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PROJECT NO. 24055

PROTOCOL REVISION	§	**PUBLIC UTILITY COMMISSION**
INFORMATIONAL FILINGS BY THE	§	
ELECTRIC RELIABILITY	§	**OF TEXAS**
COUNCIL OF TEXAS	§	

NOTICE OF ERCOT NODAL PROTOCOL REVISIONS (NOVEMBER 2, 2012)

COMES NOW, Electric Reliability Council of Texas, Inc. (ERCOT) and respectfully informs the Public Utility Commission of Texas (PUCT, Commission) of revisions to the ERCOT Nodal Protocols.

Summary of Revisions

In accordance with the process set forth in Section 21 of the ERCOT Protocols, ERCOT adopted Nodal Protocol Revision Request (NPRR) 365 (effective upon system implementation). This NPRR was developed in the ERCOT committee process, and approved by the ERCOT Board of Directors (ERCOT Board) on September 20, 2011. This NPRR is described below.

NPRR	Description	ERCOT Nodal Protocol Sections Modified
365 **(Unboxed language)**	***Change in Resource Outage Approvals from Eight to 45 Days (formerly "Change in Resource Outage Approvals from Eight to 90 Days").*** This NPRR revises the deadline for ERCOT approval of Resource Outages from an eight-day notice to a 45-day notice while aligning the new Resource Outage timelines to match those of Transmission Outages. (Consistent with Recommendation 6B of the March 15, 2011, Report of the Rotating Blackout Operations Task Force of the ERCOT Board)	Section 3, Subsections 3.1.1, 3.1.4.4, 3.1.6, 3.1.6.4, 3.1.6.5 and 3.1.6.6 (Attachment A)
	Administrative Changes. Non-substantive administrative changes were made such as spelling corrections, formatting and correcting Section numbering and references.	Section 3, Subsections 3.1.4.5, 3.1.4.6, 3.1.4.7, 3.1.4.8, and 3.15 (Attachment A)

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The changes to the Nodal Protocol language as revised by the above NPRR are shown in Attachment A in redline format.

The ERCOT Nodal Protocols, including these revisions, may be accessed on ERCOT's website at http://nodal.ercot.com/protocols/index.html.

Respectfully submitted,

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LIST OF ATTACHMENTS

ATTACHMENT A – Section 03-110212 Redline

ERCOT Nodal Protocols

Section 3: Management Activities for the ERCOT System

~~October 1, 2012~~November 2, 2012

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3 MANAGEMENT ACTIVITIES FOR THE ERCOT SYSTEM

3.1 Outage Coordination

3.1.1 Role of ERCOT

(1) ERCOT shall coordinate and use reasonable efforts, consistent with Good Utility Practice, to accept, approve or reject all Outage schedules for maintenance, repair, and construction of both Transmission Facilities and Resources within the ERCOT System. ERCOT may reject an Outage schedule under certain circumstances, as set forth in these Protocols.

(2) ERCOT's responsibilities with respect to Outage Coordination include:

(a) Approving or rejecting requests for Planned Outages and Maintenance Outages of Transmission Facilities for Transmission Service Providers (TSPs) in coordination with and based on information regarding all Entities' Planned Outages and Maintenance Outages;

(b) Assessing the adequacy of available Resources, based on planned and known Resource Outages, relative to forecasts of Load, Ancillary Service requirements, and reserve requirements;

(c) Coordinating and approving or rejecting schedules for Planned Outages of Resources scheduled to occur within 45 days after request;~~(c) Coordinating and approving or rejecting schedules for Planned Outages of Resources scheduled to occur within eight days after request;~~

~~*[NPRR365: Replace paragraph (2)(c) above with the following upon system implementation and fulfillment of staffing requirements:]*~~

~~(c) Coordinating and approving or rejecting schedules for Planned Outages of Resources scheduled to occur within 45 days after request;~~

(d) Coordinating and approving or rejecting schedules for Planned Outages of Reliability Must-Run (RMR) Units under the terms of the applicable RMR Agreements;

(e) Coordinating and approving or rejecting Outages associated with Black Start Resources under the applicable Black Start Unit Agreements;

