March 18, 2019

VIA ELECTRONIC FILING

Andrew Wheeler, EPA Administrator
Environmental Protection Agency
1200 Pennsylvania Ave NW
Washington, DC 20460

Re: EPA Docket Number: EPA-HQ-OAR-2013-0495
Review of Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, 83 Fed. Reg. 65424 (proposed Dec. 20, 2018)

Dear Administrator Wheeler:

This letter is submitted to the United States Environmental Protection Agency ("EPA") on behalf of Southwest Power Pool, Inc. ("SPP") in its capacity as a Federal Energy Regulatory Commission ("FERC") - approved Regional Transmission Organization ("RTO") and a Reliability Coordinator with responsibility to ensure the reliability of the bulk electric system within the SPP region. In this letter, SPP will provide comments in response to the proposal EPA published in the Federal Register on December 20, 2018 ("December 2018 Proposal").

SPP's comments do not address the primary subject of the December 2018 Proposal, *i.e.*, the amendment of portions of the 2015 Standards of Performance for Greenhouse Gas Emissions for New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units ("2015 Rule").[1] Instead, SPP is responding to EPA's solicitation of comments[2] regarding the separate standards the 2015 Rule set for the two EPA-created categories of combustion turbines ("CTs") identified as "base load" and "non-base load" stationary CTs. SPP appreciates the opportunity to provide information it believes is relevant to the subject on which comments have been requested: utilization of simple cycle combustion turbines ("SCCTs") in the SPP region. Specifically, SPP will describe trending circumstances in its region that demonstrate a growing need to rely on resources capable of supplying energy quickly in response to sudden or rapid changes in electric system conditions, including changes associated with the variable nature of SPP's growing renewable portfolio. SPP has historically relied on SCCTs and expects to continue to rely heavily on SCCTs in its region to meet reliability needs.

[1] 80 Fed. Reg. 64510 (October 23, 2015). The 2015 Rule added emissions standards under Section 111(b) of the Clean Air Act, codified as a new subpart TTTT of 40 C.F.R. part 60.

[2] *See, e.g.,* Section IX (G) of the December 2018 Proposal, which sets forth comment solicitations C-55 through C-58.

A. Southwest Power Pool

SPP currently has 97 members[3] and administers transmission service over 66,892 miles of transmission lines in a 546,000 square-mile service territory across all or part of 14 states.[4] As a FERC-approved RTO, SPP works to ensure the existence of a reliable supply of power, adequate transmission infrastructure, and competitive wholesale electricity prices. SPP's services include reliability coordination, tariff administration, regional scheduling, transmission expansion planning, market operations, compliance, and training. SPP administers the Integrated Marketplace, a centralized day-ahead and real-time Energy and Ancillary Services market with locational marginal pricing and market-based congestion management.

Of all of SPP's responsibilities, maintaining reliability is the most important. SPP is the registered Planning Coordinator, Reliability Coordinator and Balancing Authority for its region and performs these functions pursuant to its Open Access Transmission Tariff and the applicable reliability standards promulgated by the North American Electric Reliability Corporation ("NERC"). Section 215 of the Federal Power Act requires NERC to develop mandatory and enforceable standards that contain the reliability-related requirements for planning and operating the North American bulk power system. NERC monitors entities' compliance with these mandatory standards and enforces compliance through financial penalties and other sanctions for violations.[5]

B. The 2015 Rule and the December 2018 Proposal

In the 2015 Rule, EPA set separate emissions standards for base load and non-base load stationary CTs. These two categories are determined based on a CT's electric sales and design efficiency. CTs qualify as non-base load, and thus for a less stringent standard of performance, if they have net electric sales equal to or below their design efficiency multiplied by their potential electric output.[6] If a CT's electricity sales exceed that level, however, it is treated as base load and is subject to a more stringent standard of performance.

In the December 2018 Proposal, EPA notes that stakeholders have expressed concerns regarding the 2015 rule's manner of distinguishing between base load and non-base load CTs. Specifically, EPA states the following:

> Stakeholders have observed that in some regional electricity markets with large amounts of wind generation, some of the most efficien[t] new simple cycle

[3] SPP's members include 16 investor-owned utilities, 14 municipal systems, 20 generation and transmission cooperatives, 8 state agencies, 14 independent power producers, 12 power marketers, 11 independent transmission companies, 1 federal agency, and 1 large retail customer.

[4] SPP's service territory covers portions of Arkansas, Iowa, Kansas, Louisiana, Minnesota, Missouri, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, South Dakota, Texas, and Wyoming.

