



STATE OF DELAWARE
THE PUBLIC SERVICE COMMISSION
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May 26, 2015

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VIA ELECTRONIC DELIVERY

Mr. Howard Schneider
Chair, PJM Board of Managers
PJM Interconnection
PO Box 1525
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Re: **COMMENTS OF DELAWARE PUBLIC SERVICE COMMISSION
REGARDING TRANSMISSION EXPANSION ADVISORY COMMITTEE
("TEAC") RECOMMENDATION FOR ARTIFICIAL ISLAND
FACILITIES**

Dear Mr. Schneider,

At the April 28, 2015 TEAC meeting the PJM Staff provided its recommendation of the proposals to improve operational performance issues identified at Artificial Island ("AI") under a range of anticipated system conditions and to eliminate potential planning criteria violations (e.g., NERC, RFC, etc.) in the AI area. As requested at that meeting, the Delaware Public Service Commission ("Delaware PSC") hereby submits these comments regarding that recommendation. The Delaware PSC recognizes and appreciates that the ultimate decisions by the PJM Board regarding AI will be predominantly based on appropriate engineering and system reliability requirements. The Delaware PSC also recognizes and appreciates PJM's efforts in the extensive proposal window process to address and resolve the issues reflected in the AI operational difficulties. The Delaware PSC supports PJM's project recommendation and recognizes it offers not only system benefit, but also additional transmission support on the Delmarva Peninsula. However, as discussed further below, the Delaware PSC has significant concerns with the potential cost allocation impacts illustrated at recent TEAC meetings.

As an initial matter, it is important for the PJM Board to understand that the Delaware PSC recognizes and does not intend to disturb the cost allocation methodology in PJM's Tariff as approved by the FERC and included in PJM Manuals. However, to the extent that the cost allocation procedures are intended to recognize beneficiaries of transmission facilities, the Delaware PSC suggests that rationale is deficient in this case. The Delaware PSC would recommend to the PJM Board that there are unique, specific, and objectively determinable

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circumstances in this case that would justify additional studies to appropriately allocate costs consistent with the beneficiaries of the new facilities.

In response to the Regional Transmission Expansion Plan (“RTEP”) proposal window initiated by PJM to address the AI stability issues on April 29, 2013, there were 26 proposed solutions submitted and evaluated by the TEAC. There was a range of costs from \$100 million to \$1.550 billion and included 500kV and 230kV facilities as well as new transformation, substations, and additional circuit breakers. The proposals provided a diversity of station connections, a variety of routing options, project risks, resource requirements, and timelines. The Delaware PSC monitored the TEAC meetings and certainly appreciates the complexity required in the evaluation to reduce the proposals to a final recommendation. PJM staff will recommend to the Board for inclusion in the RTEP a new 230kV circuit from Salem to a new substation near the 230kV corridor in Delaware tapping the existing Red Lion to Cartanza and Red Lion to Cedar Creek 230 kV lines, utilizing Horizontal Directional Drilling under the river (“LS Power 5a”).

The Delaware PSC has not performed an independent analysis of the PJM staff final recommendations and takes no position at this time regarding the technical characteristics of the LS Power 5A (and supporting connection facilities). However, as presented by PJM staff, the LS Power 5A appears to provide both technical and economic benefits to the Delmarva zone. As discussed further below, however, the Delaware PSC has significant concerns regarding the ultimate cost responsibilities of PJM staff’s final recommendations.

In response to a request from the Delaware PSC Staff, at the May 8, 2014 TEAC meeting PJM provided examples of cost responsibility for a Load Ratio Share and a DFAX allocation. As shown on slide 37 of that presentation¹ for a 500kV facility, Delmarva Power & Light Company (“Delmarva”) was responsible for approximately 4.5% of the cost. The major responsibilities for the DFAX allocation of a 500kV facility included JCPL at approximately 51%. While the Delaware PSC takes no position at this time on the DFAX percentages shown in the example, the responsibilities appear logical in that cost responsibility is shared mainly among the entities in the New Jersey and Delaware transmission zones.

On the other hand, the cost allocation example for a 230kV facility such as the LS Power 5A displayed neither logic nor fairness. As shown on slide 38 of the May 8 TEAC presentation, the Delmarva zone would be assigned 100% of the cost for such a facility. It is not clear to the Delaware PSC why such a dramatic difference could occur in cost responsibility for a facility where the benefit of the project is to alleviate an operational problem in the New Jersey transmission zone and is the same for both facilities, yet the cost responsibility for the 230kV facility is assigned solely to the Delmarva transmission zone.

