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PROJECT NO. 48539

REVIEW OF THE INCLUSION	§	**PUBLIC UTILITY COMMISSION**
OF MARGINAL LOSSES IN	§	
SECURITY-CONSTRAINED	§	
ECONOMIC DISPATCH	§	**OF TEXAS**

COMMENTS OF SOUTHERN POWER COMPANY

I. INTRODUCTION

Southern Power Company (SPC) appreciates this opportunity to respond to the Request for Comment issued by the Public Utility Commission of Texas on August 24, 2018 in Project No. 48539. SPC, a subsidiary of Southern Company, is a leading wholesale energy provider meeting the electricity needs of municipalities, electric cooperatives, investor-owned utilities, and commercial and industrial customers. SPC and its affiliates own 49 natural gas and renewable generation facilities operating or under construction in 11 states with more than 12,300 MW of capacity. Eight of these facilities, totaling 1,200 MW, are in ERCOT. While SPC understands the economic theory behind use of marginal losses in ERCOT's security constrained economic dispatch, we oppose implementation for several reasons. Namely, we oppose:

1) Abrupt regulatory alterations that retroactively penalize existing market participants and investors and increase the perceived regulatory risk of investing in the Texas market,
2) Increasing reliability risks and reducing grid resiliency due to discouragement of fuel diversity in remote regions of the state, and
3) Encroaching upon and contradicting one of the bedrock principles of Senate Bill 7, neutrality in siting decisions for generating resources.

To be sure, economic theory would suggest that using marginal losses to dispatch generation could modestly improve efficiencies of production at the margin. However, this result by no means provides a certain benefit to consumers when considering the other attendant impacts of a fundamental change in policy as well as the fact that losses are already considered in ERCOT pricing. In this regard, it should be recognized that the sought for efficiency improvements are narrowly tailored to benefit a few generation resources and they are obtained at the cost of unnecessary disruptions in the energy market and harm to investor confidence. If the marginal loss proposal is intended to address resource adequacy, SPC submits there are other and better ways to address such concerns. Using marginal losses to dispatch generation does nothing material to

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resolve resource adequacy concerns, and it does very little if anything to incentivize new investment. This is not surprising, because the decision where to build a new plant should not be confused with the decision whether to build a new plant and the investment climate necessary to draw new investors to the market.

ERCOT is a competitive market that is blessed with many advantages. In this context, a better approach to resource adequacy would involve putting to the side for now disruptive changes in the design of the energy market. A capacity/reserve requirement is a far more direct and efficacious approach to addressing resource adequacy concerns. In ERCOT, competitive outcomes that reasonably respond to resource adequacy concerns are not only possible but are more likely to occur with capacity/reserve requirements. In contrast, retroactive administrative efforts to allocate marginal revenues and adjust scarcity pricing in regional markets are likely to be ineffective as a means to draw new investment, and could actually discourage long-term investment by increasing the perception of regulatory risk and weakening investor confidence in the market design.

II. RESPONSE TO QUESTIONS

1. What are the benefits of implementing the use of marginal transmission losses rather than average transmission losses in the Electric Reliability Council of Texas' (ERCOT) Security-Constrained Economic Dispatch (SCED) over the long term?

Response:

Long-term efficiencies could be gained by implementing marginal transmission losses rather than average transmission losses, especially when a new locational marginal price market is being created and designed. Siting of new resources could be optimized to contribute to a more efficient dispatch of resources across the market. However, the long-term gains are not outweighed by short- and long-term risks that would be created by implementing marginal transmission losses, when billions of dollars of investment have already been committed with an understood market design. Without a capacity/reserve requirement, some areas of Texas could suffer from a less-diverse generating mix, potentially leading to reliability issues. Our concerns are addressed in more detail in the responses below.

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.**

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

Response:

(a) While consumer costs may decline[1] as a whole across the ERCOT market, multiple studies have shown the savings would not be allocated uniformly across all consumers.[2] In fact, consumers in major economic hubs of the state could be deprived of consistently accessing the lowest-cost energy across the grid, thus causing their energy costs to rise.

