UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Reliability Technical Conference	)	Docket No. AD12-1-000
North American Electric Reliability Corporation	)	Docket No. RC11-6-000
	)	
Public Service Commission of South Carolina	)	Docket No. EL11-62-000
And the South Carolina Office of Regulatory Staff	)	Not Consolidated.

TESTIMONY OF MICHAEL J. KORMOS
SENIOR VICE PRESIDENT PJM INTERCONNECTION, L.L.C.

My name is Michael Kormos. I serve as Senior Vice President, PJM Interconnection, L.L.C. ("PJM") In this capacity I oversee PJM's operations and planning functions. In response to the November 9, 2011 Notice of the Federal Energy Regulatory Commission ("FERC" or "Commission"), and Commissioner Moeller's separate questions issued on November 14, 2011, my testimony will address the Commission's inquiry concerning the current state of processes in PJM for identifying unit-specific local or regional reliability issues in response to final regulations of the United States Environmental Protection Agency ("EPA"). Specifically, I will address:

- The proactive steps taken by PJM to analyze the impacts of EPA's proposed regulations on the reliability of the PJM grid;
- The present tools PJM has available to address retirement of units and outages resulting from retrofit decisions; and
- The "Reliability Safety Valve" proposal presented to EPA by PJM along with ERCOT, MISO, SPP and the NYISO.

In addition, although the Notice's questions are largely focused on the tools that planning authorities have to address the impact of unit retirements and retrofits, I note that question (d) for this panel asks about "other process changes that could help address reliability-related requests for exemptions from the EPA regulations." A number of Commissioner Moeller's questions are similarly broader in scope. Accordingly, in Part IV of this Testimony, I would like to address those steps that I believe the various Federal agencies can take proactively to ensure an integrated process for addressing the implementation of EPA's proposed rules.

A few caveats are in Order. PJM's primary mission as written into its Operating Agreement charges PJM to:

> direct the operation and coordinate the maintenance of the facilities of the PJM region . . . to maintain reliability of service and obtain benefits of pooling and interchange. . . .

We are the numbers people. Our focus is reliability and the operation of fair and efficient wholesale power markets, not the merits of environmental policy. Accordingly, we take no position on the overall merits of the EPA rules themselves from a public policy perspective. We are not in a position to weigh the public health impacts that EPA is seeking to address against the economic impacts of its actions. However, with our responsibility for reliability and safe operation of the grid written into our Operating Agreement, we do believe it is appropriate to comment upon what can be done holistically to ensure that the reliability of the grid is maintained if not enhanced in response to the implementation of the proposed EPA regulations.

Before delving into the specifics, I did want to address one issue that has led to much debate – namely, whether an overall reliability analysis should be undertaken

before EPA's rules are implemented and what that analysis might look like. To a certain extent, this issue presents a classic "chicken and egg" situation. Without knowing the specifics of which units might actually retire vs. which will retrofit, it is very difficult to pinpoint the exact reliability impacts and the breadth of transmission upgrades or other fixes that may be needed to address those actions. Moreover, generation owners will need to know the scope of the final EPA rules and their implementation timing before making retirement decisions. The best we can do at this point is identify, as PJM has done, the universe of "at risk" generation and outline the impact of various scenarios in order to "bookend" the problem. Thus, although we do not know the specific retirement and retrofit plans of individual generators in the PJM region, we have done this type of work and it certainly can be utilized as a guide for other regions. Whether or not FERC undertakes such a review is its decision – however, a reliability analysis of this scale must be able to evaluate the system at the generating unit level and incorporate local transmission attributes to accurately estimate the impacts of EPA regulations. As a result, although we take no position on whether FERC should undertake such an analysis on its own, we suggest additional steps for coordination and for reliability analysis among the various Federal agencies with jurisdictional responsibilities in this area. I suggest certain of those actions in response to the Commission's notice and Commissioner Moeller's questions in Part IV of this Testimony.

I. PJM's Analysis of the Potential Impacts of EPA Regulations

The PJM generation fleet today is heavily dominated by coal and includes considerable natural gas and nuclear. In 2010, coal-fired generation provided 41 percent of PJM's capacity and 49 percent of total energy production with natural gas

and nuclear making up the balance respectively. Although there are over 39,000 MW of wind resources in the interconnection queue, the reality is that today the fleet is overwhelmingly fossil-fuel based and will be dependent for the near future on fossil fuels even with a large influx of wind generation.

