20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

*** COMPLAINT REQUESTING FAST TRACK PROCESSING ***

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Pepco Energy Services, Inc.	)	
Complainant	)	
v.	)	Docket No. EL08-____-000
PJM Interconnection, L.L.C.	)	
Respondent	)	

COMPLAINT OF PEPCO ENERGY SERVICES, INC.

Pursuant to Sections 206 and 306 of the Federal Power Act ("FPA")[1] and Rule 206 of the Rules of Practice and Procedure of the Federal Energy Regulatory Commission ("FERC" or the "Commission"),[2] Pepco Energy Services, Inc. ("PES") hereby submits this Complaint to modify unjust, unreasonable and unduly discriminatory provisions of PJM Interconnection, L.L.C.'s ("PJM") Open Access Transmission Tariff ("Tariff") as related to the rules governing the Peak-Hour-Period Availability Charge ("PHPAC") for infrequently-run generation resources under PJM's Reliability Pricing Model ("RPM").[3]

In order to provide incentives for generation resources to be available during critical "Peak-Hour Periods,"[4] RPM incorporates rules which impose charges or provide credits

---

1 16 U.S.C. §§ 824(e), 825e.

2 18 C.F.R. § 385.206 (2007).

3 The provisions implementing RPM are set forth in Attachment DD to the Tariff. Unless otherwise indicated herein, all capitalized terms have the same meaning as provided in the PJM Tariff, including in Attachment DD to the Tariff.

4 Peak-Hour Periods are comprised of approximately 500 hours (referred to herein as "Peak Hours") that fall within:

> the hour ending 1500 EPT through the hour ending 1900 EPT on any day during the calendar months of June through August that is not a Saturday, Sunday, or federal holidays, and the hour ending 800 EPT through the hour ending 900 EPT and the hour ending 1900 EPT through

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

to resources based on their availability in the Peak-Hour Periods of the relevant Delivery Year. As a general matter, these charges and credits are assessed based on a generation resource's Equivalent Forced Outage Rate during the approximately 500 hours that comprise the Peak-Hour Periods ("EFORp"). However, for an infrequently-run generation resource that has fewer than 50 total Service Hours during Peak Hours, these charges and credits are based not on the EFORp, but on the resource's actual Equivalent Demand Forced Outage Rate ("EFORd") for all 8,760 hours during the applicable Delivery Year.

As demonstrated herein, the current use of an EFORd metric to calculate PHPACs for infrequently-run generation resources is unjust, unreasonable and unduly discriminatory. The RPM Settlement Agreement ("RPM Settlement")[5] called for the use of special rules for seldom-run generation resources to protect such resources from being unduly penalized by PHPACs based on an EFORp measure. Unfortunately, the use of the EFORd metric for seldom-run generation resources has had the opposite result of what was intended in the RPM Settlement. As has become clear over the course of the current 2007-2008 Delivery Year, the first full year of RPM implementation, EFORd is an inaccurate and biased measure of Peak-Hour Period availability, and is therefore unjust and unreasonable when used to assess PHPACs. Specifically, EFORd is inaccurate and biased because a resource that is available during the approximately 500 Peak Hours can nonetheless be assessed substantial PHPACs if it is unavailable during the approximately 8,260 hours that fall *outside* of the Peak-Hour Periods. Moreover, the use of an EFORd measure also results in supposed Peak-Hour Period availability charges which unjustly

---

> the hour ending 2000 EPT on any day during the calendar months of January and February that is not a Saturday, Sunday or federal holiday.

Tariff, Attachment DD at § 10(b).

5 Settlement Agreement and Explanatory Statement of the Settling Parties Resolving All Issues, Docket Nos. ER05-1410-000, *et al.* (filed Sept. 29, 2006) ("September 29 Filing").

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

and unreasonably magnify the Capacity Resource Deficiency Charges that are imposed for all 8,760 hours of the same Delivery Year. As such, the EFORd metric has had the unintended effect of subjecting PES' and potentially other sellers' infrequently-run generation resources to unreasonably high PHPAC charges (or unreasonably low PHPAC charges or even credits) that are unrelated to their availability during Peak Hours.

The current use of an EFORd metric to calculate the availability of infrequently-run generation resources during Peak-Hour Periods is also unduly discriminatory because it subjects these resources to a risk of PHPACs that are disproportionately greater than those faced by other generation resources whose PHPACs are calculated using the EFORp metric. The reason for this is straightforward: the EFORp measure is calculated *excluding* days during the approximately 500 Peak Hours when the resource was not available because of delays, cancellations, retirements, de-ratings, or rating test failures that resulted in charges or penalties. In sharp contrast, the current EFORd metric is calculated for all days during the 8,760 hours in a Delivery Year, without exceptions. This results in the double-counting of RPM-related charges and penalties for infrequently-run resources but not for other resources, an unduly discriminatory treatment that does nothing to advance the goals underlying the PHPAC.

Not only are PJM's current PHPAC rules applicable to infrequently-run generation resources unjust, unreasonable and unduly discriminatory, they also threaten reliability in PJM. Indeed, the risk of heightened PHPACs can, all other things being equal, result in infrequently-run generation resources being unable to recover their going forward costs and to therefore seek to retire. While RPM was intended to provide incentives for the entry of new capacity resources and the retention of existing resources needed to ensure resource adequacy in the PJM Region, the PHPAC rules can have the opposite effect by causing existing

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

infrequently-run generation resources already in precarious economic situations to shut down and withdraw from the market. This result could be harmful for PJM, which is already experiencing reliability concerns in Southwest MAAC and other regions.

Because the current PHPAC rules as applied to infrequently-run generation resources have not worked as intended, and because they produce an unjust, unreasonable and unduly discriminatory result, PES respectfully requests that the Commission: (1) exempt generation resources with fewer than 50 total Service Hours during the Peak-Hour Periods from PHPAC penalties or credits for the 2007-2008 Delivery Year, such that these resources will neither be harmed by, nor benefit from, their operations outside the critical Peak Hours for this Delivery Year; (2) direct PJM to replace the current EFORd-based metric with an EFORp-based metric for all generation resources for the 2008-2009 Delivery Year; and (3) direct PJM to immediately commence a stakeholder process to consider the design and implementation of a more appropriate Peak-Hour Period availability metric for infrequently-run generation resources that is consistent with what was intended in the RPM Settlement, and to make a filing under Section 205 of the FPA proposing such a metric in time for implementation prior to the start of the 2009-2010 Delivery Year.

A suitable replacement for the currently unjust, unreasonable and unduly discriminatory EFORd-based metric for calculating the availability of infrequently-run generation resources during Peak-Hour Periods must be in place before the 2008-2009 Delivery Year commences on June 1, 2008. Moreover, it would be prudent for the Commission to remedy the currently flawed Tariff provisions applicable to infrequently-run resources before Peak-Hour Period availability charges and credits for the 2007-2008 Delivery Year are finally calculated and assessed, which, under the Tariff, PJM's Office of the Interconnection is supposed to do by

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

May 31, 2008 (though PJM recently has indicated that this will not occur until August). Accordingly, PES respectfully requests that the Commission use its Fast Track procedures to allow an order on this Complaint to be issued before May 31, 2008, and to shorten the comment period for this Complaint such that any answers or comments will be due on **May 9, 2008**.

I. DESCRIPTION OF PES AND COMMUNICATIONS

A. PES

PES, a direct, wholly-owned subsidiary of Pepco Holdings, Inc., is a corporation organized and existing under the laws of the state of Delaware. PES and its subsidiaries provide energy efficiency contracting, central plant and other equipment construction, operation and maintenance services, and conduct natural gas and electric marketing. PES and/or its subsidiaries either own or exercise control over approximately 800 MW of generation located within PJM. PES has authorization from the Commission to sell power and energy in wholesale markets at market-based rates. PES also has authority from various states and the District of Columbia to sell retail electricity and natural gas at competitive prices to residential, commercial, industrial and governmental customers.

B. Communications

The persons to whom correspondence, pleadings, and other materials regarding this proceeding should be addressed and whose names are to be placed on the Commission's official service list on behalf of PES are designated as follows:

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

Peter E. Meier*
General Counsel
Pepco Energy Services, Inc.
1300 North 17th Street, Suite 1600
Arlington, VA 22209
Tel: (703) 253-1840
Fax: (703) 253-1696
pmeier@pepcoenergy.com

Michael J. Gergen
Jared W. Johnson
Stephanie S. Lim*
Latham & Watkins LLP
555 Eleventh Street, N.W., Suite 1000
Washington, D.C. 20004
Tel: (202) 637-2200
Fax: (202) 637-2201
michael.gergen@lw.com
jared.johnson@lw.com
stephanie.lim@lw.com

* Designated for service

II. BACKGROUND

A. Commission Approval Of RPM

On August 31, 2005, PJM filed its RPM proposal with the Commission to replace its then-existing capacity construct.[6] In an order issued on April 20, 2006, the Commission found that PJM's then-existing capacity construct was "unjust and unreasonable as a long-term capacity solution, because it fails to set prices adequate to ensure energy resources to meet its reliability responsibilities."[7] Nonetheless, the Commission set PJM's proposal for further proceedings because "elements of the proposal need further development and elaboration."[8] On September 29, 2006, PJM and numerous market participants (together, the "Settling Parties") filed the RPM Settlement proposing revisions to PJM's Tariff, Operating Agreement, and Reliability Assurance Agreement, which reflected certain modifications to the RPM market rules originally proposed by PJM, and which would replace PJM's then-existing capacity construct

---

6 *See* PJM Interconnection, L.L.C., Docket Nos. ER05-1410-000 and EL05-148-000 (Aug. 31, 2005).

7 *PJM Interconnection, L.L.C.*, 115 FERC ¶ 61,079 at P 5 (2006). *See also id.* at P 29.

8 *Id.* at P 6.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

with RPM beginning on June 1, 2007. The Commission approved the RPM Settlement with modifications on December 22, 2006.[9]

B. Peak-Hour-Period Availability Charges And Credits

The intent underlying the PHPAC is "[t]o preserve and maintain the reliability of the PJM Region and to encourage Capacity Market Sellers to maintain the availability of Generation Capacity Resources during critical peak hours of the Delivery Year...."[10] Under its PHPAC rules, PJM assesses whether a generation resource[11] is available at expected levels during the defined Peak-Hour Periods, and assesses charges or credits to the extent that the resource falls short of or exceeds its expected availability.

As a general matter, a generating unit's availability during Peak-Hour Periods is measured by first calculating the EFORp for the unit. The EFORp for a unit is determined using the sum of the forced full and partial outage hours when the unit is needed, divided by Service Hours plus forced outage hours when needed,[12] where PJM determines if a unit is needed based on whether the cost-based offer for the unit would be less than the real-time locational marginal price, or when PJM would have called upon the resource (absent the outage) for operating reserves.[13] Notably, the calculation of a resource's EFORp excludes "any day such ... resource was unavailable if such unavailability resulted in a charge or penalty due to delay, cancellation,

---

9 *PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,331 (2006) ("December 22 Order"), *order on reh'g*, 119 FERC ¶ 61,318 (2007).

10 Tariff, Attachment DD at § 10(a).

11 The PHPAC rules do not apply to wind or solar resources. *Id.* at § 10(a).

12 *Id.* at § 10(c). *See also* PJM Manual 18: PJM Capacity Market at 93 (Revision 3, Apr. 1, 2008) ("PJM Manual 18"), *available at*: http://www.pjm.com/contributions/pjm-manuals/pdf/m18.pdf.

13 Tariff, Attachment DD at § 10(e); PJM Manual 18 at 94.

retirement, de-rating, or rating test failure."[14] Based on a resource's EFORp, PJM then calculates the Peak Period Capacity Available ("PCAP") for the resource, using the following formula: PCAP = (Installed Capacity ("ICAP") Rating of unit) * (1.0 – EFORp).[15]

However, to the extent that a generation resource has fewer than 50 total Service Hours during Peak-Hour Periods, PJM does not use the EFORp and PCAP calculations described above. Instead, for such an infrequently-run generation resource, the EFORp is replaced with "the resource's EFORd … considering all hours in the Delivery Year…."[16] At the same time, the PCAP is replaced with the resource's Unforced Capacity ("UCAP") for all hours in the Delivery Year.[17] The RPM Settlement stated that the PHPAC rules therefore "protect[] sellers … by establishing special rules for units that run very few hours during the year…."[18]

To determine whether a resource fell short or exceeded its expected availability during Peak-Hour Periods, PJM compares the resource's PCAP (or UCAP for generation resources with fewer than 50 Service Hours during Peak Hours) to its Target Unforced Capacity ("TCAP"), which, in turn, is based on the resource's EFORd for the five preceding Delivery Years.[19] Resources that experience a shortfall in PCAP are assessed a PHPAC that is equal to

---

14 Tariff, Attachment DD at § 10(e). *See also* PJM Manual 18 at 94-95 ("If a summer/winter capability test resulted in a partial forced outage that was entered by PJM in eGADs, the partial forced outage will not be considered in the calculation of the unit's EFORp…. During the time period that a unit is delayed or retired, forced outages are not reported on the unit. As a result, performance of the unit during the time it is delayed or retired is not considered in the calculation of the unit's EFORp."). In addition, natural-gas fired generators will be excused from failure to perform during the Winter season if such failure was a result of gas being unavailable. Tariff, Attachment DD at § 10(e). *See also* PJM Manual 18 at 95.

15 Tariff, Attachment DD at § 10(c).

16 *Id.* at § 10(f); *see also* PJM Manual 18 at 94.

17 Tariff, Attachment DD at § 10(f).

18 September 29 Filing, Explanatory Statement at 36.

19 Tariff, Attachment DD at §§ 10(d), (g).

the shortfall amount multiplied by the Capacity Resource Clearing Price for the applicable Locational Delivery Area ("LDA").