(f) Reviewing and coordinating changes to existing 12-month Resource Outage plans to determine how changes will affect ERCOT System reliability, including Resource Outages not previously included in the Outage plan;

(g) Monitoring how Planned Outage schedules compare with actual Outages;

(h) Posting all proposed and approved schedules for Planned Outages and Maintenance Outages of Transmission Facilities on the Market Information System (MIS) Secure Area under Section 3.1.5.13, Transmission Report;

(i) Creating aggregated schedules of Planned Outages for Resources and posting those schedules on the MIS Secure Area under Section 3.2.3, System Adequacy Reports;

(j) Monitoring Transmission Facilities and Resource Forced Outages and Maintenance Outages of immediate nature and implementing responses to those Outages as provided in these Protocols;

(k) Establishing and implementing communication procedures:

(i) For a TSP to request approval of Transmission Facilities Planned Outage and Maintenance Outage schedules; and

(ii) For a Resource Entity's designated Single Point of Contact to submit Outage plans and to coordinate Resource Outages;

(l) Establishing and implementing record-keeping procedures for retaining all requested Planned Outages, Maintenance Outages, and Forced Outages;

(m) Planning and analyzing Transmission Facilities Outages; and

(n) Working with the appropriate Technical Advisory Committee (TAC) Subcommittee to develop procedures for characterizing a Simple Transmission Outage.

3.1.2 Planned Outage or Maintenance Outage Data Reporting

Each Resource Entity and Transmission Service Provider (TSP) shall use reasonable efforts, consistent with Good Utility Practice, to continually update its Outage Schedule. All information submitted about Planned Outages or Maintenance Outages must be submitted by the Resource Entity or the TSP under this Section. If an Outage Schedule for a Resource is also applicable to the Current Operating Plan (COP), the Qualified Scheduling Entity (QSE) responsible for the Resource shall also update the COP to provide the same information describing the Outage.

3.1.4 Communications Regarding Resource and Transmission Facilities Outages

~~**3.1.4.4 Communicating Rejection of Proposed Resource Outages**~~

~~(1) This subsection applies to certain proposed Resource Outages submitted eight days or less prior to the Outage start date that are either:~~

~~(a) Proposed changes to Planned Outages; or~~

~~(b) Newly proposed Resource Outages.~~

~~(2) If a proposal under paragraph (1) above ("Proposed Short-Noticed Resource Outage"), in conjunction with Outages that have been previously approved or accepted, would cause a violation of applicable reliability standards, ERCOT shall communicate with the requesting Market Participant and each other Market Participant with a relevant Outage that was previously approved or accepted to try to identify how to adjust any of the proposed and approved or accepted Outages.~~

~~[NPRR365: Delete Section 3.1.4.4 above and renumber accordingly upon system implementation and fulfillment of staffing requirements.]~~

3.1.4.~~4~~5 Management of Resource or Transmission Forced Outages or Maintenance Outages

(1) In the event of a Forced Outage, after the affected equipment is removed from service, the Resource Entity or QSE, as appropriate, or TSP must notify ERCOT as soon as practicable of its action by:

(a) For Resource Outages:

(i) Cehanging the telemetered Resource Status appropriately, including a text description when it becomes known, of the cause of the Forced Outage; and

(ii) Uupdating the ~~Current Operating Plan~~COP; and

(iii) Uupdating the Outage Scheduler, if necessary.

(b) For Transmission Facilities Forced Outages:

(i) Cehanging the telemetered status of the affected Transmission Elements; and

(ii) Uupdating the Outage Scheduler with the expected return-to-service time.

(2) Forced Outages may require ERCOT to review and withdraw approval of previously approved or accepted, as applicable, Planned Outage or Maintenance Outage schedules to ensure reliability.

(3) For Maintenance Outages, the Resource Entity or QSE, as appropriate, or TSP shall notify ERCOT of any Resource or Transmission Facilities Maintenance Outage according to the Maintenance Outage Levels by updating the ~~Current Operating Plan~~COP and Outage Scheduler. ERCOT shall coordinate the removal of facilities from service

within the defined timeframes as specified by the TSP, QSE or Resource Entity in its notice to ERCOT.

