Plan for Project 2023-07.

## B. Requirements and Measures

- R1.** Each Planning Coordinator shall identify, in conjunction with its Transmission Planner(s), ~~shall identify~~ each entity's individual and joint responsibilities for completing the Extreme Temperature Assessment, which shall include each of the responsibilities described in Requirements R2 through R11. Each responsible entity shall complete its responsibilities such that the Extreme Temperature Assessment is completed at least once every five calendar years. [Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]
- M1.** Each Planning Coordinator, in conjunction with its Transmission Planner(s), shall provide documentation of each entity's individual and joint responsibilities, such as meeting minutes, agreements, copies of procedures or protocols, in effect between entities or between departments of a vertically integrated system, or email correspondence that identifies an agreement has been reached on individual and joint responsibilities for completing the Extreme Temperature Assessment and that these responsibilities were completed such that the Extreme Temperature Assessment was completed once every five calendar years.
- R2.** ~~Each responsible entity, as~~ Each Planning Coordinator shall identify the zone(s) to which the Planning Coordinator belongs to under Attachment 1, and shall coordinate with all Planning Coordinators within each of its identified in Requirement R1, shall zone(s), to select ~~at least one~~ common extreme heat benchmark temperature event and ~~at least one~~ common extreme cold benchmark temperature event, ~~from the benchmark library, approved and maintained by the Electric Reliability Organization (ERO), for each of its identified zone(s) when~~ completing the Extreme Temperature Assessment.<sup>1</sup> Selected benchmark temperature events shall: [Violation Risk Factor: High] [Time Horizon: Long-term Planning]
- 2.1.** Consider no less than a 40-year period of temperature data ending no more than five years prior to the time the benchmark temperature events are selected; and
- 2.2.** Represent one of the 20 most extreme temperature conditions based on the three-day rolling average of daily maximum (heat) or daily minimum (cold) temperature across the zone.
- M2.** Each ~~responsible entity, as identified in Requirement R1,~~ Planning Coordinator shall have evidence in either electronic or hard copy format ~~of selecting at least one extreme heat benchmark event and at least~~ that it identified the zone(s) to which it belongs to, under Attachment 1, and coordinated with all other Planning Coordinators within each of its identified zone(s) to select one common extreme heat benchmark temperature event and one common extreme cold benchmark temperature event

<sup>1</sup> The Electric Reliability Organization (ERO) will maintain a library of benchmark temperature events that meet the criteria of Requirement R2.

~~for meeting the criteria of Requirement R2 for each of their identified zone(s) when completing the Extreme Temperature Assessment.~~

**R3.** Each Planning Coordinator shall ~~develop and coordinate with all Planning Coordinators within each of its zone(s) identified in Requirement R2, to~~ implement a process for ~~coordinating the development of developing~~ benchmark planning cases, ~~using for the selected Extreme Temperature Assessment that represent the~~ benchmark temperature events ~~identified selected~~ in Requirement R2, ~~Planning Coordinator(s), Transmission Planner(s), and other designated study entities, within an~~ and sensitivity cases to demonstrate the impact of changes to the basic assumptions used in the ~~benchmark planning cases.~~ This process shall include ~~the following:~~ *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

**3.1.** ~~Selection of System models within the Long-Term Transmission Planning Horizon to form the basis for the benchmark planning cases.~~

**3.2.** ~~Forecasted~~ seasonal and temperature dependent adjustments for Load, generation, Transmission, and transfers ~~to represent the selected benchmark temperature events.~~ *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning] within the zone.*

**3.3.** ~~Assumed seasonal and temperature dependent adjustments for Load, generation, Transmission, and transfers in areas outside the zone, as needed.~~

**3.4.** ~~Identification of changes to at least one of the following conditions for sensitivity cases: generation, real and reactive forecasted Load, or transfers.~~

**M3.** Each Planning Coordinator shall have dated evidence that it ~~developed and~~ implemented a process for coordinating the development of benchmark planning cases ~~and sensitivity cases for the Extreme Temperature Assessment~~ as specified in Requirement R3 ~~that includes seasonal and temperature dependent adjustment for Load, generation, Transmission, and transfers to represent the selected benchmark temperature events.~~

**R3,R4.** Each responsible entity, as identified in Requirement R1, shall use the coordination process developed in ~~accordance with~~ Requirement R3 and data consistent with that provided in accordance with the MOD-032 standard, supplemented by other sources as needed, to develop ~~and maintain~~ the following ~~and establish category P0 as the normal System condition in Table 1:~~ *[Violation Risk Factor: High] [Time Horizon: Long-term Planning]*

