UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Essential Reliability Services and the Evolving Bulk-Power System – Primary Frequency Response	)))	Docket No. RM16-6-000

COMMENTS OF THE R STREET INSTITUTE

Pursuant to the Federal Energy Regulatory Commission's (the "Commission" or "FERC") Notice of Proposed Rulemaking ("NOPR") issued on November 17, 2016,[1] the R Street Institute ("RSI") respectfully submits these comments in response to the Commission's proposed revisions to its *pro forma* Large Generator Interconnection Agreement ("LGIA") and the *pro forma* Small Generator Interconnection Agreement ("SGIA").[2] Specifically, the NOPR would revise the *pro forma* generator interconnection agreement to require all new interconnecting facilities to have primary frequency response (PFR) capability.

I. ABOUT THE R STREET INSTITUTE

The R Street Institute (RSI) is a pragmatic, free market oriented think tank. RSI aligns with such thinkers as Milton Friedman, Friedrich Hayek, Ronald A. Coase, James M. Buchanan and Arthur C. Pigou. RSI favors consumer choice; regulation that is transparent and applied equitably; and systems that rely on price signals rather than central planning.

RSI recognizes market failures – including public goods and externalities – are valid concerns governments must sometimes address. RSI also recognizes the nature of a democratic society often means agreeing on a compromise that may not always represent the first, best solution. RSI sees its role as offering research and analysis that advance the goals of a market-oriented society and efficient government, with the full realization that progress often occurs incrementally. In other words, RSI looks for free market victories on the margins.

In 2016, RSI launched an electricity policy program to research and promote consumer choice and economically sound market and rate design. RSI believes competitive electricity markets and consumer choice yield superior economic and environmental results relative to the regulated monopoly model.

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[1] *Essential Reliability Services and the Evolving Bulk-Power System – Primary Frequency Response*, Notice of Proposed Rulemaking, 157 FERC ¶ 61,122 (Nov. 17, 2016).
[2] NOPR at P 1.

II. COMMENTS

RSI supports the Commission's inquiry into PFR policy but is concerned with the prescriptive requirement of the NOPR. The need for PFR capability and provision has, and will continue, to grow substantially. This creates a compelling case to explore market-based solutions. Instead, however, the NOPR proposes a "one-size-fits-all" prescription more reminiscent of "command-and-control" policy than market-based policies that foster competition, drive innovation and meet reliability requirements at least-cost. As such, modifying the *pro forma* LGIA and *pro forma* SGIA to require new generators to install, maintain and operate a governor or equivalent controls for PFR capability may result in unjust, unreasonable and unduly discriminatory wholesale rates.

A. Proactive Market Design

The regional transmission organizations and independent system operators (RTO/ISOs) do not procure all essential reliability services (ERSs) through dedicated market processes. Specifically, no stand-alone PFR product exists in any RTO/ISO. This can result in an "incomplete market," where, despite private benefits outweighing private costs, markets do not materialize. Creating electricity market products that reflect distinct economic services remedies incomplete markets and reduces transactions costs. This provides the basis for creating organized electricity markets with well-defined, standardized products for discrete ERSs.

The most economically efficient manner to procure a discrete reliability service is through a dedicated product that compensates suppliers at competitive market rates. However, creating a new market would fail a cost-benefit test if the long-term marginal benefits of creating a market product do not outweigh its costs. Specifically, the net benefits of creating a dedicated ERC product would be negative if the incremental cost savings of a market-based approach were less than the cost to develop and implement a market-based reform (e.g., administration costs). Of course, whether a new PFR product would pass a cost-benefit test remains unclear and requires further analysis.

The decision to implement a dedicated market for PFR should hinge on projected benefits and costs. Relying on backcasting—as ERS analyses often do—underestimates the forward benefits stream of introducing a market product for an ERS with increasing demand and/or diminishing supply. As noted in the NOPR, the need to address PFR is important given the evolving generation mix. The North American Electric Reliability Corporation (NERC) recently identified that the growing number of variable energy resources (VERs) has resulted in increased need for operational flexibility, notably ERSs including

PFR, voltage support and ramping capability.[3] The reliability need for PFR and other ERS capabilities varies widely by RTO/ISO, indicating the future benefits of procuring additional PFR capability vary as well.

On account of competing needs and scarce resources to implement market reforms expeditiously, it is reasonable to expect RTO/ISOs will prioritize PFR reforms differently. At the same time, reactive approaches to sudden reliability needs are more likely to result in "Band-Aids" that compromise the quality of market design. This underscores the importance of proactive market design evaluation and reform.

Reliability and cost savings metrics are useful to determine the prioritization of creating a PFR product. For example, the NYISO independent market monitor notes that "market developments that are anticipated to save $10 million of investment and/or production costs per year for at least five years warrant a high priority designation."[4] The experience with the Midcontinent Independent System Operator's ramp capability product demonstrates the value of creating a distinct market product for an ERS that balances the RTO/ISO's reliability and economic needs with competing demands for other market enhancements.

B. NOPR Consequences

The NOPR appears inconsistent with established principles of market design. Revising the *pro forma* generator interconnection agreement to require PFR capability may result in rates that are unjust and unreasonable. Requiring resources that intend to provide one set of services to provide a separate service they otherwise find uneconomical, is unduly discriminatory.

A PFR capability mandate would likely result in higher, long-term production and capital costs compared to the RTO/ISOs each creating a capability-based PFR market with defined attributes facilitating competitive investment.