(4) ERCOT may require supporting information describing Forced Outages and Maintenance Outages. ERCOT may reconsider and withdraw approvals of other previously approved Transmission Facilities Outage or an Outage of a Reliability Resource as a result of Forced Outages or Maintenance Outages, if necessary, in ERCOT's determination to protect system reliability. When ERCOT approves a Maintenance Outage, ERCOT shall coordinate timing of the appropriate course of action under these Protocols.

(5) Removal of a Resource or Transmission Facilities from service under Maintenance Outages must be coordinated with ERCOT. To minimize harmful impacts to the system in urgent situations, the equipment may be removed immediately from service, provided notice is given immediately, by the Resource Entity or TSP, to ERCOT of such action.

3.1.4.56 Notice of Forced Outage or Unavoidable Extension of Planned or Maintenance Outage Due to Unforeseen Events

(1) If a Planned or Maintenance Outage is not completed within the ERCOT-approved timeframe and the Transmission Facilities or Resources are in such a condition that they cannot be restored at the Outage schedule completion date, the requesting party shall submit to ERCOT a Forced Outage (unavoidable extension) form describing the extension of the Outage and providing a revised return date.

(2) Any Forced Outage that occurs in Real-Time must be entered into the Outage Scheduler if it is to remain an Outage for longer than two hours.

(3) If the QSE is to receive the exemption described in paragraph (5)(d) of Section 8.1.1.4.1, Regulation Service and Generation Resource/Controllable Load Resource Energy Deployment Performance, the QSE will notify ERCOT Operators by voice communication of every Forced Outage, Forced Derate, or Startup Loading Failure within 15 minutes.

3.1.4.67 Outage Coordination of Forecasted Emergency Conditions

(1) If ERCOT forecasts an inability to meet applicable reliability standards and it has exercised all other reasonable options, ERCOT shall inform the Single Point of Contact for any affected Market Participant and all QSEs verbally and in electronic form by declaring an Emergency Condition according to Section 6.5.9.3, Communication uUnder Emergency Conditions.

(2) Under an Emergency Condition and if ERCOT cannot meet applicable reliability standards, ERCOT may discuss the reliability problem with Resource Entities, TSPs, and Distribution Service Providers (DSPs) to reach mutually agreeable solutions where Outages are negatively affecting system reliability. Actions may include changes to Outage schedules and the ~~Current Operating Plan~~COP.

3.1.4.78 Reporting of Forced Derates

The Resource Entity or its designee must enter Forced Derates that are expected to last more than 48 hours into the Outage Scheduler.

~~*3.1.6 Outages of Resources Other than Reliability Resources*~~

3.1.6 Outages of Resources Other than Reliability Resources

(1) ERCOT shall accept all Outage schedules and changes to Outage schedules for a Resource other than a reliability Resource submitted to ERCOT more than 45 days before the proposed start date of the Outage.

(2) If a Resource Entity plans to start a Planned or Maintenance Outage within 45 days that has not been previously included in the Resource's written Planned Outage and Maintenance Outage plan, then the Resource Entity must immediately notify ERCOT and include in its notice whether the Outage is a Forced Outage, Maintenance (Level I, II, or III) Outage, or Planned Outage. ERCOT's response to this notification must comply with these requirements:

(a) ERCOT shall accept Forced and Levels I, II, and III Maintenance Outage proposals, and ERCOT shall coordinate the Outages within the time frames specified in these Protocols.

(b) ERCOT shall approve Planned Outage proposals, except that ERCOT shall reject an Outage proposal if it will impair ERCOT's ability to meet applicable reliability standards and other solutions cannot be exercised.

(c) ERCOT shall accept Forced and Maintenance Outage plans from a Qualifying Facility (QF) that result from the outage of the QF's thermal host facility.~~(1) ERCOT shall accept all Outage schedules and changes to Outage schedules for a Resource other than a reliability Resource submitted to ERCOT more than eight days before the proposed start date of the Outage.~~

~~(2) If a Resource Entity plans to start a Planned or Maintenance Outage within eight days that has not been previously included in the Resource's written Planned Outage and Maintenance Outage plan, then the Resource Entity must immediately notify ERCOT and include in its notice whether the Outage is a Forced Outage, Maintenance (Level I, II, or III) Outage, or Planned Outage. ERCOT's response to this notification must comply with these requirements:~~

