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REVIEW OF REAL-TIME CO-
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PUBLIC UTILITY COMMISSION

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OF TEXAS PUBLIC UTILITY COMMISSION
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**SOUTH TEXAS ELECTRIC COOPERATIVE, INC.’S RESPONSE TO THE
COMMISSION’S AUGUST 9, 2018 REQUEST FOR COMMENTS**

TO THE HONORABLE PUBLIC UTILITY COMMISSION OF TEXAS:

COMES NOW, South Texas Electric Cooperative, Inc. (“STEC”) and submits its comments in the above referenced proceeding. The deadline for the filing of comments in the above-styled proceeding is October 8, 2018, and as a result these comments are timely filed.

I. INTRODUCTION

STEC appreciates the opportunity to provide comments to the Public Utility Commission of Texas (“PUC” or “Commission”) on Real-Time Co-optimization (“RTC”) and the benefits that it can provide to the market. At one time the market had so much excess capacity that the benefits of better optimizing the fleet were low compared to the costs of RTC. That situation has now reversed itself with the costs incurred by the absence of RTC demonstrably out-stripping the costs of instituting RTC—that is, both the quantitative and qualitative benefits of RTC far outweigh the costs of RTC to the market. STEC filed comments in the *Project to Assess Price-Formation Rules in ERCOT’s Energy-Only Market* in Project No. 47199 relating to the initial workshop, and also Comments and Reply Comments to the Commission’s requests for comments regarding these issues in that proceeding. STEC believes that the studies and subsequent reports filed by both the Electric Reliability Council of Texas (“ERCOT”) and the Independent Market Monitor (“IMM”) support the positions that STEC has taken in that proceeding with respect to the need for RTC.

II. COMMENTS

1. **What are the benefits of implementing real-time co-optimization (RTC) of the energy and ancillary services in the ERCOT market over the long term?**

STEC believes that the greatest benefit of RTC is the maximization of tight generation supplies during scarcity periods in the ERCOT market as reserve margins have declined over time. There are several other reasons identified by both ERCOT and the IMM including increases in efficiency, and cost savings to ERCOT load customers. Implementation of RTC will reduce overall production costs to the market while improving reliability, reducing congestion costs, ancillary services costs and energy costs incurred not due to demand but due to the inefficient dispatch of the market. It is important to recognize that the actual energy consumed whether RTC is implemented or not, and whether used for ancillary services or with respect to congestion or energy, will be the same. The difference is that the pricing of the deployment of resources will be more efficient, reducing overall costs to the market to reliably operate the ERCOT system. RTC will provide ERCOT with improved tools, similar to tools that entities like STEC use to manage their own portfolios so as to efficiently serve the market, thereby both reducing overall costs and providing ERCOT with the ability to deploy existing resources to better manage reliability issues arising on the ERCOT grid.

This question specifically asks about benefits over the long-term. As demonstrated in the ERCOT and IMM studies on RTC, the benefits that would have been received in 2017 alone would have more than paid for RTC implementation. As reserve margins tighten, the need to efficiently deploy resources, and the costs of not doing so, will increase further. Over the long term, the costs associated with continuing to dispatch the system as it is done today, without RTC, will continue to cause loads to pay for inefficient services, and send price signals inefficiently with respect to scarcity and the location of new generation.

2. Are the benefits identified in response to Question 1 sufficient to justify the near term costs to the market as a whole? Please consider individual stakeholder implementation costs as well as the costs to ERCOT identified in its study.

In ERCOT's filings, the costs of RTC implementation have continued to decline while the benefits have been quantified on an annual basis in the multiples of the cost of RTC implementation. While RTC will change the dispatch, the communications systems between ERCOT and Qualified Scheduling Entities ("QSEs") and other market participants should not be materially impacted. The actual data communications between ERCOT and QSEs will change to some degree, but the systems needed to effectuate those communications will not need to be modified. As a result, even near term costs to implement RTC are far outweighed by the net benefits from RTC implementation. Moreover, the reduction in Reliability Unit Commitment ("RUC") out of market actions by ERCOT that will result from RTC will assist in price formation and allow the market to work in place of command and control actions that suppress overall prices, particularly in instances where the RUC instruction is locational in nature. As has been discussed in Project No. 47199, because market participants do not have adequate information about the value of generation in the market, those units may be subject to RUC that may have otherwise been dispatched as part of the market. Given the overall reduction in RUCs, projected congestion would be resolved by generation able to provide energy instead of ancillary services. As ERCOT notes in its report on RTC in Section 3.1:

Co-optimization would allow all on-line capacity from Resources, including capacity that is currently reserved by Market Participants to provide [Ancillary Services], to be used in the most effective way to meet all of the constraints on the system: balancing power needs, meeting [Ancillary Services] requirements, and managing transmission constraints.

As a result, the market would be given more time to work prior to the need for ERCOT to take out of market actions that seek to achieve the most effective solution. With respect to

stakeholder costs, there will be two primary components: (i) training costs for operators at ERCOT and at the QSEs, and (ii) programming and data storage costs to effectuate the necessary transfer of Ancillary Service offers and awards by way of telemetry, which between the two components is expected not to exceed twenty-five thousand dollars (\$25,000) for smaller entities such as STEC.

3. What are the effects on retail customers and the retail market from the implementation of RTC?

The actual benefits to retail customers in the competitive market are unclear. Customers in fixed price contracts are not likely to see any benefit because the costs and benefits are not passed through. For those customers on variable rates, they may well see relief depending on the manner in which their contract is structured. For cooperative customers such as STEC's Member Cooperatives, those benefits would be passed through to STEC's Members for the benefit of their Member retail loads.

4. What costs would be incurred by market participants if ERCOT implemented RTC? Please provide an estimate of the costs that would be incurred by your company or companies or customers represented by your organization. Please describe the elements of those costs.

STEC does not believe that it will incur any material costs associated with RTC systems implementation by ERCOT. As noted in question 2, STEC believes that training costs, and programming and data storage costs will be the biggest costs incurred by market participants. STEC estimates that its cost to implement will be less than twenty-five thousand dollars (\$25,000).

Other than the direct costs to implement, STEC believes that are other costs incurred by the market that will need to be addressed in conjunction with RTC implementation. To the extent power prices are lowered by a more efficient dispatch of the system, if price formation

continues to fail to occur, the market parameters that result in the failure of price formation should be directly addressed; the inefficient dispatch of generation should not be considered a means to artificially increase revenues to generators as a substitute for rules that encourage price formation or that adequately compensate capacity for remaining in, or joining the ERCOT market. STEC does not believe that market signals in the ERCOT market are functioning efficiently because there are significant issues with price formation in ERCOT as referenced in STEC's prior comments in Project No. 47199, however, STEC does not believe that inefficiencies that exist in the market should remain in perpetuity because they increase prices at a time when prices are artificially low. In other words, if the implementation of RTC results in a decrease to generators at a time when reserve margins are low and therefore results in further dampening of the price signals necessary to incent generation to be in the market, then the Commission should act swiftly and couple scarcity pricing reforms with the implementation of RTC so that ERCOT load customers can continue to enjoy the continuity of service that they have historically enjoyed.

5. How would a decision to implement RTC affect your company's market systems?

Please see response to Questions 2, above. As currently contemplated, RTC will change ERCOT's dispatch and the means by which it receives Ancillary Service offers from QSEs, so it will require some changes to STEC's systems, but such changes will not be material. Market systems beyond dispatch of generation, including settlements, will require changes based upon ERCOT implementation in order to capture the Ancillary Service awards telemetered to the QSE and provide those to the settlement systems for consumption and archiving. The majority of the system changes necessary for RTC implementation will be made by ERCOT to its dispatching and settlement systems, rather than by individual stakeholders.

6. How would a decision to implement RTC affect your company's internal operations?

Internal operations would be impacted minimally with implementation of RTC. STEC sees no reason for our market activity or conduct to change, however, there could be an impact on STEC staffing requirements due to minor process changes, depending on the implementation route chosen for RTC.

