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December 2, 2010

Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, D.C. 20426-0001

Re: *PJM Interconnection, L.L.C.*, Docket No. ER11-~~2288~~-000

Dear Ms. Bose:

PJM Interconnection, L.L.C. ("PJM"), pursuant to section 205 of the Federal Power Act, 16 U.S.C. § 824d (2000), and the Commission's regulations, 18 C.F.R. part 35 (2007), hereby submits for filing revisions to the PJM Open Access Transmission Tariff ("Tariff"), and the Reliability Assurance Agreement Among Load Serving Entities in the PJM Region ("RAA") to establish additional product alternatives for demand resources seeking to participate in PJM's capacity market. As discussed in this filing, PJM has experienced tremendous growth in the level of demand resources committed to PJM as capacity resources through its annual forward capacity auctions under the Reliability Pricing Model ("RPM"). However, demand resources currently have only a single product definition—established nearly twenty years ago and carrying significant summer peak-period limitations on resource availability—by which they can commit their resources to PJM. Given the increase in the PJM region's dependence on demand resources to maintain reliability during periods when system supply resources are short, the current product definition is no longer adequate to ensure that reliability requirements are met. Accordingly, PJM proposes to establish two additional demand resource products, one available throughout the year, and one with an expanded summer commitment period compared to the current product. These additional products will significantly enhance PJM's emergency dispatch options while formally recognizing, through capacity resource commitments, the expanded response capabilities that are latent in many existing demand resources.

The enclosed Tariff and RAA revisions reflect an effective date of February 1, 2011, i.e., 61 days after the date of this filing. This filing envisions that the two new demand resource products will begin to meet PJM's reliability needs commencing with the capacity year that starts on June 1, 2014. PJM is scheduled to conduct the auction that will secure capacity commitments for that year in May 2011, and must post relevant parameters for that auction by February 1, 2011. To implement the two new demand resource products described in this filing, that posting will need to include several important new parameters. The requested effective date will allow PJM to include these two new products in that posting and in the May 2011 auction. To promote market

certainty, PJM also respectfully requests asks that the Commission issue its final order on this filing by February 1, 2011.

I. Introduction and Executive Summary.

Demand response has been a great success in the PJM Region, and holds even greater promise to continue to enhance reliable operations. As a result of concerted efforts by PJM and its stakeholders to broaden the opportunities for demand response participation in the markets, and the vision, dedication, and innovation of demand response providers, the PJM Region has more committed demand response resources than any other organized market or balancing authority area in the country. Effective demand response empowers customers to control their electricity costs, promotes inter-resource competition and efficiency, and helps defer construction of new generation plants and advance the nation's environmental objectives. Demand response holds even greater promise for the future, with growing deployment of advanced metering infrastructure and retail rate innovations by the states, which can spread the benefits of demand response from larger customers to smaller customers and transform decades-old perceptions of the elasticity of electric demand.

The continued success of demand response in PJM, however, could be hampered by the fact that demand resources currently can offer into the capacity market only a single type of product, and that product contains express limitations on demand response that are a legacy of PJM's days as a power pool. PJM and its predecessor power pool have long defined demand response as a resource PJM may call at any time, but for which consequences for non-response apply only during defined summer peak hours, no more than ten times each summer, and no more than six hours in duration per interruption. These limitations accord with a traditional utility view of peak load-shaving, and served their purposes well under more traditional approaches to meeting the region's capacity needs. The implementation of RPM in 2007, however, has spurred a dramatic growth in the commitment of demand response resources to the region's reliability needs, with a trend line foretelling even greater demand response penetration in the capacity market in coming years. PJM now must confront the possibility, therefore, that it may rely on resources for reliability that are not required to respond at all times when they are needed.

PJM's resource adequacy planning staff assessed the possible reliability impacts of these limitations many years ago and found that reliability would not be adversely affected so long as the load-shaving commitments on which PJM relied totaled less than 7.5 % of PJM's peak load. The growth of demand response as an RPM resource prompted PJM's planning staff to revisit that analysis this year, using the more sophisticated tools and analytical techniques currently available. That analysis found that PJM could be 90% confident that it would not have to call on demand response more often, or longer, than it is required to respond so long as demand response commitments did not exceed 4.7% of

peak load.[1] For comparison, Demand Resources equal to 8.4 % of peak load were offered into PJM's most recent RPM auction (for the 2013-14 Delivery Year),[2] and the cleared Demand Resources in that auction reflected 6.1 % of peak load.

Possible over-reliance on limited Demand Resources for the 2013-14 Delivery Year was mitigated because the PJM region cleared additional resources (without those limits) above PJM's installed reserve margin in that auction. However, that extra capacity margin was not seen in some of the more constrained local capacity markets. Accordingly, PJM's analyses indicate that the PJM Region has entered a phase of demand response development in which these legacy limitations on the response of demand resources threaten to become a legitimate reliability concern. Moreover, as discussed below, if PJM waits too long to implement the types of product changes described in this filing, it increases the risks of significant product price separation in the first year of implementation, which could potentially be more disruptive to the continued orderly development of demand response resources. More timely implementation, by contrast, could allow demand response providers more experience with expanded annual or extended summer commitment products before the product differentiation leads to frequent or extensive price differentiation.

PJM has worked with its stakeholders since April of this year on the best approach to expanding demand resource product alternatives to overcome the narrowly defined peak-period availability limitations and enable the continued robust growth of demand response in the PJM Region. In order to avoid a market disruption, the correct response is *not* simply to eliminate the legacy demand response product definition, or to cap the level of demand resources that may commit in RPM without providing other alternatives. The tariff-specified response limits for the legacy demand response product have been in place for years, and demand response providers have relied upon them when developing their business models and making their commitments to PJM. Rather than upset those arrangements by administrative fiat, PJM proposes to enlist the markets to address this concern. Specifically, PJM proposes to create two additional demand resource products—one available throughout the year and another available for an extended summer period—and offer those products expanded opportunities for participation.

PJM's proposal to recognize the greater reliability value of less-limited resources is comparable to its current recognition of the greater reliability value of resources that are located in capacity-constrained areas. For the existing locational "constraint," PJM's planning staff identifies the maximum capacity contribution that can be reliably expected to come from surrounding areas into a constrained area under capacity emergency

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[1] As discussed below, that analysis is based on reasonable assumptions, including reflecting PJM's existing practices of prudent dispatch of demand resources.

[2] A Delivery Year is a PJM planning year that extends from June 1 of a calendar year to May 31 of the following calendar year.

conditions. That constraint provides assurance that if PJM needs to call upon resources located outside the constrained area, they are committed at a level that can be reliably expected to be deliverable into the constrained area, given the limits imposed by the transmission system. If that constraint "binds" in the capacity auction, i.e., the limit on capacity that the transmission system can reliably deliver into the constrained area is reached, then the capacity price "separates" in that area, i.e., price rises to the level necessary to ensure that the area's remaining capacity needs are satisfied by capacity resources located *inside* that area. That higher price ensures that enough capacity is committed to meet the constrained area's needs and also sends a price signal to encourage new capacity resources to locate inside the constrained area.

Similarly, for the reliability constraint implicated by the current demand resource limitations, PJM's planning staff will determine the minimum quantity of resources without such limits that must be committed so that there is not an unacceptable risk that PJM may need to call upon the limited resources at a time when they incur no penalties for declining to respond, or when their response will not be effective at reducing loads at all times needed during the day. When that constraint "binds" in an auction, i.e., the minimum amount of unlimited or less-limited resources on which PJM must depend in order to maintain reliability is reached, then price will separate, i.e., the auction will clear higher-priced offers from resources that do not have those limitations (or have lesser limitations) as needed to meet the remaining capacity needs. This will ensure that enough capacity is committed to meet the area's needs, and also send a price signal to encourage the development of less-limited resources.

PJM proposes *two* additional demand resource products, rather than just adding a single annual product, in response to stakeholder feedback and strong support for this more flexible approach from state commissions. The intermediate product, available on any day and for a period of at least ten hours during a six-month extended summer season, accommodates the many existing demand resources in the region (such as air conditioning cycling programs) that can physically exceed PJM's current legacy tariff rule limitations on demand response capabilities but that are only available in the summer. This intermediate product, therefore, by tapping broader load management capabilities that already exist, should facilitate implementation of a program of demand resource product differentiation.

PJM also proposes to allow these two new demand resource products to meet reliability needs both for the PJM Region as a whole and for three Locational Deliverability Areas ("LDAs")[3] that typically bind in the RPM auctions or that have experienced a significant increase in Demand Resource commitments. When one of these areas separates, that means that no more resources located outside that area can be reliably delivered into that area to meet its capacity needs. To ensure reliability, that area needs not only enough in-area resources, it needs enough of the *right type* of resources,

[3] *See* RAA Schedule 10.1.

e.g., enough annual resources. Under the proposed rules, therefore, PJM's planning staff will determine not only the maximum reliable contribution of limited resources to the region, they will also determine the minimum contribution needed from annual or less-limited summer resources to each of these three LDAs. When one of those three LDAs price-separates in the auction, in-LDA resources can then be compensated not only for their locational value, but also (to the extent necessary) for their value in ensuring that PJM can call on the resources when needed.

The details of these proposed reforms are described and fully supported below and in the enclosed affidavits of Mr. Thomas A. Falin, the Manager of PJM's Resource Adequacy Planning Department,[4] and Mr. Michael E. Bryson, PJM's General Manager of Dispatch Operations.[5] PJM asks the Commission to accept these tariff changes effective February 1, 2011, so that the two new demand resource products, and the associated and conforming rule changes, can be in place as market participants prepare for the RPM Base Residual Auction in May 2011 that will secure capacity for the 2014-15 Delivery Year. Given the dramatic growth of demand response as an RPM resource, the time to address this issue, and assure both reliability and the continued success of demand response in PJM, is now.

II. PJM's Demand Resource Rules Must Evolve to Address the Reliability Risks Inherent in the Current Limitations on PJM's Demand Resource Product.

A. The PJM Region in Recent Years Has Dramatically Increased its Reliance on Demand Response to Meet Capacity Needs.

PJM's predecessor power pool for decades set a common installed capacity requirement for the entire pool area that all participating public utilities were required to help satisfy in proportion to their peak load serving responsibilities. When PJM was restructured under Order No. 888, this capacity obligation was extended to all load serving entities ("LSEs"). In 1991, PJM began to allow LSEs to take a credit against their capacity obligation for a form of demand side management known as Active Load Management ("ALM"). Under ALM, LSEs demonstrated to PJM that they had customers that were contractually committed to interrupt their load during peak demand periods, thereby reducing, to the extent of that load interruption capability, the amount of installed generating capacity the LSEs had to commit to PJM for their peak loads. PJM, as the central dispatcher, was authorized to determine when such interruptions were needed and then call upon the LSEs to interrupt the designated loads. At the end of each summer peak season, PJM reviewed LSEs' compliance with their ALM commitments; if loads had not been interrupted when and to the extent called upon, the LSE suffered significant

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[4] Mr. Falin's Affidavit is Attachment A to this filing.

[5] Mr. Bryson's Affidavit is Attachment B to this filing.

financial consequences, in the form of a full year's worth of capacity deficiency charges to the extent of its non-compliance.

In 2005, in response to mounting evidence that PJM's installed capacity construct was not providing adequate assurances of reliability, PJM proposed the Reliability Pricing Model ("RPM"). Under the RPM rules, PJM conducts forward auctions to secure capacity for a future Delivery Year, thereby allowing both existing and proposed generation plants to compete to meet the region's installed capacity needs. In a significant advance, PJM also proposed to allow "Demand Resources," i.e., an LSE's proven peak load reduction capability, to be offered into the auction in competition with generation resources. Similar to PJM's locational marginal price energy markets, all cleared resources are compensated during the Delivery Year at the market-clearing price, regardless of the level of their price offer in the auction. Through a series of orders in 2006 and 2007, the Commission approved RPM, noting in particular its benefits in allowing Demand Resources to compete in the auctions and provide a revenue stream to encourage the development of demand side management.[6]

As initially approved, RPM also carried forward the ALM concept by allowing LSEs the alternative, rather than bidding their demand response capability into the auction, to simply take a credit against their RPM capacity charges based on that demand response capability. This alternative was titled Interruptible Load for Reliability or ILR. In 2009, to encourage all resources to compete in the RPM auctions, the Commission agreed to eliminate the ILR credits effective May 31, 2012.[7]

RPM has engendered a marked increase in the commitment of demand-side resources to PJM. In the years before RPM was implemented, LSEs committed peak load management capability to PJM, in the form of ALM, at a level ranging from about one to four percent of peak load. In the last Delivery Year before RPM was implemented, the amount of participating load response in PJM (in the form of ALM) was about 1.5 percent of peak load. Peak-load management commitments (in the form of both ILR and cleared Demand Resources) increased the first year RPM was implemented, and have increased even more since, as shown in the following bar chart.

As can be seen, when PJM conducted its RPM auction earlier this year to secure capacity commitments for the 2013-14 Delivery Year, Demand Resources equating to about 6 percent of PJM's peak load were cleared, representing a four-fold increase over the demand response committed in the last year before RPM. Notably, committed load management capability was even higher—over 7 percent of peak load—in 2011-12, the

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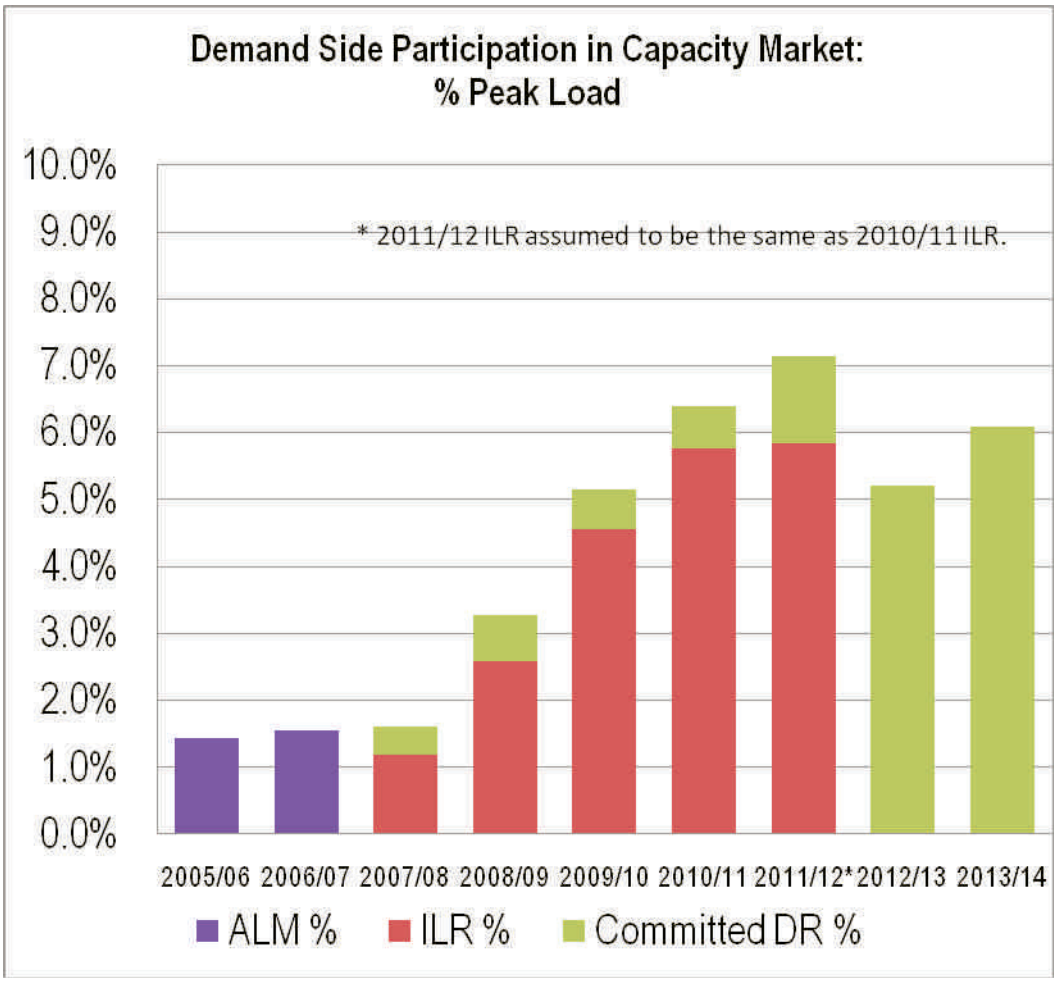
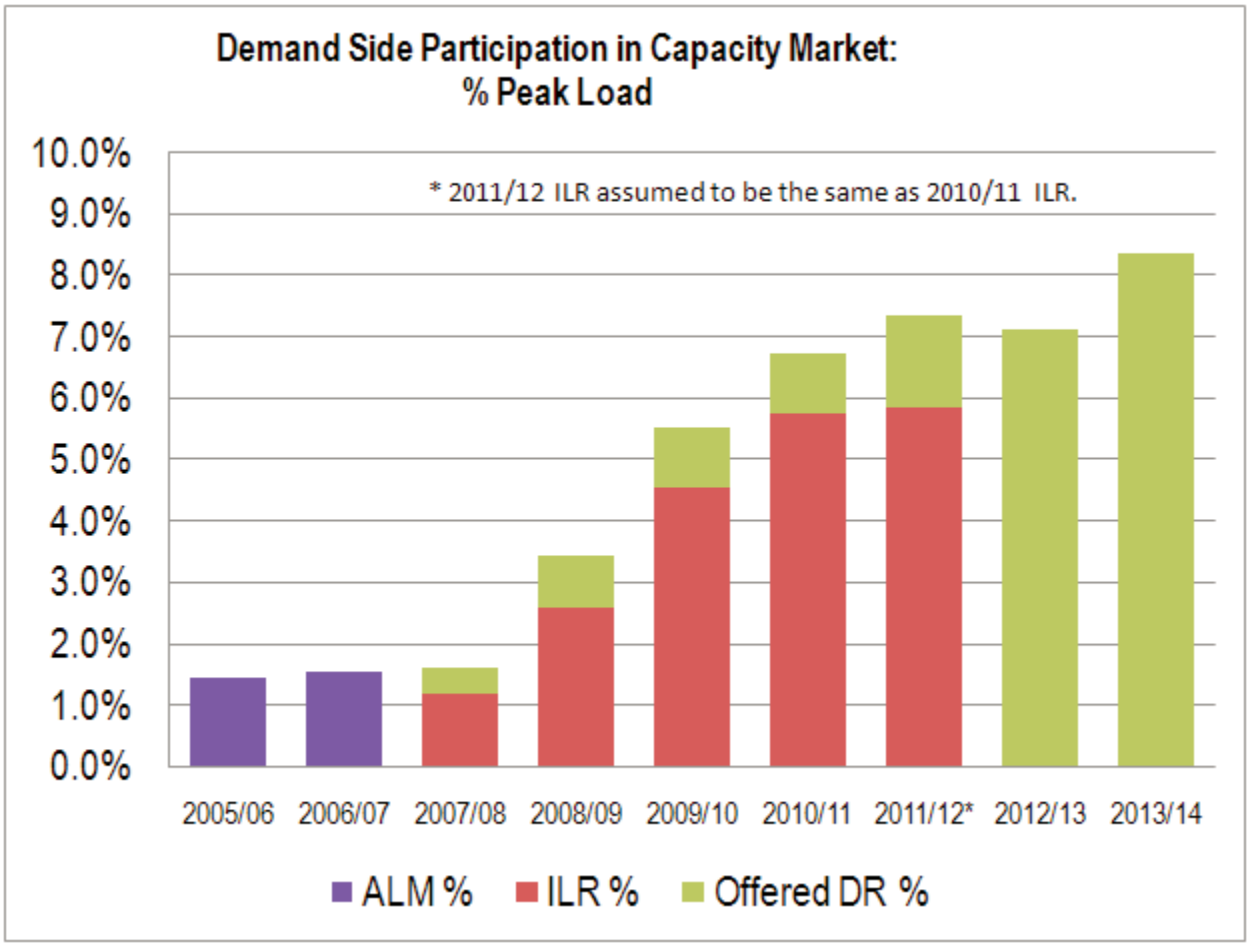
6 *PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,331, at P 6 (2006) (RPM settlement expected to provide greater incentives for new demand response), *on reh'g*, 119 FERC ¶ 61,318 (2007), *reh'g denied*, 121 FERC ¶ 61173 (2007), *aff'd Pub. Serv. Elec. & Gas Co. v. FERC*, 2009 U.S. App. LEXIS 5699 (D.C. Cir. 2009).

7 *PJM Interconnection, L.L.C.*, 126 FERC ¶ 61,275, at P 83 (2009).

last year for which ILR was available. After dropping from that Delivery Year to 2012-13 (the first year without ILR), committed Demand Resources again rose substantially from 2012-13 to 2013-14, making up much of the ground lost from the elimination of ILR.



Impressive as they are, these figures still do not capture all of PJM's potential reliance on demand response for its capacity needs. A substantial additional amount of Demand Resources were offered for each year but did not clear. The following chart shows the total underlying demand response capability potentially available each year, in the form of Demand Resources offered into the RPM auctions plus ILR committed. As can be seen, the Demand Resources offered into the auction for the 2013-14 Delivery Year were equal to about 8.4 percent of the peak load for that year, a nearly six-fold increase from the last year before RPM. This figure represents the Demand Resources that currently have qualified under PJM's existing eligibility criteria and that could be committed in future auctions. Indeed, given the increasing trend reflected in both of these charts, it is prudent to expect that an even greater amount of Demand Resources will be offered into the forthcoming RPM auctions for subsequent Delivery Years.



B. The Demand Response on Which PJM Relies for Capacity Commitments Has Several Important Limitations.

Notably, the Demand Resources offered into RPM today are essentially the same product as the ALM that public utilities committed when PJM was still a power pool. The critical eligibility criteria remain largely the same, and contain some important limitations. Specifically, load management capability could qualify as ALM then, and can qualify as a Demand Resource now, so long as it:

- Can be interrupted during the hours of 12:00 p.m. to 8:00 p.m. (Eastern Prevailing Time) on non-Holiday weekdays during the months of June through September;
- Can be called upon for interruptions up to ten times during that period each year; and
- When called upon to interrupt, can remain interrupted for up to six hours.

These criteria now define the maximum performance expected of Demand Resources. PJM can call upon a committed Demand Resource more than ten times in a year, or

outside the peak summer weekday hours, but the resource cannot be penalized for failing to respond at those times, because the resource's performance will be measured by its response when PJM's call for interruption is consistent with the above three criteria.

C. PJM's Demand Resource Limitations Raise Reliability Concerns at Increased Levels of Reliance on Those Resources.

1. *Overview.*

When these three limitations were first established for ALM, they were based on an analysis of the peak periods during the year when PJM would be most at risk of shedding load in the Mid-Atlantic Area Council ("MAAC") region then served by PJM. However, the narrow focus on that very limited set of available hours, and the limits on the frequency and duration of the calls for interruption, also reflected an explicit assumption that ALM commitments would comprise a very small share of the total capacity committed to PJM. Specifically, capacity planning analyses performed when ALM was first established in 1991 assumed that it would comprise no more than five percent of PJM's forecast unrestricted peak load.[8] In 1995, PJM updated its planning analysis and determined that reliability concerns would arise if ALM exceeded 7.5 percent of forecast unrestricted load.[9]

The reliability concerns with these limitations can be expressed in several ways, but all turn on the fact that as more megawatts of resources that are only available during narrowly defined peak periods are committed, then fewer megawatts of more broadly available resources are committed. Commitment of fewer resources that are more broadly available increases the risk that when PJM calls on capacity resources, it may have to call on a resource at a time, or in a manner, that the resource is not required to respond because of the explicit tariff limits on its expected performance. Thus, for example, if PJM commits too many Demand Resources with narrowly defined obligations under the tariff and too few capacity resources without such narrow limits, then a situation could arise in which PJM already has called all available resources and now needs to call upon a Demand Resource:

- for the eleventh time that season;
- outside of the defined peak hours of a summer workday; or
- for more than six hours.

If any of these situations arises, then PJM will be calling upon a resource *that is not compelled to respond.* Put even more simply, when there are very few limited resources,

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[8] Falin Affidavit at P 5. "Unrestricted" peak load refers to the load that would be expected if load management is not implemented.

[9] *Id.*

and very many resources without such limits, the tariff-prescribed limits are not a great concern because there is a high likelihood the limits can be avoided (by calling on a resource without such limits). But as the proportion of limited resources increases, and the proportion of resources without such limits decreases, the risk increases that PJM may need to call on a limited resource *when those limits matter*.

Given the rapid increase in Demand Resources offered and cleared in the RPM auctions, PJM committed to its stakeholders that it would conduct an updated and more thorough analysis of these reliability implications. PJM's Resource Adequacy Planning Department completed that analysis in May 2010 ("May, 2010 Analysis"). A copy of that analysis is submitted as Exhibit 1 to Mr. Falin's affidavit.

The May, 2010 Analysis focuses on two aspects of these reliability concerns (each of which is discussed at greater length in the following sections of this letter):

1. At what level of Demand Resource commitment is there an unacceptable risk that PJM will have to call on Demand Resources more than ten times in a season; and

2. Assuming Demand Resources commit at the level determined in response to question 1, for how many hours must Demand Resources commit when called upon on a given day to provide adequate assurance that Demand Resources will be effective in reducing the peak during all relevant times of the day?

As discussed below, subsequent analysis has refined PJM's approach to the reliability implications of the Demand Resource six-hour availability window. Moreover, as both of these limitations are in effect simultaneously for Demand Resources, the reliability concern with the currently limited Demand Resources are defined at any given time by whichever of these two limitations is *more* constraining at that time. For example, if one of these limitations becomes a concern when Demand Resources equate to ten percent of PJM's peak load, but the other becomes a concern at five percent of peak load, then reliability concerns with Demand Resources will legitimately arise at any level above five percent.

2. *Reliability Concerns with the Ten-Times-Per-Summer Limitation.*

For the first question, PJM developed hundreds of daily load forecasts (varying based on differing assumptions on weather patterns) and corresponding daily forecasts of the expected available generation capacity resources, for each of PJM's twenty highest coincident load days in a year. PJM compared the two and, whenever the difference (i.e., generation less load) was within an estimated operating reserve allowance of 1300 MW,[10]

[10] As detailed in the PJM manuals, the synchronized reserve requirement set by the Reliability*First* Corporation for much of the PJM Region is equal to the size of the

PJM projected that demand response would be called. PJM then varied the level of limited resources (i.e., the current Demand Resource product) committed, and correspondingly reduced the level of other (e.g., annual) resources committed, and calculated the probability that PJM would have to call upon the limited resources more than ten times per year, because it had exhausted all the annual resources that had been committed. The calculated probabilities reflect a determination that, in a certain percentage of the hundreds of different scenarios that encompass a reasonable range of possible load conditions, PJM could no longer call on the annual resources (because they had been displaced by the limited resources when capacity was committed for the year) and would have to call on the limited resources more times than they are obligated under the tariff to respond.

These probabilities are shown on the following graph, which is taken from the May, 2010 Analysis. As the level of Demand Resource commitment (as a percentage of peak load) increases, so too does the probability that PJM will need to call on Demand Resources more than ten times in a summer.