(b) A risk that should not be ignored is the potential declining diversity of the resource mix in ERCOT. Currently, there are over 7.5 GW of coal and nuclear resources operating in ERCOT's North Zone. According to ERCOT's recent study of the impacts of marginal losses in SCED, the generator revenue within the North Zone could be reduced anywhere from $222.0M to $415.3M annually, depending on the price of natural gas. This could place already-struggling plants under even more financial pressure and force them into premature retirement with the implementation of this policy. Coupled with less attractive business cases for resources in remote areas of Texas, this shift in system topology could create a growing and narrowing dependence on specific fuel types. Should fuel prices rise in the future, consumers could be further exposed to that added cost without retailers having an adequate mechanism to hedge their exposure. Not only does a well-diversified fuel mix hedge consumers' exposure to fuel prices, it also contributes to a more reliable and resilient bulk electric system.

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[1] *Study of the System Benefits of Including Marginal Losses in Security-Constrained Economic Dispatch,* Attachment B to ERCOT filing in *Project to Assess Price-Formation Rules in ERCOT's Energy-Only Market,* Project No. 47199 (Jun. 29, 2018).

[2] The Brattle Group, *Impacts of Marginal Loss Implementation in ERCOT: 2018 Reference Scenario Results,* Project No. 47199 (Oct. 12, 2017); PA Consulting Group, *The Long-term Impacts of Marginal Losses in Texas Electric Retail Customers,* Project No. 47199 (Apr. 20, 2018).

4. **The ERCOT study of using marginal transmission losses instead of average transmission losses in SCED simulated one year. How would cumulative, multi-year impacts of using marginal transmission losses be different, if at all?**

Response:

It is difficult to speculate about the results of a multi-year study. It is clear, however, that it would be a mistake to make a drastic regulatory alteration, especially one administrative in nature, without having a study conducted across multiple years in the future with varying assumptions across each year. The impact of marginal losses varies over time as the system experiences more transmission additions and changes in dispatch patterns.

5. **What costs would be incurred by market participants if marginal losses were implemented in the ERCOT market? 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.**

Response:

(a) Using a day-ahead security-constrained economic dispatch software program, SPC has estimated the negative impact to itself and to its customers to be in the magnitude of millions of dollars a year.

(b) The cost impact would be due to lower Locational Marginal Price (LMP) values, since the vast majority of SPC's generation fleet is located in the Western Load Zone. The administrative change in price formation would require a full review of our investment decisions and would drastically alter the economics of projects that already have long-term power purchase agreements associated with them.

6. **How would a decision to use marginal transmission losses affect your company's market systems?**

Response:

While the impact to our internal market systems are unknown at this time, the implementation of marginal losses would require a full review of all investment choices made within the ERCOT market, including internal programs and software that were developed to support our ERCOT resources.

7. **How would a decision to use marginal transmission losses affect your company's internal operations?**

8. **What are the effects on reliability on the ERCOT grid of using marginal transmission losses instead of average transmission losses in SCED?**

Response:

Thus far the very competitive ERCOT market has created cost savings for consumers and has played a key role in the economic development of the state. That being said, implementing marginal losses would create a reliability risk that is not worth the potential and speculative benefit of marginal production cost savings. Marginal losses would likely dampen the incentives to locate diverse resource types where the natural resources occur, mainly in remote areas, thus eliminating potential new investments that were previously cost-competitive. In an energy-only market with no mechanism to compensate investors for the risk they undertake by building new generation facilities (outside of energy prices), barriers to open competition should not be administratively created to soothe purist economic theory or "missing money" concerns.

9. **What effects, if any, would marginal transmission losses have on grid hardening and resilience?**

Response:

Diversity of fuel supplies has been a corner stone of national energy policy since the fuel shortages of the 1970s. As mentioned in our response in 3.b, we are concerned that implementing marginal losses poses a risk to grid reliability and resiliency by narrowing the mix of fuel resources.

10. **What effects would the use of marginal transmission losses in SCED have on grid reliability in regions of the ERCOT grid where non-synchronous generation is more prevalent?**

Response:

Non-synchronous generation resources play a vital role in maintaining local voltage support and frequency stability in the areas they are located. Implementing marginal transmission losses at this time would disincentivize the location of both synchronous and non-

synchronous generation in rural locations where they currently provide both voltage and frequency support. This will create the need for additional dynamic voltage and reactive support devices, such as SVCs and synchronous condensers, and make the ERCOT system much more reliant on the successful operation of these devices.

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

Response:

Most of the cost-competitive new resources currently planned are located in areas that would be impacted most by the implementation of marginal losses, placing their business cases in jeopardy. One of the key principles of Senate Bill 7 was that it would not discourage the particular location of investment choices made by power producers. Implementing marginal losses would directly contradict one of those key principles, as it would have a significant impact on the location of power generation investment. Areas that would most likely be impacted are counties within the state that experience economic growth that is not proportionate with urban areas of the state.