[5] *See, e.g.,* 16 U.S.C. §824o.

[6] *See* the 2015 Rule, 80 Fed. Reg. at 64601.

> turbines—aeroderivative turbines—could be called on to operate at capacity factors greater than their design efficiency; however, if they were to be operated at those higher capacity factors, they would become subject to the more stringent standard of performance for base load turbines, which they would not be able to meet.[7]

EPA also notes in the December 2018 Proposal that stakeholders expressed concern that the more stringent standards of performance would result in curtailment of SCCTs, which would in turn result in the unintended consequences of increased usage of less efficient turbines and higher emissions rates.[8] Accordingly, in the December 2018 Proposal, one of the areas on which EPA requested comment is:

> [W]hether there have been, or are anticipated to be, circumstances (e.g., high utilization of wind or solar resources or low natural gas prices) in which simple cycle stationary combustion aeroderivative turbines (i.e., those that are subject to standards of performance in 40 CFR part 60 subpart TTTT) have been or may be called upon to operate in excess of the non-base load threshold described in the 2015 Rule.[9]

Certain SPP stakeholders have raised concerns specifically regarding potential impacts the base load/non-base load threshold may have on SCCTs in the SPP region, particularly those that can be started quickly and can respond quickly to rapidly changing conditions. Accordingly, SPP submits information regarding operation of SCCTs, their role in reliable and efficient operation of the power grid, and observed trends regarding their generation activity in the SPP region.[10] It should be noted that SPP's data is maintained in a manner that makes it difficult to distinguish between aeroderivative turbines and other types of SCCTs. SPP believes, however, that the data discussed herein regarding SCCTs in general is relevant because of the growing number of SCCTs being utilized in SPP that could be adversely impacted by the non-base load/base load emission limits distinction at issue in EPA's solicitation for comments. SPP also provides information in these comments regarding observed trends in wind generation due to wind's power system implications that can increase the need for other generation that can start and respond to system needs rapidly.

SPP typically relies on SCCTs to maintain grid reliability during unforeseen operating circumstances, including rapid changes in generation or load, and to supply energy during periods of peak consumption. Although usage during periods of high energy consumption has been a traditional application of SCCTs in the electric power industry, and SPP continues to use the majority of its SCCTs during these times, SCCTs are becoming increasingly used by SPP during

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[7] December 2018 Proposal, 83 Fed. Reg. at 65460.

[8] *Id.*

[9] *See* Comment Solicitation C-55, 83 Fed. Reg. at 65461.

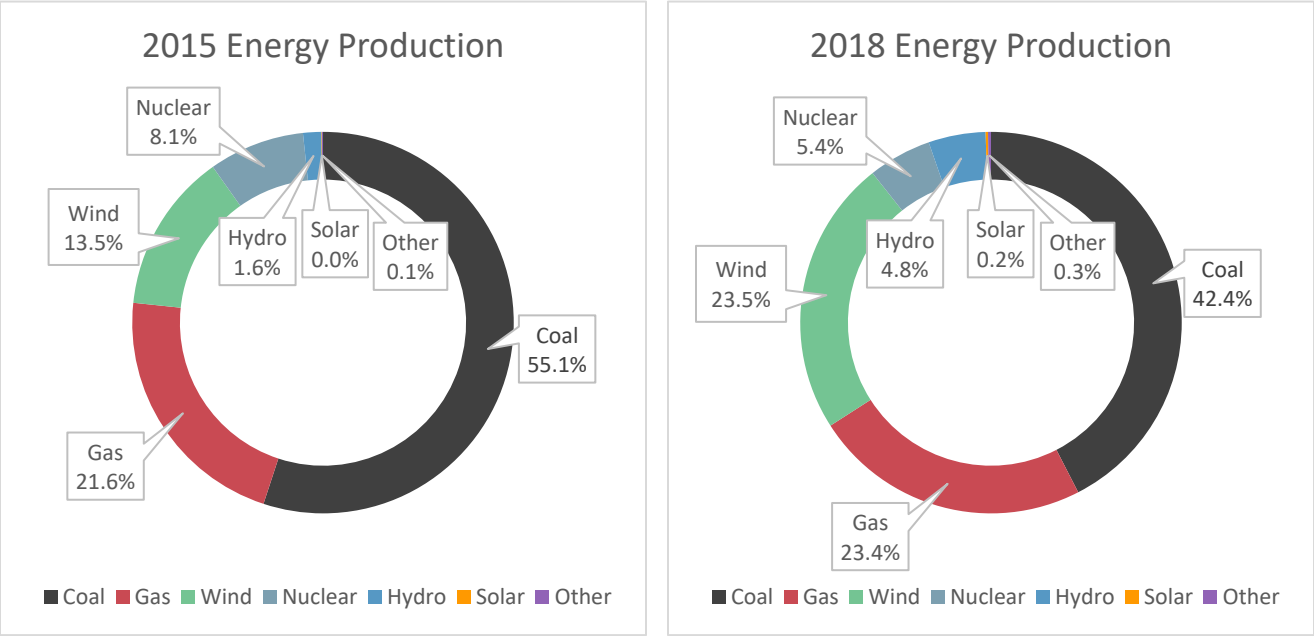
[10] Trend data provided by SPP will include yearly periods of its Integrated Marketplace operation. SPP's first full year of operating the Integrated Marketplace was 2015.