**3.1.** ~~Benchmark planning cases that include seasonal and temperature dependent adjustments for Load, generation, Transmission, and transfers to represent the System conditions of the selected benchmark temperature events as identified in Requirement R2 for one of the years in the Long Term Transmission Planning Horizon. The rationale for the year selected for evaluation shall be available as~~

~~supporting information. This establishes Category P0 as the normal System condition in Table 1.~~

~~3.2. Sensitivity cases to demonstrate the impact of changes to the basic assumptions used in the benchmark planning cases. To accomplish this, the sensitivity cases shall have changes to at least one of the following conditions:~~

- ~~• Generation;~~
- ~~• Real and reactive forecasted Load; or~~
- ~~• Transfers.~~

4.1. One common extreme heat and one common extreme cold benchmark planning case.

4.2. One common extreme heat and one common extreme cold sensitivity case.

**M4.** Each responsible entity, as identified in Requirement R1, shall have dated evidence in either electronic or hard copy format that it developed ~~and maintained~~ benchmark planning cases and sensitivity cases ~~for completing the Extreme Temperature Assessment~~ in accordance with Requirement R4.

**~~R4~~R5.** Each responsible entity, as identified in Requirement R1, shall have criteria for acceptable System steady state voltage limits, and post-Contingency voltage deviations, ~~and applicable Facility Ratings~~ for completing the Extreme Temperature Assessment. [*Violation Risk Factor: ~~High~~Medium*] [*Time Horizon: Long-term Planning*]

**M5.** Each responsible entity, as identified in Requirement R1, shall provide dated evidence, such as electronic or hard copies of the documentation, specifying the criteria for acceptable System steady state voltage limits, and post-Contingency voltage deviations, ~~and applicable Facility Ratings~~ for completing the Extreme Temperature Assessment.

**~~R5~~R6.** Each responsible entity, as identified in Requirement R1, shall define and document the criteria or methodology to be used in the Extreme Temperature Assessment ~~analysis~~ to identify instability, uncontrolled separation, or Cascading within an Interconnection. [*Violation Risk Factor: High*] [*Time Horizon: Long-term Planning*]

**M6.** Each responsible entity, as identified in Requirement R1, shall provide dated evidence, such as electronic or hard ~~copy~~copies of documentation ~~of, specifying~~ the criteria or methodology ~~used~~ to be used in the Extreme Temperature Assessment to identify instability, uncontrolled separation, or Cascading within an Interconnection. ~~in accordance with Requirement R6.~~

**R7.** Each responsible entity, as identified in Requirement R1, shall identify the ~~planning events~~ Contingencies for each category in Table 1 that are expected to produce more severe System impacts on its portion of the Bulk Electric System. The rationale for

those Contingencies selected for evaluation shall be available as supporting information. [Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]

~~R6.~~ Each responsible entity, as identified in Requirement R1, shall provide dated evidence, such as electronic or hard copies of documentation, of the Contingencies for each category in Table 1 that are expected to produce more severe System impacts on its portion of the Bulk Electric System. ~~The rationale for those Contingencies selected for evaluation shall be available as supporting information. [Violation Risk Factor: High] [Time Horizon: Long-term Planning]~~

~~M7.~~ Each responsible entity, as identified in Requirement R1, shall provide dated evidence such as electronic or hard copy documentation of the planning events for each event category in Table 1 that are expected to produce more severe System impacts on its portion of the Bulk Electric System along with supporting rationale.

~~R7,R8.~~ Each responsible entity, as identified in Requirement R1, shall complete steady state and transient stability analyses in ~~its~~the Extreme Temperature Assessment ~~at least once every five calendar years~~ using the Contingencies identified in Requirement R7, and shall document the assumptions and results ~~of the steady.~~ Steady state and transient stability analyses. ~~The Extreme Temperature Assessment shall include~~be performed for the following: [Violation Risk Factor: High] [Time Horizon: Long-term Planning]

~~7.1.8.1.~~ Analysis of the benchmarkBenchmark planning cases developed in accordance with Requirement R4 Part 4.1.

~~7.2.8.2.~~ Analysis of the sensitivitySensitivity cases developed in accordance with Requirement R4 Part 4.-2.

