Stability Studies are performed as needed to ensure proper monitoring of the grid and to meet NERC Reliability Standards. ERCOT performs stability assessments to evaluate potential system voltage and inter-area oscillation issues under various system conditions. Voltage Security Assessment Tool performs voltage stability analysis for several areas within ERCOT to ensure the reliable operation of the transmission network. The Transient Security Assessment Tool performs dynamic stability analysis to maintain system reliability. The West – North Transfer Limit is established and monitored on a designated interface between West Texas and the rest of ERCOT and is used in real-time operations.

Finally, ERCOT evaluates whether a generating unit that announces suspension of operations or retirement or seasonal operation is needed to meet transmission reliability requirements and arranges Reliability Must-Run (RMR) Service for any unit that is required for this purpose.

Operations Readiness

Operations Readiness is responsible for the following programs and activities in order to ensure the preparedness of ERCOT and System Operators:

- All Black Start Processes
- System Operations Training
- Annual ERCOT Operations Training Seminar
- All severe weather drills
- Preparation of ERCOT's Fundamentals Manual and System Operator Certification Examination

ERCOT's Black Start Program involves activities such as Resource Procurement as well as development and evaluation of System Operators' Black Start Plans. The Black Start Program also includes quarterly system tests of Generation Resources, with physical tests performed annually. Operations Readiness works with ERCOT's Operations Training Working Group to develop the Black Start Training Program, an annual training for all Market Participants. Black Start Training is required for all Transmission Operators and Resource Generators, and ERCOT's Black Start Training is an approved NERC Continuing Education (CE) Program. Through the Black Start Gas Coordination Group, Operations Readiness coordinates gas suppliers in order to restore gas flow in the ERCOT System after a Blackout event.

System Operations Training includes maintaining the System Operators' NERC certification, which requires 200 CE Hours of training each year. The Annual ERCOT Operations Training Seminar is available to all Market Participants.

Operations Readiness oversees ERCOT's severe weather drills (system-wide drills such as winter storm drills and hurricane drills) as well as the training of ERCOT Operators and Market Participants in performing these drills.

Finally, Operations Readiness updates the ERCOT Fundamentals Manual, uploads the Manual onto ERCOT's Learning Management System (LMS), and prepares examination questions for the

ERCOT System Operator Certification Exam, which is administered by ERCOT Training and Development.

Wholesale Market Operations

Wholesale Market Operations' activities include operating the ERCOT Markets that manage the commitment and dispatch of Generation and Load Resources, Ancillary Service (AS) management, and transmission network congestion management hedging. These ERCOT markets and processes include biannual and monthly Congestion Revenue Rights (CRR) Auctions, a voluntary Day-Ahead Market (DAM), daily and hourly Reliability Unit Commitment (RUC) processes, and a Real-Time Market (RTM) for energy dispatch in the ERCOT Region.

At a high level, the CRR Auction is an opportunity for Market Participants to purchase and sell CRRs on a monthly basis for months or years into the future. The DAM is a voluntary market for buyers and sellers of energy and AS. DAM is executed 365 days a year for the next Operating Day to secure the AS required to support power operations. During the Operating Day, the RTM calculates and re-dispatches the On-Line generation every five (5) minutes to achieve a least-cost economic dispatch that is secured within the network transmission constraints of the ERCOT System. Each of these markets and processes is described in more detail below.

The Wholesale Market Operations team also manages the ERCOT Demand Response Program and facilitates Emergency Response Services (ERS), which maintain and restore ERCOT System frequency during an EEA.

Congestion Revenue Rights Auction

CRR Auctions are conducted once a month for the next delivery month and twice a year for up to two years into the future. CRRs are financial instruments that yield either a charge or a payment to the owner when the ERCOT transmission grid is congested in the DAM and results in price separation. CRRs may be used as either financial hedges or financial investments. When used as a locational hedge, a CRR locks in the price of congestion at the purchase price of the CRR in the auction to offset potential future price differences for energy being injected at one location and withdrawn at another in the DAM. When purchased as an investment, a CRR may be used to speculate whether the congestion rent will be greater than the purchase price.

The main purposes of ERCOT's CRR market are to: (1) support a liquid energy market by providing tradable financial instruments for the hedging of transmission congestion charges; (2) allow Market Participants to eliminate or greatly reduce the cost uncertainties that result from transmission congestion charges; and (3) encourage competitive energy trading where the costs of congestion might otherwise be an impediment to procuring Load.

CRR ownership may be acquired in four different manners:

(1) CRR Auction – Monthly and biannual auctions allow eligible CRR Account Holders (CRRAHs) to acquire CRRs and allow CRR Owners to sell CRRs that they hold.

(2) Allocations – Pre-assigned Congestion Revenue Rights (PCRRs) are CRRs allocated by ERCOT to eligible MOUs and ECs under ERCOT Protocols Section 7.4, PCRR Overview.

(3) Bilateral Market – CRRAHs may bilaterally trade Point-to-Point (PTP) Options, PTP Obligations, and Flowgate Rights (FGRs). PTP Options with Refund and PTP Obligations with Refund are not bilaterally tradable. Bilateral trading may be done privately or through ERCOT. ERCOT facilitates trading on the CRR Market User Interface (MUI) between CRRAHs, subject to credit requirements. ERCOT settles all CRRs with the CRRAH shown in ERCOT records.

(4) PTP Obligations in the DAM – QSEs may bid and be awarded for PTP Obligations in the DAM that are settled at the Real-Time price differences between two locations, thus creating a locational hedge in Real-Time.

Day-Ahead Market

The DAM is a daily, co-optimized market in the Day-Ahead sequence for clearing AS capacity, certain CRRs, and forward financial energy transactions. Participation in the DAM is voluntary and financially binding. DAM energy settlement is based on DAM Settlement Point Prices that are calculated for Resource Nodes, Load Zones, and Hubs for one-hour Settlement Intervals using the Locational Marginal Prices (LMPs) from DAM. In contrast, the Real-Time energy settlements use Real-Time Settlement Point Prices that are calculated for Resource Nodes, Load Zones, and Hubs for a 15-minute Settlement Interval.

To participate in the DAM, Market Participants may submit three-part supply offers for Generation Resources, AS offers (from Generation or Load Resources), DAM energy-only offers (virtual or physical), DAM energy bids (virtual or actual Load), PTP Obligation bids (locational hedges), self-arrangement of AS, current operating plans (COP), energy trades, capacity trades, and AS trades. These submissions may be made up to 14 days in advance of the Operating Day and must be submitted by hour ending 10:00 on the day prior to the Operating Day for consideration in the DAM. All transactions are subject to a credit check at hour ending 07:00 in the DAM timeline, and credit is enforced on all remaining transactions prior to the start of DAM execution at 10:00. The DAM includes co-optimization across both energy and AS to determine the least-cost economic solution for the required AS and voluntary energy demand across the 24 hours in the Operating Day. DAM results are normally published by 13:30 hours each day. AS awards are required to be scheduled on the awarded Resource, but all other awards are financially binding only.

Reliability Unit Commitment & Supplemental Ancillary Services

One hour after DAM completes, but no earlier than 14:30 hours, System Operations executes a Day-Ahead Reliability Unit Commitment (DRUC) study to ensure that the ERCOT System has enough Resource capacity, including AS reserves capacity, committed in the right locations to reliably serve the forecast Load on the ERCOT System, subject to transmission constraints. Any commitments or decommitments of Resources from this study are physically binding. ERCOT also runs the Hourly Reliability Unit Commitment (HRUC) that continues to study the balance of the day for reliability and can commit additional Resources as necessary. In addition to energy capacity, if AS requirements increase or are undeliverable from a Resource in the adjustment period, ERCOT may open a Supplemental Ancillary Services Market (SASM) to procure the balance of services needed.