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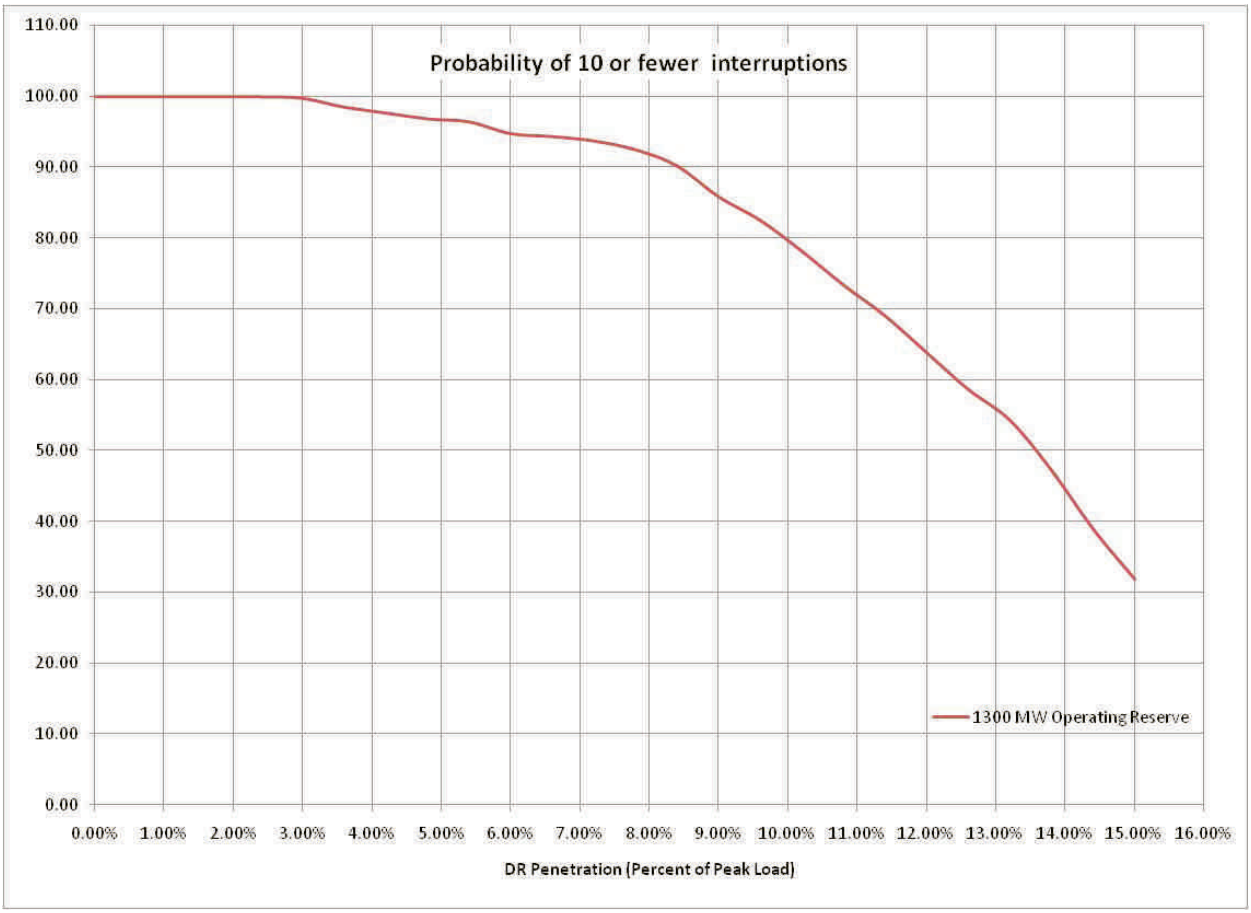
single largest generating unit, which for PJM is 1300 megawatts.. *See* PJM Manual 13, "Emergency Operations," page 11, available at: http://www.pjm.com/~/media/documents/manuals/m13.ashx



So, for example, if Demand Resource penetration is less than four percent (as ALM was before implementation of RPM), there is almost no chance that PJM would have to call on it more than ten times per summer. By contrast, if Demand Resource penetration were to hit 15 percent, it is highly likely (67 percent likely) that PJM would need to call on Demand Resources more than ten times per summer.

Applying a commonly employed 90 percent statistical confidence level here, PJM set the level of acceptable risk as a ten percent chance that a limited resource would be called upon when it is not obligated to respond. Applying that standard to the graph shown above, PJM can be 90 percent confident that it would not need to call on limited resources more than ten times in one summer so long as the committed Demand Resources equated to no more than 8.5 percent of the peak load (assuming the RPM auction clears at the level of PJM's Installed Reserve Margin).

Moreover, Mr. Bryson discusses the real-world concerns PJM dispatchers have with this limitation. As he illustrates, just this year, PJM was only eleven days into the summer when it faced emergency operations and a need to call Demand Resources. The downside to calling Demand Resources so early in the season was that it increased the

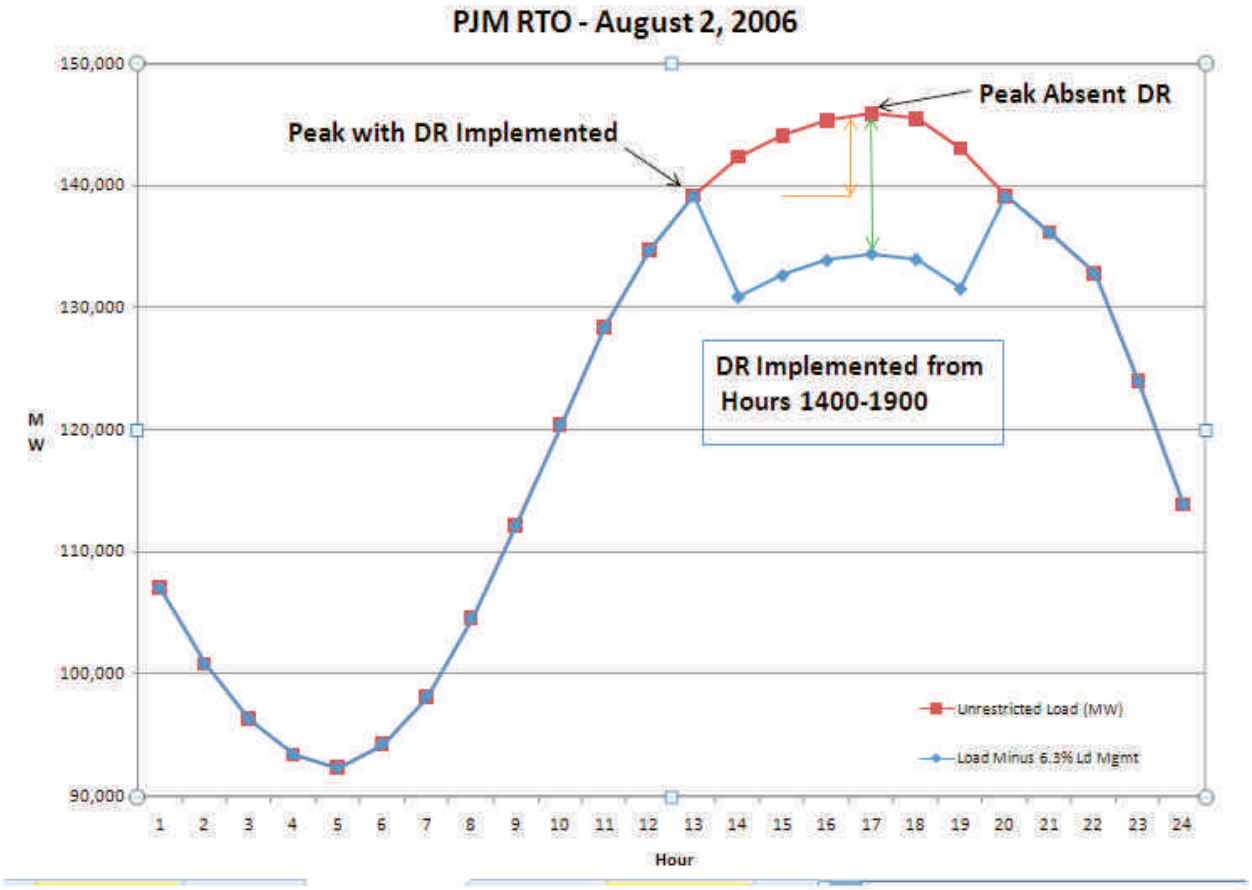
chances that PJM would exhaust the available ten calls before the summer was finished. PJM ultimately chose to call Demand Resources that day, "but the experience highlights how the current product limits force dispatchers to balance the need for Demand Resources in real-time operations versus the longer term prudence of potentially calling on Demand Resource more often than they are required to respond."[11]

3. *Reliability Concerns with the Six-Hour Interruption Window.*

For the second question, PJM analyzed how many hours during a peak day it would need Demand Resources to reduce, in order to assure that its peak load is indeed reduced for that day, and not merely shifted to a time when Demand Resources are not deployed. Demand Resources are intended to shave or reduce the daily peak load, not to shift the peak to an hour outside the six-hour Demand Resource window. PJM illustrated this concern in the May, 2010 Analysis using the all-time PJM Region peak day of August 2, 2006 as an example.

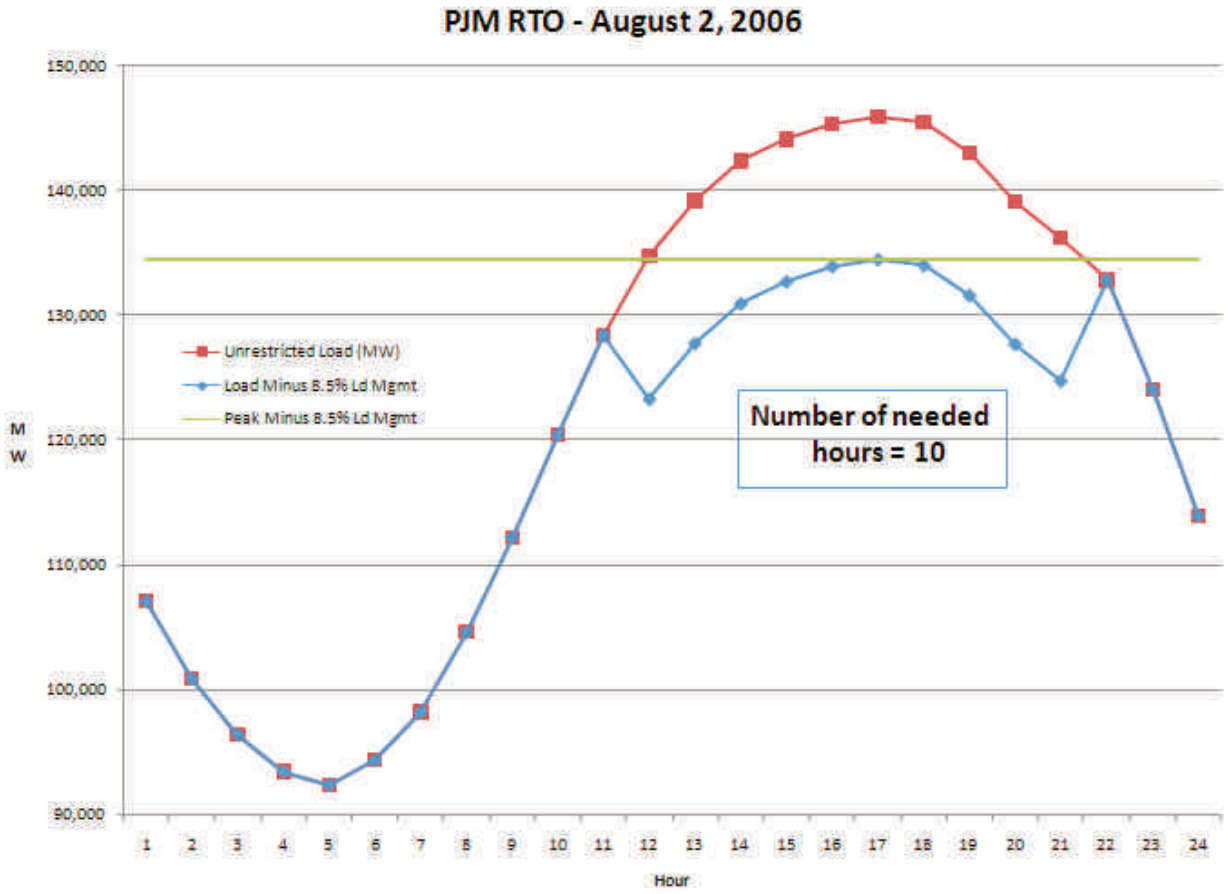
The red curve on the graph shows the unrestricted load, i.e., the peak load assuming no load management. If Demand Resources had been implemented over the highest six load hours of that day, the metered load would have followed the blue curve. In the example used in the May, 2010 Analysis, Demand Resources are assumed to commit at the same level, 6.3% of the weather-normalized peak, that they committed in the RPM auction for the 2010/2011 Delivery Year. As illustrated in the figure, calling on Demand Resources to interrupt shifts the daily peak to 1300 hours (i.e., 1:00 p.m.). As a result, the reduction in the daily peak (the vertical orange line) is less than the amount of Demand Resources called upon (the vertical green line).

[11] Bryson Affidavit at P 14.



By contrast, the following graph shows that by expanding the interruption window to ten hours, instead of six, deploying Demand Resources reduces the daily peak, rather than merely shifting the peak to a time outside the window. Specifically, the interruption window would need to be expanded to ten hours to ensure that the daily metered peak still falls within the interruption window after Demand Resources are fully implemented.[12] The goal is to ensure that the green horizontal line is the metered peak. Therefore, any red data point falling above the green line would need to be reduced by implementing Demand Resources. There are ten red data points above the green line, so the interruption window, for this particular day, needs to be ten hours. The graph therefore indicates that a ten-hour Demand Resource interruption window is required for this particular day.

[12] The analysis assumes committed Demand Resources equate to 8.5 percent of the unrestricted peak load, based on the level determined above from the investigation into the ten-times-per-summer limitation.



Based on this analysis, and similar study of nine other elevated load days from 2005 to 2009, the May, 2010 Analysis proposed to require Demand Resources to interrupt for up to ten hours at a time. Informed by its stakeholder process however, PJM determined to retain the existing Demand Resource product, including its six-hour interruption window. As shown by Mr. Falin in his affidavit, PJM's Resource Adequacy Planning staff therefore supplemented its analysis to determine the level of reliance on limited resources that would not present unacceptable reliability risks, given that the limited product need only respond for a maximum of six hours.

As explained by Mr. Falin, shifting the daily peak to an hour outside the six-hour interruption window would result in a peak load that is inconsistent with the peak load used in PJM's planning studies, which assume that the unrestricted PJM peak is reduced by the *full* amount of dispatched Demand Resources. If Demand Resource penetration is high enough, however, the daily peak could shift to an earlier or later hour and PJM planning studies would, therefore, be understating the actual load on a peak day, which could conceal reliability violations and therefore result in an unreliable system.

To avoid shifting the peak to an hour outside the six-hour window, the Demand Resources must not exceed the megawatt difference between the unrestricted peak load on a given day and the 7th highest hourly load on that same day. If PJM calls more than this amount of Demand Resources, then it will, by definition, reduce the loads in the six-hour window *below* the level of the loads outside that window, thus creating a new peak, just as shown in the first graph above. Because the new peak is outside the six-hour window, PJM cannot rely on Demand Resources to reduce that new peak. Moreover, on the assumption that commitment of limited resources correspondingly reduces the commitment to PJM of annual resources, PJM may not have sufficient annual resources to call upon to balance load and supply during these new peaks, thus raising a significant reliability concern.

To quantify this megawatt amount, PJM examined all days over the 2005-2009 period for the PJM Region that met at least one of the following three criteria:

1. PJM called on Demand Resources; or
2. the day was PJM's annual peak load day; or
3. The load exceeded the 50/50 weather-normalized peak load estimate for that particular year.

These days were selected because they represent the types of high load days that may require implementation of Demand Resources. For each of the selected days, PJM determined the megawatt difference between the unrestricted peak load and the 7th highest hourly load. This difference was then expressed as a percentage of the weather-normalized peak load for that particular summer. These percentages were then averaged across all selected days to determine the maximum contribution from limited resources on which PJM may reliably depend and, correspondingly, the minimum commitment PJM would require from annual resources.

Applying this analysis, PJM determined, as shown by Mr. Falin, that PJM can be reasonably confident that it would not need to call on limited resources outside their six-hour window so long as the committed Demand Resources equate to no more than 4.7 percent of the peak load.[13]

Considering the results of PJM's analyses for both of these Demand Resource limitations (i.e., calling no more than ten times per summer, and for no more than six hours at a time), PJM has determined (based on data for the 2013-14 Delivery Year) that it should commit limited resources (assuming the auction clears at PJM's Installed Reserve Margin) at no more than 4.7 percent.[14]

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[13] Falin Affidavit at P 8.

[14] *Id.* at P 9.

D. PJM's Analyses Rest on Reasonable Assumptions, Including Recognizing PJM's Prudent Practices Involving Dispatch of Demand Resources.

PJM's analyses described above reasonably rely on models, assumptions and techniques that PJM also regularly uses for its transmission expansion and capacity planning efforts. As Mr. Falin explains, the probabilistic peak load model used in the analyses is also used by PJM for long-term load forecasting to ensure the transmission and resource adequacy of the region.[15] The probabilistic capacity model used in the analyses is based on an approach that is widely used in the industry to perform Loss of Load Expectation ("LOLE") studies.[16] PJM has been using this capacity model for over thirty years to assess resource adequacy and to establish the installed reserve margin required to satisfy the "one day in ten years" LOLE standard.[17] Moreover, PJM's Planning Committee reviewed the May, 2010 Analysis and found its approach, assumptions, and conclusions reasonable.[18] PJM's role, its long-standing, regular reliance on these same types of analyses, and its established procedures for stakeholder review of such determinations are all significant factors. The Commission has acknowledged that it relies on RTOs, which are not market participants, "to establish reasonable provisions for applying formulas, parameters, and assumptions to make such determinations" on planning matters.[19] Indeed, the Commission rejected a challenge to PJM's peak load forecasting methodology as better addressed through the technical stakeholder committees charged with evaluating such matters.[20]

These analyses also recognize PJM's existing prudent practices of dispatching Demand Resources. Some PJM stakeholders have argued that, rather than change its Demand Resource product rules, PJM should change how it dispatches its current Demand Resources, i.e., rather than calling on all Demand Resources available in the area affected by an emergency, PJM should call on only a portion of the available resources at a time. In this way, they suggest, PJM would lessen the risk that it would "use up" the

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15 Falin Affidavit at P 10.

16 *Id.*

17 *Id.*

18 *Id.*

19 *Md. Pub. Serv. Comm'n, et al., v. PJM Interconnection, L.L.C.*, 127 FERC ¶ 61,274, at P 40 (2009)(discussing determinations of Capacity Emergency Transfer Limits and Capacity Emergency Transfer Objectives).

20 *See PJM Interconnection, L.L.C.*, 126 FERC ¶ 61,275, at P 200 (2009).

limited number of available calls on Demand Resources. However, as explained in the attached Affidavit of Mr. Bryson, "it would not be prudent for PJM to make such a substantial and sudden change in its dispatch practices" in this manner.[21]

As Mr. Bryson explains, while load reduction commitments are "a very valuable tool for managing emergencies," there are "several key factors" that affect how this capability is best deployed. Most importantly, Demand Resources are essentially the last capacity resources PJM can call in an emergency. If PJM does not get the relief it needs from calling Demand Resources, it will have few if any other resources to call upon, and therefore will need to turn to more potentially disruptive measures such as voltage reductions or manual load dumps. Dispatchers "would much rather take full advantage of voluntary commitments to reduce load than take actions that could adversely affect services for many other customers."[22] The emergency context also means that dispatchers do not have the luxury of time. Calling on all available Demand Resources in an area affected by an emergency "is the quickest approach and offers the most assurance of effective relief."[23]

Mr. Bryson next describes the timing considerations that affect how dispatchers call on Demand Resources. The vast majority (over eighty percent) of Demand Resources in PJM are "long lead-time" resources that can be called only on two hours advance notice; the remainder require one hour advance notice. Dispatchers therefore must make a judgment about the system conditions to be addressed by Demand Resources as much as eight hours in advance (i.e., the two-hour notice plus the six-hour interruption window), and "must attempt, as much as possible, to time the call for Demand Resources so that their interruption window matches the system's time of maximum need for that relief."[24] Therefore, calling on only part of the relief Demand Resources can provide, and waiting to see if that relief is effective, "would present added risks," because the dispatcher would not have enough time later in the day to invoke effectively a second round of relief from Demand Resources.[25]

Closely related to that timing concern, when dispatchers are considering a call for Demand Resources "they do not know with certainty what the system conditions will be when the Demand Resources are applied," since many important variables ("transmission

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21 Bryson Affidavit at P 6.

22 *Id.* at P 7.

23 *Id.*

24 *Id.* at P 8.

25 *Id.*

outages, load patterns, generator responses, and operating conditions") will determine those future conditions.[26] The dispatcher's best approach to managing those uncertainties when faced with a need to call Demand Resources "historically has been to call on all such resources that are available" which "increases the chances of an effective response over a wider range of possible future conditions."[27]

Mr. Bryson also explains that dispatchers typically do not have "a great deal of real-time, automated information about the current level of a Demand Resource or the impact that a given reduction in that resource's load will have on a given constraint or overload."[28] Given these data limitations, "the most prudent course for the dispatcher usually is to call on all available Demand Resources in the affected area and thereby increase the chances that such call will translate into the desired system relief."[29] PJM is working to improve the data flow; for example, it has proposed to its stakeholders business rules that would require demand resource providers to provide PJM updated information on a daily and (during emergencies) hourly basis.[30] PJM also is considering more broadly "how it could make its dispatch of Demand Resources more efficient." However, effecting such changes "would probably require significant changes in equipment, customer behavior, business rules, and PJM's relationships with Demand Resource providers," and even after implementation, PJM would need experience under those practices before it could conclude that they "would sufficiently ameliorate the shortcomings of a more limited Demand Resource product."[31]

In short, PJM cannot commit that it will abandon its current prudent practices of dispatching Demand Resources and replace those practices with undeveloped and untested new practices. While PJM will continue to investigate enhancements to its dispatch practices, that is no reason to put off any longer the addition of new Demand Resource product types that better reflect the diversity of current load management capabilities in

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26 *Id.* at P 10.

27 *Id.*

28 *Id.* at P 9.

29 *Id.*

30 *See* PJM's draft business rules on "Load Management Operational Reporting" at page 2 of its presentation to the Scarcity Pricing Working Group earlier this year, available at: http://www.pjm.com/~/media/committees-groups/working-groups/spwg/20100304/20100304-item-02-dr-disptach-business-rules.ashx

31 *Id.* at P 11.

the region and that will provide PJM dispatchers valuable additional tools for managing emergencies.

E. PJM's Robust Stakeholder Process on the Best Solution to this Reliability Concern Has Heavily Informed the Rule Changes Reflected in this Filing, and Ultimately Yielded Majority, although Not Super-Majority, Support for a Solution Based on Adding to PJM's Current Demand Resource Product Two New Products of the Type Shown in this Filing.

The Demand Resource product reforms in this filing were developed through a stakeholder process commencing in April 2010 at the PJM Reserve Requirement Assumptions Working Group. As the stakeholder process unfolded throughout 2010, the reliability concerns were presented by PJM at the PJM Planning Committee, the PJM Operating Committee, the PJM Market Implementation Committee, the PJM Markets and Reliability Committee, and the PJM Members Committee.

During the nearly eight-month stakeholder process, PJM received valuable input that has significantly shaped this filing. Most importantly, PJM agreed to take a market-based approach to this issue and to add alternative product choices for demand resources, rather than merely dictating that the existing Demand Resource product must be capped or eliminated. PJM agreed to incorporate a less-limited summer Demand Resource product; to allow demand response providers with resources that can qualify under multiple resource types to submit alternative, linked offers; and to make appropriate distinctions between compliance charges applicable to Demand Resource performance during the core summer peak period and performance outside that critical period.

Ultimately, the essence of the market rule changes in this filing received substantial stakeholder support. At the November 18, 2010 PJM Members Committee meeting, stakeholders voted on whether to retain PJM's existing Demand Resource product and add to it an annual Demand Resource product and an intermediate, less-limited product available in the summer. Although the motion fell short of the two-thirds super-majority support needed for Members Committee action, it was endorsed by over 60% of the PJM members on a sector-vote basis.[32]

III. The Enclosed Tariff Changes Reasonably Address the Reliability Concern with PJM's Current Demand Resource Rules, While Providing More Alternatives for Demand Resource Providers and More Options for PJM Dispatchers During Emergencies.

A. Overview.

The enclosed Tariff and RAA revisions provide more product alternatives for demand response providers and use the market to help resolve the reliability concerns

[32] The results of the vote on that motion were 3.02 in favor, and 1.98 opposed.

raised by the current tariff limitations in PJM's Demand Resource product. Specifically, PJM is establishing two additional Demand Resource products—known as Annual Demand Resource ("Annual DR"), and Extended Summer Demand Resource ("Extended Summer DR") that have fewer limitations than the current product. PJM is retaining the existing Demand Resource product, but renaming it Limited Demand Resource ("Limited DR") to distinguish it from the two new products. PJM's planning criteria for the RPM auctions now will specify the minimum quantities of annual resources and Extended Summer DR needed to assure that the auction will commit an adequate amount of the types of resources that are required to respond at the times needed. PJM's auction clearing process will select Extended Summer DR or annual resources out of merit order if needed to procure the minimum quantities, similar to the way in which RPM auctions today can select resources out of merit order to address locational constraints. In those cases, just as with resources selected to resolve locational constraints, resources selected to meet the necessary minimums will receive an adder to the base RPM price, thereby assuring that sufficient resources of the right type will clear, and establishing an incentive for market participants to develop more of those needed resources. This process will apply both in the region as a whole and in several Locational Deliverability Areas that are most prone to needing to rely on internal resources, including internal Demand Resources, and that have seen significant growth in reliance on Demand Resources. PJM also is modifying its compliance charge provisions to account for the two new Demand Resource products.

B. PJM Is Retaining Its Existing Demand Resource Product and Adding Two New Products.

1. *Limited Demand Resource.*

As explained above, the current tariff limitations on PJM's load management capacity product have been in place since 1991, when ALM was established. Indeed, even if only the history under RPM is considered, PJM has now cleared RPM auctions for seven Delivery Years with these limitations in place, committing over 9000 megawatts of such Demand Resources in the most recent auction. While a substantial portion of this existing load management capability probably could commit to PJM through a product with fewer limitations, many of these resources could face challenges if they attempted to transition too rapidly to less limited products. Demand response commitments have been a notable success of RPM to date, and PJM has no interest in thwarting that success. Accordingly, PJM is retaining the current load management capacity product but changing its name to Limited DR. The long-standing limitations on performance of that product, i.e., callable only in the afternoon and early evening hours of summer non-holiday weekdays, only ten times per summer, and for no more than six hours at a time, will now be embedded in the definition itself, rather than specified in a separate RAA attachment.[33]

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[33] *See* RAA, section 1.43A.

Given that there will now be three Demand Resource products, market sellers will be required to specify which type they are using as the basis of an offer (or buy bid) in the RPM auctions.[34]

2. *Annual Demand Resource.*

The first of the two new products, Annual DR, must be available on any day of the year and for an unlimited number of interruptions during the year.[35] This product still has limits on the hours of the day when it must be available—10:00 a.m. to 10:00 p.m. EPT for May through October and 6:00 a.m. to 9:00 p.m. EPT for November through April—but these are more than adequate to capture any time that these resources reasonably might be needed. Moreover, Annual DR still caps the duration of required interruption but greatly increases the usability of the product by increasing that duration to ten hours.[36]

Because Annual DR is otherwise required to be available every day of the year, there needs to be an allowance for maintenance of any underlying equipment, just as there is for generation resources. The enclosed rule changes recognize this, permitting maintenance outages that are approved in advance by PJM.[37]

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[34] *See* Tariff, Attachment DD, sections 2.22, 5.4(d), 5.6.1(a), and 5.7(c). Offers that do not specify the resource type will be rejected. *Id.* at section 5.8(c).

[35] *See* RAA section 1.1A. PJM also is defining a new term, Annual Resource, to encompass Annual DR, generation capacity resources, and Energy Efficiency Resources, all of which are generally available at all times (if not on an approved maintenance outage). *See* Tariff, Attachment DD, section 2.1B.

[36] *Id.*

[37] *Id.*

3. *Extended Summer Demand Resource.*

The second of the two new products, Extended Summer DR, has an intermediate level of limitations. It must be available on any day of an expanded summer period, i.e., May through October.[38] The hours of the day that it is required to respond to a call for interruption are expanded, relative to Limited DR, to 10:00 a.m. to 10:00 p.m. EPT, and the maximum duration of interruption is increased to ten hours from six. As discussed above, the ten-hour duration provides PJM greater assurance of a needed load response even if these resources become a substantial share of the available resource stack.

