

RELIABILITY MUST RUN AGREEMENTS

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INTRODUCTION

Coal-fired and other thermal power plants provide attributes that are necessary to maintain a reliable electricity grid. However, half the existing coal fleet (more than 93,000 MW) has announced plans to retire by the end of 2030, with the likelihood of even more retirements due to EPA regulations. The premature retirement of unprecedented amounts of coal-fired generating capacity combined with the increasing penetration of renewable power sources, which do not provide certain reliability attributes, have prompted warnings about shortages of electric generating capacity and other potential reliability problems.

Reliability Must Run (RMR) Agreements have been used to keep power plants operating past their planned retirement dates in order to avoid reliability problems. This paper explains at a high level how RMR Agreements work. Because most of the coal fleet is located in four regions of the country, the paper focuses on the RMR process in each of those regions.

OVERVIEW

RMR Agreements, also referred to as System Support Resource (SSR) Agreements, are contracts negotiated between a regional transmission organization (RTO) or independent system operator (ISO) and an electricity generator that typically provide cost-based compensation in exchange for which the generator defers deactivation (retirement). (Throughout the rest of this paper, we refer to these collectively as “RTOs.”) RMR Agreements are subject to approval by the Federal Energy Regulatory Commission (FERC). There is no standard RMR Agreement across regions, so this section of the paper is written in generalities.

Once it receives a notice of planned deactivation, the RTO conducts a study of the reliability impacts if the generator were to retire. If the study indicates an unacceptable reliability impact and no other substitute resources can serve the need in a timely manner, the RTO may ask the generator to defer its deactivation.

A generator may be willing to defer deactivation because RMR Agreements generally provide payments sufficient for the generator to recover its costs of operation, including costs to obtain or update components of the facility, and earn a return. Agreements typically are short term, with an initial term of no longer than one year, subject to extension, but often with reserved RTO rights to terminate the agreement with prior notice, such as 60 or 90 days, whenever the RTO unilaterally determines the reliability need has ended.

RMR Agreements often are necessary because of local transmission limitations that result in the need for a generator in a particular area. In other words, because of a transmission bottleneck, a generator from outside the area cannot substitute for the generator in the constrained location, leading to the need for a specific generator. When

transmission upgrades or other changes that allow for improved power flows are placed in service, the RMR Agreement is no longer needed. In most cases, the generator is then expected to retire.

If the generator does not retire after the RMR Agreement is terminated, it may be obligated to return a portion of the financial support it received during the term of the Agreement. RMR Agreements also may severely restrict a generator's operations, which may be limited to emergency situations. RMR Agreements do not override compliance with environmental restrictions.

RMR Agreements are considered a last resort to be used only when there is no other cost-effective alternative. One reason RMR Agreements are disfavored is because RTO wholesale markets typically pay all generators in a specified region a single market clearing price based on the offer of the most expensive generator whose offer is accepted. When a high cost generator that otherwise would set the price leaves the market to be compensated under an Agreement, the price received by other generators is depressed. This can have a domino effect, leading other generators to require financial support to remain operational. While short-term use of RMR Agreements has been tolerated, out-of-market payments made to RMR generators are considered antithetical to wholesale competitive markets.

DRAWBACKS

Although RMR Agreements have been used in the past to avoid reliability problems, they have drawbacks, including the following:

- RMR Agreements are not meant to address resource adequacy problems and declining reserve margins caused by thermal retirements. Rather, RMR Agreements are meant to address temporary transmission security issues caused by a generator retirement. Agreements expire when transmission has been built to remedy the transmission security issue.
- There might not be sufficient financial incentive for a retiring generator to enter into an RMR Agreement, and a retiring generator typically cannot be forced to enter into an Agreement.
- RMR Agreements do not supersede environmental regulations, which could prevent a generator from continuing to operate or constrain its operations.
- A generator may be unable to secure sufficient fuel during the term of an RMR Agreement because of uncertainty over how much the plant will be called on to operate.
- RMR Agreements are typically contested, making resolution unpredictable and time consuming which is a disincentive for generators to pursue Agreements.
- Not all regions have an established process for defining the types of reliability problems that could or should be addressed by RMR Agreements.

AGREEMENTS BY REGION

- **PJM Interconnection, L.L.C.** The deactivation of generating units in the PJM region is governed by Part V of the PJM tariff. Generation owners must provide PJM with notice of their intention to deactivate a unit up to six months prior to the deactivation

date. PJM will conduct studies quarterly to determine a need for units proposing to deactivate. The notice gives PJM the opportunity to study the transmission system to determine if any of the deactivation notices submitted in advance of the study period could affect system reliability and to develop a plan for transmission upgrades.

PJM will notify the generator owner within 60 days from the end of the quarter during which the deactivation request was submitted if a reliability issue has been identified. This notice will include the specific reliability impact resulting from the proposed deactivation, as well as an initial estimate of the time it will take to complete the necessary transmission upgrades.

