**ERCOT Planning Guide**

**Table of Contents**

**June 1, 2023**

1 Overview 1-1

1.1 Purpose 1

1.2 Process for Planning Guide Revision 1

1.2.1 Introduction 1

1.2.2 Submission of a Planning Guide Revision Request 2

1.2.3 Planning Guide Revision Procedure 3

1.2.3.1 Review and Posting of Planning Guide Revision Requests 3

1.2.3.2 Withdrawal of aPlanning Guide Revision Request 4

1.2.3.3 ROS Review and Action 4

1.2.3.4 Comments to the ROS Report 5

1.2.3.5 Planning Guide Revision Request Impact Analysis 5

1.2.3.6 ROS Review of Impact Analysis 6

1.2.3.7 Wholesale Market Subcommittee Review 6

1.2.3.8 ERCOT Impact Analysis Based on ROS Report 7

1.2.3.9 PRS Review of Project Prioritization 7

1.2.3.10 Technical Advisory Committee Vote 7

1.2.3.11 ERCOT Impact Analysis Based on Technical Advisory Committee Report 8

1.2.3.12 ERCOT Board Vote 8

1.2.3.13 PUCT Approval of Revision Requests 9

1.2.3.14 Appeal of Action 9

1.2.5 Urgent Requests 10

1.2.6 Planning Guide Revision Implementation 11

***2 Definitions and Acronyms 2-1***

2.1 Definitions 1

2.2 Acronyms 4

3 Regional Planning 3-1

3.1 Communications 1

3.1.1 Overview of Major Transmission Planning Activities 1

3.1.1.1 Long-Term System Assessment 1

3.1.1.2 Regional Transmission Plan 1

3.1.1.3 Regional Planning Group Project Reviews 2

3.1.1.4 Generation Interconnection Process 2

3.1.1.5 Geomagnetic Disturbance (GMD) Vulnerability Assessment 3

3.1.2 Regional Planning Group Project Submission 3

3.1.2.1 All Projects 3

3.1.3 Project Evaluation 4

3.1.3.1 Definitions of Reliability-Driven and Economic-Driven Projects 5

3.1.3.2 Reliability-Driven Project Evaluation 6

3.1.4 Regional Transmission Plan Development Process 6

3.1.4.1 Development of Regional Transmission Plan 6

3.1.4.1.1 Regional Transmission Plan Cases 7

3.1.4.2 Use of Regional Transmission Plan 7

3.1.5 Regional Planning Group Comment Process 8

3.1.6 Notify PUCT of Recommended Transmission Projects 9

3.1.7 Steady State Transmission Planning Load Forecast 9

3.1.8 Planning Geomagnetic Disturbance (GMD) Activities 10

3.1.9 Transmission Interconnection Study 12

4 Transmission Planning Criteria 4-1

4.1 Introduction 1

4.1.1 Reliability Criteria 2

4.1.1.1 Planning Assumptions 2

4.1.1.2 Reliability Performance Criteria 2

4.1.1.3 Voltage Stability Margin 5

4.1.1.4 Steady State Voltage Response Criteria 5

4.1.1.5 Transient Voltage Response Criteria 6

4.1.1.6 Damping Criteria 6

4.1.1.7 Minimum Deliverability Criteria 6

4.1.1.8 Maintenance Outage Reliability Criteria 6

***5 Generator Interconnection or Modification 5-1***

5.1 Introduction 1

5.2 General Provisions 1

5.2.1 Applicability 1

5.2.2 Initiation of Generator Interconnection or Modification 3

5.2.3 Confidentiality 5

5.2.4 Duty to Update Project Information and Respond to ERCOT and TDSP Requests for Information 5

5.2.5 Inactive Status 7

5.2.6 Project Cancellation Due to Failure to Comply with Requirements 8

5.2.7 Voluntary Project Cancellation 9

5.2.8 Interconnection Agreements and Procedures 9

5.2.8.1 Standard Generation Interconnection Agreement for Transmission-Connected Generators 9

5.2.8.2 Interconnection Agreement for Distribution-Connected Generators 10

5.2.8.3 Provisions for Municipally Owned Utilities and Cooperatives 10

5.3 Interconnection and Study Procedures for Large Generators 11

5.3.1 Security Screening Study 11

5.3.2 Full Interconnection Study 13

5.3.2.1 Proof of Site Control 14

5.3.2.2 Full Interconnection Study Scoping Process 15

5.3.2.3 Full Interconnection Study Description and Methodology 17

5.3.2.4 Full Interconnection Study Elements 17

5.3.2.4.1 Steady-State Analysis 17

5.3.2.4.2 System Protection (Short-Circuit) Analysis 18

5.3.2.4.3 Dynamic and Transient Stability (Unit Stability, Voltage) Analysis 18

5.3.2.4.4 Facility Study 20

5.3.2.5 FIS Report and Follow-up 20

5.3.3 ERCOT Economic Study 22

5.3.4 Reactive Study 22

5.3.5 ERCOT Quarterly Stability Assessment 23

5.4 Interconnection Procedures for Small Generators 25

5.4.1 Small Generator Review Meetings 25

5.4.2 Submission of Interconnection Agreement and TSP and/or DSP Studies and Technical Requirements 25

5.4.3 Reviews and Approval to Submit Model Information 25

5.4.4 Transmission System Reliability Impact 26

5.5 Generator Commissioning and Continuing Operations 26

***6 Data/Modeling 6-1***

6.1 Steady-State Model Development 1

6.2 Dynamics Model Development 3

6.2.1 Dynamics Data Requirements for Generation Resources and Settlement Only Generators 6

6.2.2 Dynamics Data Requirements for Load Resources 7

6.2.3 Dynamics Data Requirements for and Transmission and/or Distribution Service Providers 7

6.2.4 Dynamics Data Screening and Maintenance 8

6.3 Process for Developing Short Circuit Cases 8

6.4 Transmission Project Information and Tracking Report and Data Requirements 9

6.4.1 Transmission Project Information and Tracking Report 9

6.4.2 ERCOT Responsibilities 10

6.4.3 TSP Responsibilities 10

6.4.4 Regional Transmission Plan Projects in Transmission Project Information and Tracking Report 10

6.4.5 Content of the Transmission Project Information and Tracking Report 10

6.5 Annual Load Data Request 11

6.6 Intentionally Left Blank 12

6.7 Data Dictionary 12

6.8 Resource Registration Procedures 13

6.8.1 Resource Registration 13

6.8.2 Resource Registration Process 13

6.9 Addition of Proposed Generation to the Planning Models 14

6.10 Contingency Filing Requirements 16

6.11 Process for Developing Geomagnetically-Induced Current (GIC) System Models 17

6.12 Addition of a Proposed DC Tie to the Planning Models 18

***7 Market Data Transparency 7-1***

7.1 Planning Data and Information 1

***8 Attachments 8-1***

Declaration of Resource Data Accuracy 8(A)

Declaration of Adequate Water Supplies 8(B)

Declaration of Department of Defense Notification 8(C)

Attestation Regarding Compliance with the Lone Star Infrastructure Protection Act 8(D)

***9 RESERVED 9-1***