12. How would the implementation of marginal transmission losses affect the composition of the generation fleet in ERCOT?

Response:

The fleet of generation resources in ERCOT would likely transition to one that is less geographically and fuel diverse than it is today. This scenario is exacerbated when generation investment decisions are made primarily through forecasts of energy prices, without integrated resource plans and/or reserve requirements.

13. **Assuming the Commission decided to go forward with implementation of marginal transmission losses, what are the key issues related to determining the appropriate treatment and allocation of the marginal transmission loss surplus revenues?**

Response:

If marginal losses were to be implemented, an equitable allocation of over-collected revenues would be imperative. In other words, those who bear the initial cost should be entitled to receive the surplus revenues in proportion to their losses.

14. **Does the ERCOT analysis of the benefits of including marginal transmission losses in SCED accurately measure such benefits? Are potential costs to the market or to market participants adequately accounted for?**

Response (a):

The ERCOT one-year analysis of the benefits of marginal transmission losses does not accurately measure all the benefits and risks associated with implementing marginal losses. A change such as this should be studied more comprehensively, including multiple years in the future along with varying assumptions

Response (b):

Potential costs to market participants have not been adequately accounted for in ERCOT's analysis. For example, while the study results show a net positive benefit of $11.4M (base case), the study does not emphasize the negative impacts to individual generator owners with non-synchronous generation located in rural areas of ERCOT's system.

15. **What ERCOT operational changes would need to be made that are not considered in ERCOT's studies?**

Response:

As all system tools are updated to account for marginal losses in the calculation of LMPs, it is expected that all affected operational processes should now factor the impacts of marginal losses. An example of this would be ensuring losses are accounted for during outage planning and analysis. Another example would be assessing whether voltage schedules can be further optimized to minimize losses across the ERCOT system.

16. **Would the use of marginal transmission losses in SCED change the ERCOT transmission planning process and transmission build-out?**

Response:

Yes, it is expected that the utilization of marginal transmission losses in SCED would and should change the transmission planning process and transmission build-out. In addition to reliability, Transmission Planning should factor in the economic impacts of transmission projects. Therefore, another factor in determining the overall benefits of alternative projects should be the loss savings resulting from each project.

17. **Assuming that the implementation of marginal transmission losses results in the location of generation closer to load, what advantages and disadvantages would there be during an emergency event or a market restart to having generation located closer to load?**

Response:

Having generation more closely located to load, and thus generation resources located closer to each other, would reduce the benefits of having a geographically diverse resource mix. More generation would be susceptible to localized grid events, which could cause a greater amount of contingency resources to be procured. Areas that are remote with resources spread few and far between could be increasingly exposed to a lack of black-start capability.

18. **What effects, if any, would the implementation of marginal transmission losses have on the Congestion Revenue Rights (CRR) market?**

19. **How should the Commission direct ERCOT to implement marginal transmission losses in a way that mitigates any deleterious effects on the CRR market?**

20. **Does your assessment of the incorporation of marginal transmission losses change based on the timeline of implementation?**

Response:

No; administratively implementing marginal losses when a well-developed construct is already in place subjects existing market participants to retroactive damages, potentially creates reliability concerns, and goes against the principles of Senate Bill 7. Simply put,

marginal losses should not be implemented in the ERCOT market without a significant and holistic approach that considers other aspects of market design.

21. **What are the effects of implementing both Real Time Co-optimization (RTC) and marginal transmission losses on reliability and price formation**

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

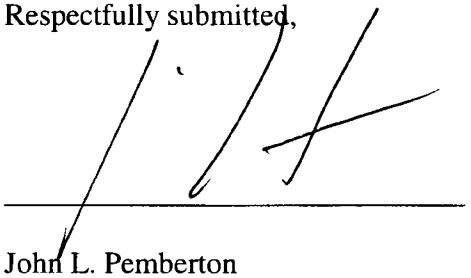
23. **What are the effects on retail customers and the retail market from the implementation of both RTC and marginal transmission losses?**

III. CONCLUSION

For all the reasons set forth in these comments, SPC opposes the use of marginal losses in ERCOT's security-constrained economic dispatch of resources.

Dated: October 8, 2018

Respectfully submitted,



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