Generation owners have an unconditional right to deactivate their facility after the advance notice period has passed. However, if PJM finds a need for a facility's continued operation, the generation owner may elect to continue to operate past the planned deactivation date in order to maintain system reliability pending the completion of transmission upgrades. Such generators can negotiate compensation with the PJM Market Monitoring Unit or make a filing with FERC to recover the entire cost of operating the unit beyond the proposed deactivation date. PJM does not maintain a standard RMR Agreement in its tariff. However, past Agreements may be used as a model.

RMR cost-of-service filings typically will be set for hearing by FERC, with the ability to pursue settlement talks before a hearing date is set. The market monitor, PJM, and the incumbent transmission provider are among the parties that frequently elect to participate in the settlement discussions. While the settlement talks typically will not delay payment based on the cost support proposed in the FERC filing, the generator will be subject to a refund obligation, with interest, if the ultimately approved payment amounts are less than the filing sums. Therefore, the generator faces uncertainty during an extended period of time until a settlement is reached or an order issues after a hearing.

- **Midcontinent Independent System Operator** MISO uses SSR Agreements to provide cost-based compensation up to a unit's full cost of service. The current rules are detailed in Section 38.2.7 of the MISO tariff. However, MISO has announced plans to make a filing with FERC in November seeking to make certain changes. These tariff changes would not take effect until one full study period (approximately one calendar quarter) after the effective date of the tariff changes approved by FERC.

An SSR Agreement may only be entered into after all potential alternatives have been determined inadequate. The standard term of such an Agreement is 12 months, with the possibility for extensions. The SSR Agreement process is triggered by a notice that a generator seeks to suspend operations. The current tariff provides that this notice must be provided to MISO at least 26 weeks prior to the planned retirement date. During this 26-week notice period, MISO will conduct a study to determine whether all or a portion of the resource's capacity is required to maintain system reliability, in which case the generator may be eligible for an SSR designation.

MISO has concluded that the transition of the resource fleet to renewable energy resources and the timing of thermal retirements are driving a need for improvements to the tariff provisions involving SSR Agreements. As the resource fleet evolves,

MISO has reached the conclusion that it needs to review elements of its SSR process to ensure reliability is maintained. In particular, MISO has proposed an extended advance notice period for units seeking to deactivate, quarterly study kickoffs, and additional stability studies.

Instead of the 26-week prior notice of a planned suspension of operations, MISO's proposed tariff changes would require notice at least four full Quarterly Study Periods before the proposed suspension date, which equates to at least 52 weeks prior to the suspension, double the current notice period. MISO will work with the relevant transmission owner to determine whether the transmission system might experience violations of NERC Reliability Standards or local planning standards if the generator is deactivated. This study does not consider possible effects on the transmission systems of neighboring balancing authorities.

While the current tariff provides that MISO will endeavor to respond to the generator within 75 days of the date of its notice as to whether a transmission system reliability issue has been identified, the proposed tariff changes would more than double the time MISO has to produce study results to 150 days after the next Quarterly Study Period starts. If MISO finds a reliability issue and cannot identify an alternative to the SSR Agreement, then MISO will enter into an SSR Agreement to keep the facility in operation so long as its operation is not inconsistent with a legal or regulatory obligation. MISO will expect the unit owner to make good faith efforts to minimize the costs of improvements that are needed by seeking available waivers or exemptions from environmental or other regulatory requirements.

MISO will engage with stakeholders to discuss alternatives to the SSR designation. MISO must pursue an alternative to the SSR designation if one is identified. In particular, it must determine whether the need for the retiring facility can be satisfied in a timely manner by new generation, generation redispatch, energy storage, system reconfiguration and changes to operation guidelines, demand response and load control, and/or transmission projects.

Once a generator provides a notice of planned suspension, it retains rights to rescind that notice. However, there are financial consequences that serve as a disincentive to submitting a retirement notice to explore whether the unit would be eligible for an SSR Agreement. For example, if a generator submits a notice, is determined not to be eligible for an SSR Agreement and elects not to retire, it will be held responsible for the costs of MISO's studies.

MISO must avoid dispatching an SSR unit on an uneconomic basis whenever possible. The SSR unit is, however, permitted to offer into the market when doing so would not interfere with its ability to provide SSR service to MISO. Net revenues received from operations will be deducted from the SSR payments. MISO's standard compensation for SSR service is limited to no more than the costs incurred for extended operation up to the fixed costs. A generator may make a filing with FERC to seek any additional compensation, including capital improvements to comply with environmental requirements.

MISO regularly reviews SSR designations and its transmission system to determine whether designations should continue. Typically, MISO can provide notice of

termination of an SSR Agreement with as little as 60 days' notice, although notice of as little as 30 days has been negotiated in the past.