In August of this year, PJM released an analysis of the potential impacts of EPA's rules as they were known at the time on coal-fired capacity in PJM. The analysis concentrated on the proposed National Emission Standards for Hazardous Air Pollutants, also known as the Mercury and Air Toxics Standards, or MATS rule, as well as the Cross-State Air Pollution Rule, or CSAPR. The study estimated the amount of capacity revenues, given energy market revenues, which would be necessary to cover required environmental retrofit capital costs, and then benchmarked these costs versus the net cost of new entry for a natural gas combustion turbine to determine the risk of a unit retiring. The study results found that 11,000 MW coal capacity were severely at risk with another 14,000 MW of coal capacity were at risk for retirement.

These numbers, reflecting at risk generation, need to be considered in a broader context. We need to keep in mind that over 10,000 MW of new capacity and upgrades to existing capacity have cleared in PJM's capactiy market (*i.e.,* the Reliability Pricing Model, or "RPM") since its inception. Moreover, the interconnection queue contains approximately 20,000 MW of capacity that is eligible to bid into the upcoming Base Residual Auction under RPM,[1] all of which, if built, would need to meet EPA requirements. Also, in the last RPM auction, a record 14,118 MW of demand response

[1] This figure includes only those projets active in the queue that have listed in service dates prior to June 1, 2015.

resources have cleared and 822 MW of energy efficiency resources, all of which can serve as replacements for the retiring generation to maintain resource adequacy.

Thus, the retirement number per se is not, in and of itself, the full story. Rather the key question is whether any reliability solutions necessitated by a retiring unit, such as transmission upgrades, demand response or generation, can enter commercial service in a reasonable time and at a reasonable cost to substitute for the retiring units. The uncertainty around that question, as applied to units which we deem to be "reliability critical units" was the genesis for the "Reliability Safety Valve" proposal which I outline below. And, as we noted in the ISO/RTO Council's submittal to the EPA, the Reliability Safety Valve proposal is also intended to apply to units that are retrofitting but cannot meet the EPA deadlines.

The forward procurement nature of PJM's capacity market (*i.e.*, RPM) has taken a good deal of guesswork out of the equation. Units are required to make decisions as to whether or not to retrofit or retire three years ahead of the delivery year by submitting offers into the RPM Capacity Market. Units are *required* to submit offers into the Base Residual Auction unless they make clear that their failure to submit a bid is due to their intention to retire. As a result, PJM knows, with reasonable certainty, which Capacity Resources will be available to serve the load in the future -- a period which coincides with the proposed implementation date of the MATS rule and is well beyond the proposed implementation date of the Cross-State Air Pollution Rule. We take no position on the merits of various litigation undertaken seeking injunctions to halt or delay implementation of EPA's rules. However, the uncertainty of the details of EPA's final MATS rule and all of the surrounding litigation on CSAPR do complicate unit owners'

decisions whether to offer their units into RPM and whether to include the costs of environmental retrofits needed under the CSAPR and MATS rules. Nevertheless, the forward nature of the RPM capacity market allows for a degree of certainty and commitment that is absent in regions with little or no forward capacity commitments.

II. Today's Tools to Address Retiring Units

Below I outline the array of tools PJM has available through its Tariff and Operating Agreement to address the impact of the unavailability of retiring or retrofitting units. These tools are generally adequate but could be severely "stress tested" in the context of the implementation of EPA's regulations. Through past precedent, the Commission made very clear that PJM does not have the authority to prevent a unit from retiring even if such a unit is needed to maintain system reliability. Whether or not this is a correct reading of the law given the Commission's reliability authority is for others to debate. However, given this ruling, PJM's tools do not ensure that a unit needed for reliability remains in commercial operation. Rather, the tools address the ancillary issues surrounding a unit retiring or becoming unavailable due to a lengthy or complex retrofit. These tools include:

- Requiring that generators seeking to retire provide notice to PJM of their intentions so that PJM may address, through transmission upgrades or analysis of other alternatives, the impact of such retirements;
- The forward "must offer" commitment requirement on generators to offer into the RPM capacity market detailed above;
- PJM's authority to coordinate and approve the schedule of generator outages resulting from the retrofitting of units;
- The ability of the PJM Board, through the Regional Transmission Expansion Planning ("RTEP") process and pursuant to the Operating

Agreement to order transmission owners to upgrade their transmission systems to ensure compliance with applicable reliability criteria;

- The availability of Reliability Must Run agreements to compensate generators which otherwise would retire to remain in commercial operation to address identified local reliability issues;

- The ability of PJM to procure resources over and above the reliability target when cost effective and consistent with the RPM demand curve;

- The limited RPM backstop mechanism which allows PJM to hold a Reliability Backstop Auction if there is a lack of sufficient capacity committed through the Reliability Pricing Model Auctions or near-term transmission deliverability violations identified after the Base Residual Auction is conducted.[2]