In his affidavit, Mr. Bryson cites recent real-world dispatch concerns that underscore the need for this type of product. Just this year, PJM needed to call on Demand Resources in May and in the very last week of September.[39] The Extended Summer DR product, which must be available from May through October, would provide firm advance commitments of load management resources that dispatchers could call if they face emergency conditions in May or October. To assure reliability, the system should not have to rely on the hope that curtailment providers will respond voluntarily if emergency conditions arise again outside the June through September period. As Mr. Bryson observes, "such *ad hoc* arrangements are no substitute for the advance commitment of capacity resources, which has been the foundation of PJM's reliability construct for decades."[40]

Since the product definition requires Extended Summer DR to respond during more days, during more hours, more often, and for longer, than the existing Limited DR product, Extended Summer DR has greater reliability value than PJM's current Demand Resources. Simply put, PJM has greater assurance that Extended Summer DR will respond when needed, because the market rules will require it to respond more often. The proposed Extended Summer DR limitations, however, still allow DR providers substantial flexibility to develop a variety of load management capabilities that will qualify as PJM capacity even though they are not available for most of the year, at night, or for longer than ten hours at a time.

Moreover, creating an "intermediate" product like Extended Summer DR will substantially ease the capacity market's transition from the current construct in which all currently qualified Demand Resources have very narrow circumstances in which they must respond. By including an intermediate product, PJM can reduce the minimum amount of annual resources it must commit to assure reliability. With only two products, i.e., limited and annual, PJM would need a higher proportion of its committed resources to be annual,

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38 *See* RAA section 1.20C.

39 Bryson Affidavit at P 13.

40 *Id.*

as that product would offer the only option for avoiding the restrictions in the limited product. Offering the Extended Summer DR product therefore will encourage broader participation of demand response in the RPM auction and also make it less likely that prices will separate in the auction, since the required minimum amount of annual resources would be reduced.

Notably, the Extended Summer DR product parameters proposed here provide a good fit for a significant share of PJM's existing load management capability. The RAA currently recognizes a type of Demand Resource known as Direct Load Control, which it defines as load management "that is initiated directly by the Provider's market operations center or its agent, employing a communication signal to cycle equipment (typically water heaters or central air conditioners)."[41] PJM's experience with this type of load management, and the data Demand Resource providers give PJM each year to qualify this capability as a Demand Resource, indicate that it should be physically capable of interrupting for longer than six hours at a time, and for more than ten times per summer. The Extended Summer DR product very likely would accommodate much of this capability, since it only needs to be available during daytime in the summer.

To gauge the potential benefits of an Extended Summer DR product, PJM considered how its RPM auction earlier this year for the 2013-14 Delivery Year might have cleared if PJM had the three proposed Demand Resource products in place at that time. For purposes of the assessment, PJM reasonably estimated that: 1) Direct Load Control ("DLC") commitments for that year would increase from the DLC deployed for the current Delivery Year (i.e., 2010-11) at the same rate of increase as all Demand Resources generally have increased from the current Delivery Year to 2013-14; and 2) that all resources committed to PJM as DLC would qualify as Extended Summer DR. The results of that analysis indicate that PJM likely would have committed enough annual resources alone, and enough annual resources and Extended Summer DR combined, to satisfy PJM's minimum requirements for those resource types in the PJM Region as a whole, and for both the Southwestern MAAC and Eastern MAAC LDAs. The combined commitment of annual resources and Extended Summer DR in the MAAC LDA would have fallen a little short of the minimum requirement for those combined resources in that LDA. However, even that shortfall would be erased if only ten percent of the remaining resources in the Limited DR category could qualify as either Annual DR or Extended Summer DR—setting a fairly low objective for migration of current load management capabilities to the new products in order to avoid price separation.

While there is no guarantee how future auctions will clear, the above analysis suggests that with three Demand Resource products in place, PJM likely could have committed enough resources with an explicit obligation to respond far more often than under the current rules, and likely could have done so without raising the clearing price and without awarding different prices to different types of Demand Resources. This

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41 RAA, Schedule 6, section H.

highlights both the benefits of including an "intermediate" product like Extended Summer DR and also the advantages of implementing these Demand Resource product reforms now. As shown previously, Demand Resource market penetration is steadily increasing. If PJM waits until Demand Resources claim a larger and larger share of capacity resources before implementing this type of reform, it increases the chances of more abrupt pricing changes immediately upon implementation. Implementing these changes now, by contrast, should allow load management providers more opportunity to match their capabilities to the new products sooner. To the extent they do so, PJM will be better able to satisfy the new minimum requirements for these products and thereby avoid frequent or extensive price differences.

Recognizing benefits such as these, many stakeholders have strongly supported including a product like Extended Summer DR in PJM's reform of its Demand Resource rules. The Governor of Maryland, for example, wrote to PJM's Board this month to express his "strong support for including a 'summer-only unlimited' option for demand response capacity resources in any package of demand response reform that PJM proposed to the [Commission]."[42] The Maryland Public Service Commission,[43] Delaware Public Service Commission,[44] and the Organization of PJM States, Inc.[45] also each wrote

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[42] Maryland Governor Martin O'Malley Letter to Mr. Howard Schneider, Chair, PJM Board of Managers, dated November 10, 2010, located on the PJM website at: http://www.pjm.com/about-pjm/who-we-are/pjm-board/~/media/about-pjm/who-we-are/public-disclosures/20101109-governors-letter-demand-response.ashx

[43] State of Maryland Public Service Commission Letter to Mr. Howard Schneider, Chair, PJM Board of Managers, dated November 12, 2010, located on the PJM website at: http://www.pjm.com/about-pjm/who-we-are/pjm-board/~/media/about-pjm/who-we-are/public-disclosures/20101115-public-service-commission-letter-regarding-dr-saturation.ashx

[44] State of Delaware Public Service Commission Letter to Mr. Howard Schneider, Chair, PJM Board of Managers, dated November 19, 2010, located on the PJM website at: http://www.pjm.com/about-pjm/who-we-are/pjm-board/~/media/about-pjm/who-we-are/public-disclosures/20101123-psc-de-letter-to-pjm-board.ashx

[45] Organization of PJM States, Inc., Letter to Mr. Howard Schneider, Chair, PJM Board of Managers, dated November 16, 2010, located on the PJM website at: http://www.pjm.com/about-pjm/who-we-are/pjm-board/~/media/committees-groups/committees/mc/20101118/20101118-item-08-opsi-demand-response.ashx

to PJM to express similar strong support for an option like Extended Summer DR, citing possible disruptions to demand response if such an option is not included.

C. PJM Will Establish Minimum Quantities of Annual Resources And Extended Summer Demand Resources to Clear in the RPM Auctions.

To allow the RPM auctions to resolve the reliability concern with the current limited Demand Resource product, PJM needs to set targets in those auctions for the different types of resources it needs to commit. To that end, the enclosed Tariff revisions establish a "Minimum Annual Resource Requirement" and a "Minimum Extended Summer Resource Requirement." PJM will determine these minimum requirements for the PJM Region as a whole and for each of the MAAC, Southwestern MAAC and Eastern MAAC LDAs.

1. *Minimum Annual Resource Requirement.*

As prescribed in the enclosed Tariff changes, the Minimum Annual Resource Requirement[46] for the PJM Region as a whole will be the PJM Region Reliability Requirement,[47] less the Short-Term Resource Procurement Target, less the Extended Summer Demand Resource Reliability Target. The Short-Term Resource Procurement Target is a reduction to the Reliability Requirement used by PJM for purposes of the Base Residual Auctions.[48] As approved by the Commission,[49] it effectively defers a small portion (2.5%) of PJM's procurement of capacity resources from the Base Residual Auction for a Delivery Year to the Incremental Auctions for that Delivery Year. Since the overall procurement in the Base Residual Auction is reduced by this amount, the minimum procurement for annual resources in that auction should correspondingly be reduced; this preserves the deferral that was approved by the Commission.

The Extended Summer Demand Resource Reliability Target is the maximum amount of Extended Summer DR that can be reliably procured in an auction, assuming PJM procures resources in the auction equal to the level of the Reliability Requirement.[50]

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46 Tariff, Attachment DD, section 2.41D.

47 The PJM Region Reliability Requirement is the target level of capacity to be procured for the region in the RPM auctions, based on the expected peak load, the approved Installed Reserve Margin, and an adjustment for the generator forced outage rate expected for the region. *See* Tariff, Attachment DD, section 2.55.

48 *See* Tariff, Attachment DD, section 2.65A.

49 *See PJM Interconnection, L.L.C.*, 126 FERC ¶ 61,275, at P 85 (2009).

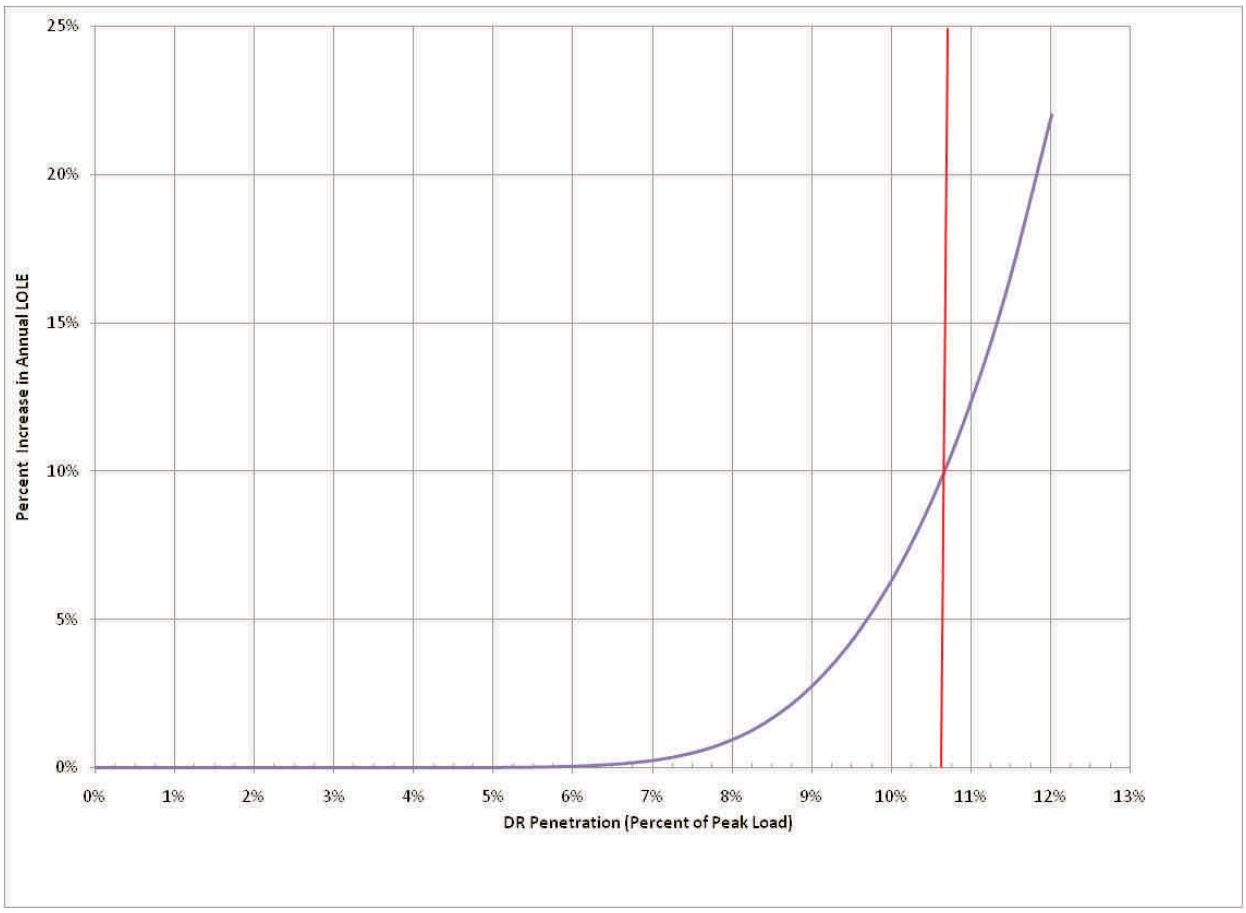
50 Tariff, Attachment DD, section 2.24C.

The target will be expressed as a percentage of forecast peak load, and converted to an "unforced" basis so that it can be correctly deducted from the Reliability Requirement (which is on an unforced basis).

Similar to its current calculation of other planning parameters for the RPM auctions, such as peak loads, CETO, and CETL, PJM will calculate the Extended Summer Demand Resource Reliability Target in accordance with procedures specified in the PJM Manuals. For reference, PJM encloses a copy of the calculation procedure with this filing (as Exhibit 2 to Mr. Falin's affidavit). PJM expects to continue to review the procedure with its stakeholders and will incorporate it into the appropriate PJM Manual. PJM will apply the procedure in January 2011 to calculate the final parameters that will be posted on February 1, 2011 for use in the next Base Residual Auction.

As detailed in the materials provided by Mr. Falin, PJM will develop hundreds of daily load forecasts (varying based on differing assumptions on weather patterns) and corresponding daily forecasts of the expected available generation capacity resources, for each of the approximately 260 weekdays in a Delivery Year. PJM then will establish a base case using the PJM Board-approved installed reserve margin. PJM will model Extended Summer DR in the base case as a resource that is 100% available from May 1 through October 31 and unavailable from November 1 through April 30. PJM then will vary the level of Extended Summer DR committed, correspondingly reduce the level of annual resources committed, and calculate the impact on the system Loss of Load Expectation ("LOLE").

PJM has applied this procedure to the planning parameters for the 2013-14 Delivery Year (as addressed in the May 2010 Base Residual Auction); the results of that analysis are shown in the graph below. As the amount of Extended Summer DR increases as a percent of peak load (on the horizontal axis), the system LOLE increases on the vertical axis. In consultation with stakeholders, and consistent with the common use of a 10 percent statistical confidence level in probabilistic models, PJM concluded that a 10 percent increase in system LOLE from inclusion of Extended Summer DR was an acceptable level of risk. The graph below indicates that Extended Summer DR can comprise 10.6 percent of the peak load (the red vertical line) without increasing the PJM system risk by more than 10 percent. By contrast, as discussed above in section II.C of this letter, the maximum amount of the current Demand Resource product that is compatible with reliability is less than half that amount, or 4.7 percent. This underscores, quantitatively, the point made in the prior section that including Extended Summer DR reduces the minimum requirement for annual resources, which in turn makes it less likely that prices will need to separate in order for the auctions to commit enough of the different types of resources that PJM needs to assure reliability.



As noted above, this method of determining the Minimum Annual Resource Requirement assumes that PJM procures capacity at the level of the Reliability Requirement (based on the Board-approved Installed Reserve Margin). If PJM clears resources in the RPM auction above the Reliability Requirement, then it could clear more limited resources than the Extended Summer Demand Resource Reliability Target but also still clear more annual resources than the Minimum Annual Resource Requirement. So long as PJM clears more than the minimum amount of annual resources, the constraint will not bind, and prices will not separate.

2. *Minimum Extended Summer Resource Requirement.*

PJM will also determine a separate minimum resource requirement for the combined contribution of Extended Summer DR and annual resources. The Minimum Extended Summer Resource Requirement[51] for the PJM Region will be the PJM Region

[51] *Id.* at section 2.41E.

Reliability Requirement, less the Short-Term Resource Procurement Target, less the Limited Demand Resource Reliability Target ("Limited DR Reliability Target").[52]

Similar to the Extended Summer DR Reliability Target, PJM will determine the Limited DR Reliability Target each year in accordance with standards and procedures specified in the PJM Manuals. A copy of the planned calculation method is shown in Exhibit 2 to Mr. Falin's affidavit. Generally, the calculation method tracks the analyses described above for assessment of the reliability impacts of the frequency and duration limitations of the existing Demand Resource product. PJM will determine the level of limited resources (as a percentage of peak load) at which there is an unacceptable (i.e., ten percent) probability that PJM will have to call limited resources more than ten times in a summer. PJM then will determine the level of limited resources at which it can be reasonably confident that it would not need to call on those resources outside their six-hour window, based on the megawatt difference between the unrestricted peak load and the 7th highest hourly load for selected high load days. PJM will set the Limited Demand Resource Reliability Target at the more restrictive result from these two analyses.

D. Prices Can Rise to Clear Additional Annual and Extended Summer Resources as Necessary.

As discussed above, the new market rules at times may allow PJM to commit resources that explicitly are required to respond more often, or for longer, than PJM's current Demand Resource product, *without* increasing the clearing price or the RPM capacity charge to LSEs. At other times, however, the constraints may "bind" and, just as RPM now allows for locational constraints, the base RPM capacity price will be increased by a price adder that reflects the extra cost of securing capacity that serves a reliability need but that offered at a higher price than another resource that does not meet that reliability need. PJM therefore is adding to its Tariff definitions of the Annual Resource Price Adder[53] and the Extended Summer Resource Price Adder[54] and is making various conforming and implementing changes to the Tariff and RAA to ensure that these price adders are correctly calculated and applied.[55] The Annual Resource Price Adder is applicable for annual resources only, while the Extended Summer Resource Price Adder is applicable for annual resources and Extended Summer DR.[56] The zonal capacity price

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52 Tariff, Attachment DD, section 2.36B.

53 Tariff, Attachment DD, section 2.1C.

54 *Id.*, section 2.24B.

55 *Id.*, section 5.14(f).

56 *Id.* at section 5.14(a).

paid by loads will be adjusted to reflect any price adders paid to annual resources or Extended Summer DR in the LDA where the Zone is located.[57]

To illustrate how these provisions will operate, PJM prepared several hypothetical clearing examples, as shown in Attachment C to this filing. All three examples use the same list of 19 resource offers: 7 from annual resources, 6 from Extended Summer DR, and 6 from Limited DR. The megawatt quantity and price of each offer are shown, and the offers are ranked from lowest price to highest. To simplify the examples and permit a closer focus on the constraints related to resource limitations, there are no locational constraints.

In the first example, no resource-type constraints bind. The resources are selected by the auction algorithm in ascending price order until the supply stack intersects the VRR Curve at a cleared quantity of 1150 MWs and a clearing price—the same for all resources—of $70/MW-day.

In the second example, the Minimum Annual Resource Requirement binds, indicating that annual resources are needed in preference to either of the other two (more limited) resource types. An Extended Summer DR resource that offered 100 MW at $60 and fully cleared in the first example clears only 20 MW in the second example; while an annual resource that did not clear in the first example clears 100 MW, at a price of $80. All cleared Limited DR and Extended Summer DR resources receive the $60 price, which was the highest price offered by any Limited DR or Extended Summer DR that cleared. All annual resources (including Annual DR, generation resources, and Energy Efficiency resources[58]) receive a $20 Annual Resource Price Adder for a total price of $80, in this case reflecting the highest price offered by an annual resource that cleared.

In the third example, both constraints bind. The last Limited DR resource to clear offered 100 MW at $50 and cleared only 95 MW. The last Extended Summer DR resource to clear offered 100 MW at $60 and cleared 45 MW. The last annual resource to clear, as in the prior example, offered 200 MW at $80 and cleared 100 MW. Therefore, all Limited DR offers that clear are paid the $50 price; all Extended Summer DR offers that clear receive the $60 price, and all annual resources that clear receive the $80 price.

In response to stakeholder requests, the enclosed rules allow a Demand Resource provider with a resource that can qualify under more than one of the three Demand Resource product types to submit linked alternative offers for its resource as Limited DR,

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57 *Id.*, section 5.14(f)(i), (ii).

58 An Energy Efficiency Resource is a project that is designed to achieve a continuous reduction in energy usage during peak periods that is not reflected in PJM's peak load forecast and that is "fully implemented at all times during [the] Delivery Year." RAA, section 1.20A.

Extended Summer DR, or Annual DR.[59] The seller must include a price difference of at least one cent per MW-day between the alternative offers (i.e., lower price for the more limited product; higher price for the less limited product). The auction clearing algorithm will select the offer that yields the least-cost solution.

E. The New Demand Resource Rules Will Also Apply in Several Locational Deliverability Areas, to Assure that Resources of the Right Type Are Available Inside Capacity Constrained Areas.

The rules described above on resource types, minimum resource requirements, and price adders will apply not only in the PJM Region as a whole but also in three LDAs, i.e., the MAAC, Eastern MAAC, and Southwest MAAC LDAs. PJM selected these three LDAs because they have experienced significant growth in reliance on Demand Resources as internal capacity and are likely to price separate from their surrounding areas.[60] To the extent changing circumstances or further analysis indicates that other LDAs experience similar growth in reliance on Demand Resources, PJM will review that issue with stakeholders and as necessary file to add such other LDAs to this list.

When one of these areas separates, that means that no more resources located outside that area, including no more of the two new types of demand resource, can be reliably delivered into that area to meet its capacity needs. To ensure reliability, that area needs not only enough in-area resources, it needs enough of the right type of resources, i.e., enough annual (or other less-limited) resources. When one of these three LDAs price-separates in the auction, in-LDA resources may be compensated not only for their locational value, but also for their value in ensuring that PJM can call on the resources when needed.

The minimum resource requirements for these three LDAs will be calculated in essentially the same way as the minimum resource requirements for the region as a whole, with two notable exceptions: the Reliability Requirement used will be that for the LDA, not that for the region; and PJM will subtract the Capacity Emergency Transfer Limit ("CETL") from the LDA Reliability Requirement. CETL quantifies the ability to deliver resources from *outside* the LDA into the LDA. The focus of this calculation, by contrast, is the quantity of resources located *inside* the LDA that need to qualify as either annual resources or Extended Summer DR.

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[59] Tariff, Attachment DD, Section 5.6.1(e).

[60] See Falin Affidavit at P 11. These same three LDAs also were called out in the RPM market rules as requiring their own separate Variable Resource Requirement curves, given their constrained situation. *See* Tariff, Attachment DD, section 5.10(a)(ii)(C).

Mr. Falin shows in his affidavit the results of applying these rules to the three LDAs using data for the 2013-14 Delivery Year to calculate the applicable reliability targets. As he shows, the Limited DR Reliability Targets for the MAAC, Eastern MAAC, and Southwestern MAAC LDAs would have been 5.5%, 6.3%, and 6.2%, respectively (compared to 4.7% for the entire PJM Region); and the Extended Summer DR Reliability Targets for those three LDAs would have been 11.1%, 14.2%, and 13.7%, respectively (compared to 10.6% for the entire region).[61]

F. As With the Existing Demand Resource Product, the Two Added Products Will Be Subject to Reasonable Compliance Charge Provisions.

The Reliability Pricing Model includes compliance charges to incent providers that commit capacity resources to PJM to honor those commitments. To ensure that these provisions correctly apply to the two new Demand Resource products, PJM is revising the compliance provisions to: 1) recognize that committed resources can differ not only by location, but also by the type of commitment, e.g., whether the resource is available for only limited hours in the summer or for the entire year; 2) better match the compliance standards and charges to the expected performance, which can now differ by resource type; and 3) make other conforming changes.

Section 8 of Tariff Attachment DD establishes a Capacity Resource Deficiency Charge applicable to both committed generation and committed demand resources that, for any reason, are unable or unavailable during the Delivery Year to deliver the promised capacity. Subsection 8.1 of that provision allows a provider that committed a resource that will not be available as expected to avoid compliance charges by committing replacement capacity. That subsection currently requires such replacement capacity to meet "the same locational requirements" as the originally committed resource. PJM is now revising that section to require the replacement capacity also to meet "the same or better temporal availability characteristics" of the committed resource and clarifies that this refers to whether the committed resource was an Annual Resource, Extended Summer DR, or Limited DR. By "the same or better," PJM means that Limited DR can be replaced by any of the three resource types, Extended Summer DR can be replaced by a resource qualifying as that product type or as an Annual Resource, and Annual Resources may be replaced only by Annual Resources. PJM is making a similar change to sections 9(b) and 10(h). As those compliance charges only apply to generators, however, suitable replacement capacity must be an Annual Resource.

PJM also is revising subsection 8.1(f) which describes the Demand Resource unavailability that will trigger compliance charges under this provision, i.e., that the resource "is not capable of providing the megawatt quantity of load response specified in the cleared Sell Offer." Specifically, PJM is adding "for the time periods of availability associated with the product type" to the end of that description, to make clear that the

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[61] Falin Affidavit at P 16.

expected availability is defined by the availability parameters in the definition of the relevant Demand Resource product.

Section 11 of Tariff Attachment DD is PJM's current compliance provision associated with the performance of Demand Resources. PJM is revising this provision first to better define in subsection 11(a) how compliance is evaluated, i.e., by load interruption event in each Zone[62] for resources that were dispatched by PJM. This revision makes clear that a resource's performance in response to a call for interruption by PJM dispatchers is the proper focus of this compliance provision. Because compliance is measured "by event," a provider cannot offset resource over-performance during one event with under-performance during another event; later over-performance provides no relief to the dispatcher calling the Demand Resource to help alleviate a present emergency. PJM also is revising section 11(a) to clarify that a provider can substitute another Demand Resource for a resource that cannot respond when called, so long as the substitute resource is in the same area where the PJM dispatcher is calling for relief, has the same lead time, and a "comparable capacity commitment," by which PJM intends to refer to the availability criteria in the product definitions. Notably, designation of a resource as a substitute for purposes of responding to an event does not diminish that resource's obligation to respond to future events, e.g., it does not "use up" one of the ten calls available from a Limited Demand Resource.

PJM is revising subsection 11(b) of this provision, which defines the compliance charge assessed on providers with under-performing resources, to distinguish between on-peak performance and off-peak performance and set different penalty charges for performance during those different periods. "On-peak" refers to the period covered by Limited DR, i.e., between 12:00 p.m EPT and 8:00 p.m. EPT on non-holiday weekdays during the months of June through September. "Off-peak" covers the remaining hours that Annual DR or Extended Summer DR must be available.

The penalty charge for on-peak under-performance will be the same charge currently defined by section 11: a resource can lose as much as its entire annual RPM revenues associated with its megawatts of under-performance (provided that if it is called only once in a summer and does not perform, it can lose no more than half of its annual revenue). As in the existing provision, the fraction of the provider's annual revenues at risk per event decreases as the number of on-peak calls increases; thus, if called three times, one-third of annual revenues are at risk for each call; if called four times, one-quarter is at risk for each call, etc. These penalty charges properly recognize the narrow focus and limited availability of the current Demand Resource product, and properly should continue to apply for this narrow set of on-peak hours. PJM's need for all Demand Resource types will continue to be greatest during these on-peak hours when PJM is most likely to face emergency conditions. Demand Resources that cannot perform during that critical period should continue to pay a high price for that peak-period under-performance.

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[62] *See* RAA section 1.89.

The penalty charge for off-peak hours recognizes that the two new Demand Resource products can be called outside the traditional on-peak hours. PJM's dependence on Demand Resources to perform during those hours is more analogous to PJM's dependence on generation resources to perform during those hours; accordingly, the compliance charge for the net under-performance of Demand Resources for each event of non-compliance during off-peak hours is 1/52 of the annual revenue rate. Putting roughly one week's worth of revenues at risk for off-peak Demand Resource non-performance strikes an appropriate balance. Performance during one part of the off-peak period is not *necessarily* more critical than performance during any other part of the off-peak period. Spreading penalty exposure equally across the full year of possible off-peak performance better reflects the roughly equal harm the system faces from resource non-performance during these off-peak hours. Setting the penalty exposure at a week, rather than a lesser period such as a day, appropriately reflects that even Annual DR and Extended Summer DR still have limits on their expected performance, such as the hours during the day they can be called, or the total number of hours per call. Therefore, failure to respond to a call for interruption within those limits remains a significant instance of non-performance, and appropriately should face a significant penalty.

If an event involves both on-peak and off-peak hours, then the penalty charge will be based on the higher of the charge rate based on on-peak and that based on off-peak. Moreover, the total compliance charges cannot exceed the resource's annual revenues.

These Demand Resource compliance charge provisions, based on inherent differences in the nature of Demand Resources, accord with the Commission's recognition that comparability between generation and demand resources is achieved not by setting identical conditions but rather by setting terms for Demand Resource participation that "both address the characteristics of demand response resources and assure reliable operations."[63]

In addition, because the period of performance evaluation for Demand Resources can now extend until the end of a Delivery Year (i.e., up to May 31), PJM is revising the deadline in section 11(e) for distributing Demand Resource compliance charge revenues to be the later of i) June of the following Delivery Year, or ii) the third billing month following the month that gave rise to the compliance charge revenues.