M8. Each responsible entity, as identified in Requirement R1, shall provide dated evidence ~~that it completed the,~~ such as electronic or hard copies of documentation, of the assumptions and results of the steady state and transient stability analyses completed in ~~its~~the Extreme Temperature Assessment, ~~such as electronic or hard copies of the analyses, meeting all the requirements in Requirement R8.~~

~~R8,R9.~~ Each responsible entity, as identified in Requirement R1, shall develop a Corrective Action Plan(s) ~~(CAPs)~~ when the ~~assessment~~analysis of a benchmark planning case, in accordance with Requirement R8 Part 8.1, indicates its portion of the Bulk Electric System is unable to meet performance requirements for ~~Table 1~~category P0 or P1 ~~Contingencies in Table 1.~~ For each Corrective Action Plan, the responsible entity shall: [Violation Risk Factor: High] [Time Horizon: Long-term Planning]

~~8.1.9.1.~~ Make ~~their CAP~~its Corrective Action Plan available to, and solicit feedback from applicable regulatory authorities or governing bodies responsible for retail electric service issues.

~~8.2.9.2.~~ Document ~~the~~ alternative(s) considered, and notify the applicable regulatory authorities or governing bodies responsible for retail electric service

issues when Non-Consequential Load Loss is utilized as an element of a CAP Corrective Action Plan for ~~the~~ Table 1 P1 Contingency.

~~8.3.9.3.~~ Be permitted to utilize Non-Consequential Load Loss as an interim solution, which normally is not permitted in Table 1, in situations that are beyond the control of the Planning Coordinator or Transmission Planner that prevent the implementation of a Corrective Action Plan in the required timeframe. ~~The use of Non-Consequential Load Loss as an interim solution in this situation is permitted, provided that each, provided that the~~ responsible entity documents the situation causing the problem, alternatives evaluated, and takes actions to resolve the situation.

~~8.4.9.4.~~ Be allowed to have revisions to the CAP Corrective Action Plan in subsequent Extreme Temperature Assessments, provided that the planned BES Bulk Electric System shall continue to meet the performance requirements of Table 1.

**M9.** Each responsible entity, as identified in Requirement R1, shall provide dated evidence, such as electronic or hard ~~copy~~ copies of documentation, of each CAP Corrective Action Plan developed ~~for its Extreme Temperature Assessment in accordance with Requirement R9, including~~ dated documentation of correspondence with applicable regulatory authorities or governing bodies responsible for retail electric service issues and any revision history, when the ~~assessment analysis of the~~ benchmark planning ~~cases indicate~~ case indicates its portion of the BES Bulk Electric System is unable to meet performance requirements for ~~Table 1 category~~ P0 or P1 ~~Contingencies in accordance with Requirement R9 in Table 1.~~

**R9, R10.** Each responsible entity, as identified in Requirement R1, shall evaluate and document possible actions designed to reduce the likelihood or mitigate the consequences and adverse impacts of the event(s) if analyses conclude there could be instability, uncontrolled separation, or Cascading within an Interconnection, for the following: *[Violation Risk Factor: Lower] [Time Horizon: Long-term Planning]*

~~9.1.~~ ~~Benchmark planning cases where possible actions are designed to mitigate the consequences and adverse impacts when the study results indicate the System could result in instability, uncontrolled separation, or Cascading for the Table 1 P2, P4, and P7 Contingencies.~~

~~9.2.~~ ~~Sensitivity cases where possible actions are designed to mitigate failures to meet the performance requirements in Table 1 for category P0, P1, P2, P4, and P7 Contingencies.~~

10.1. Table 1 P7 Contingencies in benchmark planning cases analyzed in accordance with Requirement R8 Part 8.1.

10.2. Categories P0, P1, and P7 in Table 1 in sensitivity cases analyzed in accordance with Requirement R8 Part 8.2.



**M10.** Each responsible entity, as identified in Requirement R1, shall provide dated evidence such as electronic or hard ~~copy~~copies of documentation that it evaluated and documented possible actions designed to reduce the likelihood or mitigate the consequences and adverse impacts when the ~~benchmark planning case study results indicate the System analyses conclude there~~ could ~~result in~~be instability, uncontrolled separation, or Cascading within an Interconnection for ~~the~~Table 1 ~~P2, P4, and P7~~ Contingencies in benchmark planning cases or categories P0, P1, or P7 in Table 1 in sensitivity cases.

**~~R10, R11.~~** Each responsible entity, as identified in Requirement R1, shall provide its Extreme Temperature Assessment results within 60 calendar days of a request to any functional entity that has a reliability related need and submits a written request for the information. *[Violation Risk Factor: Medium] [Time Horizon: Long-term Planning]*

**M11.** Each responsible entity, as identified in Requirement R1, shall provide dated evidence, such as email notices, documentation of updated web pages, postal receipts showing recipient~~s~~, or a demonstration of a public posting~~s~~, that it provided its Extreme Temperature Assessment to any functional entity who has a reliability need within 60 calendar days of a written request.

