

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 responds to the above-referenced Order (the “Order”), as follows:

2. **Question a)**<sup>1</sup>: What is Ameren Missouri’s definition of “economic minimum” or “unit minimum”? Because Ameren Missouri offers all its generation into the energy market operated by MISO,<sup>2</sup> its definition of these phrases (which from Ameren Missouri’s perspective are synonymous) is the same as that provided by the MISO Energy Markets and Operating Reserve Tariff, as follows:

<sup>1</sup> The questions correspond to the questions posed in Ordering Paragraph 1, items a) to d), of the Order.

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submitted to override the default value submitted during the asset registration process.

3. **Question b):** How does Ameren Missouri establish an “economic minimum” or “unit minimum”? Unit minimums are established by operations staff at each Energy Center daily and those minimums are used as the Hourly Economic Minimum Limit (per the MISO tariff, as noted above) in the daily offers submitted to MISO. These minimums are set by the operations staff because the staff at each Energy Center is 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. In general, the unit minimum limits are based on equipment, process, or control limitations such that operation below the unit minimum would pose substantial risks to unit reliability or stability, increase the potential for unit trips, or cause long term degradation of equipment. For example, the Company’s baseload coal-fired units keep a minimum number of coal mills in service (or cyclone burners in the case of the Sioux units) in order to maintain combustion stability in the boiler and guard against unit trips. As another example of factors that influence the minimum, 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, which necessitates accounting for the acid dew point in the flue gas when setting the minimums. Additionally, operation at low MW output has significant adverse effects on NO<sub>x</sub> emissions rates and heat rate performance of the unit. Factors such as the above are considered by operating staff in determining the minimums.

In 2016, Ameren Missouri implemented an initiative to investigate and lower the unit minimums of each of its baseload coal-fired units. Working with engineering and operations

staff at each of the plants, the Company reduced the overall cumulative unit minimum limit by over 700 MW from previous levels.

Unit	Previous Min (MW)	New Min (MW)	Reduction (MW)	% Reduction
Labadie 1	280	200	80	-28.60%
Labadie 2	280	200	80	-28.60%
Labadie 3	280	240	40	-14.30%
Labadie 4	280	240	40	-14.30%
Rush 1	300	170	130	-43.30%
Rush 2	300	200	100	-33.30%
Sioux 1	240	200	40	-16.70%
Sioux 2	240	200	40	-16.70%
Meramec 1	43	20	23	-53.50%
Meramec 2	43	20	23	-53.50%
Meramec 3	150	115	35	-23.30%
Meramec 4	165	85	80	-48.50%
<b>Total Reduction</b>	<b>2601</b>	<b>1890</b>	<b>711</b>	<b>-27.30%</b>

4. **Question c):** What are the pros and cons of allowing self-committing up to that [unit minimum] amount? Please see section B of Ameren Missouri's *Response to Order Opening an Investigation Of Missouri Jurisdictional Generator Self-Commitments and Self Scheduling And To Order Directing Comments* in this proceeding which explains in detail why Ameren Missouri utilizes a must run (self-commit) commit status. As noted in that response, in summary, Ameren Missouri utilizes the must run commit status to prevent the limited 24 hour look ahead algorithm utilized by the MISO market from unnecessarily cycling certain base load units whose operating characteristics, such as high cost to restart, expected increase in forced outages if the units are not placed in must run commit status, and maintenance and capital costs due to unit cycling (again, if not placed in must run commit status), warrant such a designation. Ameren Missouri takes this action to protect these assets from unnecessary damage

– and the associated cost – expected to occur with suboptimal unit decommitment orders that would result from the MISO 24 hour only look ahead commitment process.

The benefit or “pro” of continuing the practice of self-committing these units, at their economic minimums, is a reduction in the costs associated with increased cycling/decommitting activities, including 1) restarting decommitted units, 2) maintenance and capital activities resulting from associated damage to generating facilities, 3) loss of off-system sales margins during periods of associated forced outages and 4) reduction in MISO capacity revenues as a result of lower generating unit UCAP (unforced capacity) values as a result of associated increases in generating unit forced outage rates.

Ameren Missouri is not aware of a "con" associated with continued self-commitment of these units at their economic minimums in order to protect these assets from unnecessary damage – and the associated costs – expected to occur with suboptimal unit decommitment orders that would result from the MISO 24-hour only look ahead commitment process.

**5. Question d): Why does the “economic minimum” or “unit minimum” vary?** Unit minimum limits may vary due to off-normal operation 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. For example, a unit may have problems with the hydraulic oil system that controls the turbine governor valves, which in turn limits how low the MW output can be reduced. Suboptimal fuel conditions such as wet coal can also cause unit minimum limits to vary. During times of excessive rainfall, wet coal issues often occur and cause abnormally high risk of coal mill or cyclone trips that could risk a unit trip at the normal minimum load. Another issue that could affect minimum limits is unit testing that requires steady output for multiple hours. For example, Relative Accuracy Test Audits (RATAs) are routinely required to assess the

accuracy of a unit's Continuous Emissions Monitoring System and necessitate that the unit be maintained at a steady output.

Respectfully submitted,

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