Section 11A of Tariff Attachment DD sets a testing requirement for load management resources, and provides for an assessment of charges if resources fail the performance test.[64] That provision currently is drafted in terms of the existing Demand

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63 *PJM Interconnection, L.L.C.*, 129 FERC ¶ 61,250, at P 46 (2009); *New York Independent System Operator, Inc.*, 129 FERC ¶ 61,164 at P 67 (2009).

64 In addition to the other changes described above, PJM is adding "Demand Resource" to the title of this provision and to its associated testing failure charge, to better signal the products to which it applies.

Resource product. Therefore, a test is required for a Delivery Year only if PJM does not call on Demand Resources during the peak hours of June through September that define the current product's expected availability.

PJM is revising this provision in two ways. First, it is clarifying that a Demand Resource is excused from the testing requirement only if PJM has called *on that resource* during the period of defined availability for that resource. The current testing requirement is triggered for Demand Resources in a Zone depending on whether PJM has called for Demand Resources in that Zone. However, PJM might not call on all resources in a Zone. PJM might instead call on only the long lead time resources in a Zone; or there may be special circumstances in which PJM is able to depart from its standard dispatch practice (described by Mr. Bryson in his affidavit) and call on resources in only part of a Zone. The intent of this testing provision is that if a resource has not been "tested" through a real-world call during the applicable period, then it should be tested by operation of this provision to assure that ratepayers are receiving value for their capacity payments to the resource. Therefore, the trigger for testing properly should be whether the particular resource is called, and not whether any resource that happens to be in the same Zone as that resource has been called.

Second, PJM is revising this provision to include different testing triggers for the two new Demand Resource types, based on the different periods for which they are expected to be available. Accordingly, an Annual DR will be tested for a Delivery Year if it is not called during its available hours on any day of that Delivery Year; and an Extended Summer DR will be tested for a Delivery Year if it is not called during its available hours on any day from June through October or the following May of that Delivery Year. To the extent a test is required, it must be conducted for a one-hour period at a time when a load management event can be called for the type of product that is being tested.

G. The New Demand Resource Rules Also Will Be Applied to FRR Entities.

The RAA provides an alternative method of capacity commitment, known as the Fixed Resource Requirement, or FRR, that parallels RPM in many respects, including the ability to meet capacity needs with demand resources. The Demand Resource reforms in this filing are generally intended to apply to FRR as well. Accordingly, PJM is revising several sections of RAA Schedule 8.1 that set forth the FRR rules.

Specifically, PJM is revising section D(2), regarding FRR Capacity Plans, to include the requirement that the set of Capacity Resources designated in the FRR Capacity Plan must meet the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement associated with the FRR Entity's capacity obligations. PJM also is revising section F to specify that the shortages in meeting the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement associated with the FRR Entity's capacity obligation are calculated

separately. Additionally, this subsection provides the applicable penalty rate for Annual Resources, Extended Summer DR and Limited DR.

H. Several Other Conforming Rule Changes Are Needed to Implement These Demand Resource Reforms.

PJM is making several other Tariff and RAA changes to implement these reforms to its Demand Resource rules. Various sections are revised to reflect PJM's obligations to determine and timely post the minimum resource requirements discussed above, for Delivery Years starting with the 2014-15 Delivery Year.[65] PJM also is making conforming changes to certain sections that describe the auction clearing process or optimization, to include appropriate references to the minimum resource requirements.[66]

Several formal changes also are needed to better establish and define the various Demand Resource types. The timing, frequency, and duration restrictions on Demand Resources are being removed from Tariff Attachment DD-1 (and the identical RAA Schedule 6), since those limitations now will apply only to Limited DR. The relevant restrictions now will be stated in the definition of each product. The provisions of Attachment DD-1 on resource compliance also have been modified to clarify that compliance is established for each resource on an individual event basis, and considering the performance of the resources dispatched by PJM. To establish performance compliance, PJM will not net the resource's performance across events.

Section A(6) of Attachment DD-1 is being revised to provide that Demand Resources committed to PJM must be registered to participate in the Full Program Option or as a "Capacity Only" resource of PJM's Emergency Load Response program, as these are the two registration options by which demand response makes itself available to PJM for use in emergencies.

PJM also is revising several definitions in the RAA. In addition to the new product definitions discussed above, PJM also is revising the definition of "Demand Resource" to make clear that it includes each of these new products,[67] and is revising the definition of

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65 Tariff, Attachment DD, sections 3.2, 5.10, and 5.11.

66 *Id.* at section 5.12(a), (b), and (f)(v). PJM's changes to that final subsection, i.e., 5.12(f)(v), are designed to assure that if PJM buys additional capacity, or sells back capacity, in the Incremental Auctions, it will still honor the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement.

67 RAA, section 1.13.

Interruptible Load for Reliability[68] to embed in that definition the applicable limitations on timing, frequency, and duration that now are included in Attachment DD-1.

IV. Correspondence

The following individuals are designated for inclusion on the official service list in this proceeding and for receipt of any communications regarding this filing:

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V. Description of Submittal

Along with this transmittal letter, the affidavits of Mr. Falin and Mr. Bryson, and the other supporting attachments and exhibits described above, PJM submits electronic versions of the revisions to the RAA and PJM Tariff in both marked (showing the changes) and clean forms, and a PDF-format copy of this entire filing.

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[68] *Id.* section 1.42.

VI. Service

PJM has served a copy of this filing on all PJM Members and on all state utility regulatory commissions in the PJM Region by posting this filing electronically. In accordance with the Commission's regulations,[69] PJM will post a copy of this filing to the FERC filings section of its internet site, located at the following link: http://www.pjm.com/documents/ferc-manuals.aspx with a specific link to the newly-filed document, and will send an e-mail on the same date as this filing to all PJM Members and all state utility regulatory commissions in the PJM Region[70] alerting them that this filing has been made by PJM today and is available by following such link.

VII. Conclusion

Accordingly, PJM respectfully requests that the Commission act on or before February 1, 2011 to accept the enclosed Tariff and RAA revisions, effective February 1, 2011.

Respectfully submitted,

/s/ Paul M. Flynn

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[69] *See* 18C.F.R §§ 35.2(e) and 385.2010(f)(3).

[70] PJM already maintains, updates and regularly uses e-mail lists for all PJM members and affected commissions.

Attachment A

Affidavit of
Thomas A. Falin
On Behalf of PJM Interconnection, L.L.C.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, LLC) Docket No. ER11-____-000

AFFIDAVIT OF THOMAS A. FALIN
ON BEHALF OF PJM INTERCONNECTION, L.L.C.

1. My name is Thomas A. Falin. My business address is 955 Jefferson Avenue, Norristown, PA 19403. I currently serve as the Manager of the Resource Adequacy Planning Department for PJM Interconnection, L.L.C. ("PJM"). I am submitting this affidavit on behalf of PJM in support of its filing in this proceeding to modify its rules concerning the commitment of load management capabilities to help meet the PJM region's capacity needs.

2. I have served in my current position since October, 2002. The Resource Adequacy Planning Department at PJM is responsible for assessing the long term resource adequacy of the PJM system by conducting reserve margin studies, evaluating generator performance and developing long-term load forecasts. Among other duties, the Resource Adequacy Planning Department is responsible for developing many of the key reliability metrics that are incorporated each year in PJM's Reliability Pricing Model ("RPM"), including the installed reserve margin, peak load forecasts, Capacity Emergency Transfer Objectives ("CETO"), and equivalent demand forced outage rates for PJM generation facilities. In my capacity as Manager of that department, I oversee the development of these analyses every year. Prior to assuming my current position, I served as a senior engineer in the Capacity Adequacy Planning Department for three years, performing resource adequacy studies and serving as chair of several planning-related PJM stakeholder groups.

3. Prior to joining PJM, I worked for fourteen years in the System Planning Department at PECO Energy Company performing transmission and distribution studies and representing PECO on various PJM committees and working groups. I hold a Bachelor of Science Degree in Mechanical Engineering from Princeton University and a Master of Science Degree in Systems Engineering from the University of Pennsylvania. I am an active participant on several industry groups concerned with resource adequacy and reliability, including the NERC Resource Issues Subcommittee and the Reliability First Corporation Resource Adequacy Subcommittee.

4. PJM for many years has allowed load-serving entities and curtailment service providers to commit in advance that they will reduce loads to a certain level or by a certain amount when called upon by PJM during, or in anticipation of, emergency conditions. Under RPM, PJM's current approach to assuring resource adequacy, these commitments are known as Demand Resources. As currently defined in the tariff, Demand Resource commitments have important limitations. Specifically, the interruption commitments are limited to the hours from 12:00 p.m. Eastern Prevailing Time ("EPT") to 8:00 p.m. EPT on non-holiday weekdays in the

months of June through September; a maximum of six consecutive hours per call for interruption; and a maximum of ten calls for interruption per summer. Given concerns that these limitations on Demand Resource commitments have become outmoded with the significant growth, under RPM, in the Demand Resources on which PJM depends for reliability, PJM has filed in this proceeding to add a less limited summer-only load management product (known as Extended Summer Demand Resources or "Extended Summer DR") and a year-round product (known as Annual Demand Resources, or "Annual DR"). PJM is retaining its current Demand Resource product, but renaming it Limited Demand Resources or Limited DR. In my affidavit, I will support these market rule changes by: 1) describing PJM's analyses of the reliability impacts of increased reliance on the current limited Demand Resource product; and 2) showing, and providing an example of, the procedures and calculations PJM will use to set targets each year for the maximum quantities of Limited DR and Extended Summer DR that are compatible with reliability.

5. The Demand Resource limitations described above were first established by PJM's predecessor power pool in 1991 as a means for the participating public utilities to receive a credit (known as the Active Load Management, or ALM, Credit) against the installed capacity they otherwise were required to commit to assure reliable service to their loads. Those limits were based on an analysis of the peak periods during the year when PJM would be most at risk of shedding load in the Mid-Atlantic Area Council ("MAAC") region then served by PJM. Those limits on when, how often, and for how long, PJM could call on ALM also were based on an assumption that ALM commitments would comprise a very small share of the total capacity committed to PJM. Specifically, capacity planning analyses performed when ALM was first established in 1991 assumed that it would comprise no more than five percent of PJM's forecast unrestricted peak load. By "unrestricted" peak load, I mean the load that would be expected if load management is not implemented. In 1995, PJM updated its planning analysis and determined that reliability concerns would arise if ALM exceeded 7.5 percent of forecast unrestricted load.

6. Given the rapid increase in Demand Resources offered and cleared in the RPM auctions, PJM management asked the Resource Adequacy Planning Department to conduct an updated analysis of the maximum levels of Demand Resources on which PJM could reliably depend. That analysis, prepared under my direction and supervision, was completed in May 2010 ("May, 2010 Analysis"). A copy of that analysis is provided as Exhibit 1 to this affidavit. The May, 2010 Analysis investigated two distinct questions about the reliability implications of the current limits on Demand Resources: i) at what level of Demand Resource commitment is there an unacceptable risk that PJM will have to call on Demand Resources more than ten times in a season; and ii) assuming Demand Resources commit at the level determined in response to the first question, for how many hours must Demand Resources interrupt their loads when called upon on a given day to provide adequate assurance that Demand Resources will be effective in reducing the peak during all relevant times of the day?

7. As detailed in Exhibit 1, PJM concluded in response to the first question that, using data from the 2013-14 Delivery Year, PJM can be 90 percent confident that it would not need to call on limited resources more than ten times in one summer so long as the committed Demand Resources equated to no more than 8.5 percent of the peak load (assuming the auction

procures capacity at a level equal to the installed reserve margin). As to the second question, PJM concluded that the current six-hour interruption limit poses an unacceptable risk that deployment of Demand Resources would not reduce the peak load for a given day, but would instead merely shift that peak to a time outside the six-hour window, when Demand Resources cannot be called. Shifting the daily peak to an hour outside the six-hour interruption window would result in a peak load that is inconsistent with the peak load used in PJM's planning studies, which assume that the unrestricted PJM peak is reduced by the full amount of dispatched Demand Resources. If Demand Resource penetration is high enough, the daily peak could shift to an earlier or later hour and PJM planning studies would be understating the actual load on a peak day. This understatement of peak loads could conceal reliability violations and therefore result in an unreliable system. Our analysis showed that increasing the interruption window from six hours to ten hours would avoid the risk of shifting, rather than reducing, the peak load. The May, 2010 Analysis therefore proposed to require Demand Resources to interrupt their loads for up to ten hours at a time.

8. Informed by its stakeholder process however, PJM determined to retain the existing Demand Resource product, including its six-hour interruption window. PJM's Resource Adequacy Planning staff therefore conducted additional analysis to determine the level of reliance on limited resources that would not present unacceptable reliability risks, given that the limited product need only respond for a maximum of six hours. The calculation procedure PJM developed to address this question is shown in Exhibit 2 to my affidavit, and an example applying that calculation to PJM's 2013-14 Delivery Year is shown in Exhibit 3. That analysis concludes that PJM can be reasonably confident that it would not need to call on time-limited resources outside their six-hour window so long as the committed Demand Resources equate to no more than 4.7 percent of the peak load (again, assuming the auction clears at the IRM).

9. Since the ten-call and six-hour limits both apply to Demand Resources as currently defined, the reliability implications of Limited DR are defined by the more restrictive of these two limitations. Therefore, applying the analyses for both Demand Resource limitations (i..e, calling no more than ten times per summer, and for no more than six hours at a time) to the 2013-14 Delivery Year indicates that PJM should commit limited resources (assuming the auction clears at PJM's Installed Reserve Margin) at no more than 4.7 percent of its peak load forecast.

10. PJM's analyses described above reasonably rely on models, assumptions and techniques that PJM also regularly uses for its transmission expansion and capacity planning efforts. The probabilistic peak load model used in the analyses is also used by PJM for long-term load forecasting to ensure the transmission and resource adequacy of the region. The probabilistic capacity model used in the Demand Resource analyses is based on an approach that is widely used in the industry to perform Loss of Load Expectation ("LOLE") studies. PJM has been using this capacity model for over thirty years to assess resource adequacy and to establish the installed reserve margin required to satisfy the "one day in ten years" LOLE standard. The PJM Planning Committee reviewed the May, 2010 Analysis and found its approach, assumptions, and conclusions reasonable.

11. Assuming acceptance of the tariff changes in this filing, PJM will calculate reliability targets each year for the Limited DR and Extended Summer DR products, for both the PJM Region as a whole and for any Locational Deliverability Area ("LDA") that typically binds in the RPM auction and/or has experienced a significant increase in reliance on Demand Resources for capacity. Those LDAs currently are the MAAC, Eastern MAAC and Southwestern MAAC LDAs. PJM will monitor Demand Resource participation levels for all LDAs each year and review the results of those analyses with stakeholders.

12. PJM's current draft calculation procedures for these targets are shown in Exhibit 2. PJM plans to review these procedures with stakeholders and incorporate them in the appropriate PJM manual. The procedures will be applied in January 2011 to data for the 2014-15 Delivery Year so that the targets can be posted on February 1, 2011 along with the other auction parameters for the May 2011 Base Residual Auction for that Delivery Year. Conceptually, these targets are very much like the "minimum internal resources required" calculations that PJM presently calculates to define locational capacity constraints.

13. The Limited Demand Resource Reliability Target is the maximum amount of Limited Demand Resources that can be reliably procured in an auction, assuming PJM procures resources in the auction equal to the level of its Reliability Requirement (as defined in the PJM tariff). The target will be expressed as a percentage of forecast peak load, and converted to an "unforced" basis so that it can be correctly deducted from the Reliability Requirement (which is on an unforced basis). Generally, the calculation method tracks the analyses described above for assessment of the reliability impacts of the frequency and duration limitations of the existing Demand Resource product. PJM will determine the level of limited resources (as a percentage of peak load) at which there is an unacceptable (i.e., ten percent) probability that PJM will have to call limited resources more than ten times in a summer. PJM then will determine the level of limited resources at which it can be reasonably confident that it would not need to call on those resources outside their six-hour window. PJM will set the Limited Demand Resource Reliability Target at the more restrictive result from these two analyses.

14. Similar to the Limited DR Reliability Target, PJM will determine the Extended Summer DR Reliability Target each year in accordance with the attached procedure. As detailed on Exhibit 2, PJM will develop hundreds of daily load forecasts (varying based on differing assumptions on weather patterns) and corresponding daily forecasts of the expected available generation capacity resources, for each of the approximately 260 weekdays in a Delivery Year. PJM will then establish a base case that fixes the installed reserve margin at the PJM Board-approved installed reserve margin**.** PJM will model Extended Summer DR in the base case as a resource that is 100% available from May 1 through October 31 and unavailable from November 1 through April 30. PJM will then vary the level of Extended Summer DR committed, and correspondingly reduce the level of annual resources committed, and calculate the impact on system LOLE. In consultation with stakeholders, and consistent with the common use of a 10 percent statistical confidence level in probabilistic models, PJM is using a 10 percent increase in system LOLE from inclusion of Extended Summer DR in this calculation procedure as an acceptable level of risk.

15. As shown on Exhibit 3, the Resource Adequacy Planning Staff has applied this calculation procedure to data for the 2013-14 Delivery Year. That calculation indicates that Extended Summer DR (together with Limited DR) can comprise 10.6 percent of PJM's peak load (again, assuming the auction clears at the IRM) without increasing the PJM system risk of a loss of load event by more than 10 percent. Note that although this target combines Extended Summer DR and Limited DR, PJM will have a separate target (as a subset of that larger target) for the maximum level of Limited DR, which, as I illustrated above, would have been 4.7 percent for 2013-14.

16. Exhibit 2 also shows the procedures PJM will use to calculate these two reliability targets for each of the three relevant LDAs, and Attachment C illustrates application of those rules to planning data for the 2013-14 Delivery Year. The LDA procedure used to establish the Limited DR Reliability Target based on the six hour interruption limitation is identical to that used for the RTO. The LDA procedure used to establish the Extended Summer DR Reliability Target is identical to that used for the RTO with one exception. Rather than being modeled at the Board-approved installed reserve margin, each LDA is modeled at a reserve margin based on the sum of the generation internal to that LDA and the LDA's Capacity Emergency Transfer Limit. This change is necessary because the IRM is applicable to the PJM Region as a whole and not to any individual LDA. The sum of an LDA's internal generation and its CETL represents the maximum amount of resources that will be available to serve load within that LDA. As shown on Exhibit 3, the Limited Demand Resource Reliability Targets for the MAAC, Eastern MAAC, and Southwestern MAAC LDAs for 2013-14 would have been 5.5%, 6.3%, and 6.2%, respectively; and the Extended Summer DR Reliability Targets for those three LDAs would have been 11.1%, 14.2%, and 13.7%, respectively.

17. This concludes my affidavit.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.) Docket No. ER11-___-000

Thomas A. Falin, being first duly sworn, deposes and states that he is the Thomas A. Falin referred to in the document entitled "Affidavit of Thomas A. Falin," that he has read the same and is familiar with the contents thereof, and that the facts set forth therein are true and correct to the best of his knowledge, information, and belief in this proceeding.

Thomas A. Falin

Subscribed and sworn to before me, the undersigned notary public, this 2nd day of December, 2010.

Dianne Maguire

Notary Public

My Commission expires: 12/18/2012

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Dianne Maguire, Notary Public
Lower Providence Twp., Montgomery County
My Commission Expires Dec. 18, 2012
Member, Pennsylvania Association of Notaries

Exhibit 1

May, 2010 Analysis

DEMAND RESOURCE SATURATION ANALYSIS

Resource Adequacy Planning Department

May 2010

I PURPOSE

The purpose of this study is to evaluate the reliability value of Demand Resources (DR) in the PJM Region. Initiation of the study was prompted by the recent increases in the amount of DR committed in PJM, coupled with the limited interruption requirements for DR. This study determines the amount of DR at which its reliability value saturates under the current requirements regarding the number and duration of interruptions.

II BACKGROUND

PJM's first demand side management program, known as Active Load Management (ALM), was implemented in 1991. Its purpose was to allow LSEs to reduce their capacity obligations by registering interruptible load customers that would contractually commit to interrupt their load during peak demand periods. The call for the interruption was at the command of PJM Operations and verification and compliance reviews were performed at the end of each summer.

The conceptual basis for ALM was that the customers' commitment to interrupt during peak demand periods eliminated the need for those customers to procure generation capacity for the interruptible portion of their load. PJM stakeholders recognized that this premise was valid only if ALM customers (that committed no capacity to PJM) were interruptible over all loss of load risk periods so that their demand did not contribute to PJM's loss of load probability (LOLP). To ensure this assumption was valid, PJM examined load duration curves for the then MAAC region. The result of this analysis was to establish the following requirements for qualifying an interruptible load program as ALM:

- Customers must be interruptible for up to ten times per summer
- Each interruption could be for up to six hours over the 1200-2000 time period of all summer weekdays
- The amount of ALM was limited to 5% of the forecasted unrestricted peak load for each zone

Based on updated analysis performed in 1995, the limit on ALM was raised to 7.5% of the RTO forecasted unrestricted peak load. Since 1995, the 7.5% limit and the

requirement for ten interruptions per summer have been verified annually in the Installed Reserve Margin (IRM) Study. The actual amount of ALM in PJM has varied from about 1% to 4% over the 1991–2006 period and the ALM/DR limit has remained at 7.5%.

The amount of Demand Resources (including both DR and Interruptible Load for Reliability) has increased dramatically in recent years. The amount of DR in PJM was 1,677 MW in 2006/2007 and is projected to be over 8,500 MW in 2010/2011 (a fivefold increase). The corresponding increase in DR as a percent of load has been from 1.2% in 2006/2007 to 6.3% in 2010/2011. As the actual amount of DR in PJM approaches the limit of 7.5%, it is necessary to re-examine the determination of the limit and the DR interruption requirements that impact it.

III RTO ANALYSIS

PJM has more sophisticated analytical tools now than were available in 1995 when the issue of DR saturation was last investigated. Specifically, PJM now has a load forecasting tool that can produce a distribution of expected daily peaks. Because DR is implemented on a daily basis, this improved analytical capability allows for a more robust examination of the probability of implementing DR a given number of times over the summer period.

This study assesses the reliability value of DR given its two interruption requirements (ten interruptions per year and a six hour duration per interruption). Each of these requirements was investigated separately and the methodology and results are described below.

Ten Interruption Requirement

The general approach was to convolve the daily peak load distributions from the top 20 summer load days with the available capacity distribution to determine the frequency with which reserves would drop below a given threshold that would, in turn, trigger implementation of DR. This required development of a load and a capacity model.

Load Model:

1. The 2013 summer forecast distributions are obtained for the 20 CP (coincident peak) days from the 2009 load forecast. There are 481 scenarios, each representing a particular weather pattern (13 scenarios from each of 37 historical weather years). For a given weather scenario, the CP1 day represents the highest load forecasted for the summer of the forecast year. The CP2 day represents the 2nd highest load forecasted, etc.

   Note: At the time the 2009 forecast was developed, ATSI was not included.

2. The median load value from the CP1 day corresponds to the 50/50 forecasted peak for the RTO in 2013/14. The 20 CP distributions are per-unitized on the

median of the CP1 day peak. In other words, the ratio of each of 481 x 20 loads to the median forecast peak is calculated. Using the ratio calculated, the 481 x 20 loads can be re-evaluated for any forecasted peak while preserving the shape of the original distributions. This allows the 20 CP day distributions to be shifted up or down by altering the seasonal peak load.

Capacity Model:

3. The PJMRTO cumulative capacity probability table from the 2009 IRM Study is used. The cumulative capacity probability table represents the distribution of available capacity each week. Available capacity is that generation that is not expected to be on a forced, maintenance or planned outage. The capacity distribution from week 10 (the peak week in the 2009 IRM Study for DY 2013/2014) is assumed to be constant for the entire period of 20 CP days. This assumption is made because there are no planned or maintenance outages over the summer period and the generator EFORd's are modeled as constant across the Delivery Year.

4. DR is assumed to be a 100% available resource that is available to assist the system whenever PJM operating reserves fall below a certain margin. The operating reserve is thus the margin between load and available capacity at which DR is expected to be invoked. An operating reserve margin of 1,300 MW is assumed for the RTO. This value is documented on page 11 of PJM Manual 13 and represents the RTO's synchronized/spinning reserve requirement that is based on the loss of the largest PJM generating unit.

Analysis:

5. Using the normalized distributions from Step 2, and the cumulative capacity probability table from Step 3, the LOLE is calculated for each of the 481 x 20 loads and aggregated. The peak load is iteratively increased until the Installed Reserve Margin (with no DR assumed) of 15.3% is established. 15.3% is the approved IRM for the 2013/2014 DY and is used by RPM to procure capacity resources for the RTO. This solved case forms the base case. Note: LOLE is always calculated at zero margin, i.e. load exceeds available capacity (including DR).

6. The 20 CP days from each of the 481 scenarios are derived from various weather patterns that simulate the need for invoking DR. At the assumed operating reserve margin, the following occur:

    a. If the margin between load and an available capacity state is greater than the operating reserve, no Loss of Load (LOL) occurs and no DR is invoked.

    b. If the margin between load and an available capacity state is less than the operating reserve, DR is invoked if available. No LOL occurs until the

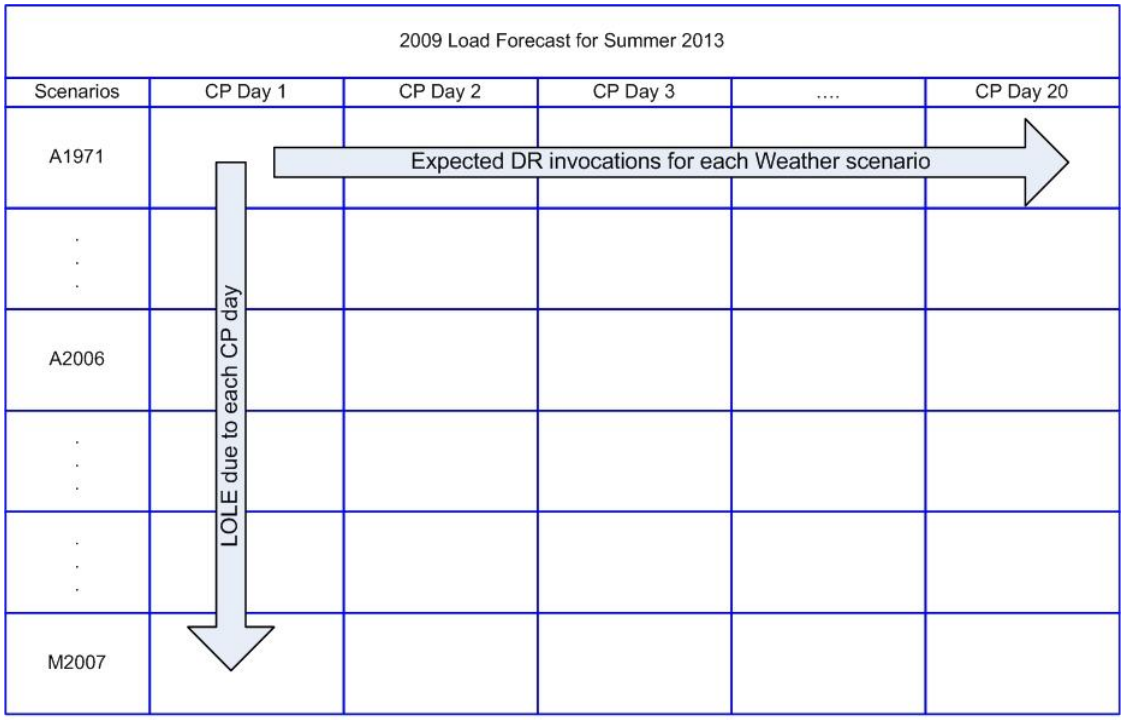
margin becomes less than or equal to zero. For each of the 20 CP days, the first instance (or capacity state) in which the margin falls below the operating reserve is used to determine the probability DR will be invoked on a particular day. For a CP day, DR can be invoked with a probability between zero and one depending on the capacity state at which the margin falls below operating reserve. For example, if (Capacity-load) <= operating reserves for all capacity states, the probability of DR invocation on that day is 1. Alternatively, if (Capacity-Load) > operating reserves for all the capacity states, the probability of DR invocation is zero. The probability of DR invocation is calculated for all 20 CP days in a weather scenario and is then summed. This sum represents the expected number of DR invocations in that scenario.

c. If, after invoking DR, the margin becomes less than zero for certain states, LOL occurs. The LOLE is aggregated for each CP day across all scenarios.