## C. Compliance

### 1. Compliance Monitoring Process

**1.1. Compliance Enforcement Authority:** “Compliance Enforcement Authority” means NERC or the Regional Entity, or any entity as otherwise designated by an Applicable Governmental Authority, in their respective roles of monitoring and/or enforcing compliance with mandatory and enforceable Reliability Standards in their respective jurisdictions.

**1.2. Evidence Retention:** The following evidence retention period(s) identify the period of time an entity is required to retain specific evidence to demonstrate compliance. For instances where the evidence retention period specified below is shorter than the time since the last audit, the Compliance Enforcement Authority may ask an entity to provide other evidence to show that it was compliant for the full-time period since the last audit.

The applicable entity shall keep data or evidence to show compliance as identified below unless directed by its Compliance Enforcement Authority to retain specific evidence for a longer period of time as part of an investigation.

- Each responsible entity shall retain evidence of compliance with each requirement in this standard for five calendar years or one complete Extreme Temperature Assessment cycle, whichever is longer.

**1.3. Compliance Monitoring and Enforcement Program:** As defined in the NERC Rules of Procedure, “Compliance Monitoring and Enforcement Program” refers to the identification of the processes that will be used to evaluate data or information for the purpose of assessing performance or outcomes with the associated Reliability Standard.

<b>Table 1.1-Contingencies-Category</b> See Footnote-2-for-BES-Level – <b>Steady State &amp; Stability Performance Events</b>			
Category		Event	Fault-type
<b>P0</b> No-Contingency	Normal-System	None	N/A
<b>P1</b> Single-Contingency	Normal-System	<del>Loss of one of the following:</del> 1. <del>Generator</del> 2. <del>Transmission-Circuit</del> 3. <del>Transformer</del> 4. <del>Shunt Device<sup>3</sup></del>	<del>3Ø</del>
		5. <del>Single Pole of a DC line</del>	SLG
<b>P2</b> Single-Contingency	Normal-System	1. <del>Opening of a line section w/o a Fault<sup>4</sup></del>	N/A
		2. <del>Bus-Section Fault</del>	SLG
		3. <del>Internal Breaker Fault<sup>5</sup> (non-Bus-tie Breaker)</del>	SLG
		4. <del>Internal Breaker Fault (Bus-tie Breaker)<sup>5</sup></del>	SLG
<b><u>Steady State &amp; Stability:</u></b> a. <u>Instability, uncontrolled separation, or Cascading within an Interconnection, defined in accordance with Requirement R6, shall not occur.</u> b. <u>Consequential Load Loss as well as generation loss is acceptable as a consequence of any event excluding P0.</u> c. <u>Simulate the removal of all elements that Protection Systems and other controls are expected to automatically disconnect for each event.</u> d. <u>Simulate Normal Clearing unless otherwise specified.</u>			

e. Planned System adjustments such as Transmission configuration changes and re-dispatch of generation are allowed if such adjustments are executable within the time duration applicable to the Facility Ratings.

**Steady State Only:**

Applicable Facility Ratings shall not be exceeded. ~~Loss of multiple Elements caused by a stuck breaker<sup>6</sup> (non-Bus-tie Breaker) attempting to clear a Fault on one of the following:~~

f.

1. System steady state voltages and post-Contingency voltage deviations shall meet the criteria identified in Requirement

R5. Generator

~~2. Transmission Circuit~~

~~1. Transformer~~

~~2. Shunt Device<sup>3</sup>~~

~~5. Bus Section~~

~~a.g. Loss of multiple Elements caused by a stuck breaker<sup>6</sup> (Bus-tie Breaker) attempting to clear a Fault on the associated bus~~