This would occur for five reasons:

1) *A blanket requirement will likely over-procure PFR capability*, at least initially. As with all ERSs, PFR levels needed to maintain reliability vary by region and over time, as highlighted by the NERC's 2016 Long-term Reliability Assessment. Markets account for this demand change, while

[3] North American Electric Reliability Corporation, "2016 Long-Term Reliability Assessment," December 2016. http://www.nerc.com/pa/RAPA/ra/Reliability%20Assessments%20DL/2016%20Long-Term%20Reliability%20Assessment.pdf

[4] David B. Patton, Pallas LeeVanSchaick and Jie Chen, "2015 State of the Market Report for the New York ISO Markets," Potomac Economics, May 2016. http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Reports/Market_Monitoring_Unit_Reports/2015/NYISO%202015%20SOM%20Report_5-23-2016-CORRECTED.pdf

a mandate ignores it. This will result in a mandate procuring excess PFR capability in regions not facing an imminent shortage, where marginal system costs exceed benefits.

2) *Mandates do not procure generator PFR capability cost-effectively*. Well-designed electricity markets allocate capital efficiently to meet reliability targets. Dictating capital resource allocation is economically inefficient. This is akin to mandating specific investments that improve capacity performance (e.g., requiring weatherization of coal facilities or mandating natural-gas plants have dual-fuel capability) instead of enabling capacity markets to allocate resources efficiently.
3) *Mandates diminish incentives to innovate*. Markets create incentives for innovation by encouraging voluntary actions to reduce costs or improve resource performance. Dictating investment stymies innovation in technologies that can provide PFR individually or in combination with other services. Since innovation drives-down long-term system procurement costs, a mandate would forego these cost reductions. This lost opportunity is sizable, as indicated by the industry need to research, develop and demonstrate new sources to provide frequency support amidst the growing share of VERs.[5]
4) *Requiring generator-only PFR capability precludes demand-side resources*. Demand-side resources can be equipped to provide PFR capability, as highlighted by demand response resources participating in the Electric Reliability Council of Texas's Load acting as a Resource program. To the extent demand-side resources provide cost-effective PFR capability, the generator mandate would result in higher-cost provision. A well-designed PFR market, on the other hand, would facilitate competition from supply- and demand-side resources.
5) *A mandate may raise costs for non-PFR services by deterring co-optimized investment*. For example, the added costs of PFR capability could change a resource decision originally intended to provide other service(s), including energy, capacity and market-based ancillary services. The alternative resource decision would be sup-optimal in a competitive market context. This could also raise costs for non-electricity products. Requiring industrial behind-the-meter generation to provide PFR capability would add direct costs and may raise operational concerns for manufacturing processes.

The NOPR does not serve as an effective bridge to a future period where a dedicated PFR market would have greater value. Instead, it sets the stage for an adverse path dependency in long-term

[5] National Renewable Energy Laboratory, "Role of Wind Power in Primary Frequency Response of an Interconnection. Conference Paper," September 2013. http://www.nrel.gov/docs/fy13osti/58995.pdf

market design, where an initial decision affects the optimality of subsequent market design changes. Requiring PFR capability would partially undermine the value proposition of later creating a PFR market by incurring sunk costs a market construct may otherwise avoid. This reduces the incremental value of avoided capital costs in PFR capability. It would also diminish the temporal and spatial value of a future PFR market to signal optimal investment in PFR capability when and where it proves most cost-effective.

The NOPR establishes a concerning precedent by requiring one type of ERS capability. Parties may extend this argument to require specific PFR settings or require capabilities for other ERSs. For example, as experience and interest in ramp capability products grows, this would raise the question of whether resources should be required to provide some level of ramp capability, thus creating a regulatory barrier to entry for resources seeking to provide some ERSs but not others.

C. Suggestions

The Commission should consider the creation of a PFR product in the RTO/ISOs to signal production *and* investment behavior. RSI respectfully requests FERC to modify its proposal to direct RTO/ISOs to study the procurement of PFR capability and/or delivery as voluntary, market-based compensated services. Specifically, the Commission could request the RTO/ISOs to create a preliminary blueprint of a dedicated PFR market along with projected future benefits under various generation mix scenarios as well as implementation and maintenance costs. This would enable a more robust accounting of the costs and benefits of adopting a PFR market vis-à-vis the current NOPR proposal.

At a minimum, such a blueprint should consider allowing generator and demand-side bids and offers—and resulting market-clearing prices—to reflect operating expenses and the opportunity costs of holding PFR in reserve. Market design evaluation could incorporate pay-for-performance principles, akin to those established in Order 755. It should also examine co-optimizing a PFR market with other ancillary services and the energy market to enhance economic efficiency. The California Independent System Operator has begun exploring a PFR market, and should seek to signal efficient capital investment in PFR capability, not merely production cost savings.

The Commission should grant RTO/ISOs flexibility to pursue PFR reforms at a pace that matches their system needs and the available institutional resources of the RTO/ISO and its respective stakeholders. At the same time, the Commission should ensure PFR procurement reform is *proactive*, since *reactive* approaches to reliability needs are more likely to result in “Band-Aids” that compromise the quality of market design.

To determine whether and when a PFR market is worth pursuing, the RTO/ISOs should weigh the future cost savings of a PFR market against the costs of market development and implementation.

The Commission could direct the RTO/ISOs to employ reliability and cost-benefit metrics that enable objective prioritization of potential PFR reforms, in context of competing market reforms.

If the Commission proceeds with revising the *pro forma* generator interconnection agreement requiring new interconnecting generators to have primary frequency response (PFR) capability, RSI stresses that it should limit the mandate to *new* interconnections and require RTO/ISOs to examine market-based constructs for the provision of delivered PFR.

III. CONCLUSION

In response to the NOPR, RSI respectfully requests the Commission consider the comments contained herein.

Respectfully submitted,

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