The combination of these tools does work well together in normal situations to ensure adequate reliability. That being said, the number of potential retirements and retrofits, and the tight timeframe associated with same, could be unprecedented in scope, thus "stress testing" these tools to a degree to which they have not been utilized before. Unit owners seeking to retrofit units will all be going to a handful of vendors which provide control equipment. Each vendor's work schedule will consequently be affected by outside events such as the availability of steel and other raw materials as well as ensuring the availability of an expert labor force required simultaneously in multiple locations. Because reliability simply cannot be compromised in this process, PJM and the other affected RTOs proposed a "Reliability Safety Valve" to EPA to ensure flexibility from EPA on compliance timing and penalty exposure to address both the impact of retiring units and retrofitting units. This proposal is described below.

[2] The Reliability Backstop Auction is limited in nature as the triggering events require it is only triggered after a three year evaluation of either the installed reserve margin or the forecasted minimum hourly load.

III. The "Reliability Safety Valve" Proposal Presented to EPA by PJM along with ERCOT, MISO, SPP and the NYISO

Although based on the information provided to us to date PJM has not identified any overarching reliability impacts associated with potentially retiring units that cannot be resolved with transmission upgrades within the four year period allowed by the proposed MATS rule, we know better than to simply gamble on this outcome without providing an appropriate safety valve for changed circumstances. The lengthy process of trying to site five miles of transmission over existing right of way for the Susquehanna-Roseland project is proof enough that even minor transmission upgrades can be delayed by forces beyond our control and even beyond the control of the states in the PJM region that otherwise approved the upgrade. Moreover, the outage scheduling issues referenced above for retrofitting units are ones which cannot be meaningfully assessed until we know more about unit-specific plans to retrofit and the extent and timing of those retrofits. It is for this reason that PJM, along with MISO, NYISO, ERCOT and SPP proposed to EPA the "Reliability Safety Valve" approach.

The Safety Valve proposal is effectively designed to provide incentives for unit owners to provide early notice of their intentions to PJM, in the case of retiring units, to plan and order needed transmission reliability solutions. An owner of a unit deemed by the appropriate planning authority to be critical for maintaining reliability must provide such timely notice (identified in our proposal as at least two years before the compliance date of the rule). In that case, the owner would be eligible for relief from the penalty provisions of the proposed rule if PJM requires the unit to run beyond the compliance

date of the MATS rule. Unit owners that fail to provide this early notice (even if well-intentioned) leave PJM less time to put in place adequate transmission reliability solutions. In those cases, although PJM and the unit owner may well still seek permission from EPA for the unit to run beyond the compliance date of the MATS rule, the unit owner would not be guaranteed, up front, relief from penalties in those situations where notice is provided less than two years prior to the compliance date. In short, the two years notice that we proposed avoids unit owners potentially profiting from their own failure to provide notice by leaving PJM little time to order the necessary transmission reliability upgrades that would allow for the timely and reliable retirement of the unit in question. We also have made clear that a similar "Safety Valve" would be needed, on a unit-specific basis, to address the reliability impacts of retrofitting units that cannot meet the MATS deadline.

We have had constructive dialogue with EPA Staff on this proposal and feel that it is both well grounded legally and the only practical means to address the "chicken and egg" problem associated with affected units that I raised previously. We also believe that EPA needs, in its final rule, to provide up front guidance to the industry as to how it would exercise its penalty authority in these situations. This would ensure that a unit owner doesn't find itself faced with the Hobson's choice of being asked by the RTO to operate for reliability while, at the same time, facing potential penalties for doing so by the EPA or, more likely, the implementing state environmental regulatory authority. Without getting into the legalities, we believe this proposal is entirely in keeping with EPA's ability to express its intent as to how it would exercise its penalty authority through the consent decree process. In addition, I understand that a finding that a unit

is critical to maintaining system reliability beyond the four years otherwise allowed under the Clean Air Act is consistent with the President's authority under Section 112(i)(4) of the Clean Air Act to exempt compliance with any standard for up to 2 years (with the ability to extend for additional periods) if the technology to implement such standard is not available and it is in the national security interest to grant extensions.

By the same token, PJM and the other RTOs made clear that EPA needs to provide similar unit-specific relief where the RTO or other reliability authority determines that retrofits of units needed for reliability cannot be accomplished within the four years allotted under the MATS rule. The EPA proposal already allows for extensions where unit owners are retrofitting units or are retiring units but installing new units at the same site. However, we believe the same rationale, legal basis and mechanisms outlined in the RTO's Reliability Safety Valve proposal for retiring units needs to be utilized in the final rule to address any reliability impacts from unit retrofits that cannot be addressed within the tight timeframes ordered by EPA (and have so indicated to EPA).