<p><del>P7</del> Multiple Contingency (Common Structure)</p>		<p>The loss of: 1. Any two adjacent (vertically or horizontally) circuits on common structure 2. Loss of a bipolar DC line</p>	<p>SLG</p>
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<b>Table 1.2 – Steady State &amp; Stability Performance Requirements Events</b>					
	<b>P0</b>	<b>P1</b>	<b>P2</b>	<b>P4</b>	<b>P7</b>
<b>Steady State Performance Requirements</b>	<ul style="list-style-type: none"> <li>Applicable Facility Ratings shall not be exceeded.</li> <li>System steady state voltages shall be within acceptable limits as defined in Requirement R5.</li> </ul>	<ul style="list-style-type: none"> <li>Applicable Facility ratings shall not be exceeded.</li> <li>System steady state voltages shall be within acceptable limits as defined in Requirement R5.</li> </ul>	Instability, uncontrolled separation, or Cascading, as defined in Requirement R6, shall not occur.		
<b>Stability Performance Requirements</b>	The System shall remain stable. Instability, uncontrolled separation, or Cascading, as defined in Requirement R6, shall not occur.	Instability, uncontrolled separation, or Cascading, as defined in Requirement R6, shall not occur.	Instability, uncontrolled separation, or Cascading, as defined in Requirement R6, shall not occur.		
<b>Requirements for Benchmark Planning Case Assessment Results</b>					
<b>Corrective Action Plan Required</b>	Yes (See Requirement R9)	Yes (See Requirement R9)	No (See Requirement R10)		
<b>Non-Consequential Load Loss Allowed</b>	No (See Requirement R9)	Yes (See Requirement R9)	Yes		

Table 1.2 – Steady State & Stability Performance Requirements Events							
Category	Initial Condition	Event <sup>1</sup>	Fault Type <sup>2</sup>	Contingency BES Level	Interruption of Firm Transmission Service Allowed	Non-Consequential Load Loss Allowed	
						Benchmark Planning Cases	Requirements for Sensitivity Case Assessment Results Cases
<b>P0</b> No (See Requirement R10) Contingency	Normal System (See Requirement R10)	None (See Requirement R10)	N/A	≥ 200 kV	Yes	No <sup>6</sup>	Yes
<b>P1</b> Single Contingency	Normal System	Non-Consequential Load Loss of one of the following: 1. Generator 2. Transmission Circuit 3. Allowed Transformer <sup>3</sup> 3-4. Shunt Device <sup>4</sup>	Yes 3Ø	≥ 200 kV	Yes	Yes <sup>6</sup>	Yes
		5. Single Pole of a DC line	SLG				
<b>P7</b> Multiple Contingency	Normal System	The loss of: 1. Any two adjacent (vertically or	SLG	≥ 200 kV	Yes	Yes	Yes

**Table 1.2 – Steady State & Stability Performance Requirements Events**

<p>(Common Structure)</p>		<p><u>horizontally</u> <u>circuits on</u> <u>common</u> <u>structure</u><sup>5</sup> <u>1.2. Loss of a</u> <u>bipolar DC</u> <u>line</u><u>Interruption</u> <u>of Firm</u> <u>Transmission</u> <u>Service Allowed</u></p>					
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**Table 1.3 – Steady State & Stability Performance ~~Footnotes~~ Events**

1. If the event analyzed involves BES elements at multiple System voltage levels, the lowest System voltage level of the element(s) removed for the analyzed event determines the BES level of the event. For P7 events, the BES level of the event is the highest System voltage level of the element(s) removed for the analyzed event.
- ~~1.2.~~ Unless specified otherwise, simulate Normal Clearing of faults. Single line to ground (SLG) or three-phase (3 $\emptyset$ ) are the fault types that must be evaluated in Stability simulations for the event described. A 3 $\emptyset$  or a double line to ground fault study indicating the criteria are being met is sufficient evidence that a SLG condition would also meet the criteria.
- ~~1.~~ Facility voltage level of Contingency is applicable to:
  - ~~a.~~ BES level 200 kV and above (referenced Contingency voltage)
  - ~~b.~~ For P7 events include Contingencies that have at least one 200kV voltage and above Facilities on common structure that has more than one mile in length.
- ~~2.3.~~ For non-generator step up transformer outage events, the reference voltage, as used in footnote ~~2a1~~, applies to the low-side winding (excluding tertiary windings). For generator and Generator Step Up transformer outage events, the reference voltage applies to the BES connected voltage (high-side of the Generator Step Up transformer). Requirements which are applicable to transformers also apply to variable frequency transformers and phase shifting transformers.
- ~~3.4.~~ Requirements which are applicable to shunt devices also apply to FACTS devices that are connected to ground.
- ~~2.~~ Opening one end of a line section without a fault on a normally networked Transmission circuit such that the line is possibly serving Load radial from a single source point.
- ~~3.~~ An internal breaker fault means a breaker failing internally, thus creating a System fault which must be cleared by protection on both sides of the breaker.
- ~~5.~~ A stuck breaker means that for a gang operated breaker, all three phases of the breaker have remained closed. For an independent pole operated (IPO) or an independent pole tripping (IPT) breaker, only one pole is assumed to remain closed. A stuck breaker results in Delayed Fault Clearing. Excludes circuits that share a common structure for 1 mile or less.
- ~~4.6.~~ Benchmark planning cases require the development of a Corrective Action Plan when the responsible entity's portion of the BES is unable to meet the performance requirements for categories P0 or P1. Additionally, in benchmark planning cases, Non-Consequential Load Loss is not permitted for category P0 and requires notification of applicable regulatory authorities or governing bodies responsible for retail electric service issues when utilized as an element of a Corrective Action Plan for P1 Contingencies. See Requirement R9 for the relevant requirements.



