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PROJECT NO. 27706

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REPORTS OF THE ELECTRIC §  
RELIABILITY COUNCIL OF TEXAS §

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**ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.'S**  
**NOTICE OF VIOLATION OF ERCOT PROTOCOLS**

Electric Reliability Council of Texas, Inc. (ERCOT) hereby notifies the Public Utility Commission of Texas (Commission) of violations of the ERCOT Protocols, as set forth herein.

**I. Improper Calculation of Location Marginal Prices in the Real-Time Market for Combined Cycle Generation Resources**

ERCOT recently discovered two inconsistencies between the logic used in its systems for the calculation of Location Marginal Prices (LMPs) at the logical Resource Node in the Real-Time market for Combined Cycle Generation Resources (CCGRs) and ERCOT Protocol Section 6.6.1.1(2), which sets forth the methodology for calculating this LMP. This LMP is used only in the limited circumstance of determining Settlement Point Prices (SPPs) for settling the Real-Time Energy Imbalance Service associated with Day-Ahead Market (DAM) Three-Part Supply Offer awards to CCGRs.

ERCOT Protocol Section 6.6.1.1(2)(b) requires that ERCOT apply a weight factor in calculating this LMP using the Real-Time telemetered outputs of the generation units in the On-Line CCGR. However, as part of system changes made on July 2, 2015, this weight factor was inadvertently changed to use each generation unit's High Reasonability Limit (HRL). ERCOT implemented an emergency system change on August 8, 2018 that reverted this calculation back to using a weight factor based on the Real-Time telemetered outputs of the generation units, as required by ERCOT Protocol Section 6.6.1.1(2)(b).

Additionally, ERCOT Protocol Section 6.6.1.1(2)(a) requires that this LMP be calculated as the weighted average of LMPs at the Resource Node of each of the generation units in the On-

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Line CCGR. However, from nodal go-live (i.e., December 1, 2010) until July 2, 2015—and following the implementation of the system change noted above on August 8, 2018—this calculation was and will be performed by calculating the LMP implicitly using a weighted average of the Shift Factors of each unit in the On-Line CCGR, and using the Real-Time telemetered outputs of the generation units to calculate the weight factor.<sup>1</sup> This LMP calculation does not match the methodology required by the Protocols because ERCOT's systems are not structured in a manner that would permit the LMP calculation to be performed as required by the Protocol language, and conforming ERCOT's systems to the Protocol language would require significant system changes. To remedy this discrepancy in the near term, ERCOT will submit an urgent Nodal Protocol Revision Request (NPRR) to revise the language in Protocol Section 6.6.1.1(2) to align with ERCOT's existing system. Additionally, ERCOT is evaluating whether a system change would be the more appropriate long-term solution to this issue.

ERCOT issued a Market Notice on August 6, 2018, to inform Market Participants of this issue and of ERCOT's corrective actions. See Attachment A. This identified inconsistency may have had a minimal impact on prices in the Real-Time market. However, ERCOT is unable to correct prices because, as noted above, its existing systems are unable to calculate the LMP at issue as required by current Protocol language.

## **II. Late Payment by ERCOT to Invoice Recipient**

ERCOT Protocol Section 9.7.2(1) requires that ERCOT pay a Settlement Invoice with funds owed to an Invoice Recipient by 1700 on the next Bank Business Day after payments are due. Pursuant to this Protocol, ERCOT was required to pay an ERCOT Qualified Scheduling Entity (QSE) an amount due (totaling less than \$6,000) by 5:00 pm on July 25, 2018. Due to an

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<sup>1</sup> From July 2, 2015 until August 8, 2018, this calculation was performed using a weighted average of the LMPs of each unit in the On-Line CCGR, but it improperly used each unit's HRL to calculate the applied weight factor.

inadvertent data entry error, however, ERCOT wired this invoice payment to the account of another QSE on July 25, 2018. ERCOT discovered this error on August 1, 2018, after it was notified by the QSE owed the payment. Upon learning of the error, ERCOT immediately requested return of the payment from the QSE that received it in error, and that QSE promptly complied. The funds were then wired to the QSE due the payment before 5 p.m. on August 1, 2018.

ERCOT does not have a record of the type of data entry error that resulted in this late payment ever occurring in the recent past, and ERCOT has redundant processes in place to protect against the occurrence of such errors. ERCOT is currently reviewing those processes to ensure this type of error does not recur.

ERCOT takes its responsibilities under the ERCOT Protocols seriously and appreciates the Commission's understanding in overseeing ERCOT's administration of these requirements. ERCOT is prepared to discuss these matters in further detail at the Commission's request.

Respectfully submitted,

By:  \_\_\_\_\_

Chad V. Seely  
Vice President and General Counsel  
Texas Bar No. 24037466  
(512) 225-7035 (Phone)  
(512) 225-7079 (Fax)  
[Chad.Seely@ercot.com](mailto:Chad.Seely@ercot.com)

Juliana Morehead  
Assistant General Counsel  
Texas Bar No. 24046474  
(512) 225-7184 (Phone)  
(512) 225-7079 (Fax)  
[Juliana.Morehead@ercot.com](mailto:Juliana.Morehead@ercot.com)

Erika Kane  
Corporate Counsel  
Texas Bar No. 24050850  
(512) 225-7010 (Phone)  
(512) 225-7079 (Fax)  
[Erika.Kane@ercot.com](mailto:Erika.Kane@ercot.com)

ERCOT, Inc.  
7620 Metro Center Drive  
Austin, Texas 78744

ATTORNEYS FOR ELECTRIC  
RELIABILITY COUNCIL OF TEXAS, INC.