~~(a) ERCOT shall accept Forced and Levels I, II, and III Maintenance Outage proposals, and ERCOT shall coordinate the Outages within the time frames specified in these Protocols.~~

~~(b) ERCOT shall accept Planned Outage proposals, except that ERCOT shall reject an Outage proposal if it will impair ERCOT's ability to meet applicable reliability standards and other solutions cannot be exercised.~~

~~(c) ERCOT shall accept Forced and Maintenance Outage plans from a Qualifying Facility (QF) that result from the outage of the QF's thermal host facility.~~

~~*[NPRR365: Replace Section 3.1.6 above with the following upon system implementation and fulfillment of staffing requirements:]*~~

~~*3.1.6 Outages of Resources Other than Reliability Resources*~~

~~(1) ERCOT shall accept all Outage schedules and changes to Outage schedules for a Resource other than a reliability Resource submitted to ERCOT more than 45 days before the proposed start date of the Outage.~~

~~(2) If a Resource Entity plans to start a Planned or Maintenance Outage within 45 days that has not been previously included in the Resource's written Planned Outage and Maintenance Outage plan, then the Resource Entity must immediately notify ERCOT and include in its notice whether the Outage is a Forced Outage, Maintenance (Level I, II, or III) Outage, or Planned Outage. ERCOT's response to this notification must comply with these requirements:~~

~~(a) ERCOT shall accept Forced and Levels I, II, and III Maintenance Outage proposals, and ERCOT shall coordinate the Outages within the time frames specified in these Protocols.~~

~~(b) ERCOT shall approve Planned Outage proposals, except that ERCOT shall reject an Outage proposal if it will impair ERCOT's ability to meet applicable reliability standards and other solutions cannot be exercised.~~

~~(c) ERCOT shall accept Forced and Maintenance Outage plans from a Qualifying Facility (QF) that result from the outage of the QF's thermal host facility.~~

3.1.6.4 Approval of Changes to a Resource Outage Plan

(1) ERCOT shall accept all changes to a Resource Outage plan submitted by a Resource Entity more than 45 days before the planned start date for the Outage. Following acceptance, where ERCOT determines that Outage requests are expected to result in a violation of an ERCOT reliability criterion or that may result in a cancellation of a Transmission Facilities Planned Outage, ERCOT may discuss such concerns with Resource Entities or QSEs in an attempt to reach a mutually agreeable resolution, including rescheduling the Outage in a manner agreeable to the Resource Entity.

(2) A Resource Entity must request approval from ERCOT only for new Resource Outages or changes to a previously accepted planned Resource Outage scheduled to occur within 45 days of the request.

(3) ERCOT shall approve Planned Outage and Maintenance Outage requests to occur within 45 days, except that ERCOT shall reject proposals if the Outage proposal will impair ERCOT's ability to meet applicable reliability standards.

(4) When the scheduled work is complete, any Resource may return from a Planned Outage in accordance with Section 3.1.6.11, Outage Returning Early. ERCOT shall accept this change and, in the event that a Transmission Facilities Outage was scheduled concurrently with the affected Resource(s) Outage, ERCOT shall coordinate between the TSP and the Resource Entity to schedule a time mutually agreeable to both parties for the Resource to be On-Line. If mutual agreement cannot be reached, then ERCOT shall decide, considering expected impact on ERCOT System security, future Outage plans, and participants.~~3.1.6.4 Approval of Changes to a Resource Outage Plan~~

~~(1) ERCOT shall accept all changes to a Resource Outage plan submitted by a Resource Entity more than eight days before the planned start date for the Outage. ERCOT may discuss with Resource Entities or QSEs any Outage requests that are expected to result in a violation of an ERCOT reliability criteria or that may result in cancellation of a Transmission Facilities Planned Outage in an attempt to reach a mutually agreeable resolution, including rescheduling the Outage in a manner agreeable to the Resource Entity.~~

~~(2) A Resource Entity must request approval from ERCOT only for new Resource Outages or changes to a previously accepted planned Resource Outage scheduled to occur within eight days of the request.~~

~~(3) ERCOT shall approve Planned Outage and Maintenance Outage requests to occur within eight days, except that ERCOT shall reject proposals if the Outage proposal will impair ERCOT's ability to meet applicable reliability standards.~~

