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| PGRR Number | [117](https://www.ercot.com/mktrules/issues/PGRR117) | PGRR Title | Addition of Resiliency Assessment and Criteria to Reflect PUCT Rule Changes |
| Date Posted | July 17, 2024 |
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| Requested Resolution  | Normal |
| Planning Guide Sections Requiring Revision  | 2.2, ACRONYMS AND ABBREVIATIONS3.1.1.6 Grid Reliability and Resiliency Assessment (new)4.1, Introduction4.1.2, Resiliency Criteria (new) |
| Related Documents Requiring Revision/Related Revision Requests | None |
| Revision Description | This Planning Guide Revision Request (PGRR) revises the Planning Guide to reflect the Public Utility Commission of Texas’ (PUCT’s) rulemaking addition of subsection (b)(3)(E) to 16 Texas Administrative Code (TAC) § 25.101, *Certification Criteria*, which requires ERCOT to conduct a biennial assessment of the ERCOT power grid’s reliability and resiliency in extreme weather scenarios and permits ERCOT to recommend transmission projects to address resiliency issues identified in the assessment. ERCOT intends to perform the biennial assessment in parallel with the Regional Transmission Plan (RTP) process.  |
| 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 | These revisions to the Planning Guide reflect ERCOT’s intended implementation of rulemaking amendments to 16 TAC § 25.101 that went into effect on December 20, 2022. Specifically, § 25.101(b)(3)(E) requires ERCOT to conduct a biennial assessment of the power grid’s reliability and resiliency in extreme weather scenarios and specifies that the assessment must: (i) consider the impact of different levels of thermal and renewable generation availability; (ii) identify areas of the state that face significant grid reliability and resiliency issues, taking into account the impact of potential outages caused by regional extreme weather scenarios on customers, including multiple element outage analysis when appropriate, and; (iii) recommend transmission projects that may increase the grid’s reliability or resiliency in extreme weather scenarios. Furthermore, § 25.101(b)(3)(A)(iii) establishes that ERCOT may recommend a transmission project that would address a resiliency issue identified in the grid reliability and resiliency assessment.ERCOT intends to propose a Nodal Protocol Revision Request (NPRR) to address the process for determining whether an upgrade that meets the proposed resiliency criteria provides sufficient benefit to offset any insufficiency of economic savings or reliability benefits, as provided in 16 TAC § 25.101(b)(3)(A)(iii). ERCOT believes this determination is best suited for consideration as part of the Regional Planning Group (RPG) Project Review process.  |

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| Market Segment | Not Applicable |

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| Proposed Guide Language Revision |

## 2.2 ACRONYMS AND ABBREVIATIONS

**CY** Current Year

**FIS** Full Interconnection Study

**FY** Future Year

**GIC** Geomagnetically-Induced Current

**GIM** Generator Interconnection or Modification

**GINR** Generation Interconnection or Change Request

**GMD** Geomagnetic Disturbance

**GRRA** Grid Reliability and Resiliency Assessment

**LTSA** Long-Term System Assessment

**RIOO** Resource Integration and Ongoing Operations

**SSR** Subsynchronous Resonance

**TCEQ** Texas Commission on Environmental Quality

**3.1.1.6 Grid Reliability and Resiliency Assessment (GRRA)**

(1) ERCOT shall perform the Grid Reliability and Resiliency Assessment (GRRA) in coordination with the Regional Planning Group (RPG) on a biennial basis in even-numbered years to assess the ERCOT System reliability and resiliency in extreme weather scenarios. The study must:

(a) Consider the impact of different levels of thermal and renewable generation availability;

(b) Identify areas of the ERCOT Region that face significant grid reliability and resiliency issues, taking into account the impact of potential Outages caused by regional extreme weather scenarios on Customers; and

(c) Identify transmission upgrades that are expected to increase the reliability or resiliency of the ERCOT System in extreme weather scenarios based on the criteria established in Section 4.1.2, Resiliency Criteria.

(2) Extreme weather scenarios shall be selected for one or more study cases. The cases shall use coincident load values and the selected scenarios may include one or more of the following:

(a) Different patterns of generation;

(b) Extreme peak load;

(c) Multiple Transmission Element Outages; and/or

(d) Multiple Generation Resource Outages.

 (3) Under the extreme weather study scenarios described in paragraph (2) above, categories P0, P1, P2.1 and P7 of NERC Reliability Standard TPL-001 shall be evaluated. The study cases prepared for evaluating P0 events will be adjusted to have sufficient power supply to meet the demand in each case.

4.1 Introduction

(1) ERCOT employs reliability, economic, and resiliency criteria in evaluating the need for transmission system improvements. The economic criteria are included in Protocol Section 3.11.2, Planning Criteria. This Planning Guide provides the reliability and resiliency criteria.

(2) The ERCOT System consists of those generation and Transmission Facilities (60 kV and higher voltages) that are controlled by individual Market Participants and that function as part of an integrated and coordinated system.

(3) To maintain reliable operation of the ERCOT System, it is necessary that all stakeholders observe and subscribe to certain minimum planning criteria. The criteria set forth in this Section 4.1 constitute the aforementioned minimum planning criteria. Tests outlined herein shall be performed to determine conformance to these minimum criteria; however, ERCOT recognizes that events more severe than those outlined in these criteria could cause grid separation and other tests may also be performed.

(4) The complexity and uncertainty inherent in the planning and operation of the ERCOT System make exhaustive studies impracticable; therefore, to gain maximum benefit from the limited number of tests performed, the selection of the specific tests and the frequency of their performance will be made solely upon the basis of the expected value of the reliability information obtainable from the test.

(5) ERCOT shall perform steady-state, short circuit, and dynamic analyses appropriate to ensure the reliability of the ERCOT System and identify appropriate solutions.

(6) Each Transmission Service Provider (TSP) will perform steady-state, short circuit, and dynamic analyses appropriate to ensure the reliability of its portion of the ERCOT System and implement appropriate solutions to meet the reliability performance criteria in this Section 4.1.

(7) The base cases created by the Steady-State Working Group (SSWG) and System Protection Working Group (SPWG) are available for use by Market Participants.

(8) If a TSP has its own planning criteria in addition to those defined in this Planning Guide, the TSP shall provide documentation of those criteria to ERCOT. ERCOT shall post the documentation on the Market Information System (MIS) Secure Area. The TSP shall notify ERCOT of any changes to their planning criteria and provide revised documentation within 30 days of such change.

4.1.2 Resiliency Criteria

(1) As part of a resiliency analysis as described in Planning Guide Section 3.1.1.6, Grid Reliability and Resiliency Assessment (GRRA), ERCOT shall identify a need for only those transmission upgrades that are necessary to:

(a) Prevent cascading, instability or uncontrolled islanding; and/or

(b) Reduce the impact of load-shedding.