Date: July 31, 2026

To: Davey Lopez, MISO Market Design Manager

From: America's Power

Subject: Planned Outage Rule

These comments propose for MISO's consideration a relatively simple and effective way – the "banking" of outage days – to prevent a large number of simultaneous planned outages of fossil generation on the MISO system. It is our understanding that the 31-Day Planned Outage Rule could have the unintended result that some 40 GW of generating capacity could be offline at the same time during the summer season. Having a substantial portion of MISO's generating capacity offline would risk capacity shortfalls during the time when electricity demand could be unusually high because of elevated temperatures.

Effect of the Rule on Outage Scheduling

Under the MISO tariff, a Generator Planned Outage exceeding 31 days within a single season triggers two separate consequences. Module E-1, Section 69A.3.1.h requires the Market Participant to replace Cleared ZRCs with Uncleared ZRCs once the 31-day threshold is exceeded in a season.[1] When that replacement is not made, MISO assesses a Capacity Replacement Non-Compliance Charge (CRNCC), calculated as the number of days the shortfall remains unreplaced, multiplied by the ZRC MW quantity, multiplied by the seasonal ACP plus a daily Cost of New Entry (CONE) value.[2]

Separately, unavailability during Tier 2 hours, which MISO's accreditation methodology treats as the hours of greatest system stress, enters a rolling three-year calculation weighting Tier 2 hours at 80 percent and Tier 1 hours at 20 percent.[3] That calculation reduces the resource's accredited capacity and, as a consequence, its future capacity revenue. The CRNCC is a one-time charge attaching to the specific outage; the Tier 2 weighting effect accrues across subsequent accreditation cycles.

The scheduling consequence is that a unit requiring a 60-day turbine overhaul cannot take that outage as a single continuous event without exceeding the 31-day seasonal threshold. Operators accordingly divide the work into two outages of approximately 31 days each, timed to straddle a season boundary, most commonly the spring-to-summer transition, so that neither segment exceeds the 31-day limit for a single season. FERC and the D.C. Circuit have both

[1]MISO FERC Electric Tariff, Module E-1 (Resource Adequacy), Section 69A.3.1.h, Replacement of Planning Resources.

[2]MISO, Capacity Replacement Non-Compliance Charge (CRNCC) and CROW Outages, Article KA-01457 (the charge applies to any combination of cleared or replaced ZRCs on full or partial Generator Planned Outage for more than 31 days in total during a season).

[3]BPM-011, Resource Adequacy Business Practices Manual, Section 1.2.6, Tier Weighting of ISAC. Current revisions are posted at MISO, Business Practice Manuals.

identified season straddling as a means of accommodating outages of up to 62 days under the current construct.[4]

The aggregate result is a concentration of maintenance activity within a narrow window, on the order of 40 GW of summer outages. MISO has acknowledged that the existing construct permits straddling that pushes outages into the higher-risk summer and winter seasons, and that outages at this scale were not anticipated.[5] Absent the rule, operators indicate they would schedule a single continuous rebuild, comprising one teardown and one reassembly, during a lower-demand spring or fall window, yielding an estimated seven to eight years of reliable operation through the winter and summer peaks that follow.

Outage Activity in the Spring and Summer Crossover Window

Maintenance costs for fossil-fired generating units vary by season. Costs are generally highest in the winter months and lowest in spring and fall. The summer premium falls between the two and below the winter premium, reflecting greater availability of parts and labor and less competing demand from forced outage repairs.

The significance of that difference lies less in the cost of any individual outage than in the scheduling behavior it causes in combination with the 31-Day Rule. A planned outage longer than 31 days must cross a season boundary if the generating unit is to avoid the replacement obligation and the associated CRNCC exposure. That requirement converts what would otherwise be a continuous scheduling decision, constrained only by the engineering condition of the unit and the cost of labor and parts, into a choice among four discrete boundary crossings. Cost considerations then eliminate the two crossings that place work in winter, leaving the spring-to-summer and summer-to-fall transitions, and the spring-to-summer boundary has become the common choice.

The consequence is felt on the supply side. A limited number of original equipment manufacturers (OEM) serve the U.S. coal fleet, and outage contractors and turbine repair facilities face a concentrated demand in the same narrow window each year. The convergence of scheduling requests creates bottlenecks in contractor availability, parts, and OEM support, raising both cost and execution risk for every operator in the queue. That outcome is the opposite of the diversified maintenance scheduling that would best serve system reliability, and it is driven by the rule rather than by the underlying cost of the work.