To: Operations

Sent: Mon, Aug 06, 2018 09:31 PM

Subject: W-A080618-01 Discrepancy in calculation of Real-Time Locational Marginal Prices at logical Resource Node for C

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**NOTICE DATE:** August 6, 2018

**NOTICE TYPE:** W-A080618-01 Operations

**SHORT DESCRIPTION:** Discrepancy in calculation of Real-Time Locational Marginal Prices at logical Resources

**INTENDED AUDIENCE:** ERCOT Market Participants

**DAY AFFECTED:** July 2, 2015 - Present and December 1, 2010 – July 2, 2015

**LONG DESCRIPTION:** ERCOT recently discovered two discrepancies between ERCOT Protocol Section Node, and ERCOT systems with respect to Locational Marginal Prices (LMPs) at the logical Resource Node (CCGRs).

- ERCOT's preliminary analysis indicates that these discrepancies had a limited impact on prices in the market.
- ERCOT is unable to correct prices because the market cannot be rerun to calculate LMPs at the logical Resource Nodes without a significant system change.
- The LMP impacted by these discrepancies is used only in the limited circumstance of determining the Energy Imbalance Service associated with Day-Ahead Market (DAM) Three-Part Supply Offer awards.
- One of the discrepancies existed from December 1, 2010 (nodal go-live) until July 2, 2015, and the other discrepancy existed from July 2, 2015 to the present.
- To address this issue in the near term, ERCOT intends to: (1) implement a system change on August 6, 2018 and (2) submit an urgent Nodal Protocol Revision Request (NPRR) to remedy the other discrepancy.
- ERCOT will continue to evaluate an appropriate long-term solution to this pricing issue and intends to begin working with the August 8, 2018 Wholesale Market Subcommittee (WMS).

July 2, 2015 – Present

ERCOT Protocol Section 6.6.1.1(2)(b) and Section 4.3(h) of the Other Binding Document (OBD) "Procedure for Identifying Resource Node for On-Line CCGRs" apply a weight factor in calculating Real-Time LMPs for a Resource Node using the Real-Time telemetered outputs of the generation units in the On-Line CCGR. However, as part of system changes implemented on July 2, 2015, the weight factor used in this calculation was changed to the Reasonability Limit (HRL). To address this issue, ERCOT will be implementing an emergency system change to use a weight factor based on the Real-Time telemetered outputs of the generation units in the On-Line CCGR (b).

December 1, 2010 – July 2, 2015

ERCOT Protocol Section 6.6.1.1(2)(a) and Section 4.3(h) of the OBD "Procedure for Identifying Resource Node for On-Line CCGRs" be calculated using a weighted average of Locational Marginal Prices at the logical Resource Node for On-Line CCGR, using the Real-Time telemetered outputs of the generation units to calculate the LMP. However, not all units had the capability to perform this precise calculation. Rather, from nodal go-live (i.e., December 1, 2010) until July 2, 2015, the LMP was calculated using a weight factor based on the Real-Time telemetered outputs of the generation units in the On-Line CCGR (a).

system changes noted above on August 8, 2018—this calculation was and will be performed by calculating the Shift Factors of each unit in the On-Line CCGR, using the Real-Time telemetered outputs of the generators. Until now, this calculation has been performed by using a weighted average of the LMPs of each unit in the market to calculate the applied weight factor, as noted above.

The telemetry and pricing information needed to calculate LMPs for CCGR logical Resource Nodes as currently located in two different systems. Accordingly, ERCOT cannot perform the calculation as required by current market rules. In a nodal go-live, ERCOT informed the market that its systems were built in a manner such that this CCGR LMP calculation is the weighted average of the Shift Factors of the units in the CCGR weighted by the telemetered outputs. This methodology is detailed in the Workshop PowerPoint at <http://www.ercot.com/calendar/2010/6/2/34936-MT>. This methodology, however, does not align with Protocol Section 6.6.1.1(2) or the OBD "Procedure for Identifying Resource Nodes." To remedy this discrepancy, ERCOT has filed an NRR and OBD Revision Request to revise the language in Protocol Section 6.6.1.1(2) and section 4.3 of the OBD to align with ERCOT's systems. ERCOT is continuing to evaluate whether a system change would be an appropriate part of any proposed rule revisions and/or system changes in relevant stakeholder forums.

ERCOT Protocol Section 6.3(4) requires ERCOT to correct prices when, among other reasons, (i) a market solution is identified in an otherwise valid market solution, unless accurate prices cannot be determined. In this case, without a software change that is not immediately available, the market cannot be rerun to calculate LMPs. Therefore, under the current language of ERCOT Protocol Section 6.6.1.1(2), ERCOT will not correct prices.

**CONTACT:** If you have any questions, please contact your ERCOT Account Manager. You may also call toll-free at 248-3900 or contact ERCOT Client Services via email at [ClientServices@ercot.com](mailto:ClientServices@ercot.com).

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