Any revenues from PHPACs are distributed to sellers in the applicable LDA that exceed their PCAP for the Delivery Year. To the extent that there are any excess revenues, such excess is distributed to load-serving entities ("LSEs") on a pro-rata basis.[20] To the extent that there are insufficient revenues to fund sellers that exceed their PCAP for the Delivery Year, this amount remains unfunded and is not paid. Under its Tariff, PJM will provide final charges and credits for a Delivery Year "within three calendar months following the end of the winter period"[21]—*i.e.*, by May 31 of each year. However, PJM recently informed market participants that these charges and credits for the 2007-2008 Delivery Year would not be calculated and assessed until August 2008.[22]

C. Stakeholder Process

As described in the attached Affidavit of James E. Newton, Vice President of Commercial Operations of PES ("Newton Affidavit," provided as Attachment A hereto), based on their historical operations as well as their Peak Hour operations through the end of Summer 2007, PES had believed that each of the generation units owned or controlled by PES and its subsidiaries would exceed 50 total Service Hours during Peak Hours. However, in February 2008, PES realized that certain of these generation units would not meet the 50 Peak Hour threshold and would therefore be assessed PHPACs based on their EFORd. On March 17, 2008, PES made a presentation to the RPM Working Group regarding flaws in the EFORd metric as

---

20 *Id.* at § 10(k).

21 *Id.* at § 10(l).

22 *See* PJM, EFORp Update at 4 (Presentation to RPM Working Group, Mar. 20, 2008), *available at:* http://www.pjm.com/committees/working-groups/rpmwg/downloads/20080320-item-04b-eforp-update.pdf.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

used to determine PHPACs for infrequently-run generation resources. On March 26, 2008, PES also made a presentation on these issues to the PJM Market Implementation Committee. Although there were stakeholder discussions on these presentations, no resolution was reached.[23]

III. COMPLAINT

As explained in the Explanatory Statement accompanying the RPM Settlement, the PHPAC rules were intended to provide incentives for generation resources to ensure that they would be available during the critical Peak Hours, but were also designed to "protect sellers … by establishing special rules for units that run very few hours during the year…."[24] During the course of the current 2007-2008 Delivery Year (the first full year of RPM implementation), however, it has become clear that the PHPAC rules can have the opposite effect by applying an inaccurate and biased availability metric to seldom-run generation resources that can result in such resources being assessed unjust, unreasonable and unduly discriminatory PHPACs that are wholly unrelated to their Peak Hour performance.

Specifically, it is now clear that the current use of an EFORd metric for a generation resource that has fewer than 50 Service Hours during Peak-Hour Periods can in fact result in PHPACs that would be substantially greater than those imposed under an EFORp metric. Critically, because the EFORd metric for infrequently-run generation resources is calculated based on all 8,760 hours of a Delivery Year, this would mean that an infrequently-run resource could incur PHPAC penalties because of its unavailability during the approximately 8,260 hours that fall *outside* the defined Peak-Hour Periods. Moreover, the EFORd metric is used to assess what are supposed to be two entirely different penalties—PHPACs and Capacity

---

23 Newton Affidavit at ¶¶ 15-17.

24 September 29 Filing, Explanatory Statement at 36.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

Resource Deficiency Charges—resulting in infrequently-run resources being penalized twice for their relative availability during every hour of a Delivery Year.

In addition, the existing PHPAC rules further penalize and discriminate against infrequently-run resources by stating that the EFORd for such resources must take into account all hours during a Delivery Year, while providing exemptions to the EFORp calculation for generation resources that have at least 50 Service Hours during Peak Hours. This discriminatory treatment results in infrequently-run generators being assessed PHPAC penalties based on a less forgiving availability metric than other generators whose availability charges and credits for Peak-Hour Periods are calculated using the exemptions in the EFORp availability metric.

Because the current PHPAC rules subject generation resources with fewer than 50 Service Hours during Peak-Hour Periods to an inaccurate and biased availability metric that results in unintended and unjust, unreasonable and unduly discriminatory charges, the Commission should find such resources to be exempt from Peak-Hour Period availability charges and credits for the 2007-2008 Delivery Year. In addition, the Commission should remedy this problem on an ongoing basis by directing PJM to modify its Tariff to assess PHPACs based on an EFORp metric for all generators for the 2008-2009 Delivery Year, and by further directing PJM to utilize its stakeholder procedures to examine alternative approaches for calculating PHPACs for infrequently-run generation resources and to make a filing with the Commission proposing a replacement methodology in time for the 2009-2010 Delivery Year.

The 2008-2009 Delivery Year will commence shortly, on June 1, 2008, and market participants need certainty on the availability metric that will be applied to infrequently-run generation resources. In addition, under its Tariff, PJM is supposed to provide final PHPAC charges and credits for the 2007-2008 Delivery Year by May 31, 2008, though PJM recently

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

reported to market participants that this would not occur until August 2008. As such, prompt Commission action is required to address the inaccurate and biased EFORd metric that results in unjust, unreasonable and unduly discriminatory PHPACs for infrequently-run generation resources.

A. The PHPAC Rules Were Originally Intended To Provide Protections For Infrequently-Run Generation Resources

The use of an EFORd availability metric to assess PHPACs for infrequently-run generation resources was apparently motivated by the belief that this would shield such resources from excessive PHPACs. Indeed, the Explanatory Statement accompanying the RPM Settlement states that the PHPAC rules "protect[] sellers … by establishing special rules for units that run very few hours during the year…."[25]

As explained in the attached Affidavit of Scott W. Niemann ("Niemann Affidavit," provided as Attachment B hereto), the "special rules" applicable to generators that run for very few hours during Peak-Hour Periods apparently reflect the concern that such generators can have very volatile EFORp calculations that could subject them to large PHPACs. Dr. Niemann explains that the use of EFORp (which only takes into account approximately 6 percent of the total hours in a Delivery Year), can fail to provide a statistically robust measure of the availability of an infrequently-run resource. Therefore, the Settling Parties apparently decided to use an EFORd metric for calculating PHPACs for resources with fewer than 50 Service Hours during Peak Hours based on the belief that "[e]xpanding the sample period could include more data, hence increasing confidence that the availability metric is capturing some underlying 'true' reliability measure for an infrequently dispatched unit rather than being driven

[25] September 29 Filing, Explanatory Statement at 36.

by a few anomalous forced outages during the less than 10 percent of Peak Hours that such a unit might be dispatched."[26]

The Commission approved the PHPAC rules proposed in the RPM Settlement without comment or modification, apparently accepting the Settling Parties' belief that these rules would, in practice, operate as intended to protect infrequently-run generation resources from inappropriately large PHPACs.

B. PJM's Existing Use Of An EFORd Metric Results In The Imposition Of Unjust, Unreasonable And Unduly Discriminatory Peak-Hour Period Availability Penalties On Infrequently-Run Generation Resources

Despite the original intent underlying the use of an EFORd metric to determine the availability of infrequently-run generation resources during Peak-Hour Periods, this metric is an inaccurate and biased measure of Peak Hour performance, and results in unjust, unreasonable and unduly discriminatory PHPACs for seldom-run resources.

1. Use of an EFORd Metric for Infrequently-Run Generation Resources Results in Penalties Unrelated to Peak Hour Availability

As discussed above, the use of an EFORd metric to determine the availability of seldom-run generation resources during Peak Hours was intended to protect these resources from large PHPACs while still focusing on their availability during Peak Hours. In practice, this has not proven to be the case.

Critically, the EFORd metric is an inaccurate and biased measure of Peak-Hour Period availability because it is based on a seldom-run generation resource's availability during *all* 8,760 hours of a Delivery Year. As a result, PHPACs assessed using this metric can bear almost no relationship to the availability of generation resources during the approximately 500 Peak Hours. This outcome is made clear by a simple example provided by Dr. Niemann. Under

---

[26] Niemann Affidavit at ¶ 25.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

this example, two 300 MW generators experience virtually identical performance for all months during a Delivery Year, including extended forced outages that result in both generators being unavailable for months during an off-peak season. The only difference between the two generators is that one of them is called on by PJM for 15 additional Peak Hours, and therefore meets the 50-Peak Hour threshold, while the second generator is not dispatched (even though it was available) and is only deemed to be needed by PJM for 42 Peak Hours. The first generator would be assessed PHPACs based on the EFORp metric, and because it was available during all the hours it was deemed to be needed by PJM during the Peak-Hour Periods, is eligible for a substantial Peak-Hour Period availability credit. The second generator (which was always available during the Peak-Hour Periods) is assessed PHPACs based on the EFORd metric. While the first generator's extended forced outage during the off-peak season is not taken into account under the EFORp metric, the second generator's EFORd calculations take that outage into account, resulting in it being assessed exceedingly high PHPACs.[27]

Mr. Newton also demonstrates that the use of an EFORp metric can result in unjustifiably increased PHPACs. In particular, Mr. Newton explains that, for June through August 2007, PES' Buzzard Point #16 unit would have an estimated 16.25% EFORd, but only a 2.06% EFORp. Assuming that these figures were applied to the entirety of the 2007-2008 Delivery Year, and based on a Capacity Resource Clearing Price of $188.05, this would mean that the Buzzard Point #16 unit would be charged approximately $158,300 in PHPACs under an EFORd metric, but would only be charged approximately $2,065 in PHPACs if an EFORp

[27] *See id.* at ¶ 30, Exh. SWN-2.

metric were used.[28] Again, this demonstrates that the use of an EFORd metric can result in dramatically increased PHPACs for an infrequently-run unit.

In addition, as both Mr. Newton and Dr. Niemann explain, EFORd is not only used to determine PHPACs for infrequently-run resources, but is also the basis for the imposition of Capacity Resource Deficiency Charges. Thus, an infrequently-run resource that experiences a forced outage (even one outside of the Peak-Hour Periods) will be penalized doubly for an increase in EFORd—once, through the imposition of Capacity Resource Deficiency Charges, and again, through the imposition of PHPACs.[29] There is no economic or other rationale for this duplication of charges. Indeed, not only do infrequently-run generation resources potentially incur PHPACs based on forced outages that occur outside the Peak Hours, but these duplicative charges do not provide any incentives for such resources to make themselves available during the critical Peak Hours.

As the Commission has recognized:

> The Commission has the responsibility of examining whether penalty provisions are just and reasonable, necessary and appropriate to protect against system reliability problems. Penalties should be *narrowly designed* to balance the need to deter conduct that is harmful to the system with the need to limit excessive and unnecessary costs.[30]

---

28 Newton Affidavit at ¶ 10, Table #1.

29 *See id.* at ¶ 9, 10; Niemann Affidavit at ¶ 32.

30 *Mirant Kendall, LLC*, 110 FERC ¶ 61,272 at P 17 (2005) (emphasis added). *See also, e.g., Cal. Indep. Sys. Operator Corp.*, 106 FERC ¶ 61,179 at P 29 (2004) ("many of the proposed penalties are not commensurate with the conduct to be deterred and, therefore, are not just and reasonable."); *Columbia Gas Transmission Corp.*, 116 FERC ¶ 61,097 at P 14 (2006) (rejecting a proposed penalty which "goes beyond what is necessary either: (1) to accomplish the primary purpose of penalties of preventing impairment of reliable service; or (2) to minimize costly arbitrage."); *Texas Gas Transmission Corp.*, 96 FERC ¶ 61,318 at 62,218 (2001) ("any change that is beyond what is necessary to remove a customer's incentive to game the system and unnecessarily removes a customer's flexibility would be an inappropriate penalty.")

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

In this case, however, the use of an EFORd metric results in PHPACs that are almost completely unrelated to Peak Hour availability and which fail to advance the goals underlying the PHPAC rules. As a result, the current use of an EFORd metric to determine PHPACs for infrequently-run generation resources is plainly unjust and unreasonable.

2. The PHPAC Rules Unduly Discriminate Against Infrequently-Run Generation Resources

As described above, infrequently-run resources are assessed PHPACs based on an EFORd metric that is calculated for all hours of a Delivery Year. By contrast, for resources that meet the 50 Peak Hour threshold, PHPACs are based on an EFORp metric that is calculated with exemptions for "any day such … resource was unavailable if such unavailability resulted in a charge or penalty due to delay, cancellation, retirement, de-rating, or rating test failure."[31]

As Dr. Niemann explains, because of the differences in the EFORp and EFORd calculations, the existing rules result in infrequently-run resources being assessed additional penalties that are not imposed on resources that meet the 50 Peak Hour threshold. In particular, Dr. Niemann explains that, under the RPM rules, a Generation Resource Rating Test Failure Charge is imposed where there is a difference between the amount of UCAP committed by a resource and the UCAP level resulting from seasonal tests of the resource. Under the current PHPAC rules, the rating test failure would be exempted from the EFORp calculation, such that a resource would not incur double penalties (i.e., a PHPAC, as well as the Generation Resource Rating Test Failure Charge).[32] However, because there are no such exemptions from the EFORp calculation, an infrequently-run resource would "face much larger total charges than generation resources that are called to run more frequently, increasing the effective penalty for a rating test

---

31 Tariff, Attachment DD at § 10(e). *See also* PJM Manual 18 at 94-95.

32 Niemann Affidavit at ¶ 34.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

failure from the capacity clearing price times two up to that price times three (i.e., the Daily Deficiency Rate plus the maximum charge under the Peak-Hour Period Availability Charge)."[33]

Excluding infrequently-run generation resources from the exemptions that are available to other generators not only lacks any logical basis, but also results in the imposition of unduly discriminatory penalties. Indeed, the existing rules could result in a resource that has 49 Service Hours during Peak Hours incurring double penalties which a resource that has just one more hour of service would be able to avoid. This is an arbitrary and unduly discriminatory result, and is further contrary to the Commission's consistent directive that penalties be narrowly tailored to meet their stated purpose.[34]

3. The Use Of An EFORd Metric Fails To Protect Infrequently-Run Generation Resources From Volatile PHPACs

As Dr. Niemann explains, the use of an EFORd metric to assess PHPACs for infrequently-run generation resources was apparently intended to avoid the volatility and large PHPACs that might result from a less statistically robust EFORp metric. However, as Dr. Niemann further explains, in designing the PHPAC rules, the RPM Settlement parties failed to recognize a critical fact: by definition, "the Peak-Hour Periods should include nearly all the hours when overall system conditions are tight and units with marginal economics would typically be dispatched."[35] As such, generation resources that are called on for fewer than 50 hours during the critical Peak-Hour Periods (when demand is generally greatest) will seldom be economically dispatched outside those Peak Hours, and the EFORd for such units does not

---

33 *Id.* at ¶ 35; *see also* Newton Affidavit at ¶ 11.