Engineering Considerations in Turbine Overhaul Scheduling

A turbine overhaul proceeds through three distinct stages, each of which bears on the feasibility of dividing the work.

- **Staging of rotor and casing.** Multi-section rotors, blade rings, and casing halves are laid out across the shop floor in a sequence-dependent order. Reassembly cannot proceed until every component has been inspected in the required sequence.

[4]Entergy Arkansas, LLC v. FERC, No. 22-1335 (D.C. Cir. July 26, 2024), slip op. at 17 to 19 (observing that a resource owner may schedule extended maintenance across two seasons and that a 62-day outage so scheduled is permitted). See also Midcontinent Independent System Operator, Inc., 182 FERC ¶ 61,096 (2023).

[5]MISO Resource Adequacy Subcommittee, Minutes of the January 14, 2026 Meeting (posted Feb. 18, 2026) (recording that existing rules allow straddling of seasons, pushing outages into the higher risk Summer and Winter seasons, and that the CRNCC may lead to increased unplanned outages). See also stakeholder feedback, MISO, RASC: Planned Outage Modeling in LOLE (2024).

- **Removal of piping, crossover, and steam path components.** Crossover piping, valves, and steam path components are pulled to access the high-pressure, intermediate-pressure, and low-pressure sections of the turbine. Each interface must be re-fit, realigned, and pressure-tested before the unit returns to service.
- **Inspection of exposed internals.** With the upper casing lifted and internals fully exposed, blading, diaphragms, and seals undergo non-destructive examination for cracks, erosion, and clearance drift. Findings from that examination routinely extend the duration of the outage.

Steam paths are machined and aligned to tolerances measured in thousandths of an inch. Each additional teardown and reassembly cycle introduces an independent opportunity for error on reassembly. Performing that cycle once every seven to eight years presents materially lower risk than performing a partial version of it every two years for the purpose of remaining within a 31-day seasonal cap. The current rule therefore sets outage timing by the calendar rather than by the engineering needs of the unit.

Banking and Transfer of Outage Days

As a near-term measure, a 124-day flexibility pool would permit generating units to bank and transfer outage days across seasons and planning years, combining two years of allotted days for a total of 248 days over 24 months. The proposal alters which party determines when the days are used but does not alter how many days are available.

- The proposal does not increase the allowable outage time. The total number of days is unchanged.
- Resources would deploy those days based on the engineering needs of the unit rather than as the seasonal calendar allows.
- Operators would continue to coordinate outage timing with MISO in advance and would remain subject to reliability requirements where adequate reserve margins exist.
- The proposal removes the incentive to straddle season boundaries for the sole purpose of avoiding the non-compliance charge.
- MISO retains oversight because operators would continue to coordinate outage timing with MISO in advance.
- A single complete overhaul would replace the current pattern of repeated partial outages.
- The proposal aligns the accreditation consequences of an outage with the resource's actual reliability performance rather than with the calendar placement of its maintenance.

In short, the proposal retains the same total number of outage days, provides flexibility to the plant operator, and improves reliability outcomes for the MISO system.

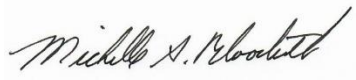
As a longer-term measure, the outage-day limit should be removed. MISO already coordinates outages with generators in real time and is positioned to continue without a fixed day-count penalty governing the schedule. Implementation would require review through the MISO stakeholder process and, depending on scope, FERC approval.

Consequences for the MISO Coal Fleet

In addition to the reliability consequences of simultaneously losing 40 GW of generating capacity at a time of potentially very high electricity demand, the 31-Day Planned Outage Rule

forces coal generators that must take these outages to forgo a substantial source of revenue (capacity payments) at a time of the year when capacity prices are favorable to coal generators. In fact, we estimate that the average coal generator in MISO receives more than 80% of its annual capacity revenues during June-August. These foregone revenues undermine the economics of the coal fleet and increase the risk of more coal retirements. We should point out that 19.1 GW (slightly less than half) of MISO's coal fleet is already expected to retire over the next five years.

We look forward to discussing this proposal with MISO at your earliest opportunity.



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