Real-Time Market and Dispatch

Every five (5) minutes the RTM and Dispatch is performed by a Security-Constrained Economic Dispatch (SCED) optimization process. SCED calculates Real-Time prices and issues Dispatch Instructions based on two objectives: (1) to achieve a least-cost economic dispatch consistent with network transmission constraints; and (2) to satisfy the necessary power balance of the ERCOT System. SCED uses only the Generation Resource Energy Offer Curves, incremental or decremental Energy Offer Curves, and Output Schedules submitted by the end of each adjustment period for an Operating Hour. ERCOT calculates a market solution and sends out Resource base points (awarded output level for Resource) that are needed to simultaneously manage energy balance and congestion every five (5) minutes, or more often, as determined by the operator. SCED uses a two-step methodology that applies market mitigation prospectively to resolve constraints for the current Operating Hour while also evaluating Energy Offer Curves and Output Schedules to produce a least-cost Dispatch of On-Line Generation Resources to match Load, subject to network transmission constraints. Once the SCED market is cleared, the SCED base points for each Resource are telemetered to the Market Participant and all locational prices are publicly posted. SCED prices are calculated at least every five (5) minutes and then rolled up into a time-weighted average as a 15-minute Settlement Interval point price for every Resource Node, Load Zone and Hub.

Settlement and Retail Operations

Retail Operations

ERCOT acts as the registration agent for REPs and provides a centralized hub for retail transactions. TDSPs and LSEs submit Electronic Data Interchange (EDI) transactions for Load Serving Entity (LSE) service, including Move In, Move Out, Switches, and Drop to Provider of Last Resort (POLR). The ERCOT ESI ID Registration System processes these transactions to establish and update ESI ID relationship records. On a daily basis, the additions and changes to ESI ID relationship records within the ERCOT ESI ID Registration System are processed into the ERCOT Data Aggregation System.

Settlements Metering & Billing

ERCOT's responsibility for settlement, billing and financial transfer ensures that electricity production and delivery are accurately accounted for among the Market Participants. These responsibilities include: (1) receiving, retrieving and estimating energy production and consumption data from all points within ERCOT; (2) grouping the data by responsible Market Participant; (3) applying appropriate load profiles, loss factors and Unaccounted for Energy (UFE) allocation mechanisms; and (4) producing the necessary billing determinants to settle the market for each 15-minute interval.

Meter data is submitted to ERCOT by TDSPs via Texas Standard Electronic Transactions (TX SET) for premises with standard Interval Data Recorder (IDR) or Non-Interval Data Recorder (NIDR) meters or LSE files for premises with advanced meters. Meter data for premises designated as ERCOT Polled Settlement (EPS) meters are acquired via an MV-90 system that polls the meters remotely. ERCOT Protocols defines routines to estimate consumption for ESI IDs where actual usage data is missing or unavailable. Prior to each settlement run for an Operating Day, the actual/estimated meter data is used in ERCOT's data aggregation process.

ERCOT calculates payments and charges to QSEs and CRRAHs using the results of the DAM, RTM, CRR market activities, and the energy production and consumption. ERCOT settles RTM activity, DAM activity, and CRR Auction activity with registered CRRAHs and/or QSEs, as applicable. A total of 70 charge types are utilized to bill the entities; these charge types are identified in ERCOT Protocols and are calculated whenever the identified conditions occur. Each relevant charge type is paid and/or charged to a QSE or CRRAH as part of the market financial settlement processes. The charge types are identified in ERCOT Protocols and are calculated whenever the identified conditions occur. The table below provides summary details regarding the various settlement statements and invoices, organized by charge type.

Invoice or Statement	Recipient	Frequency	Post Timing	Payment Timing
CRRs				
CRR auction invoice	CRRAHs	With each Monthly and Annual Auction	1st business day after completion of a CRR auction *(Note: monthly and annual CRR auctions are invoiced separately)*	3rd bank business day after invoice posts *(or next day that is both business day and bank business day)*
CRR auction revenue distribution invoice	QSEs *(with load)*	Monthly	1st business day after RTM initial statement posts for the last day of the relevant month and 1st business day after RTM final statement posts for the last day of the relevant month	5th bank business day after invoice posts *(or next day that is both business day and bank business day)*
CRR balancing account invoice	CRRAH *(due a shortfall refund)* QSEs *(with load)*	Monthly	1st business day after RTM initial statement posts for the last day of the relevant month	1st bank business day after the due date of the RTM invoice that includes the RTM initial settlement statement for the last day of the month *(or next day that is both business day and bank business day)* *payout to market only
DAM				
DAM statement	QSEs CRRAHs	Daily	2nd business day after the operating day	n/a
DAM resettlement statement	QSEs CRRAHs	Ad hoc	Ad hoc *(on business day)* *Market notice required	n/a
DAM late fee invoice	QSEs CRRAHs	Monthly	10th calendar day after the end of the relevant month *(or next business day)*	4th bank business day after invoice posts *(or next day that is both business day and bank business day)*

Invoice or Statement	Recipient	Frequency	Post Timing	Payment Timing
RTM				
RTM initial settlement statement	QSEs CRRAHs	Daily	Operating day + 5 *(or next business day)*	n/a
RTM final settlement statement	QSEs CRRAHs	Daily	Operating day + 55 *(or next business day)*	n/a
RTM true-up settlement statement	QSEs CRRAHs	Daily	Operating day + 180 *(or next business day)*	n/a
RTM resettlement settlement statement	QSEs CRRAHs	Ad hoc	Ad hoc *(on business day)* *Market notice required	n/a
Default uplift invoice	QSEs CRRAHs	Ad hoc	Ad hoc *(on business day)* *Market notice required	5th bank business day after the invoice posts *(or next day that is both business day and bank business day)*
RTM late fee invoice	QSEs CRRAHs	Monthly	10th calendar day after the end of the relevant month *(or next business day)*	4th business day after invoice posts *(or next day that is both business day and bank business day)*
DAM & RTM				
Settlements Invoice	QSEs CRRAHs	Daily	Every ERCOT business day	2nd business day after the invoice posts *(or next day that is both business day and bank business day)*
MISC				
Miscellaneous invoice	QSEs CRRAHs	Ad hoc	Ad hoc *(on business day)* *Market notice required	Specified in the market notice

Statewide information on renewables

In addition to the settlement and retail operations noted previous, ERCOT is the designated program administrator of the Texas Renewable Energy Credits trading program.

Grid Coordination

Network Modeling Administration & Maintenance

The Network Modeling departments coordinate and validate Market Participant model data. Engineers use cases based on the model to simulate the electric grid for the purpose of Transmission and Resource Planning, Energy and Market Operations, DAM activities, and CRR markets. For Transmission and Resource Planning, two sets of base cases are created each year in coordination with the TDSPs; these cases are updated tri-annually. Additionally, Network Modeling builds the base cases used for system protection studies. A separate process produces weekly cases for Energy and Market Operations and the DAM. Finally, the CRR Market relies on monthly and annual cases that are produced in another process. Information for all these models is drawn from the Network Model Maintenance System (NMMS), which is maintained and validated by ERCOT staff.

Outage Coordination

Outage Coordinators are primarily responsible for determining whether transmission and resource outages that are required for maintenance and operational reasons can be allowed without compromising reliability.

The program receives and processes more than 100,000 outage requests annually in accordance with ERCOT and NERC reliability standards, protocols and procedures. Various daily, internal reports developed by Outage Coordinators are used by other departments for planning and forecasting purposes. Outage Coordinators process requests to determine: whether they contain all the required information; conduct security analysis studies of the ERCOT System, as appropriate, for the relevant timeframe; approve, reject, accept, or withdraw the requests; and re-coordinate outages, as needed. If an outage is determined to potentially cause reliability issues, Outage Coordinators work with the Market Participants to develop mitigation plans to ensure reliability within the ERCOT Region.