7. Using the 1,300 MW operating reserve margin, the amount of DR is progressively increased. The increase in DR is modeled as 100% available generation and the additional DR replaces an equal amount of generation resources so that the 15.3% reserve margin is held constant. Thus, as the amount of DR increases in the system, more generation is displaced and also the expected number of times DR is invoked increases.

8. A histogram of the expected DR invocations from the 481 scenarios is developed for each level of DR penetration. The histogram represents the frequency with which DR is implemented X number of times as X is varied from zero to 20.

Figure 1 below illustrates Step 5 - Step 8 for a given level of DR penetration.



- LOLE due to all 20 CP days is summed to calculate Total LOLE.
- Expected DR invocations for all 481 weather scenarios are used to create a Histogram

FIGURE 1

Results

The histogram described in Step 8 above can be aggregated into a cumulative probability curve that represents the likelihood that DR is implemented X or fewer times. That aggregation is depicted in Figure 2 below for ten or fewer interruptions:

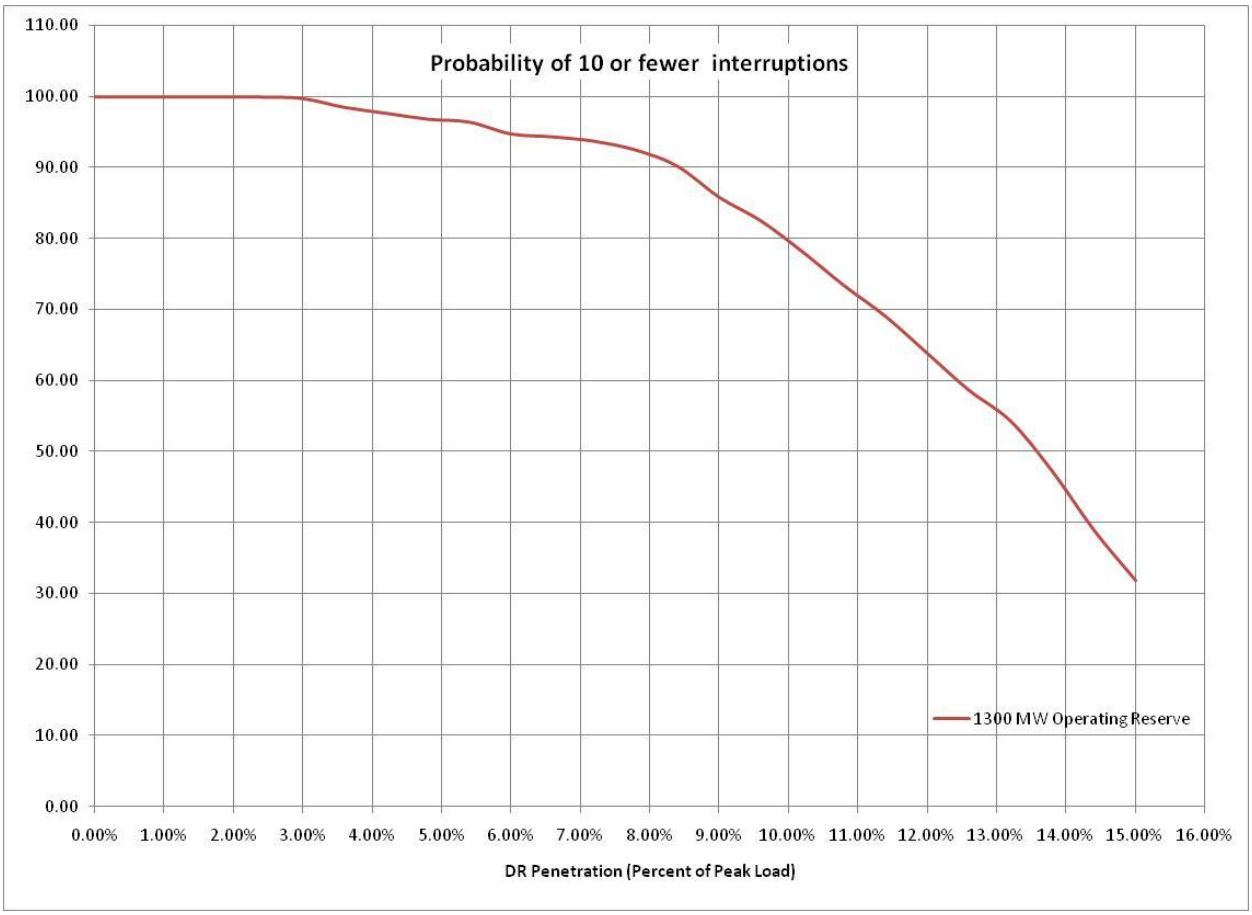


FIGURE 2

Figure 2 is based on a PJM case modeled at the 15.3% IRM reserve level and DR invocation is assumed whenever the operating reserve margin drops below 1,300 MW. Each DR invocation is counted as one event, regardless of the amount by which reserves drop below the 1,300 MW margin. This assumption is consistent with PJM operating practice and the practical reality of emergency conditions. PJM Operations calls for DR several hours in advance of the actual need when the peak load for that day is not known. Typically, PJM Operations does not have the need to call for the amount of DR that would restore reserves exactly to the 1,300 MW margin. Rather, on a typical PJM emergency day, all the DR in the affected area is invoked.

Figure 2 shows the likelihood that ten or fewer DR interruptions are needed as the amount of DR is increased across the horizontal axis. For instance, if DR were only 3% of the peak load, there is virtually a 100% chance that DR would be invoked 10 or fewer times (or a 0% chance it would need to be invoked more than 10 times). As the amount of DR increases, the probability of invoking DR ten or fewer times decreases (or, put another way, the probability of needing DR more than ten times increases).

Based on the information in Figure 2, engineering judgment must be applied to choose a DR penetration level at which PJM is comfortable that the probability of needing more than ten interruptions is not too large. A reasonable DR limit might be 8.5%, which is the point at which there is only a 10% chance that more than ten interruptions are needed (or, as indicated in Figure 2, a 90% chance of needing ten or fewer interruptions).

Sensitivity study results indicate that if the operating reserve margin were increased or decreased from the 1,300 MW level assumed in the base case, the DR saturation point would shift by a roughly equal MW amount in the opposite direction. For example, if the operating reserve margin at which DR is implemented were decreased to 1,000 MW, the DR saturation point would increase by approximately 300 MW.

Figure 2 is based on the current PJM requirement of ten interruptions. Figure 3 below illustrates the same case under the assumption of five or fewer and 15 or fewer interruptions.

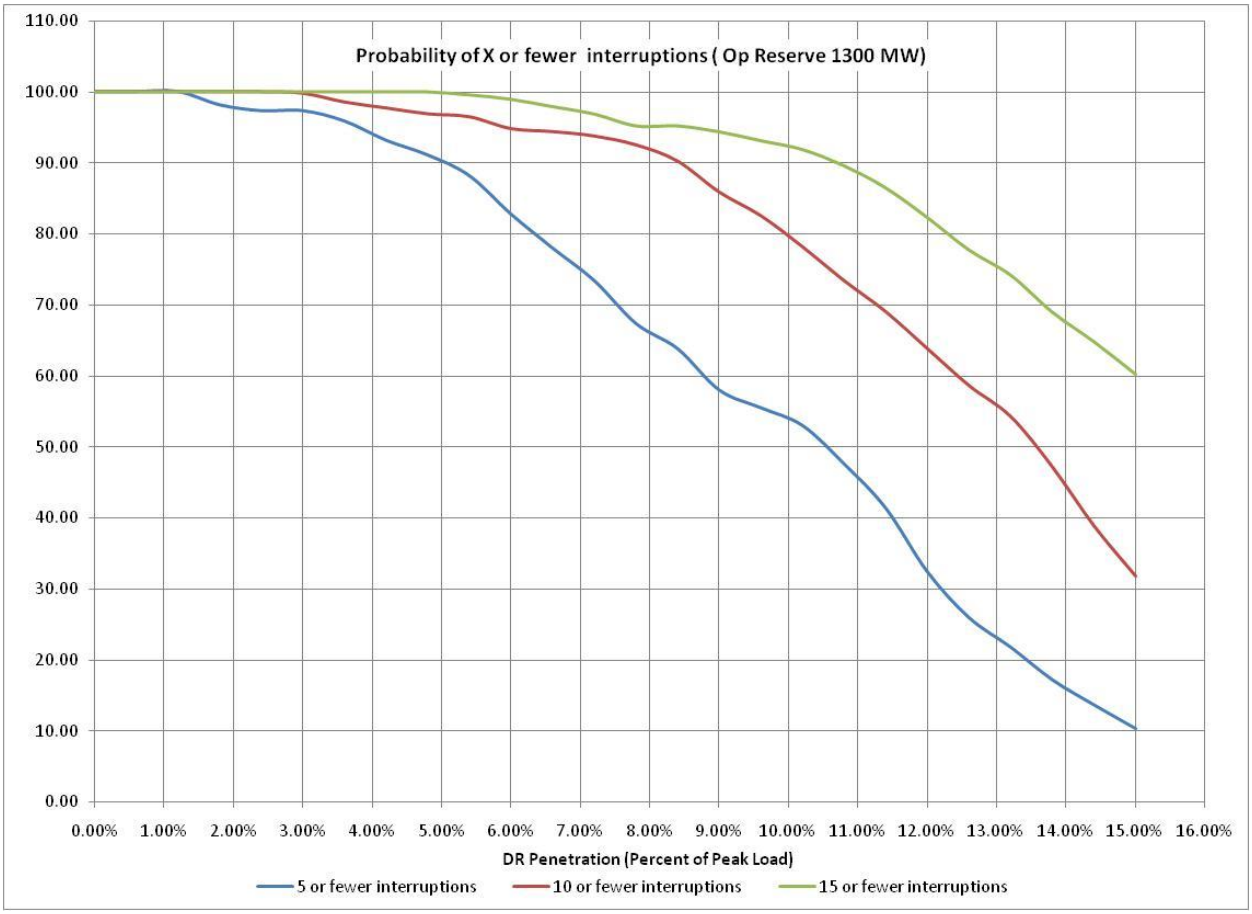


FIGURE 3

The red curve in Figure 3 is the same as the curve in Figure 2. (Both are based on ten or fewer interruptions.) The green curve in Figure 3 shows the probability of invoking DR 15 or fewer times as the amount of DR is increased across the horizontal axis. So, for example, if the 90% threshold were applied, DR could be about 11% of the forecasted unrestricted load. 11% DR would be the level at which there is only a 10% chance of requiring more than 15 interruptions. Figure 3 therefore illustrates that, if the interruption requirement were increased from 10 interruptions to 15, the limit on DR could be increased from 8.5% to 11% based on the same 90% confidence threshold.

Six Hour Duration Requirement

The second area of investigation concerns the six hour duration requirement currently applicable to DR. The intent of the DR program is to shave the daily peak load, not to shift the peak to an hour outside the six hour DR window. If the DR amount increases to a certain level, however, implementing DR could have the effect of shifting the daily peak to an early afternoon or evening hour. If this occurred, the daily peak would not be reduced by the full amount of DR. This concept is illustrated in Figure 4 below:

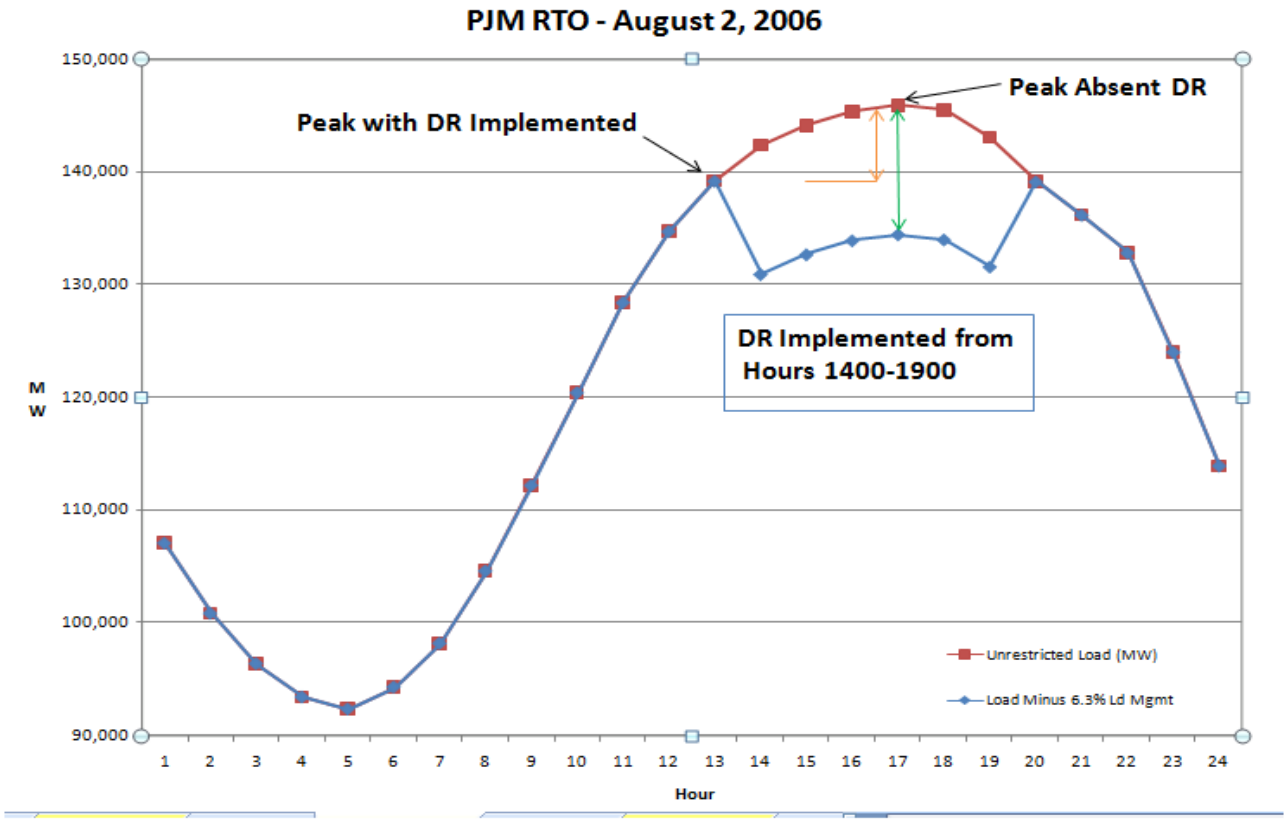


FIGURE 4

Figure 4 shows the hourly load curve from PJM's all-time peak day of August 2, 2006. The red curve shows the unrestricted load. If DR had been implemented over the highest six load hours of that day, the metered load would have followed the blue curve. (In this example, DR is assumed to be 6.3% of the weather-normalized peak. A 6.3% DR level is projected for the 2010/2011 Delivery Year.) As illustrated in the figure, the impact of implementing DR is to shift the daily peak to 1300 hours. As a result, the reduction in the daily peak (the vertical orange line) is less than the amount of DR implemented (the vertical green line).

To ensure the daily peak is reduced by the full amount of DR, the DR interruption window needs to be expanded to ensure that the peak of the day still falls within the DR interruption window. Figure 5 evaluates this issue for PJM's all-time peak day of August 2, 2006. The figure shows that the DR interruption window would need to be expanded to ten hours to ensure that the daily metered peak still falls within the DR window after DR is fully implemented. The assumed amount of DR for this analysis was 8.5% of the unrestricted load. The 8.5% level was selected based on results from the ten interruption investigation described in a previous section of this report.

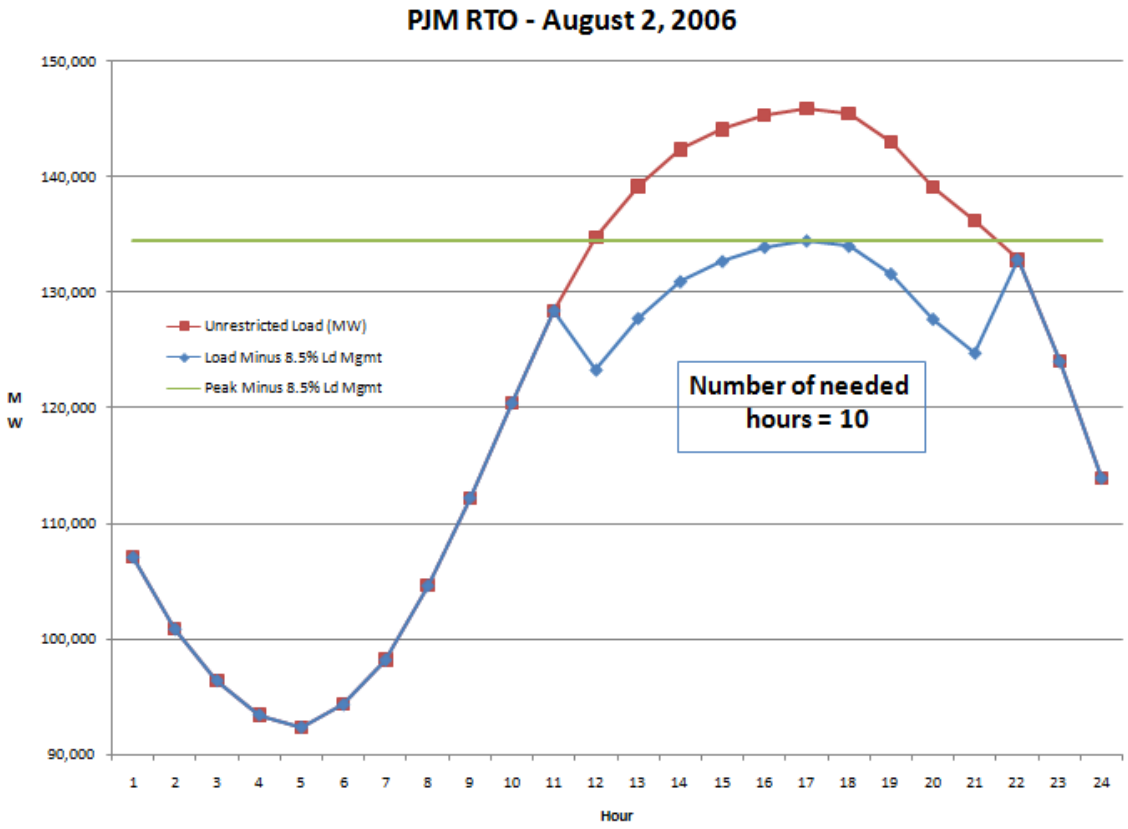


FIGURE 5

Figure 5 indicates that a ten hour DR interruption window is required for this particular day. The goal is to ensure that the green horizontal line is the metered peak. Therefore, any red data point falling above the green line would need to be reduced by implementing DR. There are ten red data points above the green line, so the interruption window, for this particular day, needs to be ten hours.

The required DR window can vary based on the particular load day being examined. This issue was investigated for each of the PJM annual peak load days from 2005-2009 and for any load day over that period on which the unrestricted peak was greater than the 50/50 weather-normalized peak load. These days would be most likely to require invocation of DR. In all these cases, the amount of DR was assumed to be 8.5% of the unrestricted peak load. For each day, the required DR interruption window was determined based on the same approach used in Figure 5. The results are summarized below in Table 1. (The load percentile column indicates where the load falls on the peak day (1CP) load distribution of that particular year.)

REQUIRED DR INTERRUPTION WINDOW FOR SELECTED LOAD DAYS

Date		Load Percentile	Required DR Interruption Window
7/26/2005	Annual Peak	55/45	9 hours
8/3/2005		55/45	9 hours
7/17/2006		70/30	9 hours
7/31/2006		65/35	10 hours
8/1/2006		95/5	10 hours
8/2/2006	Annual Peak	95/5	10 hours
8/3/2006		60/40	9 hours
8/8/2007	Annual Peak	70/30	8 hours
6/9/2008	Annual Peak	20/80	10 hours
8/10/2009	Annual Peak	20/80	9 hours

TABLE 1

These results indicate that, if the DR limit were raised to 8.5%, the duration window should be expanded to ten hours to ensure that the daily peak is reduced by the full amount of implemented DR.

IV LDA ANALYSIS

The RTO analysis described in Section III examined the likelihood of implementing DR across the RTO due to an overall insufficient level of generation resources. DR may also

be implemented to relieve local reliability problems specific to an individual Locational Deliverability Area (LDA).

The three LDAs of primary interest in this study were MAAC (consisting of the PJM Mid-Atlantic zones), Eastern MAAC (consisting of the PSE&G, JCP&L, PECO, AE, DPL and RE zones) and Southwestern MAAC (consisting of the PEPCO and BG&E zones). The ten interruption analysis procedure described above for the RTO was applied to each of these three LDAs with two modifications:

1. LDA reserves were set to the LDA's internal generation plus its Capacity Emergency Transfer Limit (CETL). This is the maximum amount of reserves expected to be available to the LDA during a local capacity emergency.
2. The operating reserve margin at which DR was assumed to be implemented was zero MW. This approach assumes that DR is initiated for LDA related problems only at the point of avoiding an actual loss of load event (or a negative reserve margin).

The results of this analysis for MAAC, EMAAC and SWMAAC are graphically depicted in Figures 6, 7 and 8, respectively. Each figure shows the probability of requiring five or fewer, ten or fewer and 15 or fewer DR interruptions as the amount of DR is increased across the horizontal axis.

FIGURE 6: MAAC

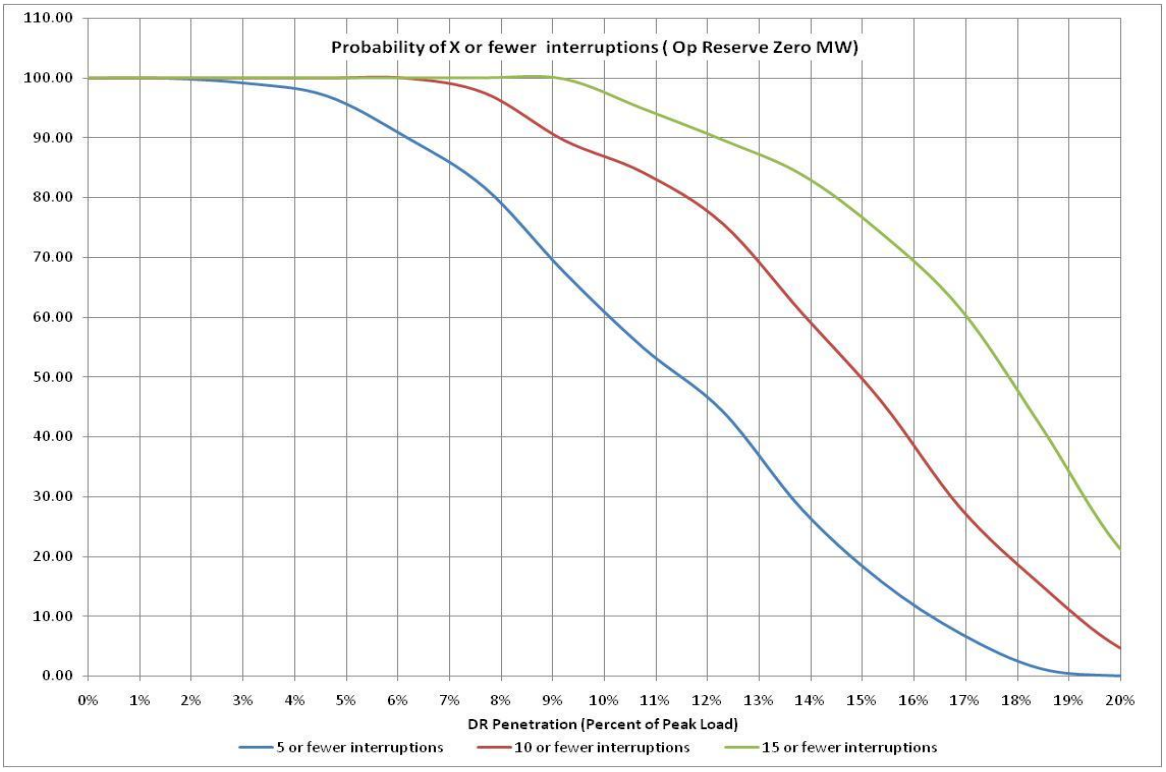


FIGURE 7: EASTERN MAAC

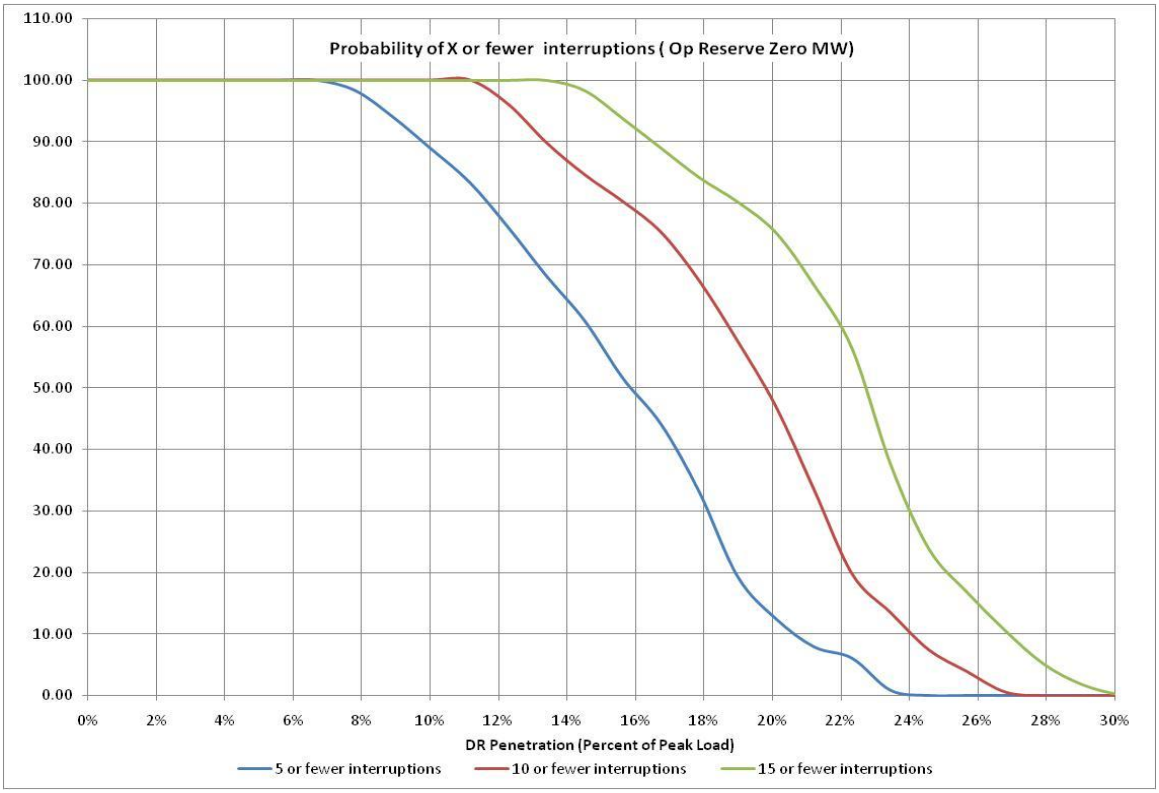


FIGURE 8: SOUTHWEST MAAC

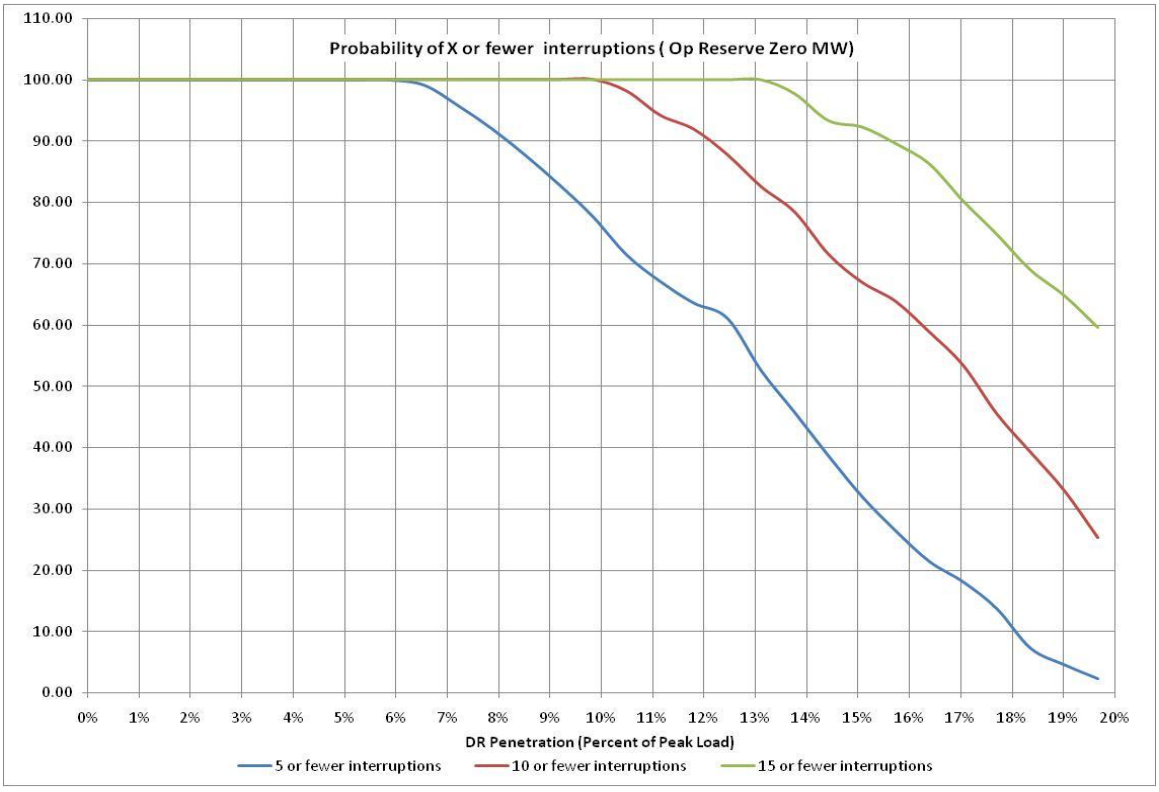


Figure 6 indicates that, based on the same 90% confidence level used in the RTO analysis, the DR penetration level in MAAC should be limited to 9.0% of the forecasted unrestricted MAAC load. The 9.0% value is based on the current requirement of ten interruptions (the red curve in the figure). The "90% confidence" DR limits for Eastern MAAC and Southwestern MAAC are 13.5% and 12.0% based on Figures 7 and 8, respectively.