## Violation Severity Levels

R #	Violation Severity Levels			
	Lower VSL	Moderate VSL	High VSL	Severe VSL
R1.	<del>N/A</del> <u>The responsible entity completed its individual and joint responsibilities such that the Extreme Temperature Assessment was completed, but it was completed less than or equal to six months late.</u>	<del>N/A</del> <u>The responsible entity completed its individual and joint responsibilities such that the Extreme Temperature Assessment was completed, but it was completed more than six months but less than or equal to 12 months late.</u>	<del>N/A</del> <u>The responsible entity completed its individual and joint responsibilities such that the Extreme Temperature Assessment was completed, but it was completed more than 12 months but less than or equal to 18 months late.</u>	The Planning Coordinator, in conjunction with its Transmission Planner(s), failed to <del>determine and</del> identify individual and joint responsibilities for completing the Extreme Temperature Assessment.  <u>OR</u> <u>The responsible entity completed its individual and joint responsibilities such that the Extreme Temperature Assessment was completed, but it was completed more than 18 months late.</u>
R2.	N/A	N/A	<del>The responsible entity did not</del> <u>Planning Coordinator coordinated with all Planning Coordinators within each identified zone to select at least one common extreme heat benchmark event and one common extreme cold benchmark temperature event from the ERO approved benchmark library for</u>	<del>The responsible entity did not</del> <u>Planning Coordinator coordinated with all Planning Coordinators within each identified zone to select a one common extreme heat benchmark event and one common extreme cold benchmark temperature event for completing the Extreme Temperature Assessment, but</u>

			<p><del>performing</del>completing the Extreme Temperature Assessment, <u>but one of the selected events failed to meet all the criteria of Requirement R2.</u></p>	<p><u>both of the selected events failed to meet all of the criteria of Requirement R2.</u></p> <p><u>OR</u></p> <p><u>The Planning Coordinator failed to coordinate with all Planning Coordinators within each identified zone to select one common extreme heat and one common extreme cold benchmark temperature event from the ERO approved benchmark library for performing</u>completing the Extreme Temperature Assessment.</p>
R3.	N/A	N/A	N/A	<p>The Planning Coordinator did not <del>develop or coordinate with all Planning Coordinators within each of its identified zone(s) to</del> implement a process for <del>coordinating the development of</del>developing benchmark planning cases among impacted adjacent Planning Coordinator(s), Transmission Planner(s), and other designated study entities, within the same Interconnection.</p>

				<p>OR</p> <p>The Planning Coordinator <del>developed and implemented</del><u>coordinated with all Planning Coordinators within each of its identified zone(s) to implement</u> a process for <del>coordinating the development of</del><u>developing</u> benchmark planning cases <del>among impacted adjacent Planning Coordinator(s), Transmission Planner(s), and other designated study entities within the same interconnection, but this</del><u>the</u> process did not <del>modify the benchmark planning cases to include seasonal and temperature dependent adjustments load, generation, Transmission, and transfers.</del> <u>all of the required elements.</u></p>
R4.	N/A	N/A	N/A	<p>The responsible entity <del>did not, as identified in Requirement R1, did not use the coordination process to develop or maintain</del> benchmark planning cases or sensitivity cases <del>for performing the Extreme Temperature Assessment.</del></p>

				<p>OR</p> <p>The responsible entity <del>developed and maintained, as identified in Requirement R1, used the coordination process to develop</del> benchmark planning cases <del>or and</del> sensitivity cases <del>for performing the Extreme Temperature Assessment,</del> but did not use data consistent with that provided in accordance with the MOD-032 standard, <del>supplemented by other sources as needed, for one or more of the required cases.</del></p> <p><u>OR</u></p> <p>The responsible entity, as <del>identified in Requirement R1, used the coordination process and data consistent with that provided in accordance with the MOD-032 standard, supplemented as needed, but failed to develop one or more of the required planning or sensitivity cases.</del></p>
R5.	N/A	N/A	N/A	<p>The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, did not have criteria for acceptable System</p>