Resource Integration

The Resource Integrations team's key objective is to provide non-discriminatory, open access to the transmission system, while maintaining the reliability of the system. All newly proposed generation projects of sufficient size that connect to the ERCOT System must go through the ERCOT generation interconnection process, which facilitates the interconnection of new Generation units in the ERCOT region by assessing the transmission upgrades necessary for new Generating units to operate reliably. Resource Integration performs a feasibility study, also known as a security screening study, for each new Generation project as required by PUC SUBST. R. §25.198. Resource Integration also coordinates subsequent studies performed by the TSPs as the interconnection process progresses for each Generation project.

System Planning

Transmission Planning

Transmission Planning is one of ERCOT's core responsibilities, directly satisfying SB 7 requirements to maintain the reliability of the system and provide non-discriminatory access to the system. ERCOT is also the only NERC-registered Planning Coordinator / Authority for the ERCOT Interconnection. The key responsibilities for this department include:

- Annual Regional Transmission Plan
- Regional Planning Group (RPG) Reviews
- Long-Term System Assessment
- NERC Compliance

The annual Regional Transmission Plan is developed by ERCOT in conjunction with the TDSPs and the Regional Planning Group (RPG). The plan addresses regionwide transmission needs and the planned improvements to meet those needs over the upcoming six (6) years. The ERCOT System is evaluated to determine transmission system improvements that are required to meet NERC and ERCOT reliability standards as well as improvements that can cost-effectively lower the overall cost of serving demand in the ERCOT Region.

The RPG, led by ERCOT, is the forum that provides transparency and input into the planning process for all ERCOT stakeholders. This consensus-based forum is open to all interested parties, including TDSPs, generators, marketers, consumer groups, environmental groups, landowners, governmental officials and PUC staff.

The RPG Charter and Procedures sets out the functions and procedures under which the RPG operates. The RPG allows stakeholders to review and comment on all major transmission projects.

ERCOT Protocols define the four levels (or "tiers") by which each project is classified. Except for minor transmission projects that have only localized impacts and projects that are directly associated with the interconnection of new generation, all transmission projects in the ERCOT region undergo a formal review by the RPG to ensure an open and fair transmission planning process. This formal review process is facilitated by ERCOT and provides an opportunity for any interested party to comment or ask questions about proposed projects.

For more expensive and complex projects, Transmission Planning performs an independent analysis of the need for major transmission projects that are submitted for RPG Review. The affirmative result of this review is formal endorsement of the project by ERCOT. Finally, the highest-tiered projects require additional endorsement by the ERCOT Board. ERCOT Project Endorsements are intended to support, to the extent applicable, a finding by the PUC that a project is necessary for the service, accommodation, convenience, or safety of the public within the meaning of PURA §37.056 and PUC SUBST. R. §25.101.

In each even-numbered year, ERCOT investigates the longer-term transmission needs of the ERCOT System in the Long-Term System Assessment (LTSA). This scenario-driven assessment

looks 10 or more years into the future to see what long-lead-time transmission projects may be needed and to assess the cost-effectiveness of larger projects in lieu of numerous smaller projects.

Resource Adequacy

The Resource Adequacy department is responsible for collecting and maintaining the data and formulating the associated reports that are necessary for the Market Participants and regulators to assess the adequacy of resources on the ERCOT system. Resource Adequacy performs several activities to support this responsibility:

- Develops the Capacity, Demand and Reserves (CDR) report, which documents the derivation of planning reserve margins on an annual basis for the next 10 years;
- Prepares Seasonal Assessment of Resource Adequacy (SARA) reports, which are produced ahead of each season to indicate forecasted capacity reserves and present several scenarios that show a range of resource adequacy outcomes;
- Conducts Special Studies related to resource adequacy, such as analyses of the impact of new EPA regulations, natural gas availability and drought;
- Conducts reserve margin criteria studies, based on loss-of-load analyses performed to determine the appropriate minimum reserve margin to meet established reliability standards;
- Prepares the Medium-Term Projected Assessment of System Adequacy (PASA_ Report, which is a three-year projection of resource availability and system reserves. This report is required by PUC SUBST. R. §25.505(d);
- Prepares monthly reports on the status of planned generation projects for which ERCOT interconnection requests have been made;
- Assists NERC in developing its annual and seasonal reliability assessments by providing generation resource, load and transmission planning data.

Load Forecasting & Analysis

ERCOT's Load Forecasting and Analysis department performs several functions that support overall grid planning and operations. These functions include:

- Load Forecasting – Econometric and neural network techniques are used to forecast load based on historical observations of load and weather and forecasted conditions for each Weather Zone.
    - The Long-Term Load Forecast is prepared annually covering the next 10 years.
    - The Mid-Term Load Forecast is prepared hourly for the next 7 days.
    - The Short-Term Load Forecast is prepared every 5 minutes for the next hour.
- Load Profiling – Load profiles, created for use in the market Settlement process, represent estimated allocation of Customers' actual energy use over 15-minute Settlement Intervals.

The Load Forecasting and Analysis department also participates with working groups in the review process for load profiling.

- Meteorology – Support meteorological services are provided including drought monitoring, lake level monitoring, seasonal outlook and others. These services support the preparation of the SARA and can contribute to other reports or forecasting for reliability planning purposes.

Compliance

ERCOT is one of several ISOs/Regional Transmission Operators ("RTOs") in the United States. ERCOT is unique from a reliability perspective due to its dual jurisdictional obligations. Prior to the Energy Policy Act of 2005 ("EPAct 2005"), with the exception of certain Department of Energy ("DOE") reporting requirements, ERCOT was subject to the jurisdiction of the PUC for all matters, including reliability. With the passage of EPAct 2005, ERCOT became subject to federal jurisdiction for reliability matters. Specifically, §1211 of EPAct 2005 amended Part II of the Federal Power Act ("FPA") by adding §215, *Electric Reliability*. Section 215 establishes an enforceable reliability construct that applies to all owners, users and operators of the bulk power system. The ERCOT Compliance department is responsible for preparing and maintaining ERCOT compliance with its reliability and security obligations to FERC, NERC and the PUC.

ERCOT's role in reliability oversight matters is linked to the following:

- The obligation to maintain reliability involves real-time monitoring of Protocol compliance as part of its real-time operations function;
- Support obligations for the reliability and market oversight functions of the PUC, the Texas RE and the IMM;
- Oversight of market participant performance metrics under the ERCOT Protocols;
- Reporting obligations under the NERC Reliability Standards;
- Investigations related to NERC Compliance Monitoring and Enforcement Program proceedings and obligation to respond to NERC inquiries related to such matters;
- Investigation and reporting obligations under the NERC Events Analysis program;
- Investigation and reporting obligations under the Department of Energy requirement to report electric system emergencies and disturbances;
- Investigations related to direct FERC oversight of reliability matters and obligation to respond to FERC inquiries related to such matters.

PUC Compliance

Consistent with PURA, the PUC Substantive Rules require ERCOT to maintain the reliability of the electric grid. In addition to this general obligation, ERCOT supports the PUC's reliability oversight function. Section 25.503 of the PUC Substantive Rules governs the PUC oversight functions, which include markets and reliability. In addition to market oversight, Section 25.503(a)(9) establishes that ERCOT shall have a role in overseeing compliance with reliability related rules (e.g. Protocols and Operating Guides) in the ERCOT region. Section 25.503(j) sets forth ERCOT's role in enforcing operating standards. Pursuant to this obligation, ERCOT is required to maintain records of all instances of material noncompliance. Additionally, ERCOT must provide information to and cooperate with the designated Reliability Monitor. The process to monitor compliance with the relevant ERCOT rules is accomplished pursuant to the ERCOT Protocols and the reliability monitoring agreement between the PUC, the Texas RE and ERCOT ("Reliability Agreement").