The green colored curves in Figures 6, 7 and 8 indicate that the DR penetration limits for the three LDAs could be increased if the interruption requirement were raised to 15 per year. The "90% confidence" limit under a 15 interruption per year requirement would be 12.0% for MAAC, 16.5% for Eastern MAAC and 15.5% for Southwestern MAAC.

The DR penetration levels in the LDA analyses are expressed as a percentage of each LDA's non-coincident peak load (NCP). The RPM auctions are conducted using PJM coincident peak loads, so the 9.0%, 13.5% and 12.0% values described above must be converted to a coincident peak load (CP) basis. That conversion is illustrated in Table 2 below.

10 or fewer interruptions					
LDA	DR limit (% of NCP)	NCP Load (MW)	DR Limit (MW)	CP load (MW)	DR Limit (% of CP)
PJMMA	9.0%	64593	5813	62608	**9.3%**
EPJMMA	13.5%	35444	4785	34273	**14.0%**
SPJMMA	12.0%	15244	1829	14715	**12.4%**

TABLE 2

The NCP load values in Table 2 are from Tables B-1, C-3 and C-4 in the 2010 PJM Load Forecast Report and the CP values are from Table B-10 in the same report. All load values are for the 2013/2014 Delivery Year. The rightmost column of Table 2 indicates that the DR limits for MAAC, Eastern MAAC and Southwestern MAAC on a PJM coincident peak load basis are 9.3%, 14.0% and 12.4%, respectively. These LDA limits would need to be observed in addition to the RTO-wide DR limit of 8.5% described in Section III of this report.

The DR limits, assuming a 15 interruption per year requirement, are converted to a PJM coincident peak load basis in Table 3 below.

15 or fewer interruptions					
LDA	DR limit (% of NCP)	NCP Load (MW)	DR Limit (MW)	CP load (MW)	DR Limit (% of CP)
PJMMA	12.0%	64593	7751	62608	**12.4%**
EPJMMA	16.5%	35444	5848	34273	**17.1%**
SPJMMA	15.5%	15244	2363	14715	**16.1%**

TABLE 3

It is important to note that the LDA analysis results are very sensitive to the CETL used to determine the LDA reserve margin. CETL values can change significantly from year to year based on inputs such as the load forecast, generator retirements and the completion or deferral of planned transmission upgrades. As a result, the LDA DR percentage limits could also change significantly from year to year.

V CONCLUSION

Given the current interruption requirements applicable to DR, these study results indicate that the reliability value of DR saturates at an 8.5% penetration level for the RTO. The 8.5% level is based on acceptance of a 90% degree of certainty that DR would not need to be implemented more than ten times in a single year. The study indicates that the DR saturation level would increase to 11% if the interruption requirement were raised from ten to 15 interruptions per year. If an 8.5% RTO limit for DR were established, the interruption window should be expanded to ten hours to ensure the daily peak is not shifted to an off-peak period.

The LDA analysis results indicate that, under current interruption requirements, the reliability value of DR saturates at 9.3% for MAAC, 14.0% for Eastern MAAC and 12.4% for Southwestern MAAC. The LDA analysis considered only DR interruptions that were required to address local, not RTO-wide, reliability problems.

Given these findings and the current DR interruption requirements, PJM recommends the following:

1. The amount of DR RTO-wide should be capped at 8.5% of the forecasted unrestricted peak.

2. The amount of DR in MAAC, Eastern MAAC and Southwestern MAAC should be capped at the levels indicated in the table below. The caps are expressed as a

percentage of each LDA's forecasted PJM coincident peak. It is important to note that these caps are based on each LDA's CETL for the 2013/2014 Delivery Year. The caps could change significantly for other Delivery Years as the CETL is impacted by factors such as generator retirements and the completion or deferral of planned transmission upgrades.

Proposed DR Limits for 2013/14 Delivery Year

LDA	DR Limit
MAAC	**9.3%**
Eastern MAAC	**14.0%**
Southwestern MAAC	**12.4%**

3. Any capacity procured in excess of the IRM or in excess of an LDA's Reliability Requirement could also be DR. This DR would not count toward the cap.

4. The DR interruption window should be expanded from six to ten hours to ensure that the daily peak is reduced by the full amount of implemented DR.

Exhibit 2

Demand Resource Target Calculation Procedures

DR RELIABILITY TARGET ANALYSIS PROCEDURES

The procedures described below are performed on an annual basis prior to each RPM Base Residual Auction. The procedures use the most recent IRM Study model, CETO/CETL models and PJM load forecast model applicable to the Delivery Year (DY) being evaluated.

I LIMITED (10x6) DR PRODUCT

RTO PROCEDURE

Ten Interruption Requirement

Load Model:

1. The summer forecast distributions for the applicable Delivery Year are obtained for the 20 CP (coincident peak) days from the PJM load forecast model. The distributions are based on a range of historical weather scenarios. For a given weather scenario, the CP1 day represents the highest load forecasted for the summer of the forecast year. The CP2 day represents the 2nd highest load forecasted, etc.

2. The median load value from the CP1 day corresponds to the 50/50 forecasted RTO peak for the applicable Delivery Year. The 20 CP distributions are per-unitized on the median of the CP1 day peak. In other words, the ratio of each weather scenario load to the median forecast peak is calculated. Using the ratio calculated, all weather scenario loads can be re-evaluated for any forecasted peak while preserving the shape of the original distributions. This allows the 20 CP day distributions to be shifted up or down by altering the forecasted summer peak load.

Capacity Model:

3. The PJMRTO cumulative capacity probability table from the most recent IRM Study is obtained. The cumulative capacity probability table represents the distribution of available capacity each week. Available capacity is that generation that is not expected to be on a forced, maintenance or planned outage. The capacity distribution from the peak week is assumed to be constant for the entire period of 20 CP days. This assumption is made because there are no planned or maintenance outages over the summer period and the generator EFORds are modeled as constant across the Delivery Year.

4. DR is assumed to be a 100% available resource that is available to assist the system whenever PJM operating reserves fall below a certain margin. The operating reserve is thus the margin between load and available capacity at which DR is expected to be invoked. An operating reserve margin of 1,300 MW is assumed for the RTO. This value is documented in Section 2.2 of PJM Manual 13 and represents the RTO's synchronized/spinning reserve requirement that is based on the loss of the largest PJM generating unit.

Analysis:

5. Using the normalized distributions from Step 2, and the cumulative capacity probability table from Step 3, the LOLE is calculated for each of the possible load levels and aggregated. The peak load is iteratively increased until the approved Installed Reserve Margin (with no DR assumed) for the applicable Delivery Year is established. This solved case forms the base case. Note: LOLE is always calculated at zero margin, i.e. load exceeds available capacity (including DR).

6. The 20 CP days from each of the weather scenarios are derived from various weather patterns that simulate the need for invoking DR. At the assumed operating reserve margin, the following occur:

    a. If the margin between load and an available capacity state is greater than the operating reserve, no Loss of Load (LOL) occurs and no DR is invoked.

    b. If the margin between load and an available capacity state is less than the operating reserve, DR is invoked if available. No LOL occurs until the margin becomes less than or equal to zero. For each of the 20 CP days, the first instance (or capacity state) in which the margin falls below the operating reserve is used to determine the probability DR will be invoked on a particular day. For a CP day, DR can be invoked with a probability between zero and one depending on the capacity state at which the margin falls below operating reserve. The probability of DR invocation is calculated for all 20 CP days in a weather scenario and is then summed. This sum represents the expected number of DR invocations in that scenario.

    c. If, after invoking DR, the margin becomes less than zero for certain states, LOL occurs. The LOLE is aggregated for each CP day across all scenarios.

7. Using the 1,300 MW operating reserve margin, the amount of DR is progressively increased. The increase in DR is modeled as 100% available generation and the additional DR replaces an equal amount of generation resources so that the IRM is held constant. Thus, as the amount of DR increases in the system, more generation is displaced and also the expected number of times DR is invoked increases.

8. A histogram of the expected DR invocations from the weather scenarios is developed for each level of DR penetration. The histogram represents the frequency with which DR is implemented X number of times as X is varied from zero to 20. The histogram is then aggregated into a cumulative probability curve that represents the likelihood that DR is implemented X or fewer times. A 90% probability of requiring ten or fewer DR interruptions is used to define the DR Reliability Target. This Target is expressed as a percent of forecasted peak load.

Duration Requirement

1. PJM examines the last five calendar years and identifies any day which is an annual peak load day and/or a day with an unrestricted peak load greater than the 50/50 weather normalized peak and/or a day on which RTO-wide load management was implemented. These days would be most likely to require invocation of DR

2. The unrestricted hourly loads for each of the days identified in step 1 are ranked from highest to lowest. The MW difference between the day's unrestricted hourly peak load and its seventh highest unrestricted hourly load is computed.

3. For each day examined in step 2, the MW difference between the day's unrestricted hourly peak load and its seventh highest unrestricted hourly load is divided by the forecasted 50/50 peak load for that particular summer. The resulting percentages are tabulated for all days that qualify per step 1. The average of these percentages is the DR Reliability Target based on the 6 hour duration requirement. Any day with a peak load well below the 50/50 peak may be excluded from this calculation as it is not representative of a day that would require implementation of DR.

The operative DR Reliability Target is the lower of the targets based on either the ten interruption requirement or the six hour duration requirement.

LDA Procedure

Ten Interruption Requirement

Three LDAs (MAAC, EMAAC and SWMAAC) are examined. The ten interruption analysis procedure described above for the RTO is applied to each of these three LDAs with the two modifications identified in steps 1 and 2 below:

1. LDA reserves are set to the LDA's internal generation plus its Capacity Emergency Transfer Limit (CETL). This is the maximum amount of reserves expected to be available to the LDA during a local capacity emergency. The CETO/CETL cases include energy-only resources and behind-the-meter (BTM) generation.

2. The operating reserve margin at which DR is assumed to be implemented is zero MW. This approach assumes that DR is initiated for LDA related problems only at the point of avoiding an actual loss of load event (or a negative reserve margin).

3. The load model and capacity model for each LDA is developed as described above in steps 1 through 4 for the RTO analysis. The unrestricted load forecast for the LDA is adjusted to include the BTM load. Thus the LDA reserve levels are established using the formula: LDA Reserve Margin = (Installed capacity + CETL) / (Unrestricted Peak Load + BTM load adjustment). The DR Reliability Target is then determined as described in steps 5 through 8 above.

4. Each DR Reliability Target determined in step 3 is converted to a MW amount by multiplying the Reliability Target percentage by each LDA's forecasted non-coincident peak load (NCP). The resulting MW Reliability Target is then divided by each LDA's forecasted coincident peak load (CP). This Reliability Target percentage is used in the RPM auction. The NCP and CP forecasts are obtained from Tables B-1, B-10, C-3 and C-4 from the most recent PJM Load Forecast Report.

Duration Requirement

1. PJM examines the last five calendar years and identifies any day which is an LDA annual peak load day and/or a day with an unrestricted peak load greater than the 50/50 weather normalized LDA peak and/or a day on which load management was implemented in that particular LDA. These days would be most likely to require invocation of DR

2. The unrestricted hourly loads for each of the days identified in step 1 are ranked from highest to lowest. The MW difference between the day's unrestricted hourly peak load and its seventh highest unrestricted hourly load is computed.

3. For each day examined in step 2, the MW difference between the day's unrestricted hourly peak load and its seventh highest unrestricted hourly load is divided by the forecasted 50/50 LDA peak load for that particular summer. The resulting percentages are tabulated for all days that qualify per step 1. The average of these percentages is the DR Reliability Target based on the 6 hour duration requirement. Any day with a peak load well below the 50/50 LDA peak may be excluded from this calculation as it is not representative of a day that would require implementation of DR.

4. Each DR Reliability Target determined in step 3 is converted to a MW amount by multiplying the Reliability Target percentage by each LDA's forecasted non-coincident peak load (NCP). The resulting MW Reliability Target is then divided by each LDA's forecasted coincident peak load (CP). This Reliability Target

percentage is used in the RPM auction. The NCP and CP forecasts are obtained from Tables B-1, B-10, C-3 and C-4 from the most recent PJM Load Forecast Report.

The operative DR Reliability Target is the lower of the two targets based on either the ten interruption requirement or the six hour duration requirement.

II EXTENDED SUMMER DR PRODUCT

This section details the procedure used to determine the DR Reliability Target associated with a demand resource product that is available for interruption an unlimited number of times from May 1 through October 31 but is not interruptible over the November 1 through April 30 time period. Each interruption may last up to ten hours. The criterion to establish the Reliability Target is to ensure that the Extended Summer DR product does not have a negative impact on system reliability. The procedure uses the most recent IRM Study model, CETO/CETL models and PJM load forecast model applicable to the Delivery Year being evaluated.

RTO PROCEDURE

Load Model:

1. The daily load forecast distributions for the applicable Delivery Year are obtained for all weekdays from the PJM load forecast model. The distributions are based on a range of historical weather scenarios. This results in approximately 260 daily load distributions.

2. The maximum load value from each weather scenario's summer period (June 1 – August 31) is determined. The median of the distribution of all these maximum load values represents the 50/50 forecasted summer RTO peak for the applicable Delivery Year.

3. The daily load distributions from step 1 are per-unitized on the 50/50 peak load value determined in step 2. In other words, the ratio of each weather scenario load to the median forecast peak is calculated. Using the ratio calculated, all weather scenario loads can be re-evaluated for any forecasted peak while preserving the shape of the original distributions. This allows all the daily load distributions to be shifted up or down by altering the forecasted summer peak load.

Capacity Model:

4. The PJMRTO cumulative capacity probability table from the most recent IRM Study is obtained for all 52 weeks of the applicable Delivery Year. The cumulative capacity probability table represents the distribution of available

capacity each week. Available capacity is that generation that is not expected to be on a forced, maintenance or planned outage.

5. The daily load distributions from step 3 are mapped to the corresponding weekly capacity distribution from step 4.

Analysis:

6. As described in step 3, the daily load distributions are iteratively shifted to equal the IRM established for the applicable DY.

7. A reference annual LOLE is determined based on the daily load distributions from step 6 and the capacity distributions from step 4. The resulting case is the Base Case.

8. To simulate the impact of summer-only DR, varying amounts of DR (expressed as a percent of the unrestricted peak load) are modeled to be interruptible from May 1 through October 31 while being unavailable for the November 1 through April 30 period. The DR is represented as a 100% available resource and is assumed to displace an equal amount of 100% available generation for the entire year.

9. At each DR amount, the annual LOLE is determined and the percent increase in risk from the reference annual LOLE is calculated.

10. The DR Reliability Target is equal to the DR amount at which the percent increase from the reference LOLE computed in step 9 is 10%. The DR Reliability Target in MW is expressed as a percent of the forecasted unrestricted peak.

LDA Procedure

Load Model:

1. The daily load forecast distributions for the applicable Delivery Year are obtained for all weekdays from the PJM load forecast model. The distributions are based on a range of historical weather scenarios. This results in approximately 260 daily load distributions.

2. The maximum load value from each weather scenario's summer period (June 1 – August 31) is determined. The median of the distribution of all these maximum load values represents the 50/50 forecasted summer LDA peak for the applicable Delivery Year.

3. The daily load distributions from step 1 are per-unitized on the 50/50 peak load value determined in step 2. In other words, the ratio of each weather scenario load to the median forecast peak is calculated. Using the ratio calculated, all weather scenario loads can be re-evaluated for any forecasted peak while preserving the shape of the original distributions. This allows all the daily load

distributions to be shifted up or down by altering the forecasted summer peak load. The load distributions are adjusted to match a load level equal to the unrestricted forecasted LDA peak plus a behind-the-meter load adjustment.

Capacity Model:

4. The cumulative capacity probability table from the most recent CETO/CETL Study is obtained for all 52 weeks of the applicable Delivery Year. (The CETO/CETL cases include energy-only resources and behind-the-meter generation.) The cumulative capacity probability table represents the distribution of available capacity each week. Available capacity is that generation that is not expected to be on a forced, maintenance or planned outage.

5. The daily load distributions from step 3 are mapped to the corresponding weekly capacity distribution from step 4.

Analysis:

6. A Base Case is established that sets the reserve margin based on the following formula: LDA Reserve Margin = (Installed capacity + CETL) / (Unrestricted Peak Load + behind-the-meter load adjustment).

7. A reference annual LOLE is determined based on the daily load distributions from the Base Case established in step 6 and the capacity distributions from step 4.

8. To simulate the impact of summer-only DR, varying amounts of DR (expressed as a percent of the unrestricted peak load) are modeled to be interruptible from May 1 through October 31 while being unavailable for the November 1 through April 30 period. The DR is represented as a 100% available resource and is assumed to displace an equal amount of 100% available generation for the entire year.

9. At each DR amount, the annual LOLE is determined and the percent increase in risk from the reference annual LOLE is calculated.

10. The DR penetration percentage at which the percent increase from step 9 is equal to 10% is determined. The DR Reliability Target in MW is expressed as a percentage of the forecasted unrestricted peak (adjusted by BTM load) used in the study.

11. The DR penetration percentage determined in step 10 is then multiplied by the LDA's forecasted non-coincident peak load (NCP). The resulting MW amount is then divided by the LDA's forecasted coincident peak load (CP) to determine the LDA Reliability Target as a percent of the LDA's CP. This Reliability Target, expressed as a percentage of the LDA's forecasted CP load, is used in the RPM auction. The NCP and CP forecasts are obtained from Tables B-1, B-10, C-3 and C-4 from the PJM Load Forecast Report.

Exhibit 3

Demand Resource Target Calculation Illustrations

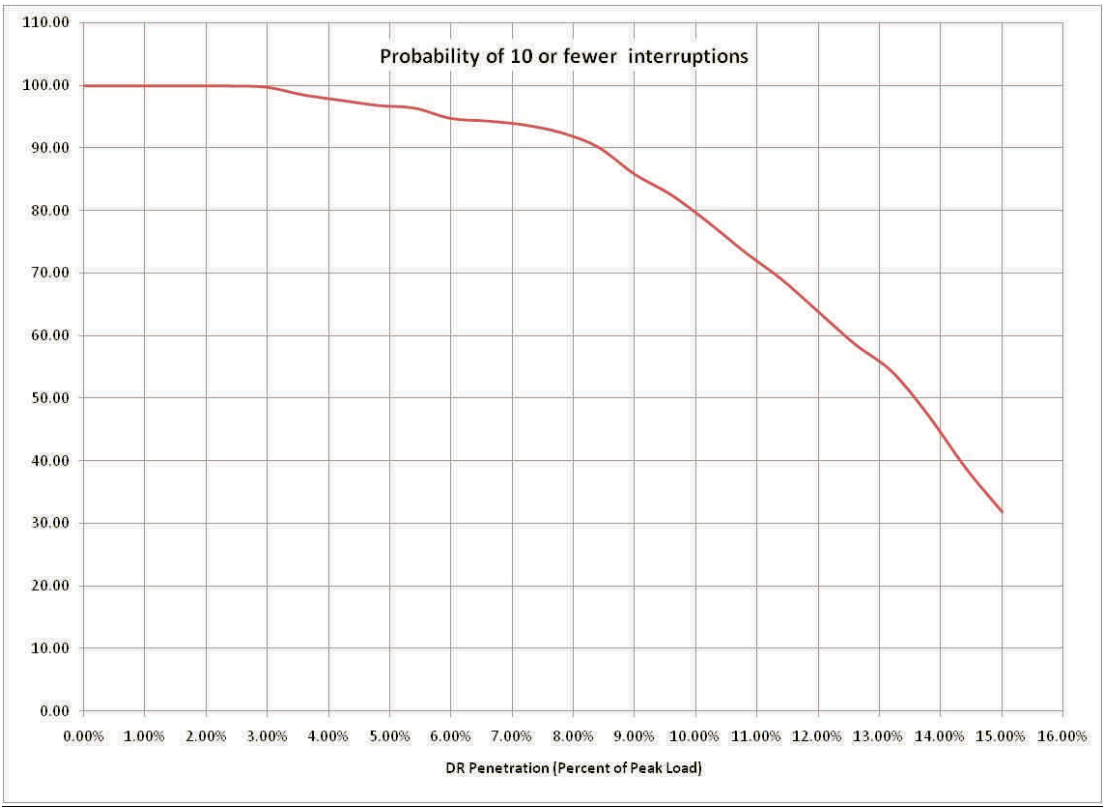
DR RELIABILITY TARGET ANALYSIS
RESULTS FOR 2013/2014 DELIVERY YEAR

These analysis results are based on input data from the 2010 PJM Load Forecast Report, the 2009 PJM Installed Reserve Margin Study and 2013/2014 CETO/CETL Cases.

I LIMITED (10x6) DR PRODUCT

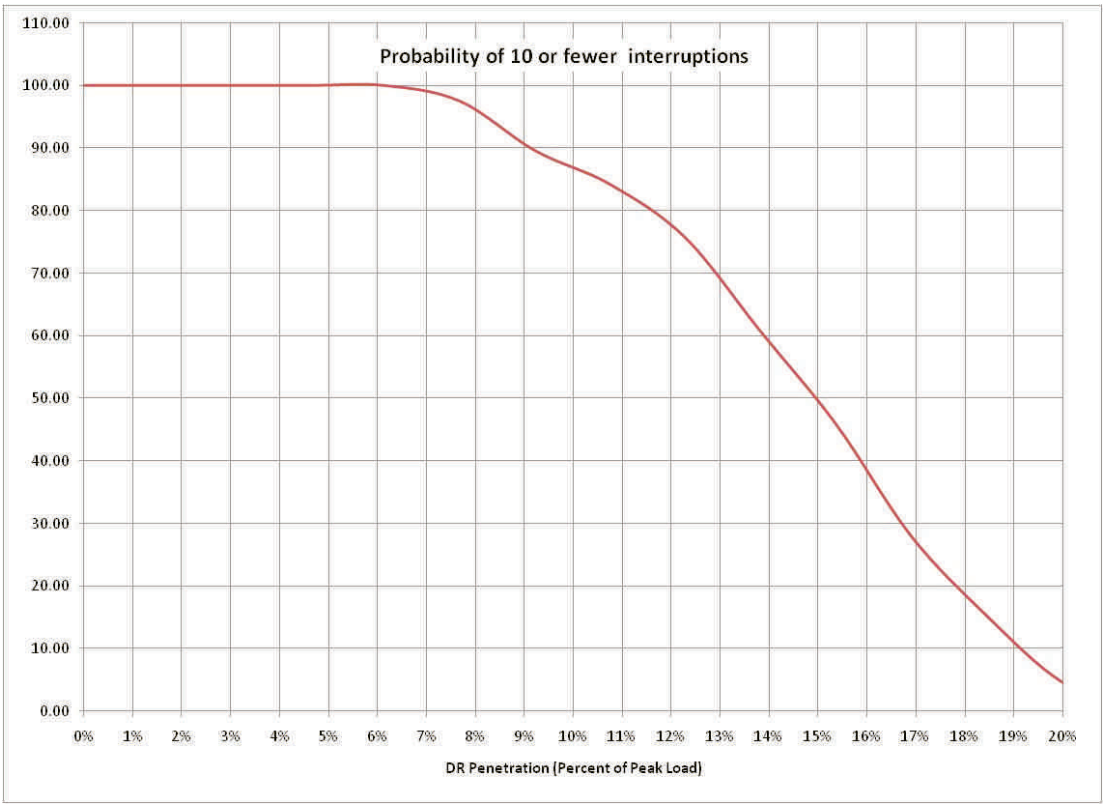
TEN INTERRUPTION ANALYSIS

PJM RTO

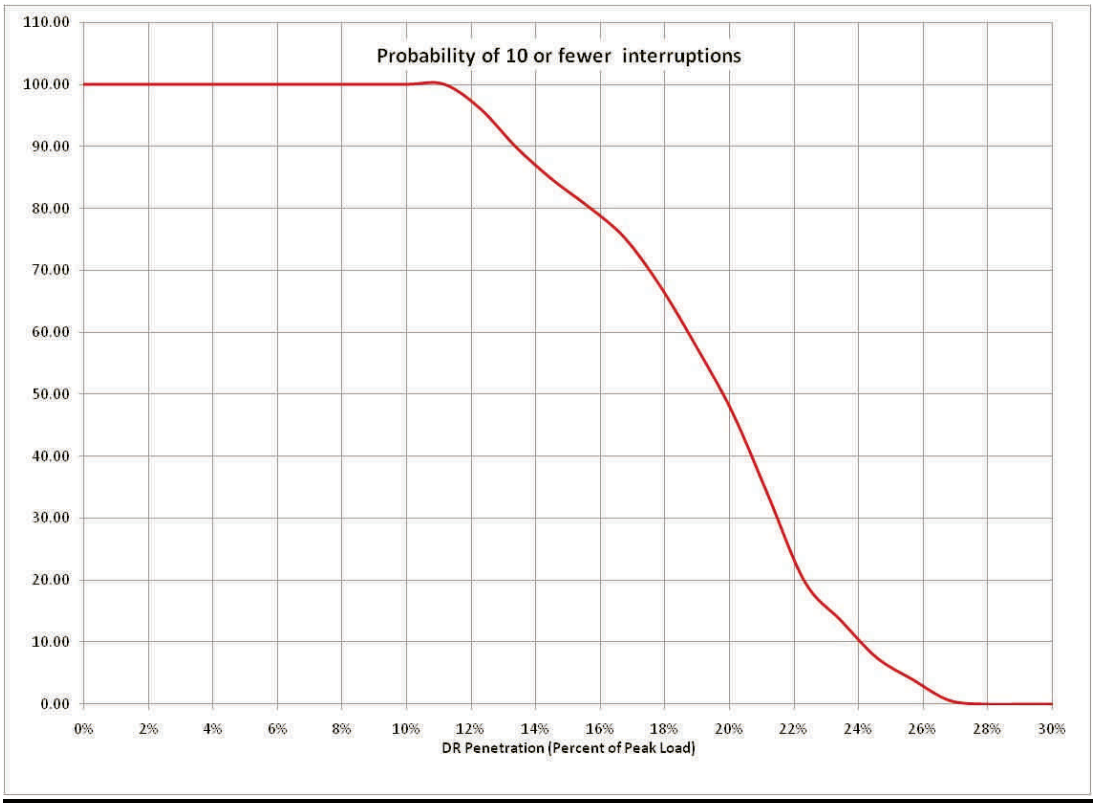


Based on a 90% threshold, the DR Reliability Target for the RTO is 8.5% of the forecasted unrestricted peak load.