				steady state voltage limits, <u>and</u> post-Contingency voltage deviations, <u>and applicable Facility Ratings</u> for <u>performing completing the</u> Extreme Temperature Assessment.
R6.	N/A	N/A	N/A	The responsible entity, <u>as identified in Requirement R1</u> , failed to define <u>and/or</u> document, the criteria or methodology <u>to be</u> used in the <u>analysis Extreme Temperature Assessment</u> to identify <u>System</u> instability, uncontrolled separation, or Cascading within an Interconnection.
R7.	N/A	N/A	The responsible entity, as <u>determined identified</u> in Requirement R1, identified Contingencies for <u>performing Extreme Temperature Assessment for each of the planning events category</u> in Table 1 that are expected to produce more severe System impacts <u>within on</u> its <u>planning area portion of the Bulk Electric System</u> , but did not include the rationale for those Contingencies selected for	The responsible entity, as <u>determined identified</u> in Requirement R1, did not identify Contingencies for <u>performing Extreme Temperature Assessment for each of the planning events category</u> in Table 1 that are expected to produce more severe System impacts <u>within on</u> its <u>planning area portion of the Bulk Electric System</u> .

			evaluation as supporting <del>documentation</del> <u>information</u> .	
<b>R8.</b>	The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, completed <del>a</del> <u>steady state and transient stability analyses in the Extreme Temperature Assessment using the Contingencies identified in Requirement R7, but it was performed less than failed to document the assumptions for one or equal to six months late. more sensitivity cases in accordance with Requirement R8.</u>	The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, completed <del>a</del> <u>steady state and transient stability analyses in the Extreme Temperature Assessment using the Contingencies identified in Requirement R7, but it was performed failed to document the assumptions for one or more than six months but less than or equal to 12 months late. benchmark planning cases in accordance with Requirement R8.</u>	The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, completed <del>a</del> <u>steady state and transient stability analyses in the Extreme Temperature Assessment using the Contingencies identified in Requirement R7, but it was performed failed to evaluate and document results for one or more than 12 months but less than or equal to 18 months late. of the sensitivity cases in accordance with Requirement R8.</u>	The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, <del>performed a</del> <u>completed steady state and transient stability analyses in the Extreme Temperature Assessment using the Contingencies identified in Requirement R7, but it was more than 18 months late. failed to evaluate and document results for one or more of the benchmark planning cases in accordance with Requirement R8.</u>  OR The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, <del>did not perform a</del> <u>failed to complete steady state or transient stability analyses and document results in the Extreme Temperature Assessment.</u>  OR The responsible entity, as <del>determined</del> <u>using the Contingencies identified in Requirement R1, performed</u>

				<p><del>an Extreme Temperature Assessment, but it was missing one or more of the required elements R7, in accordance with Requirement R8.</del></p>
R9.	N/A	N/A	<p>The responsible entity, as <del>determined</del><u>identified</u> in Requirement R1, developed a Corrective Action Plan <del>meeting each of the elements in</del><u>in accordance with</u> Requirement R9, but failed to make <del>their</del><u>its</u> Corrective Action Plan available to, or solicit feedback from, applicable regulatory authorities or governing bodies responsible for retail electric service issues.</p>	<p>The responsible entity, as <del>determined</del><u>identified</u> in Requirement R1, failed to develop a Corrective Action Plan <del>meeting each of the elements of Requirement R9</del> when the benchmark planning case study results indicate the System is unable to meet performance requirements for the Table 1 P0 or P1 Contingencies.</p> <p><u>OR</u></p> <p><u>The responsible entity, as identified in Requirement R1, developed a Corrective Action Plan, but it was missing one or more of the elements of Requirement R9 Part 9.2-9.4 (as applicable).</u></p>
R10.	N/A	N/A	<p><del>N/A</del><u>The responsible entity, as identified in Requirement R1, evaluated and documented possible actions to reduce the likelihood or mitigate the</u></p>	<p><del>Each</del><u>The</u> responsible entity, as <del>determined</del><u>identified</u> in Requirement R1, <del>failed to evaluate</del><u>evaluated</u> and <del>document</del><u>documented</u></p>