34 *See supra* note 30. *See also Midwest Indep. Transmission Sys. Operator, Inc.*, 105 FERC ¶ 61,147 at P 28 (2003) (directing the Midwest Independent Transmission System Operator to "address in its proposed energy markets tariff, if necessary, its objectives with regard to these penalties and specifically address whether the double penalty is by design and why a double penalty would be appropriate, in order to address reliability impacts and manipulation.").

35 Niemann Affidavit at ¶ 33.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

provide measurable improvements over the EFORp metric that is used for units that meet the 50-Peak Hour threshold.[36] Thus, and as Dr. Niemann concludes, "the substitution of EFORd for EFORp is not likely to substantially improve the robustness of the metric, and use of the EFORd metric introduces biases that make it an inaccurate indicator of Peak Hour reliability."[37]

4. The Flawed PHPAC Rules May Also Harm Reliability in PJM

Not only does the use of the current EFORd metric to determine PHPACs for infrequently-run generation resources result in such resources incurring unjust, unreasonable and unduly discriminatory PHPACs, but these rules could also have the unintended consequence of harming reliability in PJM.

As the Commission has made clear, RPM was intended to improve reliability by promoting investment in new and existing capacity resources as needed to ensure resource adequacy in PJM.[38] However, as Mr. Newton explains, unfairly high PHPACs could result in infrequently-run resources being unable to recover their going forward costs, and the risks of such penalties alone could cause such resources to seek to retire.[39] This would be a patently bad for PJM, which is, as the Commission has recognized, already experiencing looming reliability problems in Southwest MAAC and other areas.[40]

---

36 *Id.*

37 *Id.*

38 December 22 Order, 117 FERC ¶ 61,331 at P 1 (approving the RPM Settlement Agreement because it achieves the goals of "elicit[ing] sufficient investment in energy, transmission, and demand response.").

39 Newton Affidavit at ¶ 14. For example, PES' Benning Road and Buzzard Point generation stations, which are located in Washington, D.C., consist of oil-fired units that are 38-40 year old, with high heat rates and limited operating hours. Although PES notified PJM in February 2007 that it plans to retire the Benning Road and Buzzard Point stations on or before May 31, 2012, these are precisely the types of units that under the current rules are disproportionately harmed by excessive PHPACs resulting under the existing rules.

40 December 22 Order, 117 FERC ¶ 61,331 at PP 3, 11, 45 (noting potential reliability criteria violations in New Jersey, the Baltimore-Washington area and the Delmarva Peninsula).

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

IV. RELIEF REQUESTED

PES respectfully requests that the Commission act expeditiously to remedy the clear and unintended flaws in the current PHPAC rules as applied to infrequently-run generation resources. Specifically, PES respectfully requests that the Commission find that generation resources with fewer than 50 Service Hours during Peak Hours shall not be subject to charges and credits assessed under the PHPAC rules for the 2007-2008 Delivery Year. In addition, PES further requests that the Commission remedy the unjust, unreasonable and discriminatory use of the current EFORd metric to determine PHPACs for infrequently-run generation resources by directing PJM to modify its Tariff such that PHPACs for all generation resources will be assessed based on an EFORp metric for the 2008-2009 Delivery Year (without applying the 50 Service Hour threshold), and to direct PJM, working through its stakeholder process, to propose an alternative method for more accurately and fairly assessing the Peak Hour availability of infrequently-run generation resources in time for the 2009-2010 Delivery Year.

A. Infrequently-Run Generation Resources Should Be Exempted From The Unintended Unjust, Unreasonable And Unduly Discriminatory PHPACs For The 2007-2008 Delivery Year

As set forth herein, it is clear that the PHPAC rules as applied to generation resources with fewer than 50 Service Hours during Peak Hours may produce unjust, unreasonable and unduly discriminatory results. The heightened PHPAC penalties imposed under these rules were neither intended nor anticipated; to the contrary, the Settlement Agreement demonstrates that the PHPAC rules sought to protect infrequently-run generation resources.

In order to remedy the unintended consequences of the flawed PHPAC rules, the Commission should find that, for the 2007-2008 Delivery Year only, generation resources with fewer than 50 Service Hours during Peak Hours shall not be subject to Peak-Hour Period

availability charges, nor receive Peak-Hour Period availability credits. Critically, doing so will ensure that such resources will neither suffer nor benefit from their availability outside the critical Peak-Hour Periods, which is consistent with the intent underlying the PHPAC.

In addition, and as Dr. Niemann explains, a one-time exemption to the Peak-Hour Period availability charges and credits will have no adverse effects. Because the Peak-Hour Periods for the 2007-2008 Delivery Year have already passed, this change will not affect any reliability incentives. Moreover, no rebates or billing modifications will be needed because PJM has not yet calculated charges or credits for the 2007-2008 Delivery Year. Indeed, like PES, other generators may not have known whether they would meet the 50 Peak Hour threshold and whether their PHPACs would be determined using an EFORd or an EFORp metric until very recently. Finally, this change will have negligible effects on load because any PHPACs are first distributed among resources that exceeded their expected availability. As a result, Dr. Niemann testifies that exempting infrequently-run resources from PHPAC penalties and credits for the 2007-2008 Delivery Year "unwinds the inequity of these charges and credits, as implemented, with little or no negative side-effects."[41]

B. The Commission Should Direct PJM to Modify The PHPAC Rules As Applied To Infrequently-Run Generation Resources For The 2008-2009 Delivery Year

As made clear herein, the current unjust, unreasonable and unduly discriminatory EFORd metric used to assess PHPACs for infrequently-run resources must be replaced. As discussed below, PES is proposing a replacement methodology that it believes would more accurately and fairly assess the Peak Hour availability of infrequently-run resources. However, PES recognizes that arriving at a long-term solution is a complex matter that would benefit from

---

[41] Niemann Affidavit at ¶ 39.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

PJM stakeholder input. At the same time, PES further recognizes that the 2008-2009 Delivery Year is fast approaching, and that PJM needs to have some methodology in place to ensure that all generation resources are incentivized to ensure that they are available during the critical Peak-Hour Periods. As such, PES requests that the Commission require PJM to adopt, on an interim basis for the 2008-2009 Delivery Year, an EFORp metric to assess the Peak-Hour Period availability of all generation resources—*i.e.*, to delete Section 10(f) of Attachment DD, which sets forth the special rules applicable to infrequently-run generation resources. With this Tariff change, the EFORp metric, rather than the EFORd metric, would apply to resources with less than 50 Service Hours in the Peak-Hour Periods.

PES acknowledges that using an EFORp metric to assess the availability of infrequently-run resources is not necessarily the best long-term solution. As discussed above, and as apparently recognized by the PJM Settling Parties, the use of an EFORp metric can fail to provide a statistically robust measure of the availability of infrequently-run resources, and can result in highly variable PHPACs for such resources. However, as an interim measure, EFORp is a vast improvement over the current inaccurate and biased EFORd metric. Critically, using EFORp (rather than EFORd) for infrequently-run resources will result in such resources being assessed PHPACs that are actually based on their Peak Hour performance, and will further remove the threat of unduly discriminatory double penalties discussed above. Finally, and as Dr. Niemann explains, using EFORp for all resources should be a simple remedy for PJM to implement as it already uses the EFORp metric to assess PHPACs for most generation resources.[42]

---

[42] *Id.* at ¶ 50.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

C. The Commission Should Further Direct PJM To Use Its Stakeholder Processes To Explore Alternative Methods For Assessing PHPACs On Infrequently-Run Generation Resources

As discussed above, although an EFORp metric would alleviate many of the problems that have resulted from the current use of an EFORd metric, EFORp remains a less than ideal long-term solution for infrequently-run generation resources. The Commission should therefore direct PJM to, through its stakeholder processes, explore alternative methods for assessing PHPACs on infrequently-run generation resources, and to arrive at a replacement methodology for the 2009-2010 Delivery Year which would achieve the following goals:

> First, it should provide a similar financial incentive for availability for infrequently dispatched resources as is provided for other generation resources whose Peak-Hour Period availability charges or credits are calculated based on EFORp. Second, it should remain focused on availability during the Peak Hours utilized in the PHPAC calculations for other units and preserve the incentives to maintain high availability during these Peak Hours. Third, it should remove the duplicative charges and unintended loopholes that result from the current PHPAC rules. Finally, it should directly mitigate the problem that the current PHPAC rules for infrequently dispatched units were intended to mitigate, namely assessment of large charges under the PHPAC rules based on limited operational data during Peak Hours and potentially anomalous values of the EFORp.[43]

In examining the potential alternatives, PJM and its stakeholders should consider a proposal put forward by Dr. Niemann. In particular, Dr. Niemann suggests that the PHPAC for an infrequently-run generation resource could be based on a statistical confidence band around the resource's EFORp, where penalties or credits would only be due if the confidence band falls entirely above or below the average five-year EFORd.[44] While the detailed rules necessary to implement this approach would benefit from PJM stakeholder input, Dr. Niemann explains that

---

43 *Id.* at ¶ 40.

44 *Id.* at ¶¶ 19, 42-48.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

this approach would achieve the goal of recognizing Peak Hour performance, while also eliminating the double penalties that exist under the current PHPAC rules and providing a robust statistical measure of a resource's availability.[45] As such, Dr. Niemann's proposal provides a clear improvement over both the EFORd and EFORp metrics for assessing the Peak Hour availability of infrequently-run generation resources.

V. REQUEST FOR FAST TRACK PROCESSING

PES respectfully requests Fast Track processing under Rule 206(h) of the Commission's Rules of Practice and Procedure, so that the Commission can act on this Complaint and direct PJM to provide a suitable replacement for the currently unjust, unreasonable and unduly discriminatory EFORd-based metric for calculating the availability of infrequently-run generation resources during Peak-Hour Periods before the 2008-2009 Delivery Year commences on June 1, 2008. Moreover, it would be prudent to expeditiously remedy the currently flawed metric before availability charges and credits for Peak-Hour Periods for the 2007-2008 Delivery Year are finally calculated and assessed, which, under the Tariff, PJM's Office of the Interconnection is supposed to do by May 31, 2008 (though PJM recently has indicated that this will not occur until August). In order to allow the Commission time to address the merits of this Complaint prior to commencement of the 2008-2009 Delivery Year, PES further requests that the date for answers, interventions and comments be shortened so that they are due on or before **May 9, 2008**.

---

[45] *Id.* at ¶¶ 46-47.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

VI. RULE 206 REQUIREMENTS

A. Rule 206(b)(1): Action Or Inaction Alleged To Violate Statutory Standards Or Regulatory Requirements

PJM's current use of an inaccurate and biased EFORd metric to determine PHPACs for generation resources that have fewer than 50 Service Hours during Peak Hours subjects these resources to potentially heightened PHPACs that are unrelated to their performance during Peak Hours, and is therefore unjust and unreasonable in violation of Sections 205 and 206 of the FPA. In addition, contrary to Sections 205 and 206 of the FPA, the current EFORd metric unduly discriminates against infrequently-run generation resources by prohibiting such resources from using exemptions from forced outages available to other resources whose PHPACs are determined using the EFORp metric. This result was neither intended nor anticipated when the PHPAC rules were designed—to the contrary, the PHPAC rules were intended to protect infrequently-run generation resources from excessive PHPACs. By exposing infrequently-run generation resources to the risk of increased PHPACs, the continued use of the current EFORd metric could also make it difficult for infrequently-run resources to cover their costs, lead to increased retirements and threaten reliability in PJM.

B. Rule 206(b)(2): Legal Bases For Complaint

Imposing Peak-Hour Period availability penalties on infrequently-run generation resources that are unrelated to their actual availability during Peak Hours and failing to provide such resources with exemptions for forced outages that are available to resources that meet the 50-hour threshold is unjust, unreasonable and discriminatory ratemaking.

C. Rules 206(b)(3) And 206(b)(4): Issues Presented As They Relate to the Complainant And Quantification Of Financial Impact On Complainant

The current use of an inaccurate and biased EFORd metric to determine PHPACs for infrequently-run generation resources will result in PES and its subsidiaries unjustly and

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

unreasonably incurring higher PHPACs than they would have been assessed had such charges been calculated using an EFORp metric, or had they been allowed to calculate their EFORd based on the same exemptions from forced outages as those available under the EFORp metric. The final amounts of the PHPACs that will be charged to PES and its subsidiaries for the 2007-2008 Delivery Year will not be provided by PJM until August 2008. In addition, it is not possible for PES to quantify the impact of the continued use of the current EFORd metric on PES and its subsidiaries in the future. Nonetheless, over time, PES reasonably anticipates that it and its subsidiaries will face millions of dollars of increased PHPACs if the use of the existing flawed EFORd metric were to continue.

D. Rule 206(b)(5): Nonfinancial Impacts On Complainant

As discussed herein, the current use of an EFORd metric to determine PHPACs for infrequently-run generation resources is unjust, unreasonable and unduly discriminatory, and has unintended consequences in terms of potentially subjecting infrequently-run generation resources to artificially heightened PHPACs. This, in turn, could have adverse nonfinancial impacts on the intended functioning of the RPM market, and threaten reliability in PJM.

E. Rule 206(b)(6): Related Proceedings

PES is unaware of any existing proceedings that are directly related to the issues raised in this Complaint.

F. Rule 206b)(7): Specific Relief Requested

As discussed above, because of the unintended and unjust and unreasonable results of the current use of a flawed EFORd metric, PES respectfully requests that the Commission exempt generation resources that have fewer than 50 Service Hours during Peak Hours from charges and credits under the PHPAC rules for the 2007-2008 Delivery Year. In addition, PES respectfully requests that the Commission direct PJM to delete Section 10(f) of

Attachment DD of the Tariff such that, for the 2008-2009 Delivery Year, PJM will assess PHPACs for all generation resources based on an EFORp metric. PES further requests the Commission to direct PJM to utilize its stakeholder processes to explore alternative methods—including the methodology described in the Niemann Affidavit—for assessing PHPACs on generation resources with fewer than 50 Service Hours during Peak Hours, and to make a Section 205 filing proposing a replacement methodology in time for the 2009-2010 Delivery Year. Finally, infrequently-run generation resources need certainty on how PHPACs will be assessed in the future—as such, PES requests Fast Track processing of this Complaint (including a shortened comment period such that any answers or comments will be due by May 9, 2008), so that the Commission may expeditiously remedy the currently flawed PHPAC rules prior to the commencement of the 2008-2009 Delivery Year on June 1, 2008. Prompt Commission action would also be beneficial in allowing a remedy to be in place before Peak-Hour Period availability charges and credits for the 2007-2008 Delivery Year are finally calculated and assessed, which, PJM's Office of the Interconnection is supposed to do by May 31, 2008 (though PJM recently has indicated that this will not occur until August).