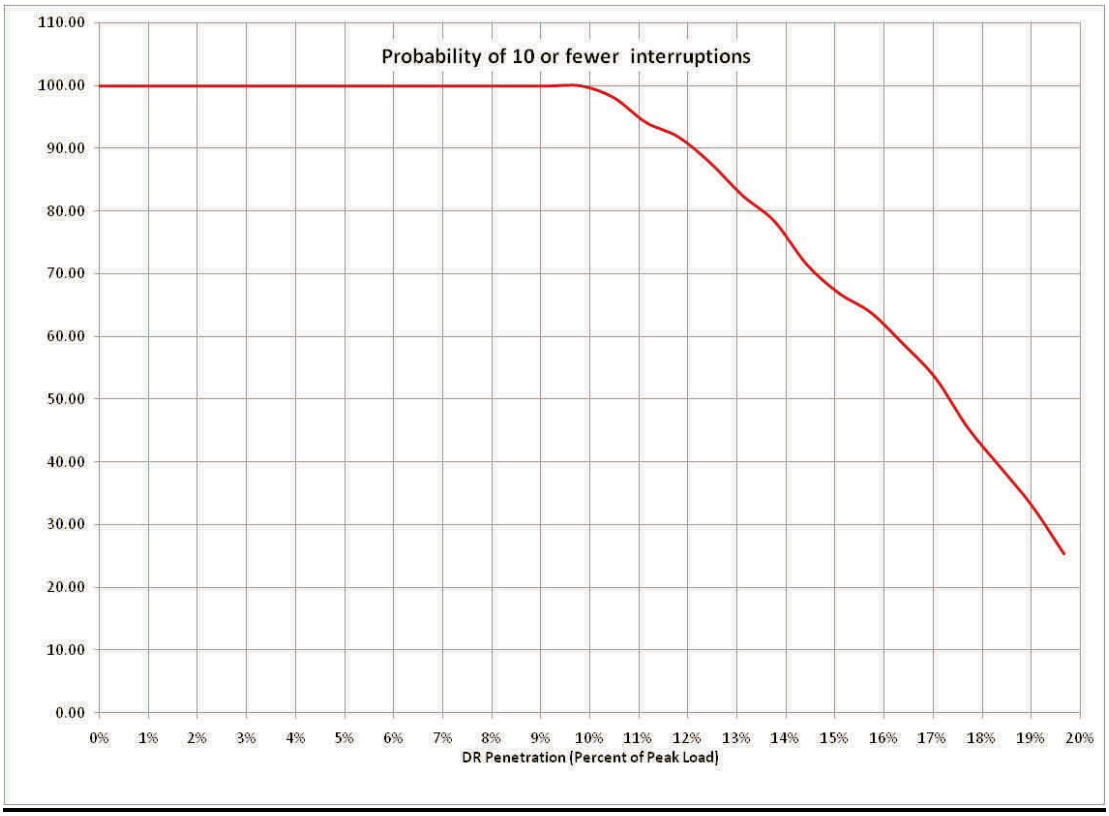
MAAC



EASTERN MAAC



SOUTHWEST MAAC



The DR penetration levels on the graphs above are expressed as a percentage of the LDA's non-coincident peak load (NCP). These values are converted to a percentage of each LDA's PJM coincident peak load (CP) in the table below.

LDA ANALYSIS RESULTS

10 or fewer interruptions					
LDA	DR limit (% of NCP)	NCP Load (MW)	DR Limit (MW)	CP load (MW)	DR Limit (% of CP)
PJMMA	9.0%	64593	5813	62608	**9.3%**
EPJMMA	13.5%	35444	4785	34273	**14.0%**
SPJMMA	12.0%	15244	1829	14715	**12.4%**

SIX HOUR DURATION ANALYSIS

PJM RTO

DR CAP FOR SELECTED LOAD DAYS
2005-2009

Date		Load Percentile	Cap for 6 Hour Duration
7/26/2005	Annual Peak	55/45	4.8%
8/3/2005		55/45	5.3%
7/17/2006		70/30	4.5%
7/31/2006		65/35	4.5%
8/1/2006		95/5	5.0%
8/2/2006	Annual Peak	95/5	5.0%
8/3/2006		60/40	3.6%
8/8/2007	Annual Peak	70/30	5.1%
6/9/2008	Annual Peak	20/80	3.8%
8/10/2009	Annual Peak	20/80	5.6%
Average excl 2008,2009			**4.7%**

MAAC

DR CAP FOR SELECTED LOAD DAYS
2005-2009

Date	Annual Peak	Load Management	Above 50/50	Cap for 6 Hour Duration
7/27/2005	X	X	X	7.0%
8/4/2005		X		4.1%
7/17/2006			X	4.6%
7/18/2006			X	5.3%
8/1/2006			X	5.8%
8/2/2006	X	X	X	4.3%
8/3/2006		X	X	4.6%
8/8/2007	X	X	X	7.0%
6/10/2008	X			6.2%
8/10/2009	X			5.9%
Values below exclude 2008 and 2009				
Min				4.1%
Max				7.0%
Average				**5.3%**

EASTERN MAAC

DR CAP FOR SELECTED LOAD DAYS 2005 - 2009				
Date	Annual Peak	Load Management	Above 50/50	Cap for 6 Hour Duration
7/27/2005	X	X	X	9.0%
8/4/2005		X		5.3%
7/17/2006			X	4.9%
7/18/2006			X	6.2%
8/1/2006			X	6.0%
8/2/2006		X	X	4.4%
8/3/2006	X	X	X	5.3%
8/8/2007	X	X	X	7.3%
6/10/2008	X		X	6.6%
8/10/2009	X			6.1%
Values below exclude 2009				
Min				4.4%
Max				9.0%
Average				**6.1%**

SOUTHWEST MAAC

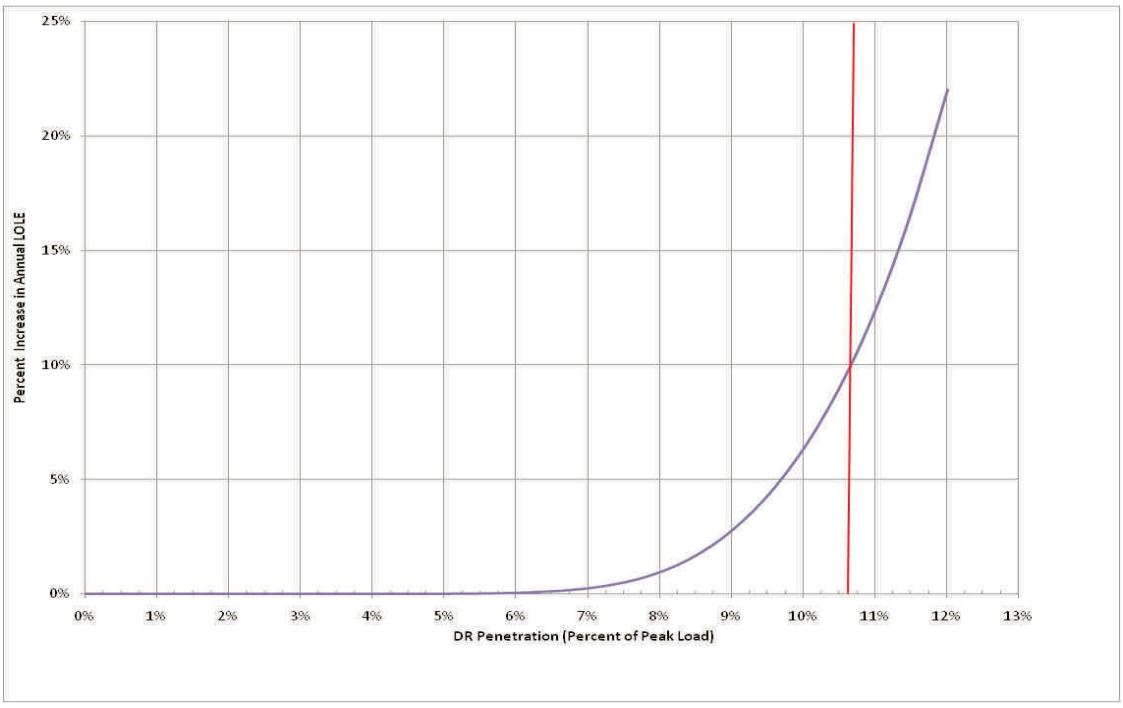
DR CAP FOR SELECTED LOAD DAYS 2005 - 2009				
Date	Annual Peak	Load Management	Above 50/50	Cap for 6 Hour Duration
7/26/2005			X	5.2%
7/27/2005	X	X	X	7.5%
8/4/2005		X		5.8%
8/12/2005			X	6.1%
8/1/2006			X	6.2%
8/2/2006		X	X	5.1%
8/3/2006	X	X	X	5.8%
8/8/2007	X	X	X	5.9%
6/10/2008	X			9.9%
8/10/2009	X			5.9%
Values below exclude 2008 and 2009				
Min				5.1%
Max				7.5%
Average				**6.0%**

The DR Targets in the tables above are expressed as a percentage of the LDA's non-coincident peak load (NCP). These values are converted to a percentage of each LDA's PJM coincident peak load (CP) in the table below.

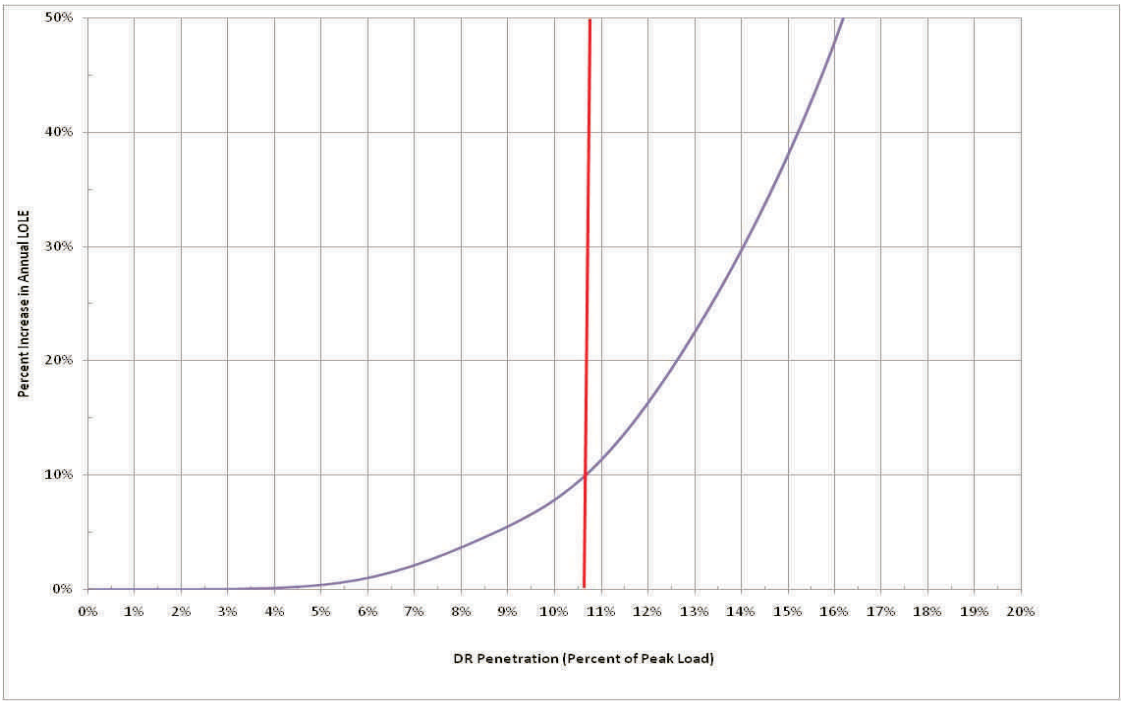
Six Hour Interruption Duration					
LDA	DR limit (% of NCP)	NCP Load	DR Limit (MW)	CP load (Table B-10)	DR Limit (% of CP)
MAAC	5.3%	64593	3423	62608	**5.5%**
EMAAC	6.1%	35444	2162	34273	**6.3%**
SPJMMA	6.0%	15244	915	14715	**6.2%**

II EXTENDED SUMMER DR PRODUCT

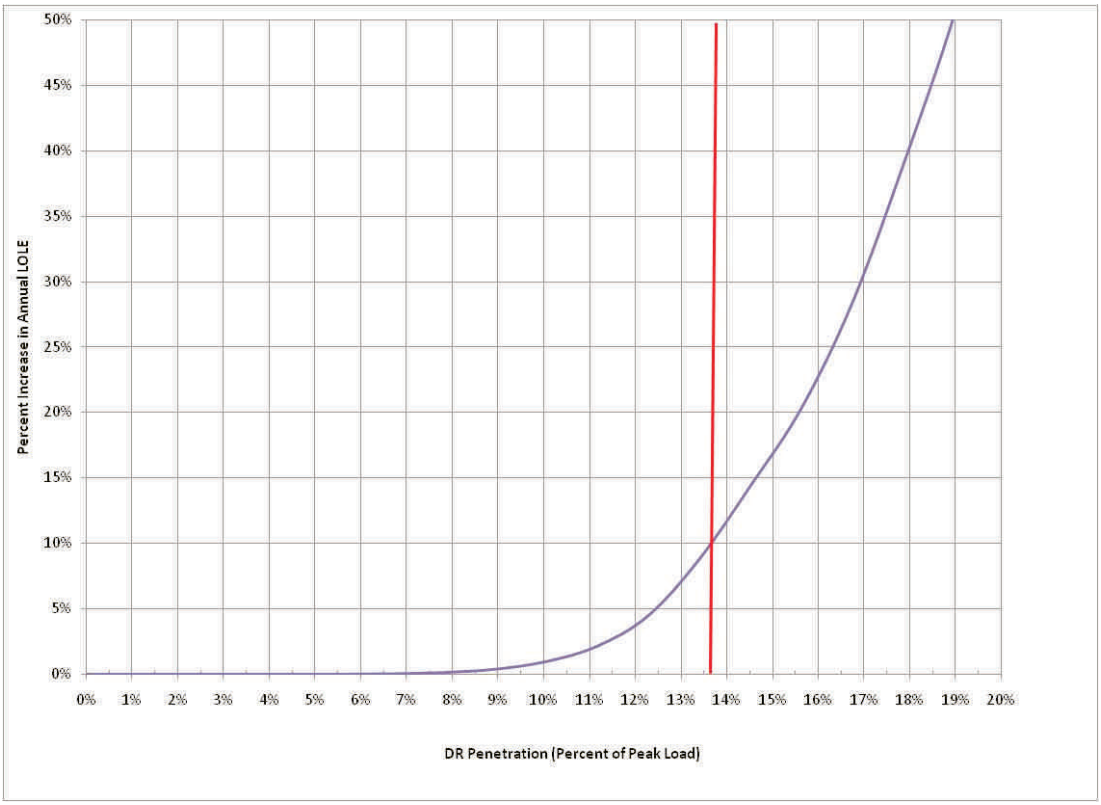
PJM RTO



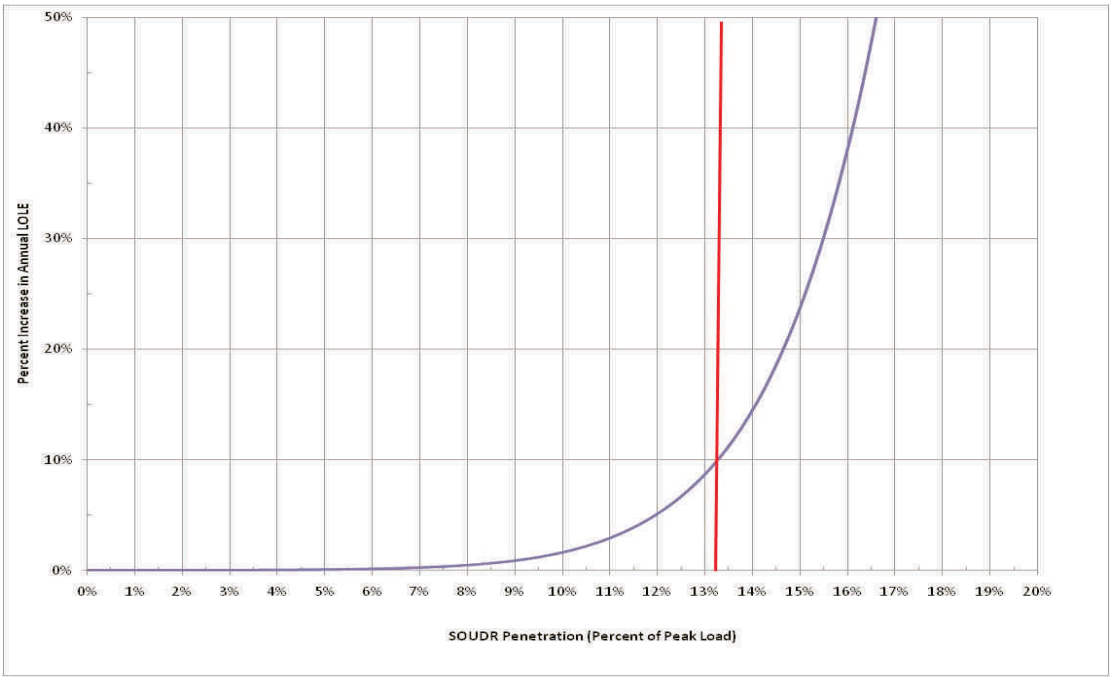
MAAC



EASTERN MAAC



SOUTHWEST MAAC



The Extended Summer DR penetration levels on the graphs above are expressed as a percentage of the LDA's non-coincident peak load (NCP). These values are converted to a percentage of each LDA's PJM coincident peak load (CP) in the table below.

EXTENDED SUMMER DR RESULTS

LDA	**Summer DR (Interruptible from May-October for up to 10 Hours per Interruption)**	
	Threshold as % NCP	Threshold as % CP
PJMRTO	10.6	**10.6**
MAAC	10.75	**11.1**
EMAAC	13.75	**14.2**
SWMAAC	13.25	**13.7**

Attachment B

Affidavit of
Michael E. Bryson
On Behalf of PJM Interconnection, L.L.C.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, LLC	)	**Docket No. ER11-____-000**

AFFIDAVIT OF MICHAEL E. BRYSON
ON BEHALF OF PJM INTERCONNECTION, L.L.C.

1. My name is Michael E. Bryson. My business address is 955 Jefferson Avenue, Norristown, PA 19403. I currently serve as the General Manager of Dispatch Operations for PJM Interconnection, L.L.C. ("PJM"). I am submitting this affidavit on behalf of PJM in support of its filing in this proceeding to modify its rules concerning the commitment of load management capabilities to help meet the PJM region's capacity needs.

2. I have been employed at PJM since April 1998 and have served in my present position since December 2006. I served as Manager, Transmission for PJM from 2003 until 2006; Manager, Operations Development from 2002 until 2003; and Manager, Information Systems from 1998 until 2003. My primary responsibility in my current position is ensuring that PJM conducts its real-time operations in a reliable and efficient manner.

3. I hold a Bachelor of Science degree in General Engineering from the United States Military Academy, West Point, NY and a Master of Business Administration degree from Saint Joseph's University, Philadelphia, PA. Prior to joining PJM, I worked for DIMAC Direct Marketing as Vice President of Information Technology Operations and in the United Sates Army in various positions.

4. In my position as the General Manager of Dispatch Operations for PJM, I am responsible for daily dispatch operations. Accordingly, in this capacity, I have personal knowledge and understanding of PJM's dispatch operations.

5. PJM for many years has allowed load-serving entities and curtailment service providers to commit in advance that they will reduce loads to a certain level or by a certain amount when called upon by PJM dispatchers facing emergency conditions. Under PJM's current approach to assuring capacity, known as the Reliability Pricing Model ("RPM"), these commitments are known as Demand Resources. As currently defined in the tariff, Demand Resource commitments have important limitations that system dispatchers must take into account when judging how and whether to invoke these interruptions. Specifically, the interruption commitments are limited to the hours from 12:00 p.m. Eastern Prevailing Time ("EPT") to 8:00 p.m. EPT on non-holiday weekdays in the months of June through September; a maximum of six consecutive hours per call for interruption; and a maximum of ten calls for interruption per summer. Given concerns that these limitations on Demand Resource commitments have become outmoded with the significant growth, under RPM, in the Demand Resources on which PJM relies for reliability, PJM has filed in this proceeding to add a less

limited summer-only load management product and an annual Demand Resource product. In my affidavit, I will support these market rule changes by: 1) responding to stakeholder suggestions that PJM should address any concerns with the existing Demand Resource product by changing how it dispatches Demand Resources; and 2) describing the challenges faced by PJM dispatchers when they consider calling on the current, limited Demand Resources, and how the new products will alleviate those challenges.

6. Some PJM stakeholders have argued that, rather than change its Demand Resource product rules, PJM should change how it dispatches its current Demand Resources. In particular, stakeholders have suggested that rather than calling on all Demand Resources available in the area affected by an emergency, PJM should call on only 50 percent, or only 25 percent, or only pre-defined quantities (for example, 500 megawatts), of the available Demand Resources at a time. In this way, they suggest, PJM could reduce the number of times, or length of time, that PJM calls on any single Demand Resource and thereby decrease the risk that it would call on a Demand Resource more often, or longer, than contemplated by the current product limitations. However, it would not be prudent for PJM to make such a substantial and sudden change in its dispatch practices in the manner they suggest.

7. The ability to invoke load reduction commitments is a very valuable tool for managing emergencies. Those commitments allow PJM to avoid, or at least defer, more potentially disruptive measures such as voltage reductions or manual load dumps. There are several key factors, however, that affect how this capability can be most effectively invoked. First, and most importantly, Demand Resources are only invoked when PJM anticipates that it will have to call on all generation capacity resources in an area to operate at their maximum emergency output levels. Therefore, if PJM dispatchers still require relief after invoking Demand Resources, they likely will have few if any options to call on generation resources and will need to move to voltage reductions or load dumps. Avoiding such actions is a high priority for system dispatchers; they would much rather take full advantage of voluntary commitments to reduce load than take actions that could adversely affect services for many other customers. In addition, because the need to call on Demand Resources typically arises under emergency conditions, dispatchers do not have the luxury of time. The dispatcher needs to take an action quickly, and needs confidence that the selected action will resolve the emergency. Dispatching all available Demand Resources in the affected area is the quickest approach and offers the most assurance of effective relief.

8. Second, under the PJM Tariff, Demand Resources require at least one hour, and in the vast majority of cases, two hours, advance notice. Specifically, about 83 percent of PJM's Demand Resources are registered as "long-lead time," i.e., two-hour notice resources, and the remainder are registered as "short-lead time," i.e., one-hour notice resources. Therefore, PJM dispatchers must anticipate the level of relief they will need from Demand Resources well before they know how much relief, if any, they in fact need from Demand Resources. The timing considerations are also complicated by the tariff-prescribed six-hour limit on the load interruption that can be expected from Demand Resources. Dispatchers therefore must make a judgment about the "shape" of the load (i.e., duration and level) to be addressed by Demand Resources as much as eight hours (i.e., the two-hour notice plus the six-hour interruption window) before realizing the actual load, and must attempt, as much as possible, to time the call

for Demand Resources so that their interruption window matches the system's time of maximum need for that relief. Given these timing considerations, a strategy of calling on only part of the relief Demand Resources can provide, and waiting to see if that relief is effective, or more relief is needed, would present added risks, because the dispatcher would not have enough time later in the day to invoke that second round of relief effectively.

9. Third, the dispatcher typically does not have a great deal of real-time, automated information about the current level of a Demand Resource or the impact that a given reduction in that resource's load will have on a given constraint or overload. Generation resources are telemetered and PJM's grid management software integrates reliable information, based on engineering data and extensive experience, about the distribution flow effects of raising or lowering the output of a generation resource by a given amount. Demand Resources, however, in the vast majority of cases are not currently telemetered (or have not been mapped to a nearby load meter) and their varying effects on system topography under a range of conditions have not been well-documented or integrated into PJM's automated grid management systems. The dispatcher knows that a Demand Resource can provide a stated amount of reduction from some baseline level, but may not know whether the resource is operating at that level before being called to reduce or if it has already reduced to some intermediate level at that time and thus can provide less relief. Given the lesser data about the exact location of Demand Resources (distribution flow effects), the dispatcher also does not have a very precise idea of how much system response to expect from calling on only part of the Demand Resources available in the area affected by an expected emergency. In light of these data limitations, the most prudent course for the dispatcher usually is to call on all available Demand Resources in the affected area and thereby increase the chances that such call will translate into the desired system relief.

10. Fourth, when dispatchers call for Demand Resources they do not know with certainty what the system conditions will be when the Demand Resources are applied. A great many factors will affect those system conditions and each of those factors—transmission outages, load patterns, generator responses, and operating conditions, among other factors—has its own set of uncertainties. From the dispatcher's perspective when considering how and whether to call on Demand Resources, the best way to manage those uncertainties historically has been to call on all such resources that are available. Calling on all such resources increases the chances of an effective response over a wider range of possible future conditions.

11. For all of these reasons, PJM cannot avoid the need for Demand Resource product reform by committing that it will dispatch Demand Resources more selectively under emergency conditions. Given the considerations described above, that commitment would not be prudent. While PJM is always looking for improved methods of system operation, and is presently considering how it could make its dispatch of Demand Resources more efficient, any such changes will require careful analysis, and their implementation would probably require significant changes in equipment, customer behavior, business rules, and PJM's relationships with Demand Resource providers. Even after any new dispatch practices are implemented, PJM would need experience with actual operations under those practices before it could come to a conclusion that those practices would sufficiently ameliorate the shortcomings of a more limited Demand Resource product.

12. Aside from the need to dispatch all available Demand Resources, the tariff limitations on the current Demand Resource product present additional challenges for PJM's dispatchers. Recent experience has underscored how the limits on these resources can translate into real-world concerns.

13. For example, during shoulder months (e.g., May or October) PJM cannot be assured of relying on the current Demand Resource product, which is required to be available only from June through September. Just this year, PJM found it needed to call on Demand Resources in May and in the last week of September. When PJM called for Demand Resources in May, those resources had no obligation to respond. PJM received an acceptable voluntary response from Demand Resources on that occasion, but such *ad hoc* arrangements are no substitute for the advance commitment of capacity resources, which has been the foundation of PJM's reliability construct for decades. PJM's call for Demand Resources on both September 23 and September 24 this year—the very last week of the committed availability period for these resources—similarly highlighted how PJM dispatchers are beginning to run up against these limits. Had PJM needed to call on these resources just one week later, they would not have been obligated to respond. Notably, spring and fall are outage seasons for both transmission facilities and generation facilities, and unseasonably warm weather during these periods may require PJM to initiate emergency procedures and call Demand Resources—just as PJM saw in May 2010. PJM needs more flexibility in its Demand Resources if it is to be assured of addressing these types of situations in the future.

14. The ten-calls-per-season limit also presented PJM's dispatchers a challenge this year. By June 11, PJM was only eleven days into the official summer season but had already experienced seven days with peak loads ten to thirty percent higher than 2009. On June 11, PJM faced the prospect of emergency operations and thus a call for Demand Resources was indicated. PJM dispatchers were concerned, however, that by calling for Demand Resources so early, we might "use up" all of the ten Demand Response opportunities well before summer operations were over. Ultimately, PJM chose to call Demand Resources that day, but the experience highlights how the current product limits force dispatchers to balance the need for Demand Resources in real-time operations versus the longer term prudence of potentially calling on Demand Resource more often than they are required to respond.