Section 8 of the ERCOT Protocols establishes performance metrics for certain reliability and market services. ERCOT is responsible for monitoring compliance with these metrics and reporting violations to the PUC and Texas RE in accordance with Section 8 and its obligations under the Reliability Agreement. ERCOT's administration of Section 8 necessarily requires interaction with third parties to investigate performance metric issues, and provides ERCOT the discretion for requesting corrective action plans and relevant disqualification or suspension based on performance and investigations.

NERC Compliance & Monitoring

ERCOT is registered with NERC for the following functions:

- Reliability Coordinator (RC)
- Balancing Authority (BA)
- Planning Coordinator (PC)
- Resource Planner (RP)
- Transmission Service Planner (TSP)
- Interchange Authority (IA)
- Transmission Operator through Coordinated Functional Registrations (TOP CFR).

ERCOT adheres to the NERC Reliability Standards and demonstrates compliance as outlined in the NERC Rules of Procedure and the NERC Compliance, Monitoring and Enforcement Program (CMEP). Compliance and Monitoring includes:

- Scheduled Audits
- Spot Checks
- Self Reporting
- Event Analyses
- Self Certification
- Enforcement Program and Settlements
- Requests For Information (RFI)
- Compliance Investigations (CI formally CVI)
- Organization Registration and Certification
- Reliability Readiness Evaluation and Improvement

Attachment G

Crisis Communications Procedures

Crisis Communications Procedures

Version 7

January 15, 2016

ERCOT PUBLIC

Document Revisions			
Date	**Version**	**Description**	**Author(s)**
07/31/2007	0.01	First approved draft	R. Drew/D Roark
10/15/2007	0.02	Added sign-off page & updated staff	D. Roark
03/24/2008	0.03	Updated staff	R. Drew/D. Roark
04/07/2009	0.04	Annual update (primarily staff changes)	D. Roark
5/1/2009	2.01	Revised EECP to EEA; updates to Appendix D pending	D. Roark
7/6/2009	2.02	Appendix D edits	D. Roark/A. Hale, A. Apodaca
7/14/2009	2.03	Updated Load Shed Table	D. Roark
March, 2010	3.10	Annual review/updates; revised communications matrix to reflect optional communications at Watch for 2500 MW adjusted responsive reserves	D. Roark
9/10/10	3.20	Added notification of firm-load shed events; updated load shed table; added L Cobos contact information and other minor edits to notification/press release templates	D. Roark
2/21/11	4.01	Revised to include post–Feb. 2 modifications regarding automated notifications via ENS; Updated news release templates; Changed "Legal/Corporate Communications" to External Affairs	D. Roark
3/8/11	4.02	Added SOC and Board to all ENS notifications; inserted "redlined" matrix; edited news release templates	D Roark
6/10/11	4.03	Revised zonal protocol references to nodal protocols; inserted final matrix; web team procedures, call center procedures, and other minor edits	D. Roark
7/12/11	4.04	Added C-5 – Grid Event Notification Lists Matrix; updated EEA templates to match PUC conservation tips; added new emergency call treatment center diagram	D. Roark
10/10/11	4.05	Revised to include NPRR379 changes to EEA; updated staff contacts; other minor edits	D. Roark
5/1/12	5.01	Added recommendations from internal audit; changed EILS to ERS (effective 6/1/12); added information about new EmergencyAlerts list and revised Grid Event Notification Lists Matrix and External Communications Matrix for Energy Emergencies; redacted contacts appendix and other personal contact information in order to change from "ERCOT Limited" to "Public"; redacted emergency call center diagram to protect confidential numbers; (Changes accepted after board review 5/15/12.)	D. Roark
6/17/12	5.02	Incorporated input from Board Communications Task Force, procedural updates and minor edits.	R. Searcy
4/25/13	6	Update with updated matrix and minor edits to team names, etc.	R. Searcy
5/23/13	6 01	Minor revisions requested by ERCOT Board Chair	R. Searcy
8/2/13	6.02	Cleaned up old charts	R. Searcy
11/5/13	6.1	Update load shed table; review with storm drill	R. Searcy
01/12/15	6.2	Update ERCOT stats, roles, news releases references	R. Searcy

12/22/15	7	Update with load shed table, clarifications to matrix and internal procedures	R. Searcy

Table of Contents

1 Introduction

ERCOT is the organization responsible for ensuring the reliability and adequacy of the regional bulk electric power grid for the majority of Texas. The ERCOT power grid encompasses approximately 90 percent of the state's electric load and about 75 percent of the Texas land area. The ERCOT region covers most of Texas, including Houston, Dallas, Fort Worth, San Antonio, Austin, Corpus Christi, Abilene and the Rio Grande Valley. It does not include the El Paso area, the Texas Panhandle, Northeast Texas (including Longview, Marshall, and Texarkana), and Southeast Texas (including Beaumont, Port Arthur and the Woodlands).

As the independent system operator for its region, ERCOT manages the scheduling of power on an electric grid consisting of more than 550 generation units and more than 46,500 miles of high-voltage transmission lines. ERCOT is a non-profit corporation regulated by the Public Utility Commission of Texas (PUC) and subject to oversight by the Texas Legislature.

2 Purpose

The purpose of the Crisis Communications Procedures is to ensure orderly and timely communication of information in the event of an unexpected, abnormal or critical situation that threatens the reliability of the regional electric grid; the operations of the ERCOT markets; or the safety, health or security of ERCOT's employees or property. These procedures establish the crisis communications framework for ERCOT to collect, coordinate and share emergency information and system status with the Texas Legislature, the PUC, other Texas state governmental entities, market participants and stakeholders, local government, federal government, and the media and public.

This document is not intended to address every contingency associated with crisis situations and the associated operational issues and challenges. ERCOT has a separate Business Continuity Plan, which addresses the numerous issues related to continuing its business operations during a disaster.

Due to the complexity of communications among these diverse groups, this document should be expected to change periodically.

3 Scope

The Crisis Communications Procedures will be implemented for incidents affecting large segments of the bulk electric power grid; normal market operations; significant public health, safety or economic disruptions affecting ERCOT staff, property or constituencies; and any event that requires high-level management participation by government and the electric industry to effectively and swiftly accomplish a return of the bulk electric power grid to normal operation.

The Crisis Communications Procedures deal only with crisis communications between ERCOT and appropriate regulatory, governmental and public-safety contacts. Other ERCOT documents, including the Business Continuity Plan, address broader crisis management procedures and policies, emergency response, disaster recovery and business continuity. Please refer to the appropriate response plan for additional information.

Additionally, this document refers to a crisis that affects the entire ERCOT region. Regional and localized electric reliability issues may be handled differently, as noted in more detail in *Appendix A*.

Except as noted, the steps outlined in these procedures are not governed by the ERCOT Protocols, but rather are internal ERCOT procedures for communications. The procedures should be used in conjunction with the normal decision-making hierarchy of ERCOT and will not supplant that decision-making process.

4 Policies/Principles

- ERCOT communicates in a regular and timely manner during a crisis.
- All communications include accurate, appropriately detailed information for each constituency.
- ERCOT keeps the PUC and the Legislature, as appropriate, informed of important developments, including system outages and potential electric shortages in keeping with PUC rules.
- All communications to the news media, including but not limited to interviews, are made through the Crisis Communications Team and designated spokespeople.
- ERCOT will generally communicate only about crises directly affecting ERCOT, the ERCOT markets, or the ERCOT regional grid.
- ERCOT may offer help to market participants experiencing crises on a case-by-case basis.
- The Crisis Communications Team will coordinate information with other teams, such as the Disaster Management Team and/or the Corporate Security Incident Response Team.
- ERCOT is not the first point of contact to the public for the majority of electricity-related crises. In many cases, ERCOT communicators refer information seekers to other sources, such as their electricity providers (load-serving entities) or wires companies.