G. Rule 206(b)(8): Documents Supporting The Complaint

Documents supporting the Complaint are provided as attachments.

H. Rule 206(b)(9): Dispute Resolution

Although the issues addressed in this Complaint were raised in PJM stakeholder discussions, no resolution was reached.[46] In light of the fast-approaching 2008-2009 Delivery Year, prompt Commission action is required to remedy the flawed EFORd metric that results in unjust, unreasonable and unduly discriminatory PHPACs for infrequently-run generation

---

[46] *See* Newton Affidavit at ¶¶ 15-17.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

resources prior to the commencement of the new Delivery Year on June 1, 2008. In addition, it would be beneficial for the Commission to issue an order on this Complaint before PJM finally calculates and assesses Peak-Hour Period Availability charges and credits for the 2007-2008 Delivery Year, which is supposed to occur by May 31, 2008 (although PJM recently indicated that this will not happen until August 2008).

I. Rule 206(b)(10): Form Of Notice

Included as Attachment C to this Complaint is a form of notice suitable for publication in the Federal Register.

J. Rule 206(c): Service On Respondent

PES has served this Complaint by email on counsel for PJM:

Vincent P. Duane, Esq.
General Counsel
PJM Interconnection, L.L.C.
955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, PA 19403
duanev@pjm.com

Steven R. Pincus, Esq.
Senior Counsel – Regulatory
PJM Interconnection, L.L.C.
955 Jefferson Avenue
Valley Forge Corporate Center
Norristown, PA 19403
Pincus@pjm.com

Barry S. Spector, Esq.
Wright & Talisman, P.C.
1200 G Street, N.W.
Suite 600
Washington DC 20005
spector@wrightlaw.com

Out of an abundance of caution, PES has also served this Complaint to persons designated on the official service list Docket Nos. ER05-1410-000 and EL05-148-000, the dockets in which the RPM proposal was first filed and ultimately settled.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

VII. CONCLUSION

WHEREFORE, for the foregoing reasons, PES respectfully requests that the Commission (i) grant PES' request for Fast Track processing of this Complaint, including PES' request that comments, answers and interventions be due no later than May 9, 2008; (ii) find generation resources with fewer than 50 Service Hours during Peak Hours to be exempt from charges and credits under the PHPAC rules for the 2007-2008 Delivery Year; (iii) order PJM to revise its PHPAC rules to calculate PHPACs for infrequently-run resources based on an EFORp metric for the 2008-2009 Delivery Year; (iv) direct PJM to utilize its stakeholder processes to explore alternative methods for assessing PHPACs on infrequently-run generation resources and to make a filing with the Commission proposing a replacement methodology in time for the 2009-2010 Delivery Year; and (v) grant this Complaint prior to the commencement of the 2008-2009 Delivery Year on June 1, 2008, which would also be prior to PJM's final calculation and billing of Peak-Hour Period availability charges and credits for the 2007-2008 Delivery Year.

Respectfully submitted,

/s/ Stephanie S. Lim

Michael J. Gergen
Jared W. Johnson
Stephanie S. Lim
Latham & Watkins LLP
555 Eleventh Street, N.W.
Suite 1000
Washington, D.C. 20004

Peter E. Meier
General Counsel
Pepco Energy Services, Inc.
1300 North 17th Street, Suite 1600
Arlington, VA 22209

Counsel for Pepco Energy Services, Inc.

Dated: April 22, 2008

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

ATTACHMENT A
AFFIDAVIT OF JAMES E. NEWTON

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Pepco Energy Services, Inc.	)	
Complainant	)	
v.	)	Docket No. EL08-____-000
PJM Interconnection, L.L.C.	)	
Respondent	)	

AFFIDAVIT OF JAMES E. NEWTON ON BEHALF OF PEPCO ENERGY SERVICES, INC.

I. BACKGROUND

1. My name is James E. Newton. I am Vice President of Commercial Operations for Pepco Energy Services, Inc. ("PES"). I have held this position since March 1, 2007. From November 1999 until I assumed my current position, I served as either a Director or Manager at PES. My relevant experience is in the area of utility operations and power trading, as both an engineer and power trader at the Potomac Electric Power Company from 1993 to November 1999. Prior to joining Potomac Electric Power Company, I gained experience in power plant operations and electric system operations at the Baltimore Gas and Electric Company. I hold a Bachelor's Degree in Mechanical Engineering from the University of Maryland in College Park, Maryland, and a Master's Degree in Business Administration from The George Washington University in the District of Columbia.

2. PES is a wholly-owned, direct subsidiary of Pepco Holdings, Inc. Among other things, PES and its subsidiaries own or control over 800 megawatts of generation in the control area of PJM Interconnection, L.L.C. ("PJM"). PES is authorized by the Federal Energy Regulatory Commission to make wholesale sales at market-based rates, and also has authorization from various states to sell electricity at retail.

3. The purpose of this affidavit is to support PES' complaint seeking to modify provisions in PJM's Open Access Transmission Tariff relating to the Peak-Hour Period Availability Charge ("PHPAC") imposed on generation units that are deemed by PJM to be needed for less than 50 hours during defined Peak-Hour Periods.

II. GOALS OF PJM'S PEAK-HOUR PERIOD AVAILABILITY CHARGES

4. In my duties as Vice President of Commercial Operations for PES, I keep abreast of stakeholder processes in PJM as well as other regional transmission organizations, such as those in New York and New England. In the course of my duties, I have thoroughly reviewed the PJM Tariff, as well as the Settlement Agreement and supporting materials detailing and implementing PJM's Reliability Pricing Model ("RPM"). Based on my knowledge of the PJM stakeholder processes and materials concerning RPM, it is my

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

understanding that PHPACs are intended to provide incentives for generators to make themselves available during the critical Peak-Hour Periods (*i.e.*, approximately 500 hours during the Summer and Winter Periods when demand is generally greatest). This is done by imposing penalties on generation units that do not meet their expected availability targets during the Peak-Hour Periods, while providing credits to those units that exceed their expected availability. PHPACs are assessed after the end of an entire Delivery Year (June 1 through May 31) and are billed retroactively by PJM a few months after the close of the Delivery Year.

5. At the same time, the PHPAC rules were apparently designed to attempt to avoid unduly penalizing infrequently-run generation units (*i.e.*, units with less than 50 service hours during the approximately 500 total hours that make up the Peak-Hour Periods) by using two different metrics: an Equivalent Forced Outage Rate for Peak-Hour Periods ("EFORp") for assessing the availability of generation units that are called on for 50 or more service hours during Peak-Hour Periods, and an Equivalent Demand Forced Outage Rate ("EFORd") for all hours during the applicable Delivery Year for units with less than 50 service hours during Peak-Hour Periods. As explained in the accompanying affidavit of Scott W. Niemann, the substitution of EFORd for EFORp in the calculation of the PHPACs was apparently in recognition of the high degree of variability in EFORp for infrequently-run units. For example, a unit that has very few operating hours during Peak-Hour Periods could experience a very high EFORp during a particular year due to an outage that only lasts for one day. As such, the parties designing the PHPAC rules apparently believed that using an EFORd metric for an infrequently-run generation unit could help smooth out any volatility and provide a better representation of the unit's availability during Peak-Hour Periods.

6. As I explain below, however, the results from Delivery Year 2007/2008 (the first Delivery Year for which the PHPAC will be calculated and assessed), demonstrate that the current PHPAC rules, which measure the availability of infrequently-run generation units based on EFORd, can in fact cause infrequently-run units to incur unduly high PHPACs that bear little relationship to their actual availability during Peak-Hour Periods. In addition, the EFORd-based availability metric for infrequently-run generation units can impose additional penalties on such units that would not be applicable to generators that meet the 50-hour threshold and whose availability is evaluated using an EFORp-based metric. As a result, the PHPAC rules appear to unfairly penalize infrequently-run generators, which is contrary to my understanding of the goals of such rules.

III. UNANTICIPATED CONSEQUENCES OF PJM'S CURRENT PHPAC RULES FOR INFREQUENTLY-RUN GENERATION UNITS

7. Based on PES' experience over the last ten months or so since the beginning of the first year of RPM implementation on June 1, 2007, it has become clear that the existing PHPAC rules do not work as intended for infrequently-run generation units.

8. Critically, the use of an EFORd metric to assess infrequently-run generation units' availability shifts the focus of PHPACs from the critical Peak-Hour Periods to all hours of the Delivery Year. In his testimony, Dr. Niemann offers an example that shows the

disparate treatment under the PHPAC rules for two units with very similar performance characteristics, where one unit has exceeded 50 hour service hours during the critical peak hours, while the other has not. The example makes clear that the use of the actual EFORd as calculated over all hours of the Delivery Year using all forced outage data (as opposed to the EFORp that is calculated using only forced outages in peak hours where a unit is deemed needed by PJM) can result in an infrequently-run generation unit being charged PHPACs even though it was 100% available during Peak-Hour Periods. Conversely, an infrequently-run generation unit that is unavailable in the few hours needed during the Peak-Hour Periods may avoid a penalty because of its operation in non-Peak Hour Periods. This does not correspond to my understanding of the intent underlying PHPACs.

9. In addition, a generating unit could experience an extended forced outage that spans many of the non-critical hours (*i.e.*, hours outside of the 500 critical peak hours defined in the PJM Tariff), which would increase the EFORd metric for such unit. This means that, for an infrequently-run generation unit, forced outages experienced during non-peak hours can adversely affect the generation unit's EFORd, and can result in the unit being assessed PHPACs. Not only does this mean that infrequently-run generation units would be charged PHPACs for events occurring outside the Peak-Hour Periods, but would also mean that such units would not be properly incentivized through the PHPAC to make sure that their units are available during the critical 500 peak hours. Moreover, for infrequently-run generating units, the PHPAC in effect magnifies the Capacity Resource Deficiency Charge, which is also assessed for increases in EFORd.

10. An example underscores how these two methods of computing the PHPAC—EFORd and EFORp—may result in markedly different measures of a resource's availability during Peak-Hour Periods. PES' Buzzard Point West Combustion Turbine #16 is rated as a 16 MW generator committed in RPM for the 2007/2008 Delivery Year. This unit experienced an extended 2.6 MW partial forced outage from June through November of 2007. Based on my calculations, I estimate that the EFORd for Buzzard Point West CT #16 would be approximately 16.25% for the months from June through August 2007. By contrast, I estimate that the EFORp for the unit for the same months (June through August 2007), would be only approximately 2.06%, since EFORp only takes into consideration the hours during Peak-Hour Periods when the unit is "needed" by PJM.[1] Extending this example further, if these EFORd and EFORp estimates (16.25% and 2.06%, respectively) held true for the entirety of Delivery Year 2007/2008, and based on a Capacity Resource Clearing Price of $188.05, this would result in an approximately $158,300 charge under the PHPAC rules if an EFORd metric is used, but only an approximately $2,064 charge if an EFORp metric is used. The data supporting my calculations are shown in Table #1 below. Thus, the very same unit, with a relatively low EFORp, faces significantly higher PHPACs using the EFORd derived formula. As

---

[1] PJM has not yet finalized its determination of EFORp related to availability as a reserve unit, so I have only considered the energy availability in this example.

mentioned previously, the Buzzard Point West CT #16 unit would also face a Capacity Deficiency Charge based on its increased EFORd.

Table #1

Example of Peak Hour Availability Charges Under EFORd and EFORp Metrics For Buzzard Point West CT#16 (Using June through August 2007 Outage Statistics)

	A	B	C	D	E	F	G	H
					(A)*[100-(C)]/100	(A)*[100-(D)]/100	(E) - (F)	(G)*366* (LDA Clearing Price of $188.05)
	Committed ICAP (MW)	**Service Hours**	**EFORd-5 (%)**	**Forced Outage Rate for June through August 2007 (%)**	**TCAP (MW)**	**PCAP (MW)**	**Shortfall (MW)**	**Estimated Delivery Year PHPAC**
Using EFORp	16	39.37	1.88	2.06	15.70	15.67	0.03	$2,064.78
Using EFORd	16	76.23	1.88	16.25	15.70	13.40	2.30	$158,300.49

*Assumes that outage rate holds true for entire Delivery Year

11. Another fundamental problem with the current design of the PHPAC for infrequently-run generation units is that their availability during Peak-Hour Periods is measured using an EFORd based on all hours during a Delivery Year, with no exceptions. By contrast, the PJM Tariff states that, for generation units that meet the 50-hour threshold, their availability during Peak-Hour Periods is measured using an EFORp that includes exceptions for non-availability because of rating test failures that result in other, non-PHPAC penalties.[2] As such, turning back to the Buzzard Point West CT #16 example described above, under the PJM Tariff, PJM might not consider all or part of the 2.6 MW partial forced outage in calculating the unit's EFORp, depending on whether the partial forced outage was also the result of the generator test failure. However, if Buzzard Point West CT#16 was called upon for less than 50 hours during Peak-Hours Period, it would not be entitled to an exemption from any forced outage hours in the calculation of its EFORd, and would therefore be subject to increased PHPAC penalties that would not be imposed on generation units that meet the 50-hour threshold.

12. Finally, as mentioned above, the use of EFORd (instead of EFORp) in the PHPAC calculation for infrequently-run units was apparently intended to address the volatility in EFORp for such units. However, if demand is generally greatest during the Peak-Hour Periods, then a unit that has fewer than 50 service hours during the critical Peak-Hour

---

2 *See* PJM Tariff, Attachment DD at § 10(e).