off-peak, *i.e.* non-summer, periods when wind generation tends to fluctuate the most. SCCTs complement wind generation and other renewable resources, that tend to be intermittent and highly variable, because SCCTs typically can be started, synchronized and capable of injecting a significant amount of energy (including voltage support),[11] within minutes after being called upon.

C. Wind Generation in SPP

Nearly 21,500 MW of installed wind nameplate capacity is currently operating in the SPP Balancing Authority Area footprint and participating in the SPP Integrated Marketplace. As shown in the charts comprising Figure 1, SPP has observed significantly increased wind generation being produced in its region and expects that trend to continue over the next several years. In 2015, wind generation represented 13.5% of SPP's energy mix. In 2018, wind generation represented 23.5% of SPP's energy mix, an almost two-fold increase over three years.

Figure 1: Comparison of 2015 and 2018 Energy Production



SPP experienced a wind penetration record on April 30, 2018, when over 63.96% of its load was served by wind generation. In fact, SPP has experienced wind penetration records in each of the last three years. Based on that trend and an expectation that more wind capacity will be added in the future, wind penetration in SPP is expected to increase. The expectation that more wind capacity will be added in the future stems from development interest expressed in SPP's generator interconnection study ("GI") queue and affirmed, to some extent, by SPP's transmission planning

[11] As imports into areas of relatively high-load intensity suddenly increase, nearby SCCTs can provide reactive support to those areas as needed to maintain proper system voltages.

study assumptions. In SPP's GI queue, wind developers have requested SPP to evaluate the prospective interconnection of almost 55,000 MW of additional wind nameplate capacity. SPP's Integrated Transmission Planning studies currently underway assume up to 33,000 MW of wind generation, in total, will be connected to SPP's system by 2030.

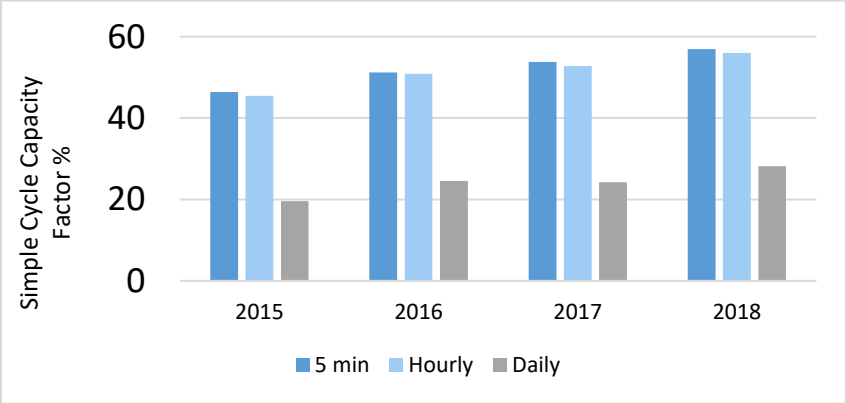
D. Simple Cycle CT Activity in SPP

The benefits of wind generation are accompanied by operating challenges that can arise due to wind's variable nature. Because of their ability to quickly inject real and reactive power into the system, rapidly responding SCCTs are useful in facilitating reliable integration of increased levels of renewable generation and its associated variability. As described in the following paragraphs, SPP has observed certain trends in the SPP region that indicate a growing dependence on SCCTs[12] and demonstrate a correlation with increasing levels of wind generation.

To respond to reliability needs that arise throughout an operating day in the most cost-effective way, SPP has increasingly called upon, or "committed," SCCTs, with 4,577 of these SCCT commitments occurring in 2015 and 6,563 occurring in 2018. The Integrated Marketplace utilized 26.1% of total available SCCT capacity in SPP during 2015 (annual capacity factor). The annual capacity factor for SCCTs in the Integrated Marketplace increased to 31.5% for 2018. SPP currently has eight SCCTs in its region with annual capacity factors over 40%.