5 Communications Constituencies

- ERCOT Employees
  - Executives
  - All staff
- ERCOT Board of Directors
- Governor's Office
- Texas Legislature and United States Congress
  - State and Federal Jurisdictional Committees
  - Texas Lieutenant Governor
  - Texas Speaker of the House
  - All Texas legislators and congressional delegation
- Public Utility Commission of Texas (PUC)
- Market participants and stakeholders
- Texas Railroad Commission (RRC)
- Texas Commission on Environmental Quality (TCEQ)
- State Division of Emergency Management including the State Operations Center (SOC). ERCOT usually will rely on the SOC notification system to reach:
  - City/County Emergency Management Departments
  - Mayors
  - Local Law Enforcement Agencies
  - Fire Departments
  - Texas Department of Public Safety (DPS)
  - County Commissioners and County Judges
  - State agencies other than the PUC, TCEQ and RRC
- Texas Reliability Entity (TRE) — notification re: emergency grid event procedures
- North American Electric Reliability Corporation (NERC) — notification re: emergency grid event procedures
- Federal Energy Regulatory Commission (FERC) — notification re: emergency grid event procedures

- News Media/Public

System Operations' communications with affected transmission providers and the following federal constituencies are beyond the scope of this document. Please see Section 10 for more information.

- Federal Agencies
  - Federal Energy Regulatory Commission (FERC)
  - Federal Department of Homeland Security (DHS), Joint Terrorism Task Force (JTTF)
  - North American Electric Reliability Corporation (NERC), Electricity Sector Information Sharing and Analysis Center (ESISAC)
  - Other federal agencies, such as the Nuclear Regulatory Commission or the Department of Homeland Security (DHS), as appropriate

6 Crisis Communications Team and Responsibilities

CEO – Maintains and delegates, as necessary, to General Counsel and the Vice President, External Affairs and Corporate Communications, the primary responsibility for communicating with PUC Commissioners, legislators, and the Governor's Office, as appropriate; approves overall messaging and serves as lead spokesperson for on-camera/radio interviews during emergency, unless otherwise designated.

General Counsel – Serves as backup to the CEO; ensures legal soundness of messages; develops and ensures accuracy and consistency of messages to be communicated by all parties; shares responsibility with the Vice President, External Affairs and Corporate Communications, as delegated by the CEO, for communicating with PUC Commissioners, legislators, and the Governor's Office, as appropriate.

Vice President, External Affairs and Corporate Communications – Serves as backup to the CEO; develops and ensures accuracy and consistency of messages to be communicated by all parties; shares responsibility with General Counsel, as delegated by the CEO, for communicating with PUC Commissioners, legislators, and the Governor's Office, as appropriate; ensures that all appropriate governmental and news media receive complete, timely and appropriate information; and oversees internal communications within the ERCOT organization.

CORPORATE COMMUNICATIONS STAFF

Director of Corporate Communications and Government Relations – Helps develop messaging; has primary responsibility for communicating with appropriate staff contacts at the Legislature; and backstops the Vice President, External Affairs and Corporate Communications, and Communications Manager as needed.

Communications Manager – Helps develop messaging; has primary responsibility for communicating with the news media and as spokesperson for on-camera/radio interviews during emergency, as designated by the CEO; coordinates and directs work of Core Web Team and other internal and external communications staff; and backstops the Vice President, External Affairs and Corporate Communications, and Director of Corporate Communications and Government Relations as needed.

CLIENT SERVICES STAFF

Director of Client Services – Oversees communication with market participants; staffs emergency call center during major emergencies that result in a large volume of calls. (See *Appendix E*: Inbound Calls Treatment.)

OPERATIONS STAFF

Chief Operating Officer – Oversees grid and market decisions during a crisis; reviews and provides input to messages regarding grid emergencies; may participate in external communications activities as needed.

Vice President, Grid Planning and Operations – With Director of System Operations, ensures Crisis Communications Team is apprised of system conditions and understands actions being taken to protect the grid; reviews and approves messaging; may participate in external communications activities as needed.

Director of System Operations – With Manager of System Operations or his/her delegate, serves as primary source of grid coordination information; reviews and approves messaging; may participate in external communications activities as needed.

Manager of System Operations – Oversees actions of operators who initiate external notices; maintains ENS system; serves as back-up to Director of System Operations.

7 Crisis Communications Procedures

Activate Crisis Communications Procedures

- Member(s) of the Crisis Communications Team is/are notified that a crisis or potential crisis has been identified; the Crisis Communications Team notifies the ERCOT officers if not already informed.

- The Crisis Communications Team makes the decision to activate the Crisis Communications Procedures, except as otherwise specified. An Energy Emergency Alert (EEA), which is activated by Operations, is an example of such an exception. In an EEA event, Operations staff initiates first communications via the Emergency Notification System, which includes automated emails, social media and mobile app notifications and phone calls to predetermined lists, based on the EEA level or grid status. The phone calls continue until a person responds to ensure notification is made outside regular working hours. The Crisis Communications Team is briefed on the situation by relevant operations/technical/security staff; in the event of a grid emergency, this will be the Control Room Liaison.

- If the Crisis Communications Team cannot convene at ERCOT facilities, refer to the ERCOT Business Continuity Plan for alternative location or convene via telephone communication.

Take Immediate Action

- Crisis Communications Team develops key messages based on information received from ERCOT Operations staff.

- Corporate Communications staff approves key messages for the PUC, Legislature, media, staff, other governmental bodies, and SOC.

- Client Services representatives approve key messages for stakeholders and market participants.

- Crisis Communications Team identifies and notifies media spokesperson(s) based upon the nature and degree of the situation.

- Designated Corporate Communications staff identifies and tailors appropriate standard news releases and media advisories for the specific crisis and, when appropriate, notifies market participant communications staff. Team members also post appropriate messages, following release of automated messages, to social media outlets and the ERCOT Energy Saver mobile app. Team members designated to monitor social media activity will respond, if needed, with

appropriate information or notify Corporate Communications manager. In situations in which immediate consumer action is requested to support grid reliability, social media and app messages will take precedence over news releases, followed by additional messages linking to more informative releases.

- Core Web Team deploys appropriate grid conditions notices on home page, at the request of Crisis Communications Team, supports other postings as needed, and monitors system performance. Director of Corporate Communications and Government Relations or designee will ensure ERCOT and PUC home page notifications are synchronized, either prior to change or as soon as possible following an automated change.

- As needed, Client Services activates emergency call center.

- Telecommunications staff transfers main line phone numbers to emergency phone line for call treatment (see *Appendix E*) at request of Crisis Communications Team.

- Corporate Communications staff records appropriate voice messages on emergency phone line.

Communicate Information about the Crisis

- Corporate Communications staff sends follow-up notifications to governmental agencies, employees, market participant communications staff and media as appropriate.

- Corporate Communications staff also provides notification via social media and the ERCOT Energy Saver mobile app as appropriate.

- Client Services staff sends notifications to market participants as appropriate.

- Communications used:
  First communication is an automated email and/or phone call initiated by the Control Room staff. The phone calls continue (up to three attempts) until a person responds.
  - Follow-up with key governmental contacts begins (personal calls by External Affairs/Corporate Communications staff)
  - Distribution of email messages
  - Recording of updates for public's inbound calls as needed due to incoming call volume

- Core Web Team and Crisis Communications Team periodically update the website, social media channels and mobile app with appropriate information.