The Delaware PSC Staff estimates that the ultimate cost impact for the LS Power 5A and other AI facilities could be significant to Delaware transmission customers, including ratepayers of Delmarva.² Depending on the ultimate in-service costs of the LS Power 5A and other AI facilities, the cost impact could be nearly a 25% increase in Annual Transmission Revenue Requirements. Based on the last Annual Update filed by Delmarva, the Network Service Revenue

¹“May 8 TEAC presentation” <http://www.pjm.com/~media/committees-groups/committees/teac/20140508/20140508-item-01-reliability-analysis-update.ashx>

² The Delaware PSC additionally recognizes that the cost impact would also affect ratepayers of Old Dominion Electric Coop and the Delaware Municipal Electric Corporation.

Requirement for transmission service(s) effective June 1, 2014 was approximately \$121 million.³ Should the in-service costs for the LS Power 5A and other AI facilities assigned to Delmarva be estimated at \$200 million with a conservative 15% carrying charge, the impact on the current Network Service Revenue Requirement for Delmarva transmission service(s) would be \$30 million resulting in an increase of approximately 25%. In the view of the Delaware PSC, such an outcome is neither fair nor equitable and the resulting rate for transmission service(s) paid by Delmarva customers would not be just and reasonable.

What should be considered in this unique case is an appropriate assessment of the AI facilities that would reflect the benefits before and after construction of the new LS Power 5A. For example, when evaluating reliability projects for future periods, it appears that PJM's evaluations of costs and benefits of advancing reliability projects do contemplate such assessments. PJM Manual 14B: PJM Region Transmission Planning Process ("M-14B") provides as follows:⁴

2.6.4 Evaluation of cost / benefit of advancing reliability projects

PJM will perform annual market simulations and produce cost / benefit analysis of advancing reliability projects. An initial set of simulations will be conducted for current year plus 1 and current year plus 5 using the "as is" transmission network topology without modeling future RTEP upgrades. A second set of simulations will be conducted for each year using the as planned RTEP upgrades. A comparison of the "as is" and "as planned" simulations will identify constraints which have caused significant historical or simulated congestion costs but for which an as-planned upgrade will eliminate or relieve the congestion costs to the point that the constraint is no longer an economic concern.

On the other hand, it appears that PJM's baseline reliability upgrade cost allocation procedures do not include an assessment and comparison of "as is" and "as planned" simulations. PJM's M-14B provides as follows:

A.3 Schedule 12 Cost Allocation Process for Baseline Transmission Reliability Upgrades . . . Allocation of transmission upgrades for reliability is beneficiary based. With respect to reliability projects, while a definitive benefit is from the elimination of a reliability criteria violation, the benefit quantified for the purpose of cost allocation is the use of the upgrade by PJM load zones. The usage of the reliability project by a PJM load zone relative to the usage by all other PJM load zones will be used to determine the percentage cost responsibility to be assigned to the zone.

A.3.1 RTEP Baseline Reliability Upgrade Cost Allocation . . . Under this approach to cost allocation, it is entirely possible, and certainly consistent with the allocation philosophy, that the costs of upgrades in one transmission zone may be allocated in significant part to load in other transmission zones. While many required transmission upgrades are allocated entirely to load within the same zone where the criteria violation and the related upgrade are located, the nature of large, integrated transmission systems like the PJM system is such that transmission facilities in one area can be used

³ FERC Docket No. ER09-1158 annual update filing May 15, 2014
http://elibrary.ferc.gov/idmws/file_list.asp?document_id=14216771

⁴ The Delaware PSC "assumes" that the identification and relief of constraints would be similar to the identification and relief of the operational difficulties encountered at AI.

significantly to serve loads in other areas. The planning process identifies the most effective solutions to criteria violations and the resultant use of these solutions by loads may not be related to the physical location of the transmission upgrade. Therefore, responsibility for the costs of baseline reliability upgrades likewise shall be allocated to those who use these solutions, regardless of their physical location relative to the location of the baseline reliability upgrade required to ensure the reliability of their service.

As shown above, when evaluating reliability upgrades for future periods there is a specific comparison between “as is” and “as planned” facilities which does not occur when determining the cost allocation process for reliability projects. While PJM Staff recognized, in M-14B section A.3.1 above, that one zone’s required transmission reliability upgrades could be allocated to an entirely different zone based on load flows, they offered no potential mitigation for this issue. In this unique case, it would appear that in order to identify potential beneficiaries of new facilities, there should be assessments of “as is” of the existing AI facilities as well as “as planned” with the construction of the LS Power 5A.