Periods is unlikely to have operated for many more hours outside of the Peak-Hour Period, absent operation of those units in non-peak hours by PJM for reliability. As such, even though, as Dr. Niemann explains, EFORd includes the consideration of "f factors" which are intended to reflect additional operational characteristics of a unit, the use of EFORd instead of EFORp for infrequently-run units does not accurately measure the "as-needed" availability of such units during Peak-Hour Periods.

13. Because of the problems experienced by PES under the existing design of the PHPAC for infrequently-run generation units, this peak availability charge does not appear to have worked as intended. The PHPAC as currently designed for seldom-run units does not provide an accurate and consistent incentive for such units to be available during the critical Peak-Hour Periods. In addition, the use of EFORd to calculate availability for infrequently-run units not only fails to mitigate the risk of extreme variability in PHPACs for these units, it can actually exacerbate this risk relative to other more frequently run units whose availability is calculated using an EFORp metric.

14. Moreover, PHPACs can have large impacts on the ability of infrequently-run generators to recover their going forward costs. As such, the risk of having to pay greater PHPACs will, all other things being equal, incent generators to retire these units. The current problems with the design of the PHPAC for infrequently-run generation units therefore not only operate contrary to their original intent but could also be bad for reliability, where there are areas (such as Southwest MAAC) which through the RPM auctions through the 2009/2010 Delivery Year appear to be resource constrained.

IV. PJM STAKEHOLDER DISCUSSIONS

15. Until earlier this year, PES believed that its infrequently-run generation units would meet the 50 service hour threshold during Peak-Hour Periods for Delivery Year 2007/2008. Indeed, at the end of Summer 2007, for many of PES' generating units, few additional hours were needed to bring them to the 50 service hour threshold. It was not until the month of February (nearing the end of the Peak-Hour Periods) that PES realized certain of its infrequently-run generation units would not meet the 50 service hour threshold and would therefore be assessed PHPACs based on EFORd rather than EFORp. Having assessed and identified flaws in the existing PHPAC rules with respect to the use of the EFORd metric for infrequently-run units, PES promptly brought the issue to the attention of other PJM stakeholders.

16. On March 20, 2008, I made a presentation to the RPM Working Group of PJM describing PES' concerns regarding the design flaws of the PHPAC for infrequently-run generation units. Unfortunately, with the end of the Delivery Year drawing nearer, it became obvious that it would not be possible to have this issue properly vetted through the RPM Working Group, and the hierarchy of three higher level parent committees. Nevertheless, I felt it important to present our concerns to a variety of stakeholders, and took the opportunity to also present PES' concerns regarding the PHPAC rules for infrequently-run generation units at the March 26, 2008 meeting of the Market Implementation Committee. In conjunction with these presentations, I spoke to a number of stakeholders on their initial reactions to the information presented. There were no

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

official votes or endorsements; however, many unofficial responses were supportive of the PES position that the current rules are unjust and unfair. Nonetheless, there were also concerns that the ultimate resolution of the issue should not degrade reliability, or conflict with the intent of the parties to the RPM Settlement Agreement.

17. Based on the discussions before the RPM Working Group and Market Implementation Committee, I do not anticipate that the PJM stakeholder process will be able to resolve the problems inherent in the design of the PHPAC for infrequently-run generation units before the commencement of Delivery Year 2008/2009 on June1, 2008.

18. This concludes my affidavit.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Pepco Energy Services, Inc.	)	
Complainant	)	
v.	)	Docket No. EL08-____-000
PJM Interconnection, L.L.C.	)	
Respondent	)	

AFFIDAVIT OF JAMES E. NEWTON ON BEHALF OF PEPCO ENERGY SERVICES, INC.

I, James E. Newton, being duly sworn, hereby state and confirm that the contents of the foregoing Affidavit are true and correct to the best of my knowledge, information and belief.

James E. Newton

Subscribed and sworn before me
this 22nd day of April, 2008

Notary Public

My Commission expires: January 31, 2010

MILDRED WADE ANTONE
NOTARY PUBLIC
REG # 7037697
COMMISSION EXPIRES 1/31/2010
COMMONWEALTH OF VIRGINIA

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

ATTACHMENT B
AFFIDAVIT OF SCOTT NIEMANN

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Pepco Energy Services, Inc.	)	
Complainant	)	
v.	)	Docket No. EL08-____-000
PJM Interconnection, L.L.C.	)	
Respondent	)	

AFFIDAVIT OF SCOTT W. NIEMANN

I. QUALIFICATIONS

A. PROFESSIONAL CREDENTIALS

1. My name is Scott W. Niemann. I am a Principal of CRA International ("CRA"), an international economics, finance, and business consulting firm. My business address is 200 Clarendon Street, T-33, Boston, MA 02116. I am a member of the Energy and Environment Practice Group at CRA and have 10 years experience advising industry participants and policy makers in the wholesale electricity industry on a range of economic and business issues. The primary focus of my consulting is in the areas of wholesale electricity market analysis, electricity market design and restructuring, regulation, and business strategy in the increasingly competitive U.S. electricity industry. In this context, I have advised clients and conducted quantitative studies related to various business and regulatory issues affecting wholesale markets for electric power, installed generating capacity, and operating reserves. My work has focused on a broad range of issues including resource adequacy, fuel prices, fuel supply, environmental regulations, market structure, locational marginal pricing, financial transmission rights, seams issues, and market power. I have conducted studies and made numerous presentations to senior management of utility and merchant power clients, rating agencies, the investment community, market operators, and the U.S. Department of Justice. I have routinely been retained as a market expert both in support of asset transactions and in the context of litigation and regulatory proceedings.

2. Prior to joining CRA in 2001, I was a Principal Consultant in the Energy Economics Practice of PA Consulting Group. I hold a BA degree in Mathematics, Economics, and Political Science from the University of Kansas and MS and PhD degrees in Economics from the University of Wisconsin. My resume is attached as Exhibit SWN-1.

3. Much of my work has focused on the organized markets in the Northeast US, including the market operated by PJM Interconnection, L.L.C. ("PJM"). I have routinely advised clients about the economic fundamentals, market rules, and regulatory issues in each of these markets, focusing in particular on the commercial implications and financial risks. Much of my recent work has focused on markets for installed capacity, including the

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

PJM Reliability Pricing Model ("RPM") market. As part of this work, I have led the development of detailed models of the capacity markets administered by various independent system operators, which capture both the market fundamentals and detailed rules behind each market design. I have been actively involved in advising numerous market participants on the outlook for each of these markets and the commercial implications of market rules, such as those for performance incentives, for generating assets.

B. ROLE IN RPM DEVELOPMENT

4. I have been closely involved with the development of the RPM market over the last 2 years, both in development of the market design and in advising market participants. I was one of two CRA economists retained by a generation owner during the RPM settlement proceeding before the Commission. During this process, I followed closely the development of the market design and market rules now included in the PJM Tariff. Following the filing and approval of the RPM Settlement Agreement,[1] I have advised several market participants, including both generation owners and load serving entities, about the RPM market design and rules. Much of my work in this area has focused on detailed aspects of the market rules and the implications of these rules for generation portfolios and individual generating assets. Among the rules of interest to several of my clients have been the performance incentives and penalty structures under the RPM rules.

5. I have also been retained on numerous occasions as an independent market advisor supporting asset transactions in PJM, including the acquisition or financing of several assets that are expected to generate cash flows predominantly from the RPM market. In this role, I have assisted market participants with their due diligence efforts, including detailed review of the RPM market rules and assessment of the risks introduced by uncertainty in unit performance and the potential for availability changes and non-performance penalties. I have also advised rating agencies and debt and equity investors regarding the commercial implications of several aspects of the RPM rules.

II. INTRODUCTION AND SUMMARY

A. PURPOSE OF TESTIMONY

6. The purpose of my testimony in this matter is to discuss several critical flaws in the current RPM rules regarding the Peak-Hour Period Availability Charge ("PHPAC"), which is intended to provide incentives for enhanced availability among RPM capacity resources during defined "Peak-Hour Periods" through charges for under performance or credits for over performance in such Peak-Hour Periods relative to historical resource availability. Specifically, I will discuss the treatment of infrequently dispatched

---

[1] *See* Settlement Agreement and Explanatory Statement of the Settling Parties Resolving All Issues, Docket Nos. ER05-1410-000, *et al.* (filed Sept. 29, 2006) ("RPM Settlement Agreement").

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

resources under these rules, which stems from an alternative calculation of charges and credits for generation resources with fewer than 50 service hours during the relevant Peak-Hour Periods.

B. AVAILABILITY METRICS

7. In the RPM market, like the market for any other product, buyers desire assurance that they will actually receive value for the purchased product. Just as the buyer of a new toaster would expect the seller to repair or replace it if it breaks, buyers have an expectation that a resource procured to provide generating capacity during times of high system demand will actually be available at the reliability level upon which its market payment is based.

8. Over the years, as power markets evolved, the form of the capacity obligation has also evolved. Early capacity market constructs were based simply on the installed capacity rating of resources, or ICAP. PJM subsequently defined the capacity product as Unforced Capacity, or UCAP, a measure that disallows a fraction of the ICAP based on historical reliability of the unit. This performance was measured by a new statistic, computed on data from the Generating Availability Data System ("GADS"), called the Equivalent Demand Forced Outage Rate ("EFORd"). This metric was widely adopted for use in other capacity markets, and it is still in use in New York.

9. In designing the latest generation of capacity markets, though, market participants have sought a stronger commitment, focused on resource availability during times of greatest system need. After all, a unit outage in April is likely to be of far less consequence to grid reliability than that same outage in the middle of an August heat wave. Consequently, both of the recently implemented capacity markets in the United States, the Forward Capacity Market in ISO New England and RPM in PJM, include financial incentives focused on peak-period availability.

10. In PJM, such incentives are provided through charges and credits assessed under the PHPAC rules. The purpose of these charges and credits is to provide an increased assurance that the value of the UCAP product procured from a generation resource through the RPM market will be provided to buyers. The value of the UCAP product bought and sold through the RPM market comes from enhanced system reliability, particularly during periods of high demand when having sufficient resources in reserve and available is most critical. The PJM Tariff therefore defines approximately 500 hours ("Peak Hours") each year, including designated hours in both the summer and winter periods, as Peak-Hour Periods. Under the PHPAC rules, forced outages during these Peak-Hour Periods are penalized much more stiffly than outages at other times, at least for most resources. Conversely, resources that have fewer outages than expected (based on historical reliability) during Peak-Hour Periods earn credits. This carrot-and-stick approach was designed to provide the "pay for performance" guarantee sought by load.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

C. SUMMARY OF FLAWS IN EXISTING PHPAC RULES

11. As a general matter, I believe that the charges and credits provided for under the PHPAC rules are reasonable to provide incentives for Peak-Hour Period availability for most generation resources. However, even with the limited amount of time that market participants have had to evaluate them, it is clear that there are flaws in the determination of such charges and credits for generation resources that have fewer than fifty (50) total service hours during Peak Hours. These flaws are causing charges under these rules to be determined in a manner that I do not believe was intended, and that is creating economically irrational results and inconsistent and unfair treatment of similar resources.

12. Performance of units that have fewer than 50 service hours during Peak-Hour Periods is not measured by the Peak-Period Equivalent Forced Outage Rate ("EFORp") (which takes into account the approximately 500 critical Peak Hours, but instead by their overall performance during all 8,760 hours in a Delivery Year, measured by EFORd. It is rational that participants in the RPM settlement proceedings may have been concerned that fewer than 50 service hours would be too few data points to provide a robust measure of a unit's reliability. With few observed hours of operation, the EFORp metric is likely to subject units with less than 50 hours of service to potentially excessive charges under the PHPAC rules stemming from large swings in measured availability from relatively minor outage events during Peak Hours. The potential for the charges and credits under the PHPAC in any one year to be driven more by random events than actual reliability across the Peak-Period Hours undermines the economic rationale for the PHPAC, which is to provide transparent incentives for improving availability.

13. Although these may have been legitimate concerns, when scrutinized further, it is apparent that the different measure created for units operating fewer than 50 service hours during Peak-Hours Periods is based upon a flawed approach in that it does not provide an accurate, unbiased measure of reliability during the Peak-Hour Periods. The alternative measure not only fails to provide the intended protection against excessive charges for such infrequently dispatched units, but may even exacerbate the penalties by counting outages that are excluded from the EFORp measure because they are already penalized through other RPM charges. While there are sound economic reasons for introducing an alternative to EFORp in the calculation of the PHPAC, there is not economic rationale for an alternative that fails to measure the same outcomes EFORp.

14. Most fundamentally, the current EFORd metric can cause infrequently dispatched units to incur high charges under the PHPAC rules that bear no relationship to their actual availability during Peak-Hour Periods. In a "pay for performance" world, what matters is what actually happened—did the unit perform when it was needed, or not? What is wanted, then, is an appropriate way to assess the performance of these infrequently dispatched resources during Peak Hours. However, biases introduced by the substitution of the EFORd metric for the EFORp metric can cause infrequently dispatched units to incur high charges under the PHPAC rules even if they were available for dispatch during Peak Hours—in other words, on its face there is a mismatch between the intent of the

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

charge, the incentives the charge was designed to create, and the actual charges that result from the market rules as written.

15. An additional concern is that EFORd, the current metric applied to infrequently dispatched resources, penalizes a particular kind of partial forced outage that is already penalized through provisions in another part of the RPM Tariff. This is because of the differing treatment that exists between generation resources that operate 50 hours or more and infrequently dispatched resources regarding certain exceptions (e.g., if there is a rating test failure) to their availability calculations. Generation resources must be tested in summer and winter, and units that fail to prove up sufficient capacity to meet the associated capacity obligation are penalized directly for that shortfall through the Generation Resource Rating Test Failure Charge.[2] For resources with 50 or more service hours during Peak-Hour Periods, the PHPAC rules state that a rating test failure has no effect on their Peak-Hour Period availability charges or credits. However, such a failure also is counted as a partial forced outage in the GADS system, and consequently increases the EFORd of the resource. As a result, for resources with less than 50 service hours during Peak Hours, the test failure also increases the charges assessed on them under the PHPAC rules. This double-counting creates a different penalty structure for one class of resources with no corresponding economic rationale or social benefit.

