

In the Matter of an Investigation of Missouri)
Jurisdictional Generator Self-Commitments) File No. EW-2019-0370
Into SPP and MISO Day-Ahead Markets.)

COMES NOW Union Electric Company d/b/a Ameren Missouri (“Ameren Missouri” or the “Company”) and hereby provides the additional responses required by the Commission’s October 16, 2019 *Order Directing Further Responses* (the “Order”) and requests leave to late file the same, as follows:

2. **Question A. Are the economic or unit minimums established based upon the physical limitations of each plant?**

3. **Question B. Are the economic or unit minimums established based upon the optimization of operation of each plant?**

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4. **Question C. What factors are considered in the determination of the economic or unit minimums?**

While not a complete listing of factors, examples of the equipment, process or control limitations considered by operating staff in determining the minimums include:

- Coal-fired units keep a minimum number of coal mills in service when operating (or cyclone burners in the case of the Sioux units) in order to maintain combustion stability in the boiler and guard against unit trips.
- Operation at low megawatt (“MW”) output causes decreased flue gas temperatures in the precipitators, which in turn can cause acid dew point corrosion damage and long-term degradation of the units. This necessitates accounting for the acid dew point in the flue gas when setting the minimums.
- Operation at low MW output has significant adverse effects on NO_x emissions rates and heat rate performance of the unit.
- The good utility practice of conservative operations philosophy that involves avoidance of operating conditions that may result in unit trips and their associated costs.

a. **Subquestion (i). What weighting is applied to each factor in the determination of the economic or unit minimums?**

The operation of the physical systems that establish the unit minimums are not weighted, nor are they additive. For example, the minimum operation due to running coal mills is not additive to the minimum operation resulting from the process to manage flue gas temperatures in the precipitators. Rather, they are operated collectively and simultaneously, and there may be multiple processes or equipment that all require a common level of minimum unit operation.

As described in the Company's October 2nd response, unit minimums are established by operations staff at each Energy Center daily and subsequently used as the Hourly Economic Minimum Limit in the daily offers submitted to MISO. The operations staff at each Energy Center are in the best position to establish these values as they are responsible for knowing and understanding the operational limits of the equipment and systems, and for safely operating the units at each respective Energy Center within the design parameters of the plant.

5. **Question D. Do the economic or unit minimums ever vary for any reason other than the physical characteristics of the individual plant with the exception of unit testing?**

No. As noted in the response to Question A, these minimums are established based upon the physical limitations of each plant as they exist at the time the determination is made, taking into consideration limiting factors such as off-normal operation, including limitations due to suboptimal fuel conditions or malfunctioning of equipment or controls, or certain key pieces of equipment being out of service and in need of repair during the next maintenance cycle. Because the answer to this question is “no,” sub-question (i) parts (a) through (c) of Question D do not apply.

a. **Sub-question (i), part (d). Who is responsible for determining the appropriateness of variances from physical characteristics within the bidding strategy of the unit?**

The generation offers submitted daily to MISO, which include a parameter for Hourly Economic Minimum Limit, are submitted by Ameren Missouri's Energy Management & Trading (EM&T) department. EM&T operates under the direction of Andrew Meyer, Senior Director Energy Management & Trading.

Respectfully submitted,

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