Bring Closure to Crisis

- An ERCOT officer declares that the crisis is over.
- The Crisis Communications Team issues an "all clear" notification as appropriate. Crisis Communications Team coordinates documentation of the crisis and response with input from all team members and others.
- Crisis Communications Team monitors the situation.

Incorporate Learning

- Crisis Communications Team participates in a "Lessons Learned" discussion following actual events. The Director of Corporate Communications and Government Relations or designee will schedule lessons-learned meetings twice annually, once after annual severe weather drills or other crisis training exercises and once prior to the alternating season, if no events have occurred during that timeframe.
- Crisis Communications Team makes amendments to the Crisis Communications Procedures document, if needed.
- Changes to procedures, roles, responsibilities, etc., are implemented, if needed.
- In the absence of a crisis event, regular training on the Crisis Communications Procedures for team members will follow release of summer and winter Seasonal Assessments of Resource Adequacy.

Energy Emergency Alert

- In the case of a shortage of electrical supply requiring deployment of the Energy Emergency Alert (EEA), as described in Section 6.5.9.4 of the ERCOT Protocols, ERCOT will communicate according to the procedures described in *Appendix A*. Primary communication to operating personnel at qualified scheduling entities and transmission operators will be made by system operators according to protocol.
- First communication of EEA situations to the Crisis Communications Team and other critical constituents is an automated email, text message and/or phone call initiated by the Control Room staff. The phone calls continue until a person responds to ensure notification is made outside regular working hours.

- The automated Emergency Notification System, which makes calls every two minutes up to three unsuccessful tries over a course of approximately 25 minutes, will include:

All EEA Levels:
  - ERCOT staff (Crisis Communications Team/CEO Contact List)
  - PUC
  - Office of Public Utility Counsel (OPUC)
  - Government/Legislative representatives
  - Board members
  - State Operations Center (SOC)
  - RRC
  - TCEQ
  - TRE
  - NERC
  - FERC
  - Independent Market Monitor (IMM)

When the ENS system is activated for all EEA levels, written notifications also automatically go to the following:
  - Subscribers to Emergency Alerts list
  - Twitter and mobile app subscribers
  - Manual posting to Facebook occurs ASAP

EEA Level 2
  - Statewide media
  - Market participant communications/media contacts

Pre-EEA step – "Watch for Physical Responsive Reserves below 2,500 MW":
  - PUC infrastructure and reliability representatives
  - TRE
  - FERC
  - Independent Market Monitor

Local firm-load shed:
  - PUC
  - TRE
  - FERC
  - IMM
  - OPUC
  - Board members
  - SOC
  - Government/Legislative representatives

- The Crisis Communications Team has responsibility for follow-up communications to provide additional information following automated messages. The Crisis Communications Team also will follow up with other constituents, including government entities and the SOC hotline, to confirm the correct message has been sent to first responders, county officials and state agencies. See *Appendix A* for detailed EEA communication responsibilities.

NOTE: Sixty (60) days following an operating day, unit-specific information is no longer considered confidential under ERCOT Protocols. Corporate Communications Team should note this date on the calendar following an EEA event and anticipate inquiries from media and other interested parties. The presentation of this information will depend on the severity of the event and level of interest in the details.

8 Long-term Crisis Communications Procedures

In the event of a long-term crisis (usually defined as lasting more than 72 hours), the same crisis communications procedures will be used with the following additions:

- Crisis Communications Team monitors the situation and continues to make communications to appropriate constituencies as needed throughout the duration of the crisis.
- Crisis Communications Team and Core Web Team periodically update the website with appropriate information throughout the duration of the crisis.

9 Procedures for Crises with Lead Time

In the event that ERCOT becomes aware of an impending situation that could lead to a crisis (as in the event of a forecasted hurricane), the same basic crisis communications principles and steps detailed in these procedures will be followed, but with advance planning carried out as possible.

- A spokesperson(s) will be identified in advance.
- Appropriate media advisories and press releases will be identified and tailored as much as possible to the specific situation and kept ready for release.
- All constituencies will be contacted with warning messages if appropriate, particularly if the integrity of the grid is threatened. Corporate Communications staff will ensure appropriate communications between ERCOT and market participant Operations staff has occurred prior to communication with market participant communications staff.
- Approved messages will be communicated to the Core Web Team and the "1 ERCOT Staff" email list in advance of the crisis.
- Crisis Communications Team will develop appropriate messaging for inbound phone lines, including public and news media.
- Emergency documents and spotlights will be set up and prepared in advance for deployment.
- In the event of an impending crisis that may strike ERCOT facilities, Internal Communications staff, under the direction of the Director of Corporate Communications and Government Relations, has the primary responsibility for communicating with employees about grid- or market-related crises. In situations that necessitate regular internal updates to ensure employee safety, Human Resources representatives will use Mission Mode to communicate urgent information companywide. Additional information is available in the confidential and proprietary Business Continuity Plan.

10 Procedures for Communicating with Federal Agencies

Certain reporting to federal agencies is done by the Control Room operators without involvement from the Crisis Communications Team. This reporting must be done in a timely manner and falls outside the scope of these procedures in accordance with relevant laws and rules. Relevant information will be shared with the Crisis Communications Team as soon as possible after timely reporting to federal authorities.

11 Definitions

- **Crisis**

  ERCOT defines a crisis as any unexpected, abnormal or critical situation that threatens the reliability of the regional electric grid, market operations, or the safety or security of ERCOT's employees or property.

- **Emergency**

  ERCOT Protocols define an emergency condition as "that operating condition where the safety or reliability of the ERCOT System is compromised or threatened, as determined by ERCOT." All emergencies are crises, but not all crises are emergencies.

- **Energy Emergency Alert (EEA)**

  A plan defined in the ERCOT Protocols and Operating Guides that provides an orderly, predetermined procedure for addressing a shortfall in electric supply by calling upon all available resources and, if necessary, shedding load during electric system emergencies.

  Level 2 of the EEA states that in the event that load curtailment is needed, ERCOT will seek voluntary load curtailment from consumers by issuing an appeal through the public media. Communication steps for this contingency are included in *Appendix A*.

- **Triggering Event**

  A triggering event is an event that causes ERCOT to declare a crisis.

12 Maintaining the Procedures

The Crisis Communications Procedures shall be reviewed and, if needed, updated by ERCOT staff at least once per year prior to the summer peak demand season. The procedures shall be updated any time a major change is made to the way that ERCOT plans to communicate. Contact lists shall be updated as needed.

13 Training and Exercises

Corporate Communications and External Affairs will meet twice a year, prior to summer and winter, to review the Crisis Communications Procedures and discuss any recent updates. As needed, other Crisis Communications Team back-up team members and ERCOT support staff will be included in these training discussions.

Designated Corporate Communications staff will participate each year in the System Operations annual storm drill and contact the PUC, the Texas State Operations Center, and other market participant communications and public information officers to invite them to participate in the crisis communications exercise.

Designated Corporate Communications staff will participate in at least one other training exercise, which may include participation in the state's annual hurricane drill or an equivalent drill or actual emergency event.

The Director of Corporate Communications and Government Relations or designee will establish training requirements, beyond drills and real-time events, for the Crisis Communications Team, including support and back-up staff.