IV. What the Federal Agencies Can Do

The Reliability Safety Valve is hardly bullet proof. For one, as I indicated earlier, this Commission has made clear that notwithstanding its reliability authority, the RTO has no authority to order a unit to operate even if needed for reliability. Although we can compensate the unit through an RMR contract, the potential for penalties from EPA if the Final MATS Rule is not clear, as well as the potential for citizen lawsuits, could drive a unit owner to simply decide to retire the unit notwithstanding the availability of RMR revenues. By the same token, although for PJM, unit retirements could be addressed through transmission upgrades because we are not forecasting any overall

resource adequacy issues, the same may not hold true for other regions. A region-wide resource adequacy issue could be much harder to solve, particularly for a region which lacks a forward capacity commitment or other means to ensure the timely construction of new generation.

For this reason, we do believe that further coordination is needed among the federal agencies. I say this respectfully as I am not aware of the level of coordination presently underway. However, a number of areas for coordination come to mind:

Improving the Application of the Secretary of Energy's 202(c) Authority and FERC's 207 Authority---Section 202(c) of the Federal Power Act gives the Secretary of Energy the authority to order units to operate when needed for reliability. On August 24, 2005, the DC Public Service Commission filed an emergency petition and complaint both at DOE and FERC when the Commonwealth of Virginia Department of Environmental Quality ("DEQ") moved aggressively to shutdown the Mirant (now GenOn) Potomac River Generating Station before certain transmission upgrades could be installed. Although the Secretary of Energy eventually issued the requested Order, the process was both slow and incomplete. While the DEQ filed its Motion seeking Emergency Relief back on August 24, 2005, the final Secretary's "Emergency Order" was not issued until December 20, 2005, some 4 months later. Moreover, due to the workings of the *ex parte* law at FERC and certain inter-agency deference, the parties were unable to communicate with this agency on the substance of the matter except through very formal processes each of which triggered its own critical energy infrastructure information ("CEII") implications. In short, a matter which should have been seen as an exercise of the two agencies executive responsibilities instead became

steeped in judicial processes which delayed relief and stilted communication. Finally, because the Secretary's Order was vague as to which environmental regulations would still apply to the Mirant plant, we understand that the company was ultimately fined by the Commonwealth of Virginia for the means by which it implemented the Secretary's Order.

If Section 202(c) is to be used as the ultimate backstop, then its application and the processes surrounding its use need to be clarified and streamlined. FERC and DOE processes should be transparent, but less beholden to time consuming process given the emergency nature of the Orders being sought. The relationship of the Secretary's Order to EPA's authority and the state's authority needs to be clarified and the residual responsibilities of the unit owner with respect to those environmental requirements for which it is being relieved should be spelled out in far greater detail to avoid the "double jeopardy" problem faced by Mirant. And finally, the deference to the reliability issues raised by the applicable retail body (in this case the DC Public Service Commission), needs to be better acknowledged and adhered to than was the case in the Potomac River situation. As indicated, at the end of the day the Secretary's Order was helpful. However, given the short timeframes and the potential number of affected units, we cannot afford the same process issues that we went through with the Potomac River Order to simply be repeated.

Additional Reliability Analyses---- I agree that a nationwide high level study of "what if's" may only work to delay implementation of the rules with little corresponding benefit absent more information from EPA and, based on that EPA information, from affected unit owners. On the other hand, we do believe that close

ongoing consultation between FERC and EPA on reliability issues is critical with a particular focus on developing appropriate mechanisms built in to ensure that reliability can be maintained under the schedules set by the proposed rules. This ongoing coordination could be accomplished in a number of ways. The RTOs' reliability safety valve provides one approach to this problem. However, should the EPA not accept this approach, then a specific provision in the final EPA rule which recognizes FERC's role in seeking a Presidential Order for extensions of the rule based on specific reliability findings provides another avenue of relief while allowing the important work on retrofitting units and implementing needed transmission upgrades to continue. Although the RTOs would commit to assist with data and analysis to support FERC's work in this area, at the end of the day FERC, as the authority charged by the Congress with ensuring the nation's reliability, is in the best position to accomplish this task.

We respectfully offer these suggestions in the spirit of providing our best thoughts on possible additional tools which could be developed. We understand that coordination between the affected agencies may already be underway and provide these additional options in response to the Commission's and Commissioner Moeller's inquiry as to what additional actions could be considered.

I thank you for your consideration and look forward to your questions.