7. What are the effects of RTC on reliability of the ERCOT grid?

As discussed above, the implementation of RTC will reduce RUCs in the market, and give the ERCOT market access to all of the available capacity in the market (rather than only that which is not reserved to Ancillary Services) thereby utilizing the most cost-effective resources and making available additional capacity to resolve congestion without taking the out of market actions ERCOT relies on today. The availability of additional capacity to ERCOT in the Real-Time market can only serve to strengthen reliability. Additionally, with RTC, liquidity for reassigning Ancillary Services responsibility would be increased. As ERCOT states in Section 4 of its RTC Study, "Ancillary Services would be dynamically assigned to the optimal set of on-line qualified Resources in Real-Time." QSEs with fewer resources in their portfolio could free up self-reserved generation capacity since it would be no longer necessary to do so in order to avoid paying financial 'penalties' as a result of illiquidity in the bilateral market and Supplemental Ancillary Service Market ("SASM") in the event that a generator in its fleet became unavailable as the result of a unit outage. This reserved capacity would be freed up and available for dispatch in the Real-Time Market, and potentially will be made available for commitment in the Day-Ahead Market.

8. How would a decision to implement RTC affect investment in new generation resources in ERCOT over the next five years, the next 10 years, and in the years beyond 10 years?

RTC would allow ERCOT to more efficiently utilize the resources it has available to it on the system. As a result, RTC would better dispatch generation, which should send more accurate price signals. The benefits of RTC are unlikely to resolve the issues that ERCOT has with price signals failing to support new build capacity or reward existing capacity. RTC will only allow ERCOT to better use the capacity it already has on the ERCOT system—which in and of itself is a significant benefit when reserve margins have declined to historical lows. Coupled with Extended Locational Marginal Pricing and/or with a local ORDC for demand pockets, pricing transparency for a location or for certain technologies might become more apparent with the implementation of RTC which could affect investment decisions. However, in the next five, ten or greater number of years, RTC alone will not act as a substitute for the lack of pricing signals to incent capacity additions necessary to meet the increasing demands of the ERCOT system.

RTC may reduce generation prices in near term by increasing market efficiencies. However, implementing RTC will not address inefficiencies that exist for units that are operating online, at or above the unit's Low Sustained Limit, and are not being compensated for that generation. That issue, and other price formation issues, will need to be addressed in the context of a greater resource adequacy discussion.

9. Do the ERCOT and IMM analyses of the benefits of implementation RTC accurately measure such benefits? Are potential costs to the market or market participants adequately accounted for?

ERCOT and the IMM both conclude that both the quantitative and qualitative benefits outweigh the costs of implementation of RTC. Although certain dynamics of any of the inputs in the model could be disputed which could impact the benefits or the costs, the benefits in

improvement in efficiency for the ERCOT market outweigh the costs in any rational set of analysis. The impact to market participants may vary in the inclusion of RTC, but the holistic conclusion with RTC inclusion to the market surmount the sum of the individual parts.

10. What is the appropriate funding mechanism for the ERCOT implementation costs associated with RTC? How should these costs be recovered?

Because the costs will ultimately reduce prices to generators, and are for the benefit of the market as a whole, like other costs that benefit efficiencies in the market, these costs should be assessed on a load ratio share basis.

11. How would RTC change the ancillary services market?

Implementation of RTC would allow for more efficient allocation and dispatch of ancillary services. Ultimately, the ancillary services best able to support reliability should be valued higher than those that are not as effective at resolving reliability issues. Once sufficient resources are deployed, overall prices for ancillary services are likely to decline. As discussed above, liquidity for Ancillary Service capacity will be increased and the need for individual market participants to reserve capacity for contingency events is reduced thereby potentially increasing Ancillary Services offers available in the Day Ahead Market. The Real-Time market for Ancillary Services will no longer be reliant upon a poorly functioning SASM mechanism, but will be the result of co-optimization itself.

12. What effects, if any, would the implementation of RTC have on the Congestion Revenue Rights (CRR) market?

RTC is projected to reduce overall congestion charges in the RTM, which should tend to reduce the costs of clearing congested interfaces. Because prices for CRRs should converge toward the DAM and RTM congestion clearing costs over time, the costs of CRRs in the auction

will also likely decline as a result of the efficiency gained in the dispatch of generation with RTC.