16. To summarize, the exception to EFORp for units with fewer than 50 service hours during Peak-Hour Periods was apparently intended to prevent the PHPAC rules from resulting in large charges being assessed on infrequently dispatched units based on a large impact of relatively minor outages on the EFORp metric. In other words, in cases where the EFORp metric does not provide a robust measure of good or bad performance for a generator, that metric should not be used to assess charges or credits. However, the alternative measure applied for these infrequently dispatched units, annual EFORd, is not an unbiased measure of Peak Hour availability, and does not necessarily provide a more robust indicator of performance. The biases in the EFORd metric may, in fact, lead to a stricter standard and more stringent penalty to infrequently dispatched units than to other units that run more frequently.

D. SUMMARY OF PROPOSED REMEDIES

17. It is clear that the existing PHPAC rules as applied to infrequently dispatched units lead to charges that have no economic basis and therefore must be remedied. However, for the current 2007-2008 Delivery Year, it would not be practical to craft a new performance metric for infrequently dispatched resources or to ask PJM to rebuild EFORd to fix its demonstrable flaws as the basis for determining charges under the PHPAC rules. I propose, therefore, that an equitable solution is simply to set to zero all Peak-Hour Period Availability charges (*and* credits) accrued by units that have fewer than 50 service hours during the Peak-Hour Periods in the current 2007-2008 Delivery

---

[2] PJM Tariff, Attachment DD, Section 7.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

Year. These units would still be subject to other availability charges and penalties, and their EFORd during this past year would still affect their future quantity of available UCAP.

18. In addition, the current flawed EFORd metric under the PHPAC rules should be replaced before the next Delivery Year commences. Developing an appropriate and economically rational Peak-Hour Period availability metric for infrequently dispatched generation resources will be a complex task. The upcoming 2008-2009 Delivery Year starts on June 1, 2008, which is simply too soon to have a fully developed replacement for the current flawed EFORd metric. As such, and as an interim measure, I believe that the most reasonable approach would be simply to strike the 50-hour service threshold from the Tariff (i.e., Section 10(f) of Attachment DD), thereby applying the same EFORp availability metric to all generation resources. This approach is, on its face, non-discriminatory and would provide prospectively the same "pay for performance" sought in the RPM Settlement Agreement.

19. While an EFORp availability metric applied to all generation resources could provide an acceptable interim alternative that mitigates some of the problems under the existing PHPAC rules, this metric remains problematic because of its potentially great variance for infrequently dispatched generation resources that suffer a minor outage during the few hours they might have been dispatched during Peak-Hour Periods. As such, I discuss below an alternative implementation of the EFORp availability metric for infrequently dispatched units that I believe would be the foundation for a more robust, and thus more sound, replacement. This alternative would include a statistical confidence band around the annual EFORp measure that could be compared to the 5-year EFORd measure. Penalties or credits would be assessed only if the confidence band falls entirely above or below the historical average EFORd, as such an outcome would provide statistically conclusive evidence that an observed deviation in the EFORp measure is due to systematically poor performance during Peak Hours, and not simply a change in the observed metric due to anomalous outcomes that may not have occurred had more observable service hours been available. Nonetheless, given the complexities of implementing such an approach in a manner that is consistent with the intent of the PHPAC rules and the treatment of more frequently dispatched units, the proposal should be vetted through the PJM stakeholder process before the Commission considers adopting it as part of RPM.

III. REVIEW OF RPM RULES REGARDING AVAILABILITY METRICS AND PENALTIES

20. The RPM Settlement Agreement assesses several distinct charges based on the availability of capacity resources during the course of a Delivery Year: the Generation Resource Test Rating Failure, the Capacity Resource Deficiency Charge, and the

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

PHPAC.[3] These charges were designed to complement each other to provide a set of appropriate incentives for generation resources to be highly available, particularly during periods when they are most needed. This section briefly reviews each of these measures and associated charges, providing a foundation to understand how the PHPAC as currently in effect fails to work successfully in the specific case of infrequently dispatched resources.

A. GENERATION RESOURCE RATING TEST FAILURE CHARGE

21. Section 7 of Attachment DD to the PJM Tariff defines the Generation Resource Rating Test Failure Charge. Every PJM capacity resource must prove up its rated capacity each summer and winter through a generation resource test. If the tested rating is lower than the rating underlying the capacity cleared through the RPM, the difference is assessed at the Daily Deficiency Rate, which is generally equal to two times the Capacity Resource Clearing Price.[4]

B. CAPACITY RESOURCE DEFICIENCY CHARGE

22. Section 8 of Attachment DD defines the Capacity Resource Deficiency Charge. For existing generation resources, this charge could apply either if the unit is derated or if its EFORd increases during a Delivery Year. Focusing on the EFORd increase, this charge is assessed in the event that "the EFORd value determined for such resource two (2) months prior to the Third Incremental Auction is lower than the EFORd value submitted in the Capacity Market Seller's cleared Sell Offer."[5] That is, the quantity of UCAP credited to a generator in a Delivery Year is fixed based on its EFORd in the previous calendar year. A supplier may avoid the charge by providing sufficient replacement capacity, either through the Third Incremental Auction or bilaterally. This charge is also equal to the Daily Deficiency Rate.

C. PEAK-HOUR PERIOD AVAILABILITY CHARGE

23. Section 10 of Attachment DD defines the Peak-Hour Period Availability Charge, which is the principal focus of this testimony. Unlike the other two availability charges just described, this charge was intended to "provide generation owners with a significant added incentive to ensure that their capacity resources are available when most needed,

---

[3] Sections 7, 8, and 10 of Attachment DD to the PJM Tariff, respectively. Section 9 of Attachment DD defines an additional availability metric, the Peak Season Maintenance Compliance Penalty, which is not relevant to my testimony today. Capitalized terms herein not otherwise defined have the meanings set forth in the PJM Tariff.

[4] The Daily Deficiency Rate is the greater of (i) two times the Capacity Resource Clearing Price and (ii) the Net Cost of New Entry.

[5] PJM Tariff, Attachment DD at Section 8.1(b).

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

and provide loads with greater assurance that their payments for capacity will maintain peak-period reliability."[6] To accomplish this goal, the RPM Settlement Agreement defines a new availability metric, the EFORp, which is essentially the equivalent forced outage rate of a resource measured over a pre-defined set of about 500 hours each year that align with historical periods of peak system load. Units with EFORp above their historical EFORd pay a charge per unforced MW equal to the locational Capacity Clearing Price, while units with Peak-Hour Period performance that was better than their historical EFORd receive a credit, funded by charges paid by other capacity suppliers.[7] The calculation of a resource's EFORp excludes "any day such … resource was unavailable if such unavailability resulted in a charge or penalty due to delay, cancellation, retirement, de-rating, or rating test failure."[8]

24. The RPM Settlement Agreement, however, only applies the EFORp measure to units that have at least 50 total service hours during Peak-Hour Periods. "If a unit has fewer than fifty total service hours during Peak-Hour Periods, then its actual peak-hour period availability will be based on the unit's EFORd (calculated in the same manner as for the Unforced Capacity it is allowed to sell, i.e., using the most recent twelve-month EFORd period, rather than the average of five such periods)."[9] Unlike the EFORp measure for units that run for 50 or more Peak Hours, the EFORd calculation does not exclude hours where unavailability was due to delay, cancellation, retirement, de-rating or a rating test failure.

25. No explicit rationale is provided in the filing of the Settlement Agreement for this differing treatment other than the general intent to "protect sellers" by establishing special rules for generation units that run infrequently,[10] but it is my belief that use of the EFORd metric was expected to be both statistically robust and more forgiving in terms of charges assessed under the PHPAC rules than an EFORp metric for infrequently dispatched units. The EFORp metric, after all, includes only about 500 hours (6 percent of the hours) in a year, while the EFORd metric includes all 8,760 hours. Expanding the sample period could include more data, hence increasing confidence that the availability metric is capturing some underlying "true" reliability measure for an infrequently dispatched unit rather than being driven by a few anomalous forced outages during the less than 10 percent of Peak Hours that such a unit might be dispatched.

---

[6] RPM Settlement Agreement, Explanatory Statement at 36.

[7] The value of such credits is capped at the locational Capacity Clearing Price.

[8] PJM Tariff, Attachment DD at Section 10(e).

[9] RPM Settlement Agreement, Explanatory Statement at 37-38 (discussing Section 10(g) of Attachment DD).

[10] *Id.* at 36.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

IV. FLAWS IN PEAK-HOUR PERIOD AVAILABILITY CHARGES AND CREDITS FOR INFREQUENTLY DISPATCHED GENERATION RESOURCES

26. Although the use of an EFORd metric for infrequently dispatched units under the PHPAC rules appears to have been based on legitimate concerns about the robustness of EFORp measured over a limited number of hours, it is now apparent that the EFORd metric is not unbiased and is not likely to produce a more fair and forgiving measure of Peak-Hour Period availability. The rules underlying the alternative PHPAC calculation for infrequently dispatched units are flawed at several levels. The exception crafted for such resources undermines the effectiveness of the Peak-Hour Period availability incentive for those units. An equally serious flaw is that the use of EFORd as calculated for purposes of unit availability creates a more severe penalty for an infrequently dispatched resource that is also subject to a Generation Resource Rating Test Failure Charge.

A. LACK OF FOCUS ON SEASONAL PERFORMANCE

27. The fundamental goal of the PHPAC rules is to provide an additional incentive to achieve high availability during periods when capacity resources are most needed. The EFORd metric itself was designed decades ago by PJM as a statistical proxy for peak-period availability. However, EFORd uses summary statistics rather than specifically examining hour-to-hour performance or need.[11] Recognizing the limitations of EFORd as a targeted metric for Peak Hour performance, the Settlement Agreement created an alternative, the EFORp metric.

28. In reverting back to EFORd for infrequently dispatched resources, though, we end up with an inaccurate measure of Peak Hour availability that greatly mutes the economic incentives for such availability, relative to the incentives in place for typical generation resources. EFORd is calculated over all 8,760 hours in a year; EFORp, during about 500 hours. Hence, performance for infrequently dispatched units is likely to be influenced more by performance outside of the Peak-Hour Periods, and the impact of performance during the Peak-Hour Periods will have a much smaller impact on the PHPAC. There is no economically rational basis for imposing on infrequently dispatched units additional charges under the PHPAC rules, which are clearly aimed at peak performance, for their

---

[11] The EFORd metric scales the Forced Outage Hours ("FOH") for a resource by what has been termed the full and partial "f factors." These factors represent the portion of full or partial outage hours during times a unit would have run if available and account for such things as the number of forced outages and the number of attempted and actual starts. The f factors are designed to be larger for units dispatched more frequently and smaller for units that do not run often, meaning that FOH should have a smaller impact for unit with fewer service hours. While the intent of this metric is in some ways similar to the EFORp metric, it is a very different measure and does not directly account for whether or not a unit would have been called on to generate, nor is it limited to only Peak-Hour Periods. As a result the f factors do not scale the EFORd metric into a measure that properly measures the as-needed availability of an infrequently dispatched generation resource for the purpose of calculation the PHPAC.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

performance outside the defined Peak-Hour Periods. Rather, incentives for performance outside of the Peak-Hour Periods should be, and are, provided through other provisions of the market rules.

29. For example, suppose a unit had 49 service hours during the Peak-Hour Periods and experienced no outages during the Peak Hours. By any reasonable measure of Peak-Hour Period performance, this unit should not be penalized, and potentially should receive a credit for good performance. Under the existing PHPAC rules, had the unit been dispatched for one additional hour, that desired outcome would have been achieved because the unit would be assessed charges and credits based on its EFORp. However, because the unit was dispatched infrequently, performance would instead be measured using EFORd, which would take into consideration all hours of the Delivery Year, including those outside of the Peak-Hour Periods. If the unit experienced a limited number of outages outside the Peak-Hour Periods, its Peak-Hour Period availability could be deemed to be significantly lower and the owner of the unit could move from receiving a credit to being assessed a charge under the PHPAC rules, despite the unit being available every time it was called to generate during Peak Hours, as well as being available during all other Peak Hours even when it was not economic to run. By contrast, as mentioned above, another unit with identical performance, but one additional service hour during Peak Hours, could generate a Peak-Hour Period availability credit under the PHPAC rules because its performance would be judged using the EFORp which does not take non-Peak Hours into account.

30. Exhibit SWN-2 shows a separate numerical example of how charges under the PHPAC rules would be assessed for two very similar units with very similar performance, but only one of which falls below the 50 service hour threshold. Both units performed during the Peak-Hour Periods without an outage, exceeding their Peak-Hour Period availability measured under the five-year EFORd measure of 85 percent. Both units also experienced extended outages outside the Peak-Hour Periods. The owner of Unit A, for which charges and credits are assessed under the PHPAC rules based on EFORp, is eligible to receive a credit of more than $3 million. By contrast, the owner of Unit B, which had 15 fewer service hours during the Peak-Hour Periods, is assessed a charge of more than $9 million, based on its relatively high EFORd, a charge that is not incurred for Unit A, despite nearly identical performance during Peak Hours and throughout the year. While it may be supportable to penalize the owners of each of these units for poor performance based on EFORd throughout the year, such a penalty is not the intent of the PHPAC rules and therefore should not be assessed under these rules. Moreover, in terms of annual availability, the performance of both Unit A and Unit B will lead to financial consequences as a result of respective EFORd measures, through a lower UCAP rating being applied in the next Base Residual Auction, resulting in a diminished quantity that can be sold in the auction. The performance of Unit B, however, will be penalized twice.

31. The treatment of infrequently dispatched units under the PHPAC rules can also serve to excuse a generator's under-performance during Peak-Hour Periods by shifting the metric to a year-round measure. Suppose a generator was on outage during all of the Peak-Hour

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

Periods in both summer and winter. Clearly, the intent of the PHPAC rules would be to penalize the owner of such a unit very severely, and that is exactly the outcome that would occur without the exemption for infrequently dispatched units. However, if the unit does not have 50 service hours during the Peak-Hour Periods, its availability would instead be determined by its EFORd. If this unit was dispatched frequently outside of the Peak-Hour Periods and performed well in the non-Peak Hours, its owner could end up being assessed very limited charges, or no charges at all, under the current PHPAC rules.