- **Southwest Power Pool** SPP does not have an established RMR or SSR process. Instead, it has a Generator Retirement Process, which is found in Attachment AB of its Tariff. The process sets out retirement notification procedures and allows SPP to evaluate the impacts of retiring generation on the SPP transmission system. A generator must provide notice to SPP one year prior to a proposed retirement date. SPP will then study the impact of the retirement with an initial screening within 30 calendar days and the possibility of more detailed studies based on those initial results.

SPP's inclusion of the Generator Retirement Process in its Tariff is a relatively recent development. The addition was triggered by the increase in generator retirements on the SPP system in recent years, as well as SPP's belief that this trend will continue. SPP's Generator Retirement Process focuses solely on transmission solutions through network upgrades. Because SPP does not have an equivalent RMR tariff process or standard agreement for compensating generators as in other RTOs, generators would have to convince FERC that SPP's failure to offer them a cost-based contract leads to unjust, unreasonable, and unduly discriminatory terms of service. A generator would do this by initiating a FERC proceeding, which can be a costly and uncertain process. Because of SPP's lack of a process, it is unlikely that an Agreement could be employed to stave off a reliability problem.

- **Electric Reliability Council of Texas** The protocols for RMR service in ERCOT are set forth in Section 3.14 of the ERCOT Nodal Protocols. ERCOT is not generally subject to FERC jurisdiction but has a process that involves reporting to its Board and dispute resolution through the Public Utility Commission of Texas (PUCT).

ERCOT may enter into an RMR Agreement with a retiring generator if ERCOT determines the resource is needed for voltage support, stability, or because of a local transmission constraint. Its protocols provide that it must limit the use of Agreements to the greatest extent possible. Unlike many other RTOs, a generator can voluntarily petition ERCOT for contracted RMR status. A generator cannot be forced to provide RMR service.

The generator must submit a Notice of Suspension of Operations to trigger ERCOT's consideration of an RMR Agreement. The notice is to be provided at least 150 days prior to any requested suspension date of more than 180 days and must commit to closure, absent a finding of reliability need. ERCOT will publicly post the notice, and, unlike other regions, allow a public comment period of 21 days. ERCOT will conduct a study of alternatives to the RMR Agreement, which it will post publicly.

Within 30 days of receiving the Notice of Suspension, ERCOT will issue a market notice as to whether the unit may need to continue operations. ERCOT is to complete its reliability studies within 60 days of the Notice of Suspension. Once it has reached a decision, ERCOT will publicly post notice of its determination of need for the generator. This will trigger the process of issuing a request for proposals to find an alternative to the generator. ERCOT will endeavor to set deadlines so that the process of identifying alternatives is completed within the 150-day period after the

Notice of Suspension was submitted. ERCOT will select the most cost-effective option between the RMR Agreement and other alternatives.

If ERCOT determines it needs the generator, the generator has 10 days to provide additional information to ERCOT, which should include an initial estimated budget of its Standby Cost and RMR fuel adder. Shortly thereafter, ERCOT and the generator will begin negotiations, even though an alternative may end up being more cost-effective. Should the 150-day notice period pass without a substantive determination of need by ERCOT, the generator may file a complaint with the PUCT. The ERCOT Board must approve ERCOT's execution of an RMR Agreement.

ERCOT may execute Agreements with an initial term that is at least one month in duration. Typically, the Agreement's term should not extend beyond one year. ERCOT may allow an exception to the one-year limit if the generator must make a significant capital expenditure to meet environmental requirements or to ensure availability. Even then, however, ERCOT will conduct an annual review and if that review indicates the resource is no longer needed, it will initiate exit negotiations. In fact, within 90 days of executing an Agreement, ERCOT must begin a private notification process to its Board of an exit strategy to the RMR Agreement by providing the Board with future cost-effective alternatives to its renewal. An Agreement may be extended for a subsequent term if the unit continues to be the most cost-effective solution.

QUESTIONS

Nationwide, more than 200 coal-fired generating units (totaling more than 93,000 MW) have announced plans to retire by 2030. However, this total does not include additional retirements that will result from future EPA regulations. Given the large number of expected coal retirements, the potential for reliability problems, and the drawbacks with RMR Agreements, there are at least four important questions that need to be considered by grid operators, generators, utility commissioners and policymakers:

1. *Are RMR Agreements an effective way to prevent a large number of coal retirements from causing both resource adequacy and reliability problems, or are there more effective ways?*
2. *Would grid operators need to change their RMR procedures in order to evaluate the resource adequacy and reliability impacts of a large number of coal retirements? How long would it take to make these procedural changes?*
3. *Would a large number of RMR Agreements be harmful to electricity markets? Are there other unfavorable consequences of a potentially large number of RMR Agreements?*
4. *Will EPA design its regulations to mitigate coal retirements and avoid increasing risks to reliability?*

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