~~(4) When the scheduled work is complete, any Resource may return from a Planned Outage in accordance with Section 3.1.6.11, Outage Returning Early. ERCOT shall accept this change and, in the event that a Transmission Facilities Outage was scheduled concurrently with the affected Resource(s) Outage, ERCOT shall coordinate between the TSP and the Resource Entity to schedule a time mutually agreeable to both parties for the Resource to be On-Line. If mutual agreement cannot be reached, then ERCOT shall decide, considering expected impact on ERCOT System security, future Outage plans, and participants.~~

~~*[NPRR365: Replace Section 3.1.6.4 above with the following upon system implementation and fulfillment of staffing requirements:]*~~

~~3.1.6.4 Approval of Changes to a Resource Outage Plan~~

~~(1) ERCOT shall accept all changes to a Resource Outage plan submitted by a Resource Entity more than 45 days before the planned start date for the Outage. Following acceptance, where ERCOT determines that Outage requests are expected to result in a violation of an ERCOT reliability criterion or that may result in a cancellation of a Transmission Facilities Planned Outage, ERCOT may discuss such concerns with Resource Entities or QSEs in an attempt to reach a mutually agreeable resolution, including rescheduling the Outage in a manner agreeable to the Resource Entity.~~

~~(2) A Resource Entity must request approval from ERCOT only for new Resource Outages or changes to a previously accepted planned Resource Outage scheduled to occur within 45 days of the request.~~

~~(3) ERCOT shall approve Planned Outage and Maintenance Outage requests to occur within 45 days, except that ERCOT shall reject proposals if the Outage proposal will impair ERCOT's ability to meet applicable reliability standards.~~

~~(4) When the scheduled work is complete, any Resource may return from a Planned Outage in accordance with Section 3.1.6.11, Outage Returning Early. ERCOT shall accept this change and, in the event that a Transmission Facilities Outage was scheduled concurrently with the affected Resource(s) Outage, ERCOT shall coordinate between the TSP and the Resource Entity to schedule a time mutually agreeable to both parties for the Resource to be On-Line. If mutual agreement cannot be reached, then ERCOT shall decide, considering expected impact on ERCOT System security, future Outage plans, and participants.~~

3.1.6.5 Evaluation of Proposed Resource Outage

(1) If a proposed Resource Outage, in conjunction with previously accepted Outages, would cause a violation of applicable reliability standards, ERCOT shall:

(a) Communicate with the requesting Market Participant and each other Market Participants as required under Section 3.1.6.8, Resource Outage Rejection Notice; and

(b) Consider modifying the previous acceptance or approval of one or more Transmission Facilities or reliability Resource Outages, considering order of receipt and impact to the ERCOT System; based upon security and reliability analysis results, ERCOT shall investigate possible Remedial Action Plans (RAPs) for all insecure states and strive to maximize transmission usage consistent with reliable operation.

(2) If security can be maintained using an alternative considered in item (1)(b), then ERCOT, may, in its judgment, direct the selected alternatives and approve the proposed Resource Outage.

(3) If ERCOT does not resolve the security issues using any alternatives considered in item (1)(b), then ERCOT shall reject the proposed Resource Outage.

3.1.6.6 Timelines for Response by ERCOT for Resource Outages

(1) ERCOT shall approve, accept or reject each request in accordance with the following table:

Amount of time between a request for acceptance of a Planned Outage and the scheduled start of the proposed Outage:	**ERCOT shall approve, accept or reject no later than:**
Three days	ERCOT shall approve or reject within 1800 hours, two days before the start of the proposed Outage
Between four and eight days	ERCOT shall approve or reject within 1800 hours, three days prior to the start of the proposed Outage
Between nine and 45 days	Five Business Days after submission. Planned Outages are automatically accepted if not rejected at the end of the fifth Business Day following receipt of request.
Greater than 45 days	ERCOT must accept, but ERCOT may discuss reliability and scheduling impacts to minimize cost to the ERCOT System in an attempt to accomplish minimum overall impact. Within five Business Days, ERCOT will notify the submitter if there is a conflict with a previously scheduled Outage.