			<p><u>consequences and adverse impacts of the event(s) when analyses conclude there could be instability, uncontrolled separation, or Cascading within an Interconnection where required under Requirement R10 Part 10.1, but failed to evaluate and document possible actions where required under Requirement R10 Part 10.2.</u></p>	<p><u>possible actions, to reduce the likelihood or mitigate the consequences, and adverse impacts of the event(s) when the benchmark planning case study results indicate the System analyses conclude there could result in be instability, uncontrolled separation, or Cascading for within an Interconnection where required under Requirement R10 Part 10.2, but failed to evaluate and document possible actions where required under Requirement R10 Part 10.1.</u></p> <p><u>OR</u></p> <p><u>The responsible entity, as identified in Requirement R1, failed to evaluate and document possible actions to reduce the Table 1 P2, P4, and P7 Contingencies likelihood or mitigate the consequences and adverse impacts of the event(s) when analyses conclude there could be instability, uncontrolled separation, or Cascading within an Interconnection where required under</u></p>
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				<u>Requirement R10 Parts 10.1 and 10.2.</u>
<b>R11.</b>	The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, <del>distributed</del> <u>provided</u> its Extreme Temperature Assessment results to functional entities having a reliability related need who requested the information in writing, but it was more than 60 days but less than or equal to 80 days following the request.	The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, <del>distributed</del> <u>provided</u> its Extreme Temperature Assessment results to functional entities having a reliability related need who requested the information in writing, but it was more than 80 days but less than or equal to 100 days following the request.	The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, <del>distributed</del> <u>provided</u> its Extreme Temperature Assessment results to functional entities having a reliability related need who requested the information in writing, but it was more than 100 days but less than or equal to 120 days following the request.	The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, <del>distributed</del> <u>provided</u> its Extreme Temperature Assessment results to functional entities having a reliability related need who requested the information in writing, but it was more than 120 days following the request.  OR The responsible entity, as <del>determined</del> <u>identified</u> in Requirement R1, did not <del>distribute</del> <u>provide</u> its Extreme Temperature Assessment results to functional entities having a reliability related need who <del>requested</del> <u>submitted a written request for</u> the information <del>in writing</del> .

## D. Regional Variances

None.

## E. Associated Documents

- Implementation Plan for Project 2023-07
- Technical Rationale Document
- Consideration of Issues and Directives for FERC Order 896.

## Version History

Version	Date	Action	Change Tracking
1	TBD	Addressing FERC Order 896	New Standard

## **Attachment 1: Extreme Temperature Assessment Zones**

The table below lists the zones to be used in the Extreme Temperature Assessment and identifies the Planning Coordinators that belong to each zone. In accordance with Requirement R2, each Planning Coordinator is required to identify the zone(s) to which it belongs.

<b>Zone</b>	<b>Planning Coordinators</b>
<b><i>Eastern Interconnection</i></b>	
<u>MISO</u>	<u>MISO</u>
<u>SPP</u>	<u>SPP</u>
<u>PJM</u>	<u>PJM</u>
<u>NPCC (New England)</u>	<u>Planning Coordinators in NPCC that primarily serve the six New England States</u>
<u>NPCC (New York)</u>	<u>Planning Coordinators in NPCC that primarily serve New York</u>
<u>SERC</u>	<u>Planning Coordinators in SERC excluding those that primarily serve Florida and those in MISO, SPP, or PJM</u>
<u>SERC (Florida)</u>	<u>Planning Coordinators in SERC that primarily serve Florida</u>
<u>Central Canada</u>	<u>Planning Coordinators that primarily serve Saskatchewan and/or Manitoba region of MRO</u>
<u>Eastern Canada</u>	<u>Planning Coordinators in NPCC that primarily serve Ontario, New Brunswick, and Nova Scotia</u>
<b><i>Western Interconnection</i></b>	
<u>WECC Southwest</u>	<u>Planning Coordinators in the Southwest region of WECC, including El Paso in West Texas</u>
<u>Pacific Northwest</u>	<u>Planning Coordinators in the Pacific Northwest region of WECC</u>
<u>Great Basin</u>	<u>Planning Coordinators in the Great Basin region of WECC</u>
<u>Rocky Mountain</u>	<u>Planning Coordinators in the Rocky Mountain region of WECC</u>
<u>California/Mexico</u>	<u>Planning Coordinators in the California/Mexico region of WECC</u>
<u>Western Canada</u>	<u>Planning Coordinators that primarily serve British Columbia and/or Alberta region of WECC</u>
<b><i>ERCOT Interconnection</i></b>	
<u>ERCOT</u>	<u>Areas in Texas subject to ERCOTs jurisdiction.</u>
<b><i>Quebec Interconnection</i></b>	
<u>Quebec</u>	<u>Planning Coordinators that primarily serve Quebec in the NPCC Region.</u>

The map below depicts an approximation of the zones to be used in the Extreme Temperature Assessment and is provided as a visual aid; to the extent that there is a conflict between the map and the table, the table controls. This map is not to be used for compliance purposes.