Appendix A: Energy Emergency Alert
External Communications Procedures

Energy Emergency Alert External Communications Procedures

This document describes how the Electric Reliability Council of Texas (ERCOT) meets its communications obligations when an Energy Emergency Alert (EEA) event is possible, expected, or under way. These communications obligations are required by a combination of PUC Rule, ERCOT Protocol, and ERCOT internal procedures, as follows:

1. PUC Subst. R. 25.362(i)(4) requires that ERCOT immediately communicate with the PUC if "ERCOT becomes aware of any event or situation that could reasonably be anticipated to adversely affect the reliability of the regional electric network";
2. ERCOT Protocols Sec. 6.5.9.3 (Communication under Emergency Conditions) and Sec. 6.5.9.4 (EEA) lay out the basic framework for emergency communications to market participants; and
3. ERCOT internal procedures relating to communications with government officials, market participants, ERCOT Staff, and the general public are described in this document and in the Crisis Communications Procedures document, to which this EEA Procedure document is attached as *Appendix A*.

Introduction

The EEA is a set of emergency procedures to be implemented when there is insufficient generating capacity available to meet customer demand and maintain adequate operating reserves. The EEA authorizes ERCOT to order increases in the supply of electricity in the region or to order or request decreases in customer consumption to maintain the reliability of the grid. The EEA consists of a sequence of specific actions that ERCOT can undertake, or can order others to undertake, to preserve the reliability of the grid.

ERCOT, at management's discretion, may at any time through the public news media issue an ERCOTwide appeal for voluntary energy conservation. In the absence of a defined emergency, these decisions require approval of the CEO or designee.

Level 1 of the EEA provides for ERCOT to increase the supply of electricity generation capacity by utilizing available DC tie capability. ERCOT also can initiate demand response through its Emergency Response Service resources (30-minute ERS and weather-sensitive loads) at this time.

Level 2 of the EEA seeks to reduce demand on the electricity grid by interrupting primarily large industrial consumers who have contractually agreed to have power interrupted in an emergency — known as Load Resources — and/or Emergency Response Service (ERS), if available.

The EEA culminates with Level 3, at which time ERCOT orders local utilities to institute mandatory rotating outages of customers to reduce demand on the system. Implementation of Level 3 will create a need for local officials, law enforcement, and emergency service personnel to respond to situations caused by the rotating outages that have the potential to create public safety or health concerns, such as traffic signal outages, increased calls to the 9-1-1 emergency

systems, and the potential need to assist persons with health conditions that require medical equipment powered by electricity.

Communication Responsibilities

ERCOT's role as the system operator means that ERCOT has the best, most timely, and most complete information on the status of the electrical grid. As a result, ERCOT has the primary responsibility for providing initial notification of emergency conditions to governmental officials, including the PUC and State Operations Center (SOC), electricity market participants and the general public.

When emergency procedures are, or may be, needed, ERCOT will first communicate this information to the PUC and SOC via the automated Emergency Notification System. Additionally, when the first notice is issued by ERCOT for an event, ERCOT will also make personal contact with the SOC and the Executive Director of the PUC or the Executive Director's designee. With each subsequent notice issued as ERCOT proceeds through the EEA, ERCOT will make personal contact with the Executive Director of the PUC or the Executive Director's Designee. If the Executive Director cannot be reached, ERCOT will proceed down a contact list of senior agency management until personal contact is established.

ERCOT will also provide notice to legislative leaders, the ERCOT Board of Directors, and others as needed, using an appropriate form of notice.

ERCOT will use social media (including Twitter and Facebook), the website and mobile app, a subscriber-based notification list, and news releases to communicate with the public in a crisis, when possible.

Appendix A-2 provides a summary of the communications and the triggering events leading up to and associated with an EEA event. However, ERCOT's need and ability to issue all levels of EEA communications will depend on the specifics of the event. ERCOT will consider the severity of the immediate and anticipated capacity shortfall, how far in advance ERCOT staff is able to predict the likelihood of an EEA event, and the amount of time available between the various levels of the EEA.

The first notification to the SOC will be an automated email or phone call to provide the greatest amount of time for the SOC to issue a situation report (SITREP) via email through the state's emergency communications network, thereby informing local and statewide governmental leaders, local law enforcement, and emergency services personnel of the event.

The Crisis Communications Team will follow up with additional information using the templates included as *Appendix A- 3*, with appropriate modifications based on actual conditions.

EEA Communications Content and Triggering Events

The EEA communications are as follows:

A. Pre-EEA Notices

Throughout each day, ERCOT system operators continuously assess the ability of available electric generation capacity to meet electricity consumption for current and future hours, with particular attention paid to available capacity during the projected peak demand hours of the day, which vary seasonally. If ERCOT determines at any point that there may be insufficient generation available to serve customers, it can issue a series of notices, advisories or watches to power plant owners to inform them of the situation. In many cases, this will result in power plant owners revising their plans for the day, which may include starting additional power plants so that they are available. If the situation is not resolved through these voluntary actions, and the adjusted responsive reserves fall below 3,000 megawatts (MW), then ERCOT Operations will issue an Advisory which serves as an informational notice to the generation owners that additional capacity may be needed. If reserves drop below 2,500 MW, ERCOT Operations will issue a Control Room Watch, which allows ERCOT to purchase additional reserve capacity from the market and take other actions to bring on extra capacity.

If ERCOT Operations issues a Control Room Watch for adjusted responsive reserves below 2,500 MW, and Corporate Communications staff learns there is a potential for development of an emergency situation, Corporate Communications staff will send an early advisory to key PUC staff and has discretion to also notify other governmental contacts and market participant communications staff.

Further, ERCOT Operations issues twice-daily notices to PUC staff. These notices include measures of the likelihood that ERCOT will need to issue a directive to shed firm load (EEA Level 3). The likelihood for each day is described as being low, medium or high. If ERCOT Operations issues a PUC Report advising a high likelihood of firm load shed for the day, Crisis Communications staff will follow up via email with key PUC staff, SOC and other governmental contacts. Depending on the situation, Corporate Communications staff also may seek authorization to issue a media appeal for conservation if one has not already been issued.

If ERCOT Operations issues a Control Room Watch due to reserves below 2,500 MW, the Control Room will initiate the automated Emergency Notification System email and phone calls to the infrastructure/reliability representatives for the PUC, TRE, FERC and the IMM. Crisis Communications staff will follow up with additional information if there is a potential for an emergency situation. For example, there may be times in winter or shoulder months when a Watch is required because of Protocol, even though reserves are expected to recover quickly. If Operations indicates that there is a potential for an emergency situation, the Crisis Communications Team will follow up the automated ENS message with additional information.

B. Localized Firm-load Shed Events

If a transmission overload or other grid situation requires ERCOT Operations to request a utility to drop firm load in a local area, targeted conservation messages will be delivered in conjunction with the local utilities in the affected area(s). Staff does not wish to create a statewide or broader issue or concern where none exists. An automated ENS notification will go out ONLY to the PUC, IMM, TRE and OPUC.

Corporate Communications staff will endeavor to gather situational details quickly and will provide follow-up information to the ENS list that received the notice, as well as government officials, market participant PIOs and media in the local area affected by the event.

C. EEA Level 1 Notice – Additional Electricity Procured

If reserves fall below 2,300 MW, ERCOT will implement EEA Level 1 and take actions to restore adequate reserves. This includes ordering all power plant owners to start and fully deploy additional plants if possible and arranging for emergency power from other electrical grids.

Following declaration of EEA Level 1 and the automated ENS notification, Crisis Communications staff will provide follow-up phone calls and emails following that emergency procedures have been implemented and that further actions will be required if reserves are not adequately restored.

Depending on conditions at the time, ERCOT may also issue a public media appeal for conservation. *Appendix A-2* includes a template form of notice that will be the basis for EEA Level 1 notice unless Corporate Communications staff determines that the template is not appropriate for that particular situation.

D. EEA Level 2 Notice – Directing Interruptible Customers (Load Resources) and/or ERS to Curtail Load

If Level 1 is not successful in restoring reserves and reserves fall below 1,750 MW, ERCOT will declare EEA Level 2 and direct Load Resources and/or Emergency Response Service (ERS) to shut down their facilities, thereby reducing demand on the electrical grid.