(2) If circumstances prevent adherence to these timetables, ERCOT shall discuss the request status and reason for the delay of decision with the QSE and make reasonable attempts to mitigate the effect of the delay.~~**3.1.6.5 Evaluation of Proposed Short-Noticed Resource Outage**~~

~~(1) If a Proposed Short-Noticed Resource Outage, in conjunction with previously accepted Outages, would cause a violation of applicable reliability standards, ERCOT shall:~~

~~(a) Communicate with the requesting Market Participant and each other Market Participants as required under Section 3.1.4.4, Communicating Rejection of Proposed Resource Outages; and~~

~~(b) Consider modifying the previous acceptance or approval of one or more Transmission Facilities or reliability Resource Outages, considering order of receipt and impact to the ERCOT System; based upon security and reliability analysis results, ERCOT shall investigate possible Remedial Action Plans (RAPs) for all insecure states and strive to maximize transmission usage consistent with reliable operation.~~

(2) If security can be maintained using an alternative considered in item (1)(b), then ERCOT, may, in its judgment, direct the selected alternatives and approve the Proposed Short-Noticed Resource Outage.

(3) If ERCOT does not resolve the security issues using any alternatives considered in item (1)(b), then ERCOT shall reject the Proposed Short-Noticed Resource Outage.

[NPRR365: Replace Section 3.1.6.5 above with the following upon system implementation and fulfillment of staffing requirements:]

3.1.6.5 Evaluation of Proposed Resource Outage

(1) If a proposed Resource Outage, in conjunction with previously accepted Outages, would cause a violation of applicable reliability standards, ERCOT shall:

(a) Communicate with the requesting Market Participant and each other Market Participants as required under Section 3.1.6.8, Resource Outage Rejection Notice; and

(b) Consider modifying the previous acceptance or approval of one or more Transmission Facilities or reliability Resource Outages, considering order of receipt and impact to the ERCOT System; based upon security and reliability analysis results, ERCOT shall investigate possible Remedial Action Plans (RAPs) for all insecure states and strive to maximize transmission usage consistent with reliable operation.

(2) If security can be maintained using an alternative considered in item (1)(b), then ERCOT, may, in its judgment, direct the selected alternatives and approve the proposed Resource Outage.

(3) If ERCOT does not resolve the security issues using any alternatives considered in item (1)(b), then ERCOT shall reject the proposed Resource Outage.

3.1.6.6 Timelines for Response by ERCOT for Resource Outages

ERCOT shall approve, accept or reject each request in accordance with the following table:

Amount of time between a Request for acceptance of a Planned Outage and the scheduled start of the proposed Outage:	**ERCOT shall approve, accept or reject no later than:**
Between one and two days	ERCOT shall approve or reject within eight Business Hours of receipt by ERCOT
Between three and eight days	ERCOT shall approve or reject within 1800 hours, two days prior to the start of the proposed Outage
Greater than eight days	ERCOT must accept, but ERCOT may discuss reliability and scheduling impacts to minimize

	~~hazard/cost to ERCOT System in an attempt to accomplish minimum overall impact.~~

~~*[NPRR365: Replace Section 3.1.6.6 above with the following upon system implementation and fulfillment of staffing requirements:]*~~

~~**3.1.6.6 Timelines for Response by ERCOT for Resource Outages**~~

~~(1) ERCOT shall approve, accept or reject each request in accordance with the following table:~~

~~Amount of time between a request for acceptance of a Planned Outage and the scheduled start of the proposed Outage:~~	~~ERCOT shall approve, accept or reject no later than:~~
~~Three days~~	~~ERCOT shall approve or reject within 1800 hours, two days before the start of the proposed Outage~~
~~Between four and eight days~~	~~ERCOT shall approve or reject within 1800 hours, three days prior to the start of the proposed Outage~~
~~Between nine and 45 days~~	~~Five Business Days after submission. Planned Outages are automatically accepted if not rejected at the end of the fifth Business Day following receipt of request.~~
~~Greater than 45 days~~	~~ERCOT must accept, but ERCOT may discuss reliability and scheduling impacts to minimize cost to the ERCOT System in an attempt to accomplish minimum overall impact. Within five Business Days, ERCOT will notify the submitter if there is a conflict with a previously scheduled Outage.~~

~~(2) If circumstances prevent adherence to these timetables, ERCOT shall discuss the request status and reason for the delay of decision with the QSE and make reasonable attempts to mitigate the effect of the delay.~~

3.15 Voltage Support

(1) ERCOT in coordination with the Transmission Service Providers (TSPs) shall establish and update, as necessary, the ERCOT System Voltage Profile for all Electrical Buses used for Voltage Support in the ERCOT System and shall post all Voltage Profiles on the Market Information System (MIS) Secure Area. ERCOT may temporarily modify its requirements based on current system conditions.