Similar to increases observed in SCCT annual capacity factors, SPP has also observed that the highest five-minute, hourly and daily periods of SCCT utilization during the year has increased between 2015 and 2018 as indicated in Figure 2. During SPP's peak utilization of SCCT's in 2015, 126 units were operating at a total output of 10,800 MW. In 2018, the highest utilization of SCCTs involved 208 units producing a total of 13,200 MW.

Figure 2: Simple Cycle – Peak Capacity Factors (5-min, hourly and daily)



[12] SPP notes that many Combined Cycle CT plants are operated such that the SCCT component(s) of the plant are used on a stand-alone basis because of the flexibility the SCCTs can provide when needed. SPP reflects usage of the SCCT portion of those CCCT plants in the SCCT data provided herein.

The peak SCCT utilizations shown above have occurred during periods of high electricity consumption, which occurs primarily in summer months within the SPP region. However, SPP has recently observed an increasing number of times where high SCCT utilization has occurred during non-summer periods where high volatility in wind generation is most often experienced. In 2015, SPP observed only one of its 20 highest SCCT capacity factor days occurring in a non-summer month. In 2018, by contrast, SPP observed 8 of its 20 highest SCCT capacity factor days occurring in a non-summer month.

The largest amounts of hourly wind generation decreases observed each year has increased from 2015 to 2018. In 2015, the largest hourly wind generation decrease observed was 2,241 MW while the largest hourly wind generation decrease observed in 2018 was 3,351 MW. This indicates that the volatility of wind generation is becoming a bigger factor in determining the usage of SCCTs.

E. How Simple Cycle CTs are used in the SPP Integrated Marketplace

SCCTs are typically able to offer flexible operating parameters (*e.g.* start time, minimum run time, and ramp) for SPP's market utilization purposes. The SPP Integrated Marketplace must anticipate and react to changes in load, generation output, and overall system ramping needs. At times, the delta between anticipated needs and actual needs can be large. The degree of predictability for these events and the amount of forecast error are factors that determine what grid operators need to reliably address these conditions. Generally speaking, the most flexible and rapidly responsive resources provide grid operators the greatest ability to maintain proper grid reliability. This is especially true given the difficulty and complexity that can be involved in prediction of load and generation fluctuations. Additionally, relying on the flexibility and quick responsiveness of these resources allows the market to resolve reliability needs more cost effectively—particularly when using newer and more efficient sources—compared to other types of conventional generation.

Predicting generation fluctuations is already a complex undertaking in SPP, and such fluctuations are becoming increasingly larger. As distributed generation increases, it may also become increasingly difficult to predict fluctuations in load. While the overall increase in utilization of gas-fueled simple cycle generation can be attributed to a multitude of changes within the SPP footprint, the primary drivers are a reduction in the amount of more traditional base load generation being self-committed as well as an increase in the amount of renewable generation capability being added to the SPP system. Additionally, a downward trend in self-committed capacity offered in the SPP Integrated Marketplace has resulted in SPP having more economical, flexible, and available resources accessible to it at the time a commitment decision is required, which is typically less than 24-hours ahead of time.

F. Planning Assumptions about Simple Cycle CTs

SPP performs annual transmission planning studies that project transmission expansion needs over the next 10 years. These studies include assumptions about future electricity demand, generator additions and retirements, fuel prices, and other variables that impact transmission needs. SPP's planning studies currently in progress assume up to 33,000 MW of wind generation will be connected to the SPP transmission system by 2030, suggesting an additional 13,000 MW of new

wind generation could be added over the next 10 years. These studies also include assumptions about new solar generation and battery storage being developed over the next decade. Of particular note, the studies assume up to 5,000 MW of new SCCTs could be added to the system in order to meet reserve capacity requirements and to account for the increasing number of intermittent resources.

G. Conclusion

SPP anticipates the need for and reliability benefit of SCCTs will increase as the amount of capacity in SPP from renewable generation, including wind, increases. Based on recent trends and current planning assumptions regarding increased wind penetration and increased utilization of SCCTs, SPP foresees additional utilization of SCCTs in excess of the non-base load threshold described in the 2015 Rule. If regulatory relief of current environmental restrictions in the 2015 Rule is not provided, SPP's utilization of SCCTs to address reliability needs in the most cost-effective and efficient manner could be compromised, yielding unintended consequences of decreased reliability and increased usage of less efficient, higher-emitting resources.

Respectfully submitted,

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cc:
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