32. Also problematic is the fact that the EFORd metric is used both to determine penalties for infrequently dispatched generation resources under the PHPAC rules and to determine changes in payments for all generation resources resulting from EFORd increases through the calculation of UCAP in the following year. In cases where there is an EFORd increase, the resource owner would have to purchase replacement capacity, either bilaterally or through the Third Incremental Auction, or would incur Capacity Resource Deficiency Charges. For infrequently dispatched resources, any increase in EFORd is *also* charged during the course of the year through the PHPAC rules. This duplicative reliance on EFORd inappropriately increases the penalties for any EFORd increase for infrequently dispatched resources.

33. Finally, the apparent rationale for using an EFORd metric for units with fewer than 50 service hours during Peak-Hour Periods is itself dubious. As described above, my understanding is that less than 50 service hours was deemed to be too few data points to provide a statistically robust measure of a unit's reliability. By definition, however, the Peak-Hour Periods should include nearly all the hours when overall system conditions are tight and units with marginal economics would typically be dispatched. As a result, it is unlikely many additional service hours will occur for very high-heat-rate peakers in the additional hours included in the calculation of EFORd and the use of EFORd does not necessarily provide additional data that can be used to accurately assess the availability of such units during Peak-Hour Periods. Moreover, even if a unit *is* operated with some frequency outside of the established Peak-Hour Periods, it calls into question the appropriateness of using hours outside the Peak-Hour Periods to assess charges or credits for Peak-Hour Period availability. In effect, the substitution of EFORd for EFORp is not likely to substantially improve the robustness of the metric, and use of the EFORd metric introduces biases that make it an inaccurate indicator of Peak Hour reliability.

B. DOUBLE-COUNTING OF RATING TEST FAILURES CHARGE

34. Another significant flaw in the design of the PHPAC rules as applied to infrequently dispatched resources is how these rules interact with other design elements of RPM, including, in particular, the Generation Resource Rating Test Failure Charge. As discussed above, the Tariff provides exceptions to the EFORp calculation for unavailability due to events that result in charges or penalties other than PHPACs. Therefore, for most RPM capacity generation resources, charges under the PHPAC rules are assessed *net of rating test failure*. For example, suppose a capacity supplier cleared 88 MW of UCAP from its 100 MW (nominal) generation resource, based on the

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

resource's prior-year EFORd of 12 percent. During its rating tests, however, the resource only manages to prove up 90 MW of capacity, reducing the resource's UCAP to 79.2 MW. This gap between 88 MW and 79.2 MW is charged through the Generation Resource Rating Test Failure Charge, but the EFORp metric is built around the lower 90 MW test rating. This design is appropriate, as it avoids a double penalty for the same deficiency.

35. By contrast, a double penalty *is* levied on infrequently dispatched generation resources. A capacity supplier must take a partial forced outage for the portion of a generation resource between its nominal and tested ratings. As discussed above, the PHPAC rules allow for this partial forced outage to be washed out of the EFORp metric through exemptions for outages that also result in non-PHPAC charges or penalties. However, the partial forced outage *is* included in the EFORd metric. EFORd, it should be remembered, is not custom-built for determining availability during Peak-Hour Periods. Consequently, even though it may make sense for some purposes to include the rating test failures as partial forced outages in EFORd, in the context of assessing PHPACs, this inclusion double-counts the capacity shortfall already penalized through the Generation Resource Rating Test Failure Charge—but only for infrequently dispatched resources. In effect, such resources face much larger total charges than generation resources that are called to run more frequently, increasing the effective penalty for a rating test failure from the capacity clearing price times two up to that price times three (i.e., the Daily Deficiency Rate plus the maximum charge under the Peak-Hour Period Availability Charge).

V. PROPOSED REMEDIES

36. In light of the flaws of the PHPAC rules applicable to infrequently dispatched resources, changes to the PJM Tariff are appropriate and necessary. In my opinion, the Commission should take the following actions:

(a) For the current 2007-2008 Delivery Year, the Commission should direct PJM to not assess any charges or pay any credits to infrequently dispatched resources based on the PHPAC rules;

(b) The Commission should direct PJM to work with its stakeholders to develop an alternative method for calculating the Peak-Hour Period availability of infrequently dispatched resources and associated charges or credits, possibly with the requirement that a statistical confidence band around the calculated value of EFORp, based on the number of observed service and outage hours, must fall entirely above or below the historical average value of EFORd before any penalties or credits apply; and

(c) Given that this alternative method simply cannot be developed in time for the upcoming 2008-2009 Delivery Year, as an interim measure, the Commission should direct PJM to apply the current EFORp metric uniformly to all generation resources regardless of their number of service hours in the Peak-Hour Periods.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

37. The rationales for these conclusions are discussed below.

A. ELIMINATE PEAK-HOUR PERIOD AVAILABILITY CHARGES AND CREDITS FOR THE 2007-2008 DELIVERY YEAR

38. Given the flaws of the EFORd metric as a basis for determining charges under the PHPAC rules, these charges for infrequently dispatched resources are disconnected from any sound economic rationale. At the same time, though, establishing some alternative measure retrospectively would fail to serve the primary function of these charges: to create an incentive to maintain high availability during Peak-Hour Periods. Thus, for the current 2007-2008 Delivery Year only, the most prudent and fair solution is to eliminate the Peak-Hour Period availability charges (and credits) for infrequently dispatched resources.

39. Setting the Peak-Hour Period availability charges (and credits) to zero for the 2007-2008 Delivery Year is not unreasonable. From an incentive perspective, an avowedly one-time change has no adverse incentive effect: generation owners had (and, presumably, responded to) financial incentives to provide high reliability during the already transpired Peak-Hour Periods for the 2007-2008 Delivery Year. Moreover, as illustrated by Mr. Newton's testimony, it is likely that owners of many infrequently dispatched generation resources simply were in no position to ascertain until very recently whether their resources' charges under the PHPAC rules would be determined using the EFORd or EFORp metric. Furthermore, PJM has not yet calculated Peak-Hour Period availability charges and credits and issued bills for the 2007-2008 Delivery Year, so it has no need to issue rebates or other settlement modifications. Because any charges collected under the PHPAC rules are used first to pay generators with above-expected availability in the first instance, it is as likely as not that cancelling these charges for infrequently dispatched resources will have no effect whatsoever on bills to load. And even if there were some effect, it would be very small because the total capacity of such resources is small relative to the total capacity procured through the RPM market. Zeroing out the 2007-2008 Peak-Hour Period Availability charges (and credits) therefore unwinds the inequity of these charges and credits, as implemented, with little or no negative side-effects.

B. DEVELOP AN ALTERNATIVE PEAK-HOUR PERIOD AVAILABILITY METRIC FOR INFREQUENTLY DISPATCHED GENERATION RESOURCES

40. To correct the problems with the existing PHPAC rules for infrequently dispatched generation resources, PJM stakeholder discussions should be held to develop an alternative Peak-Hour Period availability measure that accomplishes the following goals: First, it should provide a similar financial incentive for availability for infrequently dispatched resources as is provided for other generation resources for which Peak-Hour Period availability charges or credits are calculated based on EFORp. Second, it should remain focused on availability during the Peak Hours utilized in the PHPAC calculations for other units and preserve the incentives to maintain high availability during these Peak Hours. Third, it should remove the duplicative charges and unintended loopholes that result from the current PHPAC rules. Finally, it should directly mitigate the problem that

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

the current PHPAC rules for infrequently dispatched units were intended to mitigate, namely assessment of large charges under the PHPAC rules based on limited operational data during Peak Hours and potentially anomalous values of the EFORp.

41. Although, for the reasons I have discussed, simply using the EFORd metric to compute PHPACs for infrequently dispatched resources is not appropriate and fails to mitigate the limited data problem for such units, there were legitimate reasons for finding an alternative to EFORp for such units. The EFORp of units with few service hours is strongly affected by a single outage during the Peak-Hour Periods. In such a circumstance, EFORp is not a robust statistical estimator of the resource's "true" Peak-Hour Period availability. It may cause a well-maintained unit that should have generally high availability to be treated as very poor performer simply because the unit was not called on often. Conversely, it may allow a poorly maintained unit that would perform poorly if called on often to appear to be highly available simply because it was not called on to generate much and therefore its availability was not tested. There are other alternatives, however, than simply discarding the idea of estimating Peak-Hour Period availability of infrequently dispatched units altogether.

42. After evaluating possible approaches, I believe that a superior adjustment to the PHPAC rules for infrequently dispatched generation resources could be developed based on the concept of a statistical confidence interval. The purpose of EFORp is to provide a metric for assessing the degree to which a resource provides reliability benefits during the Peak-Hour Periods during which reserve capacity resources are most needed. For a unit that is in economic merit during all such hours, EFORp provides a very good measure of the percentage of the time the unit was not providing the desired reliability benefits. However, for units that are called on to generate infrequently, the actual availability of the units is not observed during many of the Peak Hours. As with any statistical sample, the fewer hours contained in this sample, the less robust the resulting estimate will be.

43. A standard approach applied when interpreting statistics estimated with data from a limited sample is hypothesis testing based on application of confidence intervals around the estimated values of the statistics. For example, results of public opinion polls that rely on data from a subset of the target population are typically presented with a margin of error, based on a statistical confidence interval. If a reference value (e.g., 50 percent of the population) falls inside the interval defined by the estimated polling response plus-or-minus the margin of error, the results cannot be confidently interpreted to be different from that reference value. Similarly, if the reference value falls outside of the interval, one can conclude with a high degree of confidence that the survey result differs from the reference value. As the size of the sample increases, the margin of error will decrease, collapsing to zero as the sample size approaches the entire population.

44. A very similar confidence interval could be constructed around the EFORp metric. For units with a small number of service and outage hours (i.e., a small denominator in the EFORp calculation), the interval would be wider, and for units that were either running or on outage during all of the relevant Peak Hours, the interval would collapse to a single

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

value. An alternative approach for assessing charges under the PHPAC rules for infrequently dispatched units could therefore be to calculate the EFORp metric, along with a statistical confidence interval, and assess the PHPAC only if the five-year average EFORd for the unit falls outside of the confidence band around EFORp. In other words, charges and credits under the PHPAC rules would be assessed only when the observed difference between EFORp and 5-year EFORd can be interpreted as a robust statistical indicator. This application of an EFORp metric and a confidence interval is analogous to the common treatment of statistical indicators in research and policy making. Conclusions are only drawn from statistical indicators, and decisions are made based on those indicators, only if they can be demonstrated to be statically robust estimates.

45. Determining the level of statistical confidence to be applied in formulating the interval, as well as the calculation of the charge or credit when the reference EFORd level falls outside of the interval, will require consideration of several subjective factors and is best left to a stakeholder process. In principal, the approach could be based on the expected outcomes for units with exactly 50 service hours. In other words, the confidence level could be set so that the expected width of the interval, were it applied for a unit with 50 service, would be unlikely to exclude many charges or credits under the PHPAC rules. As services hours falls below 50, the interval should be expected to widen and charges or credits excluded more often.

46. Charges and credits under the PHPAC rules computed along these lines would provide a clear economic incentive for infrequently dispatched generation resources to be available during the Peak-Hour Periods. It would thus provide targeted "pay for reliability benefits" directly tied to observed in-period performance and take into account all available data about the resource's reliability during these hours, similar to more frequently dispatched units, thereby satisfying the first and second objectives stated above. Moreover, the approach would continue to be based on the comparison of EFORp to 5-year EFORd, eliminating the duplicative EFORd-based charges and penalties assessed on infrequently dispatched generation resources under the current rules.

47. The approach also satisfies the final objective. It prevents the assessment of charges or credits for infrequently dispatched units based on an EFORp value that may not be a robust statistical measure of "true" availability during Peak-Hour Periods. Moreover, it should stabilize the expected value of charges and credits assessed under the PHPAC rules for infrequently dispatched units by preventing performance in a very small number of hours from generating large charges or credits. In short, it addresses the key shortcoming of the current EFORp metric as applied to infrequently dispatched resources that apparently motivated the use of the EFORd metric.[12]

---

[12] There could be other methods, but they are less desirable. For example, a simplistic approach could be to use a rolling-average of several years' EFORp. Such a metric, however, has several weaknesses. For example, it is contrary to the general design of RPM charges, which are assessed in the same year as the event. This close link between performance and payment is an economically

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

48. Before any alternative Peak-Hour Period availability metric for infrequently dispatched units is implemented, however, detailed rules would need to be developed in a PJM stakeholder process. The rules will need to address issues such as the exact formula and level of statistical confidence that would be applied in formulating the confidence band around EFORp. These rules would benefit from input from a range of stakeholders, including PJM staff.

C. USE EFORP AS AN INTERIM MEASURE FOR THE 2008-2009 DELIVERY YEAR

49. Until PJM stakeholders have had time to develop a sound replacement for the Peak-Hour Period availability metric for infrequently dispatched generation resources (based on the approach described above or some other methodology that would accurately reflect the Peak-Hour availability of infrequently dispatched generators), some metric is necessary. For the reasons I have discussed, using the whole-year EFORd metric to assess Peak-Hour Period availability is unsound and discriminatory. As such, as an interim measure, I would recommend that the EFORp metric be used for *all* resources, regardless of the number of service hours during the designated Peak-Hour Periods.

50. Using EFORp for infrequently dispatched resources is, as the Settlement Agreement clearly recognized and as I discuss above, less than ideal. Nonetheless, as an interim measure, EFORp as a metric has two clear virtues: First, it is completely defined in the PJM Tariff already and is the standard by which most generation resources are evaluated. Second, it is an unbiased estimate of a unit's Peak-Hour Period reliability, although this estimate may be less statistically robust than ideal when based on limited service hours. Finally, EFORp is clearly superior to the currently used EFORd metric for the purpose of assessing charges and credits under the PHPAC rules inasmuch as it addresses the two major deficiencies of EFORd: the lack of focus on Peak-Hour Periods (and, consequently, the double-counting of generic availability), and the double-counting of test rating deficiencies. While EFORp may not provide a robust measure for infrequently dispatched generation resources, EFORd will generally be no more robust and introduces additional, undesired biases that make it inaccurate. Hence, until a more robust measure of Peak Hour availability under limited dispatch can be developed, simple removal of the 50 hour threshold will provide a more equitable and economically rational assessment of charges and credits under the PHPAC rules for infrequently dispatched units.