(2) All Generation Resources (including self-serve generating units) that have a gross generating unit rating greater than 20 MVA or those units connected at the same Point of Interconnection (POI) that have gross generating unit ratings aggregating to greater than 20 MVA, that supply power to the ERCOT Transmission Grid, shall provide Voltage Support Service (VSS).

(3) Generation Resources required to provide VSS shall comply with the following Reactive Power Requirements:

(a) An over-excited (lagging or producing) power factor capability of 0.95 or less determined at the generating unit's maximum net power to be supplied to the ERCOT Transmission Grid and at the transmission system Voltage Profile established by ERCOT, both measured at the POI;

(b) An under-excited (leading or absorbing) power factor capability of 0.95 or less, determined at the generating unit's maximum net power to be supplied to the ERCOT Transmission Grid and at the transmission system Voltage Profile established by ERCOT, both measured at the POI;

(c) Reactive Power capability shall be available at all MW output levels and may be met through a combination of the Generation Resource's Unit Reactive Limit (URL), which is the generating unit's dynamic leading and lagging operating capability, and/or dynamic VAr capable devices. This Reactive Power profile is depicted graphically as a rectangle. For Intermittent Renewable Resources (IRRs), the Reactive Power requirements shall be available at all MW output levels at or above 10% of the IRR's nameplate capacity. When an IRR is operating below 10% of its nameplate capacity and is unable to support voltage at the POI, ERCOT may require an IRR to disconnect from the ERCOT System for purposes of maintaining reliability; and

(d) As part of the technical Resource requirements to begin commercial operations, all Generation Resources must conduct an engineering study, or demonstrate through performance testing, compliance with the Reactive Power capability requirements of this Section 3.15. Any study or testing results must be accepted by ERCOT prior to commercial operations.

(4) Wind-powered Generation Resources (WGRs) that commenced operation on or after February 17, 2004, and have a signed Standard Generation Interconnection Agreement (SGIA) on or before December 1, 2009 ("Existing Non-Exempt WGRs"), must be capable of producing a defined quantity of Reactive Power to maintain a Voltage Profile established by ERCOT in accordance with the Reactive Power requirements established in paragraph (3) above, except in the circumstances described in paragraph (a) below.

(a) Existing Non-Exempt WGRs whose current design does not allow them to meet the Reactive Power requirements established in paragraph (3) above must conduct an engineering study using the Summer/Fall 2010 on-peak/off-peak Voltage Profiles, or conduct performance testing to determine their actual Reactive Power capability. Any study or testing results must be accepted by ERCOT. The Reactive Power requirements applicable to these Existing Non-Exempt WGRs will be the greater of: the leading and lagging Reactive Power capabilities established by the Existing Non-Exempt WGR's engineering study or testing results; or Reactive Power proportional to the real power output of the Existing Non-Exempt WGR (this Reactive Power profile is depicted graphically as a

triangle) sufficient to provide an over-excited (lagging) power factor capability of 0.95 or less and an under-excited (leading) power factor capability of 0.95 or less, both determined at the transmission system Voltage Profile established by ERCOT, and both measured at the POI.

(i) Existing Non-Exempt WGRs shall submit the engineering study results or testing results to ERCOT no later than five Business Days after its completion.

(ii) Existing Non-Exempt WGRs shall update any and all Resource registration information regarding their Reactive Power capability documented by the engineering study results or testing results.