13. What are the effects of implementing both RTC and marginal transmission losses on reliability and price formation?

Each of these mechanisms will result in better, more efficient dispatch of generation on the ERCOT grid. Each should benefit price formation, although neither will address the lack of price formation in ERCOT relating to over-mitigation, the failure to have thermal generation set prices when on-line but operating at their Low Sustained Limit because the generation is needed to serve base load demand, or the lack of any value for capacity services provided free to the market, including the free capacity call option during times of shortages. Both RTC and marginal losses implementation will provide more efficient signals to the ERCOT market, and send more accurate price signals to generators that provide greater benefits to the ERCOT system as a whole. As a result, each would separately benefit reliability and price formation, and together the impact of reducing these market inefficiencies will be greater, though one is not dependent on the other. However, in the case of RTC where overall payments to generators will decline, care must be taken to ensure that the implementation of RTC does not inadvertently squeeze generators out of the market, particularly when the ERCOT system is operating with reserve levels that are at or below the Economically Optimum Reserve Margin, and therefore harm reliability. The Commission should take action to ensure that the efficiencies gained from RTC does not harm long-term resource adequacy.

14. Are there any synergies that may result from contemporaneous adoption of both RTC and marginal transmission losses?

Both the implementation of RTC and marginal losses would increase efficiencies in the ERCOT market. The lack of these building blocks for the market are inefficiencies, or market

flaws, that should be corrected, and although not interdependent, these two do work well in tandem to improve price formation. Improved market signals from both RTC and marginal losses implementation would benefit the market, though it is not clear that the two need to be done at the same time.

15. What are the effects on retail customers and the retail market from the implementation of RTC and marginal transmission losses?

Overall the costs for power paid for by wholesale load serving entities should decline for the same conditions. It will depend on the types of contracts that the end-use customer in the competitive market has as to whether the end-user will see any benefit for either RTC or marginal losses implementation. For STEC's Members, they will see a pass through of the efficiencies in the market that serve to reduce overall costs. That is likely the case for most, if not all electric cooperatives. In the short-term, it will be difficult to have the benefits of RTC passed through in the competitive market unless the product being sold is a variable product. If the product is a fixed product, retail customers will not see any of the benefits of the efficiencies created until their existing fixed contract terminates, and if there is competitive pricing pressure, those benefits should be reflected in the next fixed or variable agreement the customer enters into, depending of course on the contract terms. Generation and Transmission Cooperatives' rates are designed to flow through benefits to their Members cooperative owners, which then flow through benefits to their corresponding Member loads/owners.

16. What effects, if any, would the implementation of RTC have on existing administrative scarcity pricing mechanisms, such as the Operating Reserves Demand Curve and the Reliability Deployment Price Adder?

STEC believes that the Reliability Deployment Price Adder (“RDPA”) will continue to be needed beyond the implementation of RTC. However, because the RDPA is a socialized payment that does not send an accurate price signal, it is not an effective tool for incenting generation to build in load pockets. Therefore, the RDPA will still be necessary, but may be less important if other design features discussed in Project No. 47199 are implemented (e.g. ELMP or locational ORDCs). The ORDC as we presently know it will likely not be necessary as a separate adder, but will likely become a demand component of the RTC implementation. Even if this change occurs, the ORDC will still suffer from the same challenges faced today in identifying the most efficient values for the inputs used in the ORDC in its current form. Modifications to a future version of the ORDC may be needed to ensure that there is coordination between the Value of Lost Load and the System-Wide Offer Cap.

III. CONCLUSION

STEC believes that RTC implementation would have both reliability and cost-saving benefits to loads in the ERCOT market. As a result, STEC would encourage the Commission to implement RTC for the benefit of ERCOT loads.

Respectfully submitted,

A handwritten signature in cursive script, reading "Diana Liebmann", written in black ink. The signature is positioned above a horizontal line.

Diana M. Liebmann

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