51. This concludes my affidavit.

---

sound rule. Second, such an approach would, by design, mute the impact of poor performance by spreading the impact across years, but still generate penalties for realized values of EFORp that cannot be demonstrated to be statistically robust indicators of diminished reliability benefits.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

EXHIBIT SWN-1

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

INTERNATIONAL

SCOTT W. NIEMANN

Principal

Ph.D. Economics,
University of Wisconsin

M.S. Economics,
University of Wisconsin

B.A. Mathematics, Political Science, Economics,
University of Kansas

Scott Niemann is an economist with extensive experience in the design, policy, and analysis of energy markets. As a member of CRA's Energy and Environment Practice, he has advised clients on a broad range of power market issues including market design, LMP pricing, financial transmission rights, resource adequacy markets, seams issues, and market power. Dr. Niemann has conducted numerous market studies addressing financial performance of electric generating assets, benefits of potential electric generation, transmission, and gas infrastructure upgrades, valuation of financial transmission rights, market power concerns, and economic damages. He has been retained as a market expert by a broad range of clients, including utilities, merchant power providers, investors, and trading organizations.

Prior to joining CRA, Dr. Niemann was a Principal Consultant at PA Consulting (and predecessor companies, PHB Hagler Bailly, and Putnam, Hayes, and Bartlett), where he conducted economic analyses in the environmental, energy, and commercial litigation practice areas.

EXPERIENCE

ENERGY

- On behalf of numerous market participants, conducted independent market assessments of northeast ISO resource adequacy markets. Led the development of CRA's price forecasting models for ISO-NE Forward Capacity Market, NYISO UCAP market, and PJM RPM Market. Served as capacity market expert in numerous assignments to support capacity acquisitions, financing, transfer pricing, and strategic decision making.

- Advised market participants during the FERC proceedings related to the design and implementation of the FCM, RPM, and NYISO UCAP markets.

- Provided expert testimony (both written and live oral) on behalf of NRG as part of the Connecticut Department of Public Utility Control (DPUC) proceeding regarding procurement of energy and capacity awarded under the Connecticut Energy Independence Act. Testimony focused on the benefit evaluation approach implemented in the selection of winning projects.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

- On behalf of companies involved in power marketing and electricity generation, performed more than 50 analyses of energy prices, power plant performance, and generation asset values in North American wholesale energy markets. This work has involved contributing to the development of a detailed GE MAPS model of the North American wholesale energy market and numerous simulations of the Eastern and Western U.S. and Canadian electricity markets.

- On behalf of US Power Generating, LLC., conducted an analysis of the New York City capacity and energy markets to support the evaluation and successful acquisition of the Astoria generating portfolio. Prepared independent market assessment and forecast of financial performance to support the financing process.

- Served as Project Manager for a CRA team engaged by ESB National Grid, the Irish system operator, to assist in the design of a competitive wholesale market for Ireland and develop the rules for the market. As Project Manager, coordinated team staffing and deliverables schedule, working on-site in Dublin. Led or participated in meetings with CRA team and client staff to develop straw man proposals for market design aspects. Drafted and presented discussion papers outlining aspects of the proposed design.

- On behalf of the Vice President of Energy Management at Con Edison, conducted several studies related to the NYISO market, including:

  - Analysis of the impact of changes in a wheeling arrangement between Con Edison and PSE&G using a GE-MAPS model of the Northeast U.S. The analysis included comparison of location prices, transmission congestion, and generation patterns within the PJM and NYISO systems under a range of PJM-NYISO transfer scenarios. Evaluated various strategies for implementation of the wheeling arrangement in light of market rules, commitment and dispatch methodologies, and transmission constraints within PJM and the NYISO.

  - Evaluation of the impacts on locational prices, generation costs, and costs to retail consumers within both PJM and the NYISO of moving Rockland Electric load from the NYSIO to PJM.

  - Evaluation of benefits of potential transmission upgrades both within New York City and other parts of the NYISO system.

  - Analysis of the impacts on locational prices and costs to retail customers of generation and transmission outages within New York, generating capacity additions in various locations, and proposed retirement of existing units.

- On behalf of participants in auctions for financial transmission rights (FTRs) and Transmission Congestion Contract (TCCs), analyzed bidding strategies, historical and forecasted congestion patterns, impacts of changes in market rules on FTR values, and historical FTR and TCC auction outcomes.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

- Provided expert testimony regarding expected electricity prices, generator unit operations, and the corresponding value of transmission credits held by the owners of a merchant power plant in the Southeast U.S.

- Led analytical efforts to estimate the gas demands related to steam and electric generation for a New York utility, examining a range of scenarios based on the relative prices of natural gas and other fuels, electricity demand, and the future mix of generating technology and fuel options.

- On behalf of a large power generating and trading organization, acted as independent market expert supporting agency approval of a natural gas asset acquisition. Led an evaluation of potential market power concerns stemming from the acquisition of natural gas transportation and storage assets and presented analysis to the Department of Justice in support of the company's application for agency approval under the HSR Act.

- On behalf of a large U.S. utility, assessed the impacts on the value and operation of its assets of integrating its service area into a competitive, LMP-based market. The analysis examined a broad range of issues including the effects of constraints outside the utilities service area on LMPs within the area, mitigation of seams issues, impacts of the precise definition and implementation of constraints within market software on the congestion patterns affecting nodal prices in the utilities territory, and the ability to hedge congestion risks through an FTR portfolio.

- On behalf of various U.S. clients, contributed to studies of the costs and benefits of forming Regional Transmission Organizations and implementing economic congestion management and LMP in place of physical congestion management. Specifically, the studies address the elimination or alleviation of seams issues between markets, FTR allocations, formation of regional load prices in markets with nodal prices for generators, and impacts of market changes on retail electric rates.

- On behalf of clients in the wholesale electric power industry involved in mergers or assets sales, assessed market power concerns under the FERC's Appendix A Merger Guidelines for transactions in several U.S. regions, including NYISO, ISO-NE, PJM, SERC, ECAR, SPP, ERCOT, and WECC.

- On behalf of the New York Research and Development Authority, worked as part of a team to develop an integrated natural gas and electric modeling system to evaluate the adequacy of the gas delivery system for meeting the future demands of electric generators. Led electricity modeling efforts related to the estimation of fuel demands among electric generators in New York and neighboring regions, accounting for transmission constraints, gas delivery constraints, and fuel switching by generations.

- Led analytical efforts supporting CRA expert testimony before the Federal Energy Regulatory Commission regarding the manipulation of electric power prices in the Pacific Northwest during the California Energy Crisis. Analysis addressed the reasonableness of a wholesale power contract in light of spot and forward market prices and the ability of power markets and traders to influence those prices.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

- Led the development of CRA's GE-MAPS model database, including compilation and auditing of generation, load, fuel price, and transmission data, and incorporation of these data into an MS-ACCESS database and interface with the GE-MAPS model.

- Evaluated benefits of potential transmission upgrades in the northeastern U.S. and Canada. The analysis used the GE MAPS model of the Eastern interconnection to measure the change in energy prices, and consumer and producer surplus in the Great Lakes Region.

- Studied generator bidding behavior in northeastern electricity markets and the impacts of market power mitigation measures.

- Evaluated the economic and environmental impact on a North American regional energy market of retiring coal-fired generation. The analysis involved estimation of the resulting changes in energy prices, power plant emissions, costs to consumers, and financial performance of generation assets.

- Conducted analyses supporting CRA expert testimony in litigation and FERC proceedings, including:

  - Wholesale power contract disputes.
  - Disputes over transmission rights.
  - Market design and market power mitigation issues.
  - Allegations of market power abuses.
  - Damages analysis related to generating unit outages.

- On behalf of a generation owner selling in the ISO-NE market, conducted an audit of payments for out-of-merit generation and associated uplift payments and production costs to identify recoverable costs and potential underpayments by the ISO.

- As part of a team working for an electric transmission and distribution utility, designed and conducted the econometric analysis for a study of customer value of service reliability. The study involved design and implementation of a survey and econometric analysis of the resulting data to measure residential and commercial customers' outage costs and willingness-to-pay to avoid various outage scenarios.

ENVIRONMENTAL LITIGATION

- On behalf of a municipal utility involved in litigation involving alleged natural resource damage, assisted in estimating the economic value of damaged resources. Project work included review of documents, collection of data, formulation of an economic framework for measuring damages, and support of an academic expert witness.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

- On behalf of a Middle-Eastern country making a claim for environmental damages arising out of the 1990 Gulf War, assisted in the assessment and valuation of potentially recoverable economic damages. Conducted substantial in-country research and developed techniques to value changes in health and environmental conditions. The confidential assessment was submitted to the United Nations Compensation Commission.

- For a property value dispute in the western United States, evaluated alternative valuations of environmentally impaired commercial real estate. The project involved review and critique of a survey used to elicit willingness-to-pay and evaluation of alternative measures based on market transactions.

- For a residential property value dispute, conducted an econometric analysis of survey-based willingness-to-pay measures for changes in groundwater quality and associated health risks. The effort involved analysis of data from several surveys, each with a different design and format, to assess potential biases in the survey responses and determine the effects of various demographic characteristics.

- For companies engaged in settlement discussions and litigation regarding environmental insurance coverage claims, estimated the cleanup costs and potential natural resources and property damage liability at hazardous waste sites. The work involved development of detailed, site-specific estimates using probabilistic assessment methods to determine the expected present value and distribution of future costs, which reflect technical and regulatory uncertainty.

OTHER COMMERCIAL LITIGATION

- For a major corporation involved in an intellectual property and antitrust dispute, performed analyses of market share, production capacity, output prices, and production costs. Assisted in the estimation of alternative measures of economic damages using market share, lost profits, and stock market valuation methods. Provided support in the preparation of expert reports.

- For a privately held company involved in a tax dispute, evaluated cash retention strategies of publicly and privately held firms. The analysis involved reviewing academic literature and evaluating implications of finance theory for the decisions of different types of firms in various industries.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

EXHIBIT SWN-2

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

Exhibit SWN-2
Effect of the 50 Hour Constraint on the Peak Hour Availability Charge for Two Units with Similar Availability Statistics

Assumptions	UNIT A	UNIT B	
Installed Capacity (MW)	300	300	
Five-year Average EFORd(%)	15%	15%	
07/08 LDA Clearing Price ($/MWD)	188.54	188.54	
07/08 DY # of Days	366	366	
EFORd Calculation for Delivery Year	**UNIT A**	**UNIT B**	**Difference**
Full Forced Hrs	5,064	5,064	-
Eq Forced Derated Hrs	-	-	-
Available Hours	3,793	3,793	-
Service Hours	123	108	15
Reserve Shutdown Hours	3,670	3,685	15
Full Forced Outages	1	1	-
Attempted Starts	8	6	2
Actual Starts	8	6	2
EFORD %	59.2%	59.9%	0.7%
EFORp Calculation for Delivery Year	**UNIT A**	**UNIT B**	**Difference**
Peak FOH	-	-	-
Peak EFDH	-	-	-
Peak SH	57	42	15
EFORp %	0.0%	0.0%	-

Peak Hour Period Availability Charge	UNIT A	UNIT B	Difference
Peak Service Hours Above/Below 50 Hour Constraint	**7**	**(8)**	
TCAP (MW)	255	255	
PCAP (MW)	300	120	180
Shortfall (MW)	(45)	135	180
PHAC ($)	($3,105,254)	$9,288,712	**$12,393,966**

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Pepco Energy Services, Inc.	)	
Complainant	)	
v.	)	Docket No. EL08-____-000
PJM Interconnection, L.L.C.	)	
Respondent	)	

AFFIDAVIT OF SCOTT W. NIEMANN

I, Scott W. Niemann, being duly sworn, depose and state that the contents of the foregoing Affidavit on behalf of the Pepco Energy Services, Inc., is true, correct, accurate and complete to the best of my knowledge, information, and belief:

Scott W. Niemann

SUBSCRIBED AND SWORN

before me this 22 day of April, 2008

Suzanne M. Walsh

Notary Public

My commission expires: 2/26/11

SUZANNE M. WALSH
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
February 26, 2011

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

ATTACHMENT C
FORM OF NOTICE

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Pepco Energy Services, Inc.	)	
Complainant	)	
v.	)	Docket No. EL08-____-000
PJM Interconnection, L.L.C.	)	
Respondent	)	

NOTICE OF COMPLAINT

( )

Take notice that on April 22, 2008, Pepco Energy Services, Inc. ("PES") filed a formal complaint against PJM Interconnection, L.L.C. ("PJM") pursuant to Section 206 of the Federal Power Act, and Rule 206 of the Federal Energy Regulatory Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.206, alleging that provisions of PJM's Open Access Transmission Tariff as related to the rules governing the Peak-Hour-Period Availability Charge for infrequently-run generation resources under PJM's Reliability Pricing Model are unjust, unreasonable and unduly discriminatory. PES further requests Fast Track processing of its complaint pursuant to 18 C.F.R. § 385.206(h).

PES certifies that copies of the complaint were served on the contacts for PJM as listed on the Commission's list of Corporate Officials.

Any person desiring to intervene or to protest this filing must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214). Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a notice of intervention or motion to intervene, as appropriate. The Respondent's answer and all interventions, or protests must be filed on or before the comment date. The Respondent's answer, motions to intervene, and protests must be served on the Complainants.

The Commission encourages electronic submission of protests and interventions in lieu of paper using the "eFiling" link at http://www.ferc.gov. Persons unable to file electronically should submit an original and 14 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426.

This filing is accessible on-line at http://www.ferc.gov, using the "eLibrary" link and is available for review in the Commission's Public Reference Room in Washington, D.C. There is an "eSubscription" link on the web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email FERCOnlineSupport@ferc.gov, or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

Comment Date: 5:00 pm Eastern Time on [May 9, 2008].

Magalie R. Salas
Secretary

20080422-5153 FERC PDF (Unofficial) 4/22/2008 4:51:59 PM

Document Content(s)

PES.PDF.....1-65