(iii) If the Existing Non-Exempt WGR's engineering study results or testing results indicate that the WGR is not able to provide Reactive Power capability that meets the triangle profile described in paragraph (~~43~~)(a) above, then the Existing Non-Exempt WGR will take steps necessary to meet that Reactive Power requirement depicted graphically as a triangle by a date mutually agreed upon by the Existing Non-Exempt WGR and ERCOT. The Existing Non-Exempt WGR may meet the Reactive Power requirement through a combination of the WGR's URL and/or automatically switchable static VAr capable devices and/or dynamic VAr capable devices. No later than five Business Days after completion of the steps to meet that Reactive Power requirement, the Existing Non-Exempt WGR will update any and all Resource registration information regarding its Reactive Power and provide written notice to ERCOT that it has completed the steps necessary to meet its Reactive Power requirement.

(iv) For purposes of measuring future compliance with Reactive Power requirements for Existing Non-Exempt WGRs, results from performance testing or the Summer/Fall 2010 on-peak/off-peak Voltage Profiles utilized in the Existing Non-Exempt WGR's engineering study shall be the basis for measuring compliance, even if the Voltage Profiles provided to the Existing Non-Exempt WGR are revised for other purposes.

(b) Existing Non-Exempt WGRs whose current design allows them to meet the Reactive Power requirements established in paragraph (3) above (depicted graphically as a rectangle) shall continue to comply with that requirement. ERCOT, with cause, may request that these Existing Non-Exempt WGRs provide further evidence, including an engineering study, or performance testing, to confirm accuracy of Resource registration information supporting their Reactive Power capability.

(5) Qualified Renewable Generation Resources (as described in Section 14, State of Texas Renewable Energy Credit Trading Program) in operation before February 17, 2004, required to provide VSS and all other Generation Resources required to provide VSS that were in operation prior to September 1, 1999, whose current design does not allow them

to meet the Reactive Power requirements established in paragraph (3) above, will be required to maintain a Reactive Power requirement as defined by the Generation Resource's URL that was submitted to ERCOT and established per the criteria in the ERCOT Operating Guides.

(6) New generating units connected before May 17, 2005, whose owners demonstrate to ERCOT's satisfaction that design and/or equipment procurement decisions were made prior to February 17, 2004, based upon previous standards, whose design does not allow them to meet the Reactive Power requirements established in paragraph (3) above, will be required to maintain a Reactive Power requirement as defined by the Generation Resource's URL that was submitted to ERCOT and established per the criteria in the Operating Guides.

(7) For purposes of meeting the Reactive Power requirements in paragraphs (3) through (6) above, multiple generation units including wind turbines shall, at a Generation Entity's option, be treated as a single Generation Resource or WGR if the units are connected to the same transmission bus.

(8) Generation Entities may submit to ERCOT specific proposals to meet the Reactive Power requirements established in paragraph (3) above by employing a combination of the URL and added VAr capability, provided that the added VAr capability shall be automatically switchable static and/or dynamic VAr devices. A Generation Resource and TSP may enter into an agreement in which the proposed static VAr devices can be switchable using Supervisory Control and Data Acquisition (SCADA). ERCOT may, at its sole discretion, either approve or deny a specific proposal, provided that in either case, ERCOT shall provide the submitter an explanation of its decision.

(9) A Generation Resource and TSP may enter into an agreement in which the Generation Resource compensates the TSP to provide VSS to meet the Reactive Power requirements of paragraph (3) above in part or in whole. The TSP shall certify to ERCOT that the agreement complies with the Reactive Power requirements of paragraph (3).

(10) Unless specifically approved by ERCOT, no unit equipment replacement or modification at a Generation Resource shall reduce the capability of the unit below the Reactive Power requirements that applied prior to the replacement or modification.

(11) Generation Resources shall not reduce high reactive loading on individual units during abnormal conditions without the consent of ERCOT unless equipment damage is imminent.

(12) All WGRs must provide a Real-Time SCADA point that communicates to ERCOT the number of wind turbines that are available for real power and/or Reactive Power injection into the ERCOT Transmission Grid. WGRs must also provide two other Real-Time SCADA points that communicate to ERCOT the following:

(a) The number of wind turbines that are not able to communicate and whose status is unknown; and

(b) The number of wind turbines out of service and not available for operation.

(13) For the purpose of complying with the Reactive Power requirements under this Section 3.15, Reactive Power losses that occur on privately-owned transmission lines behind the POI may be compensated by automatically switchable static VAr capable devices.