Another example of potential beneficiaries of the LS Power 5A project, which is neglected in the current load flow cost allocation would be the expected improved system conditions that would allow maximum power output from all of the AI generation units without operational complexity. These assessments of limited generation operations with existing facilities compared to increased generation operations from all of the AI units after the installation of LS Power 5A should reflect the objectives of the original AI proposal window problem statement & requirements document as follows:⁵

1. Generate maximum power (3818 MW total) from all AI Units (Salem1: 1253MW, Salem-2: 1245MW, Hope Creek: 1320MW) without a minimum MVAR requirement from the AI. Full maximum power must be maintained under both the baseline and all N-1 outage conditions of 500kV transmission lines in the AI area. For both the baseline and N-1 outage conditions, AI voltage must be maintained within operating limits and stable for all NERC Category B and C contingencies. NERC Category C3 contingencies “N-1-1 contingencies” do not need to be run on top of the N-1 outage condition.
2. Maximum MW output from AI should not be affected by the simultaneous outage of Power System Stabilizers (PSS) of Artificial Island units Hope Creek and Salem-2. The Salem-1 PSS is assumed to be on for all scenarios.
3. Reduce operational complexity.
4. Improve Artificial Island stability.
5. Maintain PJM System Operating Limits (SOLs)

While these are the obvious benefits sought by PJM, there is no recognition of these benefits within the current cost allocation process. In the current allocation, enhanced New Jersey generation options, and generation company revenues, are predominantly paid by Delaware and Maryland rate payers. It does not appear that PJM has previously identified such benefits from enhanced operation of all of the AI generation units.

⁵ <http://www.pjm.com/~media/planning/rtep-dev/expan-plan-process/ferc-order-1000/rtep-proposal-windows/redacted-artificial-island-problem-statement.ashx>

Another example in M-14B where the identification of beneficiaries versus cost recovery does not appear consistent with the proposed cost responsibility of LS Power 5A is shown in section 2.5 as follows:

2.5 RTEP Cost Responsibility for Required Enhancements

. . . The cost responsibility for each baseline-revealed Network Reinforcement is borne by transmission owners based on the contribution to the need for the network reinforcement.

While the AI Area Network includes some Delmarva transmission facilities, it is not clear that those Delmarva facilities solely contributed to the need for the network reinforcement to address the operational complexity, stability issues, or other concerns with the operation of the AI generation units. PJM has not identified, to this point, the extent to which the Delmarva transmission facilities included in the AI Area Network supports the cost allocation proposed for the LS Power 5A.

The Delaware PSC requests that PJM perform the necessary simulations to identify the beneficiaries of the AI facilities before and after the construction of LS Power 5A through simulations of the “as is” and “as planned” facilities. The Delaware PSC suggests that reliance on a single DFAX of LS Power 5A showing just the usage of that new facility does not appropriately identify the beneficiaries of its construction and operation.

As mentioned previously, the Delaware PSC is not intending to protest PJM’s procedures regarding the evaluation of RTEP upgrades. In this case, however, there are unique, specific, and objectively determinable circumstances that would justify additional studies to appropriately allocate costs consistent with the beneficiaries of the new facilities. There are three coincident circumstances, when all are occurring with a proposed RTEP upgrade, which PJM should consider to justify additional studies (simulations) to determine cost allocation as follows:

1. Construction of a new facility that also requires new right(s) of way in addition to new equipment; and
2. The DFAX of the new facility assigns all (or nearly all) of the costs to a transmission zone which is different than the zone where the evaluation of the costs and benefits of the new facility was considered; and
3. The cost allocation resulting from a single DFAX would significantly increase the rates paid by customers for transmission service(s).

Recognition of these three unique, specific and objectively determined circumstances when they all occur with a proposed RTEP upgrade would allow PJM to provide the necessary additional information to implement appropriate cost allocation of transmission facilities corresponding to the beneficiaries of the construction and operation of those transmission facilities.

The Delaware PSC recognizes that cost allocation is within the Transmission Owners realm of authority and is anxious to resolve this concern without a lengthy protracted FERC process. As the Delaware PSC perceives it, the proposed cost allocation is unjust and unreasonable without a legitimate correlation to benefit.

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The PJM Board has previously shown leadership in the determination of the selection process for the Artificial Island proposals. At the July 2014 Board meeting, the PJM Board deferred selection for the Artificial Island project solution in order to obtain additional information concerning cost caps, scope of work, and project schedules which resulted in a final recommendation by PJM staff that was able to incorporate much needed material to support the approval of the LS Power 5A project now before the Board. The Delaware PSC would urge the PJM Board to continue its leadership in this matter and to include in its approval of the LS Power 5A project a requirement that PJM staff address and resolve the cost allocation issue as recommended in the above comments.

Please feel free to contact me or Mr. Robert Howatt our Executive Director, should you have any questions, or if I can be of further assistance in this matter.

Sincerely, Dallas



Winslow

Chairman
Delaware Public Service Commission

Copies:

Members, PJM Board

Mr. Craig Glazer, Vice President-Federal Government Policy, PJM

Mr. Steve Herling, PJM Vice President – Planning

Mr. Paul McGlynn, Chair, Transmission Expansion Advisory Committee
Commissioners, Delaware Public Service Commission

Mr. Robert Howatt, Executive Director, Delaware Public Service Commission

Ms. Janis Dillard, Deputy Director, Delaware Public Service Commission

Mr. David Bonar, Delaware Public Advocate