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| PGRR Number | [122](https://www.ercot.com/mktrules/issues/PGRR122) | PGRR Title | Reliability Performance Criteria for Loss of Load |
| Date Posted | | November 11, 2024 | |
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| Requested Resolution | | Normal | |
| Planning Guide Sections Requiring Revision | | 4.1.1.2, Reliability Performance Criteria | |
| Related Documents Requiring Revision/Related Revision Requests | | None | |
| Revision Description | | This Planning Guide Revision Request establishes a new reliability performance criteria that no more than 1,000 MW of Load may be lost for any single contingency, and also specifies how loss of Load is calculated for this criteria. | |
| Reason for Revision | | [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 1 – Be an industry leader for grid reliability and resilience  [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 2 - Enhance the ERCOT region’s economic competitiveness with respect to trends in wholesale power rates and retail electricity prices to consumers  [Strategic Plan](https://www.ercot.com/files/docs/2023/08/25/ERCOT-Strategic-Plan-2024-2028.pdf) Objective 3 - Advance ERCOT, Inc. as an independent leading industry expert and an employer of choice by fostering innovation, investing in our people, and emphasizing the importance of our mission  General system and/or process improvement(s)  Regulatory requirements  ERCOT Board/PUCT Directive  *(please select ONLY ONE – if more than one apply, please select the ONE that is most relevant)* | |
| Justification of Reason for Revision and Market Impacts | | ERCOT has observed a rapid increase in the size of proposed Large Load interconnections. When the interim Large Load interconnection process was established in 2022, the largest interconnection request tracked by ERCOT was for a 1 GW project. Today, ERCOT is regularly seeing interconnection requests of 2 GW to 4 GW in size. In addition, many of these projects are clustered in small geographic and electrical areas and are comprised primarily of equipment that is incapable of remaining connected to the ERCOT system during voltage disturbances. As a result, there is a growing risk to the frequency stability of the ERCOT grid due to one or more of these Large Loads disconnecting from the system as the result of a contingency. This standard is derived from the reliability studies performed for the Southern Cross DC Tie project. | |

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| Market Segment | Not applicable |

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| **Market Rules Notes** |

Please note that the following PGRR(s) also propose revisions to Section 4.1.1.2:

* PGRR115, Related to NPRR1234, Interconnection Requirements for Large Loads and Modeling Standards for Loads 25 MW or Greater

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| Proposed Guide Language Revision |

4.1.1.2 Reliability Performance Criteria

(1) The following reliability performance criteria (summarized in Table 1: ERCOT-specific Reliability Performance Criteria, below) shall be applicable to planning analyses in the ERCOT Region:

(a) With all Facilities in their normal state, following a common tower outage with or without a single line-to-ground fault, all Facilities shall be within their applicable Ratings, the ERCOT System shall remain stable with no cascading or uncontrolled Islanding, and there shall be no non-consequential Load loss;

(b) With all Facilities in their normal state, following an outage of a DC Tie Resource or DC Tie Load with or without a single line-to-ground fault, all Facilities shall be within their applicable Ratings, the ERCOT System shall remain stable with no cascading or uncontrolled Islanding, and there shall be no non-consequential Load loss;

(c) With any single generating unit unavailable, followed by Manual System Adjustments, followed by a common tower outage or outage of a DC Tie Resource or DC Tie Load with or without a single line-to-ground fault, all Facilities shall be within their applicable Ratings, the ERCOT System shall remain stable with no cascading or uncontrolled Islanding, and there shall be no non-consequential Load loss;

(d) With any single transformer, with the high voltage winding operated at 300 kV or above and low voltage winding operated at 100 kV or above unavailable, followed by Manual System Adjustments, followed by a common tower outage, or the contingency loss of a single generating unit, transmission circuit, transformer, shunt device, FACTS device, or DC Tie Resource or DC Tie Load with or without a single line-to-ground fault, all Facilities shall be within their applicable Ratings, the ERCOT System shall remain stable with no cascading or uncontrolled Islanding, and there shall be no non-consequential Load loss. An operational solution may be planned on a permanent basis to resolve a performance deficiency under this condition;

(e) With any single DC Tie Resource or DC Tie Load unavailable, followed by Manual System Adjustments, followed by a common tower outage, or the contingency loss of a single generating unit, transmission circuit, transformer, shunt device, FACTS device, or DC Tie Resource or DC Tie Load, with or without a single line-to-ground fault, all Facilities shall be within their applicable Ratings, the ERCOT System shall remain stable with no cascading or uncontrolled Islanding, and there shall be no non-consequential Load loss. An operational solution may be planned on a permanent basis to resolve a performance deficiency under this condition; and

(f) For any contingency event described in this Section 4.1.1.2 and for all category P1, P2, P3, P4, P5, P6, or P7 events described in the NERC Reliability Standard addressing Transmission Planning Performance Requirements, the total Load loss shall be less than 1,000 MW. Calculation of total Load loss shall include both consequential Load loss and all Load reducing consumption or disconnecting from the ERCOT System as a consequence of the resulting voltage excursion.

| **Initial Condition** | | **Event** | **Facilities within Applicable Ratings and System Stable with No Cascading or Uncontrolled Outages** | **Non-consequential Load Loss Allowed** |
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| 1 | Normal System | Common tower outage, DC Tie Resource outage, or DC Tie Load outage | Yes | No |
| 2 | Unavailability of a generating unit, followed by Manual System Adjustments | Common tower outage, DC Tie Resource outage, or DC Tie Load outage | Yes | No |
| 3 | Unavailability of a transformer with the high voltage winding operated at 300 kV or above and low voltage winding operated at 100 kV or above, followed by Manual System Adjustments | Common tower outage; or  Contingency loss of one of the following:  1. Generating unit;  2. Transmission circuit;  3. Transformer;  4. Shunt device;  5. FACTS device; or  6. DC Tie Resource or DC Tie Load | Yes | No |
| 4 | Unavailability of a DC Tie Resource or DC Tie Load, followed by Manual System Adjustments | Common tower outage; or  Contingency loss of one of the following:  1. Generating unit;  2. Transmission circuit;  3. Transformer;  4. Shunt device;  5. FACTS device; or  6. DC Tie Resource or DC Tie Load | Yes | No |

Table 1: ERCOT-specific Reliability Performance Criteria

(2) ERCOT and the TSPs shall endeavor to resolve any performance deficiencies as appropriate. If a Transmission Facility improvement is required to meet the criteria in this Section 4.1.1.2, but the improvement cannot be implemented in time to resolve the performance deficiency, an interim solution may be used to resolve the deficiency until the improvement has been implemented.

(a) A Remedial Action Scheme (RAS) shall not be planned to resolve a planning criteria performance deficiency unless it is expected that system conditions will change such that the RAS will no longer be needed within the next five years.

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| ***[PGRR113: Replace item (a) above with the following upon system implementation of NPRR1198:]***  (a) A Remedial Action Scheme (RAS) or Constraint Management Plan (CMP) shall not be planned to resolve a planning criteria performance deficiency unless it is expected that system conditions will change such that the RAS or CMP will no longer be needed within the next five years. |