Following declaration of EEA Level 2, ERCOT will provide notice that Level 2 has been implemented. ERCOT Corporate Communications staff will issue an appeal for voluntary conservation during Level 2 if one has not been issued in an earlier step. *Appendix A-2* includes a template form of notice for EEA Level 2.

E. EEA Level 3 Notice – Ordering Mandatory Rotating Outages of Customers

Level 3 of the EEA is an order by ERCOT for the 17 largest transmission operators[1] to institute rotating outages of customers to reduce the demand on the electric grid. ERCOT orders outages in increments of 100 MW as required to stabilize the system in order to prevent a widespread, uncontrolled blackout from occurring. As a rule of thumb, one MW is roughly enough electricity to power 500 average homes under normal conditions in Texas, or about 200 homes during hot weather when air conditioners are running for longer periods of time.

When necessary to maintain the frequency of the electric grid at or above a certain level (59.8 Hertz), ERCOT immediately implements Level 3 procedures, even if there has not been time to declare prior steps. In these situations, industrial loads with underfrequency relays installed will trip off-line automatically.

The rotating outages are allocated among transmission operators as follows:

ERCOT Load Shed Table	
Transmission Operator	**2014 Total Transmission Operator Load (%MW)**
American Electric Power Service Corp.	8.80
Brazos Electric Power Cooperative Inc.	4.80
Brownsville Public Utilities Board	0.41
Bryan Texas Utilities	0.51
CenterPoint Energy Houston Electric LLC	24.97
City of Austin DBA Austin Energy	3.85
City of College Station	0.29
City of Garland	0.85
CPS Energy (San Antonio)	7.14
Denton Municipal Electric	0.51
GEUS (Greenville)	0.17
LCRA Transmission Services Corporation	5.58
Oncor Electric Delivery Company LLC	36.46
Rayburn Country Electric Cooperative Inc. DBA Rayburn Electric	1.09
Sharyland Utilities	0.25
South Texas Electric Cooperative Inc.	2.03
Texas-New Mexico Power Company	2.29
ERCOT Total	**100.00**

ERCOT Corporate Communications staff will provide follow-up information on the Level 3 implementation, following the automated ENS notification, and note the expected duration of the rotating outages (e.g., through the afternoon peak period during summer).

[1] Transmission operators are called "local utilities" in public notices to more clearly describe their role to laypersons.

Communications staff also will issue a news media release regarding implementation of Level 3. *Appendix A-2* includes the form of notice that will be issued.

F. Notice of the Cancellation of EEA Level 3

After ERCOT Operations terminates its instruction to the local utilities to implement rotating outages, Corporate Communications will provide notice that Level 3 has been canceled. The notice will indicate that customers who continue to experience outages should contact their local utilities.

G. Notice of Cancellation of EEA

Once ERCOT completely exits the EEA, notice will be provided that emergency conditions are over and grid operations have returned to normal. (ERCOT will not issue a separate notice relating to the restoration of power to interruptible industrial loads, as they will have received direct instructions from ERCOT Operations.)

Communications Related to Localized Reliability Issues

In addition to the possibility of a regional generation shortfall, ERCOT also monitors the grid for the possibility of localized transmission outages or other reliability problems that could cause interruptions of service on a local level. In such cases, Corporate Communications, in consultation with the PUC, may also issue an advisory for a specific geographic area within the region if there is a reasonable probability that localized outages associated with ERCOT grid operations may be needed.

To the extent localized outages may occur without advance notice, ERCOT and the PUC will strive to provide immediate notification to local officials via the SOC. An additional advisory will be sent out when grid operations have returned to normal and power has been restored to all customers.

In a localized situation, ERCOT does not wish to create a statewide issue or concern where none exists, so ERCOT staff will work closely with local utilities in the affected area(s) to deliver a targeted conservation message when those actions are needed.

Due to the localized nature of such an event, ENS notices are handled at operator discretion. Delays in notification could result as staff takes necessary steps to identify and notify appropriate stakeholders.

Appendix A-1 – Energy Emergency External Communications Matrix

Posted on www.ercot.com in News / Reports / Emergency Response section

Appendix A-2 – EEA Notification Templates

Following are approved sample notices to be used for EEA notifications. Any changes should be event specific. Messages may be skipped, combined or adjusted depending on actual events, subject to the discretion of the Crisis Communications Team.

If time permits, a "heads-up" email will be sent to the Emergency email lists (SOC, PUC, RRC, TCEQ, OPC, Board, Government,/Legislative contacts, Independent Market Monitor and market participant public information officers) prior to distribution of a news release about the initiation of emergency procedures.

Sample template for "heads-up" email:

The news release below will be issued shortly.

If you have questions, please contact your ERCOT representative.

- Director of Corporate Communications and Government Relations - XXX-XXXX
- Government Relations - XXX-XXXX
- Media Relations, media@ercot.com - XXX-XXXX
- CLIENT SERVICES, (512) 248-3900 (option 1 – wholesale)

Winter Version

The templates in the following section are written for summer months. For winter grid events, the time period for peak demand will be adjusted as advised by Grid Operations, and the conservation tips will be changed to the following:

- Keep your thermostat as low as is comfortable.
- Turn off and unplug non-essential lights and appliances.
- Avoid running large appliances such as washers, dryers and electric ovens during peak energy demand hours.
- Close shades and blinds at night to reduce the amount of heat lost through windows.
- Businesses should minimize the use of electric lighting and electricity-consuming equipment as much as possible.
- Large consumers of electricity should consider shutting down or reducing non-essential production processes.

The winter peak time period for conservation will typically be 5-9 a.m. but may require additional times, such as 4-9 p.m., depending on the circumstances.

Templates for summer and winter are saved on the Legal drive in the External Affairs folder under Crisis Communications Procedures and in the Corporate Communications drive under External.

POWER WATCH – Conservation Needed; Chance of Rotating Outages

ERCOT NEWS RELEASE: Electric Reliability Council of Texas

Power Watch – Conservation Needed
Chance of Rotating Outages

Consumers and businesses are encouraged to reduce their electricity use as much as possible today during peak electricity hours from 3 to 7 p.m. to avoid electricity emergencies or the need for rotating outages.

- Turn thermostat up 2-3 degrees during the peak hours of 3 to 7 p.m.
- Set programmable thermostats to higher temperatures when no one is home.
- If home, use fans to feel 4-6 degrees cooler.
- Schedule pool pumps to run in the early morning or overnight hours; shut off between 4 to 6 p.m.
- Limit use of large appliances (dishwasher, washer, dryer, etc.) to morning or after 7 p.m.
- If you cook indoors from 3 to 7 p.m., use a microwave or slow cooker.
- Close blinds and drapes during late afternoon.
-

See more conservation tips at www.ercot.com/about/conservation/index.html.

Power Watches are issued by the regional electric grid operator, the Electric Reliability Council of Texas (ERCOT), during periods of high demand when supplies of reserve power are low. At this stage, ERCOT has emergency measures to bring on additional generation, so rotating outages are not likely. However, if all sources of supplies are exhausted or large generation outages occur, ERCOT will order utilities to begin reducing load by cutting service through rotating outages.

How to track electricity demand

- View daily peak demand forecast, current load and available generation at http://www.ercot.com/
- Get real-time notices of energy emergency alerts by following @ERCOT_ISO on Twitter, liking the Electric Reliability Council of Texas on Facebook, by signing up for our Apple or Android mobile app (available for download at the Apple Store or Google Play), or by signing up for the EmergencyAlerts list on http://lists.ercot.com.

Consumer assistance
Public Utility Commission Hotline – 1-888-782-8777

Call your electric utility for information about local outages