15. The addition, as proposed by PJM in this proceeding, of the Annual Demand Resource and Extended Summer Demand Resource products would resolve dispatch challenges such as those described above. As proposed, they will allow PJM to call a Demand Resource product an unlimited number of times during, respectively, the Delivery Year or an extended summer season (May through October), and for up to ten hours of interruption at a time. These products therefore will be considerably enhanced reliability resources compared to the current Demand Resource product. Indeed, from a dispatch perspective, the flexibility of these products more closely resembles the flexibility of generation, since they can be called at more times, more often, and for longer periods. PJM dispatchers now will have Demand Resource options during fall and spring maintenance seasons and during winter peak periods. Moreover, unlike the current Demand Resource product, PJM dispatchers will be able to consider earlier implementation of these resources without compromising their later availability for peak

conditions. In short, from a dispatch perspective, the proposed new Demand Resource products will be a tremendous improvement.

This concludes my Affidavit.

Michael E. Bryson
PJM Interconnection, L.L.C.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

PJM Interconnection, L.L.C.) Docket No. ER11-___-000

Michael E. Bryson, being first duly sworn, deposes and states that he is the Michael E. Bryson referred to in the document entitled "Affidavit of Michael E. Bryson," that he has read the same and is familiar with the contents thereof, and that the facts set forth therein are true and correct to the best of his knowledge, information, and belief in this proceeding.

Michael E. Bryson

Subscribed and sworn to before me, the undersigned notary public, this 1st day of December, 2010.

Dianne Maguire

Notary Public

My Commission expires: 12/18/2012

COMMONWEALTH OF PENNSYLVANIA
Notarial Seal
Dianne Maguire, Notary Public
Lower Providence Twp., Montgomery County
My Commission Expires Dec. 18, 2012
Member, Pennsylvania Association of Notaries

Attachment C

Hypothetical Illustration of Demand Resource Price Separation

Illustration to Show Price Separation to Meet Minimum Resource Requirement

Resource Data			No Minimum Resource Requirement			Minimum Annual Resource Requirement							Minimum Extended Summer Resource Requirement						
Resource Type	Capacity of the Resource, MW	Offer Price	Capacity Cleared from the Resource, MW	Total Capacity Cleared-All Resources, MW	Clearing Price: All Resources	Capacity Cleared from the Resource, MW	Total Capacity Cleared, MW	Annual Resources Cleared, MW	Annual Resources & Extended Summer DR Cleared, MW	Clearing Price: Limited Resources	Clearing Price: Extended Summer Resources	Clearing Price: Annual Resources	Capacity Cleared from the Resource, MW	Total Capacity Cleared, MW	Annual Resources Cleared, MW	Annual Resources & Extended Summer DR Cleared, MW	Clearing Price: Limited Resources	Clearing Price: Extended Summer Resources	Clearing Price: Annual Resources
Limited DR 14	5	$1	5	5		5	5	0	0				5	5	0	0			
Limited DR 15	5	$2	5	10		5	10	0	0				5	10	0	0			
Limited DR 16	30	$3	30	40		30	40	0	0				30	40	0	0			
Limited DR 17	10	$4	10	50		10	50	0	0				10	50	0	0			
Limited DR 18	25	$5	25	75		25	75	0	0				25	75	0	0			
Extended Summer DR 8	5	$7	5	80		5	80	0	5				5	80	0	5			
Extended Summer DR 9	5	$8	5	85		5	85	0	10				5	85	0	10			
Extended Summer DR 10	30	$9	30	115		30	115	0	40				30	115	0	40			
Extended Summer DR 11	10	$10	10	125		10	125	0	50				10	125	0	50			
Extended Summer DR 12	25	$11	25	150		25	150	0	75				25	150	0	75			
Annual Resource 1	200	$15	200	350		200	350	200	275				200	350	200	275			
Annual Resource 2	200	$20	200	550		200	550	400	475				200	550	400	475			
Annual Resource 3	200	$40	200	750		200	750	600	675				200	750	600	675			
Limited DR 19	100	$50	100	850		100	850	600	675				95	845	600	675	**$50**		
Extended Summer DR 13	100	$60	100	950		20	870	600	695	**$60**	**$60**		45	890	600	720		**$60**	
Annual Resource 4	200	$70	200	**1150**	**$70**	200	1070	800	895				200	1090	800	920			
Annual Resource 5	200	$80	0	1150		100	**1170**	**900**	**995**			**$80**	100	**1190**	**900**	**1020**			**$80**
Annual Resource 6	100	$90	0	1150		0	1170	900	995				0	1190	900	1020			
Annual Resource 7	200	$100	0	1150		0	1170	900	995				0	1190	900	1020			

Minimum Annual Resource Requirement	0			900							900
Minimum Extended Summer Resource Requirement	0			900							1020
Limited DR Cleared	175			175							170
Extended Summer DR Cleared	175			95							120
Annual Resources Cleared	800			900							900
Total Resources Cleared	**1150**			**1170**							**1190**

Marked Sections

2. DEFINITIONS

Definitions specific to this Attachment are set forth below. In addition, any capitalized terms used in this Attachment not defined herein shall have the meaning given to such terms elsewhere in this Tariff or in the RAA. References to section numbers in this Attachment DD refer to sections of this attachment, unless otherwise specified.

2.1A Annual Demand Resource

"Annual Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.1B Annual Resource

"Annual Resource" shall mean a Generation Capacity Resource, an Energy Efficiency Resource or an Annual Demand Resource.

2.1C Annual Resource Price Adder

"Annual Resource Price Adder" shall mean an addition to the marginal value of Unforced Capacity and the Extended Summer Resource Price Adder as necessary to reflect the price of Annual Resources required to meet the applicable Minimum Annual Resource Requirement.

2.1D Annual Revenue Rate

"Annual Revenue Rate" shall mean the rate employed to assess a compliance penalty charge on a Demand Resource Provider or ILR Provider under section 11.

2.2 Avoidable Cost Rate

"Avoidable Cost Rate" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

2.3 Base Load Generation Resource

"Base Load Generation Resource" shall mean a Generation Capacity Resource that operates at least 90 percent of the hours that it is available to operate, as determined by the Office of the Interconnection in accordance with the PJM Manuals.

2.4 Base Offer Segment

"Base Offer Segment" shall mean a component of a Sell Offer based on an existing Generation Capacity Resource, equal to the Unforced Capacity of such resource, as determined in accordance with the PJM Manuals. If the Sell Offers of multiple Market Sellers are based on a single existing Generation Capacity Resource, the Base Offer Segments of such Market Sellers

shall be determined pro rata based on their entitlements to Unforced Capacity from such resource.

2.5 Base Residual Auction

"Base Residual Auction" shall mean the auction conducted three years prior to the start of the Delivery Year to secure commitments from Capacity Resources as necessary to satisfy any portion of the Unforced Capacity Obligation of the PJM Region not satisfied through Self-Supply.

2.6 Buy Bid

"Buy Bid" shall mean a bid to buy Capacity Resources in any Incremental Auction.

2.7 Capacity Credit

"Capacity Credit" shall have the meaning specified in Schedule 11 of the Operating Agreement, including Capacity Credits obtained prior to the termination of such Schedule applicable to periods after the termination of such Schedule.

2.8 Capacity Emergency Transfer Limit

"Capacity Emergency Transfer Limit" or "CETL" shall have the meaning provided in the Reliability Assurance Agreement.

2.9 Capacity Emergency Transfer Objective

"Capacity Emergency Transfer Objective" or "CETO" shall have the meaning provided in the Reliability Assurance Agreement.

2.9A Capacity Export Transmission Customer

"Capacity Export Transmission Customer" shall mean a customer taking point to point transmission service under Part II of this Tariff to export capacity from a generation resource located in the PJM Region that is delisted from Capacity Resource status as described in section 5.6.6(d).

2.10 Capacity Market Buyer

"Capacity Market Buyer" shall mean a Member that submits bids to buy Capacity Resources in any Incremental Auction.

2.11 Capacity Market Seller

"Capacity Market Seller" shall mean a Member that owns, or has the contractual authority to control the output or load reduction capability of, a Capacity Resource, that has not transferred

such authority to another entity, and that offers such resource in the Base Residual Auction or an Incremental Auction.

2.12 Capacity Resource

"Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.13 Capacity Resource Clearing Price

"Capacity Resource Clearing Price" shall mean the price calculated for a Capacity Resource that offered and cleared in a Base Residual Auction or Incremental Auction, in accordance with Section 5.

2.14 Capacity Transfer Right

"Capacity Transfer Right" shall mean a right, allocated to LSEs serving load in a Locational Deliverability Area, to receive payments, based on the transmission import capability into such Locational Deliverability Area, that offset, in whole or in part, the charges attributable to the Locational Price Adder, if any, included in the Zonal Capacity Price calculated for a Locational Delivery Area.

2.14A Conditional Incremental Auction

"Conditional Incremental Auction" shall mean an Incremental Auction conducted for a Delivery Year if and when necessary to secure commitments of additional capacity to address reliability criteria violations arising from the delay in a Backbone Transmission upgrade that was modeled in the Base Residual Auction for such Delivery Year.

2.15 CONE Area

"CONE Area" shall mean the areas listed in section 5.10(a)(iv)(A) and any LDAs established as CONE Areas pursuant to section 5.10(a)(iv)(B).

2.16 Cost of New Entry

"Cost of New Entry" or "CONE" shall mean the nominal levelized cost of a Reference Resource, as determined in accordance with section 5.

2.17 Daily Deficiency Rate

"Daily Deficiency Rate" shall mean the rate employed to assess certain deficiency charges under sections 7, 8, 9, or 13.

2.18 Daily Unforced Capacity Obligation

"Daily Unforced Capacity Obligation" shall mean the capacity obligation of a Load Serving Entity during the Delivery Year, determined in accordance with Schedule 8 of the Reliability Assurance Agreement.

2.19 Delivery Year

Delivery Year shall mean the Planning Period for which a Capacity Resource is committed pursuant to the auction procedures specified in Section 5.

2.20 Demand Resource

"Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.21 Demand Resource Factor

"Demand Resource Factor" shall have the meaning specified in the Reliability Assurance Agreement.

2.22 Demand Resource Provider

"Demand Resource Provider" shall mean a PJM Member that has the capability to reduce load, or that aggregates customers capable of reducing load. The Demand Resource Provider shall notify the Office of the Interconnection whether such load reduction is provided by a Limited Demand Resource, Extended Summer Demand Resource or an Annual Demand Resource. A Curtailment Service Provider, as defined in the Operating Agreement, may be a Demand Resource Provider, provided it qualifies its load reduction capability as a Limited Demand Resource, Extended Summer Demand Resource, or Annual Demand Resource.

2.23 EFORd

"EFORd" shall have the meaning specified in the PJM Reliability Assurance Agreement.

2.24 Energy Efficiency Resource

"Energy Efficiency Resource" shall have the meaning specified in the PJM Reliability Assurance Agreement.

2.24A Extended Summer Demand Resource

"Extended Summer Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.24B Extended Summer Resource Price Adder

"Extended Summer Resource Price Adder" shall mean an addition to the marginal value of Unforced Capacity as necessary to reflect the price of Annual Resources and Extended Summer

Demand Resources required to meet the applicable Minimum Extended Summer Resource Requirement.

2.24C Extended Summer Demand Resource Reliability Target

"Extended Summer Demand Resource Reliability Target" for the PJM Region or an LDA, shall mean the maximum amount of Extended Summer Demand Resources in Unforced Capacity determined by PJM, in accordance with procedures specified in the PJM Manuals, to be consistent with the maintenance of reliability, stated in Unforced Capacity, that shall be used to calculate the Minimum Annual Resource Requirement. The Extended Summer Demand Resource Reliability Target shall be expressed as a percentage of the forecasted peak load of the PJM Region or such LDA- and is converted to Unforced Capacity -by multiplying [the reliability target percentage] times [the Forecast Pool Requirement] times [the DR Factor] times [the forecasted peak load of the PJM Region or such LDA, reduced by the amount of load served under the FRR Alternative].

2.25 [Reserved]

2.26 Final RTO Unforced Capacity Obligation

"Final RTO Unforced Capacity Obligation" shall mean the capacity obligation for the PJM Region, determined in accordance with Schedule 8 of the Reliability Assurance Agreement.

2.26A Final Zonal ILR Price

"Final Zonal ILR Price" shall mean the Adjusted Zonal Capacity Price after the Second Incremental Auction, less the amount paid in CTR credits per MW of load in the Zone in which the ILR is to be certified.

2.27 First Incremental Auction

"First Incremental Auction" shall mean an Incremental Auction conducted 20 months prior to the start of the Delivery Year to which it relates.

2.28 Forecast Pool Requirement

"Forecast Pool Requirement" shall have the meaning specified in the Reliability Assurance Agreement.

2.29 Forecast RTO ILR Obligation

"Forecast RTO ILR Obligation" shall mean, in unforced capacity terms, the ILR Forecast for the PJM Region times the DR Factor, times the Forecast Pool Requirement, less the Unforced Capacity of all Demand Resources committed in FRR Capacity Plans by all FRR Entities in the PJM Region, for use in Delivery Years through May 31, 2012.

2.30 Forecast Zonal ILR Obligation

"Forecast Zonal ILR Obligation" shall mean, in unforced capacity terms, the ILR Forecast for the Zone times the DR Factor, times the Forecast Pool Requirement, less the Unforced Capacity of all Demand Resources committed in FRR Capacity Plans by all FRR Entities in such Zone, for use in Delivery Years through May 31, 2012.

2.31 Generation Capacity Resource

"Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.32 ILR Forecast

"ILR Forecast" shall mean, for any Delivery Year ending on or before May 31, 2012, the average annual megawatt quantity of ILR certified for the five Planning Periods preceding the date of the forecast; provided, however, that before such data becomes available for five Delivery Years under the Reliability Pricing Model, comparable data on Active Load Management (as defined in the preexisting reliability assurance agreements) from up to five prior Planning Periods shall be substituted as necessary; and provided further that, for transmission zones that were integrated into the PJM Region less than five years prior to the conduct of the Base Residual Auction for the Delivery Year, data on incremental load subject to mandatory interruption by Electric Distribution Companies within such zones shall be substituted as necessary.

2.33 ILR Provider

"ILR Provider" shall mean a Member that has the capability to reduce load, or that aggregates customers capable of reducing load. A Curtailment Service Provider, as such term is defined in the PJM Operating Agreement, may be an ILR Provider, provided it obtains certification of its load reduction capability as ILR.

2.34 Incremental Auction

"Incremental Auction" shall mean any of several auctions conducted for a Delivery Year after the Base Residual Auction for such Delivery Year and before the first day of such Delivery Year, including the First Incremental Auction, Second Incremental Auction, Third Incremental Auction or Conditional Incremental Auction. Incremental Auctions (other than the Conditional Incremental Auction), shall be held for the purposes of:

(i) allowing Market Sellers that committed Capacity Resources in the Base Residual Auction for a Delivery Year, which subsequently are determined to be unavailable to deliver the committed Unforced Capacity in such Delivery Year (due to resource retirement, resource cancellation or construction delay, resource derating, EFORD increase, a decrease in the Nominated Demand Resource Value of a Planned Demand Resource, delay or cancellation of a

Qualifying Transmission Upgrade, or similar occurrences) to submit Buy Bids for replacement Capacity Resources; and

(ii) allowing the Office of the Interconnection to reduce or increase the amount of committed capacity secured in prior auctions for such Delivery Year if, as a result of changed circumstances or expectations since the prior auction(s), there is, respectively, a significant excess or significant deficit of committed capacity for such Delivery Year, for the PJM Region or for an LDA.

2.35 Incremental Capacity Transfer Right

"Incremental Capacity Transfer Right" shall mean a Capacity Transfer Right allocated to a Generation Interconnection Customer or Transmission Interconnection Customer obligated to fund a transmission facility or upgrade, to the extent such upgrade or facility increases the transmission import capability into a Locational Deliverability Area, or a Capacity Transfer Right allocated to a Responsible Customer in accordance with Schedule 12A of the Tariff.

2.36 Interruptible Load for Reliability (ILR)

"Interruptible Load for Reliability" or "ILR" shall have the meaning specified in the Reliability Assurance Agreement.

2.36A Limited Demand Resource

"Limited Demand Resource**"** shall have the meaning specified in the Reliability Assurance Agreement.

2.36B Limited Demand Resource Reliability Target

"Limited Demand Resource Reliability Target**"** for the PJM Region or an LDA, shall mean the maximum amount of Limited Demand Resources determined by PJM, in accordance with procedures specified in the PJM Manuals, to be consistent with the maintenance of reliability, stated in Unforced Capacity that shall be used to calculate the Minimum Extended Summer Demand Resource Requirement for the PJM Region or such LDA. The Limited Demand Resource Reliability Target shall be expressed as a percentage of the forecasted peak load of the PJM Region or such LDA and is converted to Unforced Capacity by multiplying [the reliability target percentage] times [the Forecast Pool Requirement] times [the DR Factor] times [the forecasted peak load of the PJM Region or such LDA, reduced by the amount of load served under the FRR Alternative].

2.37 Load Serving Entity (LSE)

"Load Serving Entity" or "LSE" shall have the meaning specified in the Reliability Assurance Agreement.

2.38 Locational Deliverability Area (LDA)

"Locational Deliverability Area" or "LDA" shall mean a geographic area within the PJM Region that has limited transmission capability to import capacity to satisfy such area's reliability requirement, as determined by the Office of the Interconnection in connection with preparation of the Regional Transmission Expansion Plan, and as specified in Schedule 10.1 of the Reliability Assurance Agreement.

2.39 Locational Deliverability Area Reliability Requirement

"Locational Deliverability Area Reliability Requirement" shall mean the projected internal capacity in the Locational Deliverability Area plus the Capacity Emergency Transfer Objective for the Delivery Year, as determined by the Office of the Interconnection in connection with preparation of the Regional Transmission Expansion Plan, less the minimum internal resources required for all FRR Entities in such Locational Deliverability Area.

2.40 Locational Price Adder

"Locational Price Adder" shall mean an addition to the marginal value of Unforced Capacity within an LDA as necessary to reflect the price of Capacity Resources required to relieve applicable binding locational constraints.

2.41 Locational Reliability Charge

"Locational Reliability Charge" shall have the meaning specified in the Reliability Assurance Agreement.

2.41A Locational UCAP

"Locational UCAP" shall mean unforced capacity that a Member with available uncommitted capacity sells in a bilateral transaction to a Member that previously committed capacity through an RPM Auction but now requires replacement capacity to fulfill its RPM Auction commitment. The Locational UCAP Seller retains responsibility for performance of the resource providing such replacement capacity.

2.41B Locational UCAP Seller

"Locational UCAP Seller" shall mean a Member that sells Locational UCAP.

2.41C Market Seller Offer Cap

"Market Seller Offer Cap" shall mean a maximum offer price applicable to certain Market Sellers under certain conditions, as determined in accordance with section 6 of Attachment DD and section II.E of Attachment M - Appendix.

2.41D Minimum Annual Resource Requirement

"Minimum Annual Resource Requirement" shall mean the minimum amount of capacity that PJM will seek to procure from Annual Resources for the PJM Region and for the MAAC, Eastern MAAC and Southwestern MAAC LDAs in the RPM Auctions for a Delivery Year. For the PJM Region, the Minimum Annual Resource Requirement shall be equal to the RTO Reliability Requirement minus [the Short-Term Resource Procurement Target for the PJM Region in Unforced Capacity] minus [the Extended Summer Demand Resource Reliability Target for the RTO in Unforced Capacity]. For an LDA, the Minimum Annual Resource Requirement shall be equal to the LDA Reliability Requirement minus [the Short-Term Resource Procurement Target for such LDA in Unforced Capacity] minus [the LDA CETL] minus [the Extended Summer Demand Resource Reliability Target for such LDA in Unforced Capacity]. The LDA CETL may be adjusted pro rata for the amount of load served under the FRR Alternative.

2.41E Minimum Extended Summer Resource Requirement

"Minimum Extended Summer Resource Requirement" shall mean the minimum amount of capacity that PJM will seek to procure from Extended Summer Demand Resources and Annual Resources for the PJM Region and for the MAAC, Eastern MAAC and Southwestern MAAC LDAs in the RPM Auctions for a Delivery Year. For the PJM Region, the Minimum Extended Summer Resource Requirement shall be equal to the RTO Reliability Requirement minus [the Short-Term Resource Procurement Target for the RTO in Unforced Capacity] minus [the Limited Demand Resource Reliability Target for the PJM Region in Unforced Capacity]. For an LDA, the Minimum Extended Summer Resource Requirement shall be equal to the LDA Reliability Requirement minus [the Short-Term Resource Procurement Target for the LDA in Unforced Capacity] minus [the LDA CETL] minus [the Limited Demand Resource Reliability Target for such LDA in Unforced Capacity]. The LDA CETL may be adjusted pro rata for the amount of load served under the FRR Alternative.

2.42 Net Cost of New Entry

"Net Cost of New Entry" shall mean the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset, as defined in Section 5.

2.43 Nominated Demand Resource Value

"Nominated Demand Resource Value" shall mean the amount of load reduction that a Demand Resource commits to provide either through direct load control, firm service level or guaranteed load drop programs. For existing Demand Resources, the maximum Nominated Demand Resource Value is limited, in accordance with the PJM Manuals, to the value appropriate for the method by which the load reduction would be accomplished, at the time the Base Residual Auction or Incremental Auction is being conducted.

2.43A Nominated Energy Efficiency Value

"Nominated Energy Efficiency Value" shall mean the amount of load reduction that an Energy Efficiency Resource commits to provide through installation of more efficient devices or equipment or implementation of more efficient processes or systems.

2.44 Nominated ILR Value

"Nominated ILR Value" shall mean the amount of load reduction that an ILR resource commits to provide either through direct load control, firm service level or guaranteed load drop programs. For ILR, the maximum Nominated ILR Capacity Value is limited, in accordance with the PJM Manuals, to the value appropriate for the method by which the load reduction would be accomplished, at the time the ILR is certified.

2.45 Opportunity Cost

"Opportunity Cost" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

2.46 Peak-Hour Dispatch

"Peak-Hour Dispatch" shall mean, for purposes of calculating the Energy and Ancillary Services Revenue Offset under section 5 of this Attachment, an assumption, as more fully set forth in the PJM Manuals, that the Reference Resource is dispatched in four distinct blocks of four hours of continuous output for each block from the peak-hour period beginning with the hour ending 0800 EPT through to the hour ending 2300 EPT for any day when the average real-time LMP for the area for which the Net Cost of New Entry is being determined is greater than, or equal to, the cost to generate (including the cost for a complete start and shutdown cycle) for at least two hours during each four-hour block, where such blocks shall be assumed to be dispatched independently; provided that, if there are not at least two economic hours in any given four-hour block, then the Reference Resource shall be assumed not to be dispatched for such block.

2.47 Peak Season

"Peak Season" shall mean the weeks containing the 24th through 36th Wednesdays of the calendar year. Each such week shall begin on a Monday and end on the following Sunday, except for the week containing the 36th Wednesday, which shall end on the following Friday.

2.48 Percentage Internal Resources Required

"Percentage Internal Resources Required" shall have the meaning specified in the Reliability Assurance Agreement.

2.49 Planned Demand Resource

"Planned Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.50 Planned External Generation Capacity Resource

"Planned External Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.50A Planned Generation Capacity Resource

"Planned Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.51 Planning Period

"Planning Period" shall have the meaning specified in the Reliability Assurance Agreement.

2.52 PJM Region

"PJM Region" shall have the meaning specified in the Reliability Assurance Agreement.

2.53 PJM Region Installed Reserve Margin

"PJM Region Installed Reserve Margin" shall have the meaning specified in the Reliability Assurance Agreement.

2.54 PJM Region Peak Load Forecast

"PJM Region Peak Load Forecast" shall mean the peak load forecast used by the Office of the Interconnection in determining the PJM Region Reliability Requirement, and shall be determined on both a preliminary and final basis as set forth in section 5.

2.55 PJM Region Reliability Requirement

"PJM Region Reliability Requirement" shall mean, for purposes of the Base Residual Auction, the Forecast Pool Requirement multiplied by the Preliminary PJM Region Peak Load Forecast, less the sum of all Preliminary Unforced Capacity Obligations of FRR Entities in the PJM Region; and, for purposes of the Incremental Auctions, the Forecast Pool Requirement multiplied by the updated PJM Region Peak Load Forecast, less the sum of all updated Unforced Capacity Obligations of FRR Entities in the PJM Region.

2.56 Projected PJM Market Revenues

"Projected PJM Market Revenues" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

2.57 Qualifying Transmission Upgrade

"Qualifying Transmission Upgrade" shall mean a proposed enhancement or addition to the Transmission System that: (a) will increase the Capacity Emergency Transfer Limit into an LDA by a megawatt quantity certified by the Office of the Interconnection; (b) the Office of the Interconnection has determined will be in service on or before the commencement of the first Delivery Year for which such upgrade is the subject of a Sell Offer in the Base Residual Auction; (c) is the subject of a Facilities Study Agreement executed before the conduct of the Base Residual Auction for such Delivery Year and (d) a New Service Customer is obligated to fund through a rate or charge specific to such facility or upgrade.

2.58 Reference Resource

"Reference Resource" shall mean a combustion turbine generating station, configured with two General Electric Frame 7FA turbines with inlet air cooling to 50 degrees, Selective Catalytic Reduction technology, dual fuel capability, and a heat rate of 10,500 Mmbtu/ MWh.

2.59 Reliability Assurance Agreement

"Reliability Assurance Agreement" shall mean that certain "Reliability Assurance Agreement Among Load-Serving Entities in the PJM Region," on file with FERC as PJM Interconnection, L.L.C. Rate Schedule FERC No.44.

2.60 Reliability Pricing Model Auction

"Reliability Pricing Model Auction" *or "RPM Auction"* shall mean the Base Residual Auction or any Incremental Auction.

2.61 Resource Substitution Charge

"Resource Substitution Charge" shall mean a charge assessed on Capacity Market Buyers in an Incremental Auction to recover the cost of replacement Capacity Resources.

2.61A Scheduled Incremental Auctions

"Scheduled Incremental Auctions" shall refer to the First, Second, or Third Incremental Auction.

2.62 Second Incremental Auction

"Second Incremental Auction" shall mean an Incremental Auction conducted ten months before the Delivery Year to which it relates.

2.63 Sell Offer

"Sell Offer" shall mean an offer to sell Capacity Resources in a Base Residual Auction, Incremental Auction, or Reliability Backstop Auction.

2.64 [Reserved for Future Use]

2.65 Self-Supply

"Self-Supply" shall mean Capacity Resources secured by a Load-Serving Entity, by ownership or contract, outside a Reliability Pricing Model Auction, and used to meet obligations under this Attachment or the Reliability Assurance Agreement through submission in a Base Residual Auction *or an Incremental Auction* of a Sell Offer indicating such Market Seller's intent that such Capacity Resource be *Self-Supply. Self-Supply may be either* committed regardless of clearing price *or submitted as a Sell Offer with a price bid.* A *Load Serving Entity's* Sell Offer with a price bid for an owned or contracted Capacity Resource shall not be deemed "Self-Supply," *unless it is designated as Self-Supply and used by the LSE to meet obligations under this Attachment or the Reliability Assurance Agreement.*

2.65A Short-Term Resource Procurement Target

"Short-Term Resource Procurement Target" shall mean, as to the PJM Region, for purposes of the Base Residual Auction, 2.5% of the PJM Region Reliability Requirement determined for such Base Residual Auction, for purposes of the First Incremental Auction, 2% of the of the PJM Region Reliability Requirement as calculated at the time of the Base Residual Auction; and, for purposes of the Second Incremental Auction, 1.5% of the of the PJM Region Reliability Requirement as calculated at the time of the Base Residual Auction; and, as to any Zone, an allocation of the PJM Region Short-Term Resource Procurement Target based on the Preliminary Zonal Forecast Peak Load, reduced by the amount of load served under the FRR Alternative. For any LDA, the LDA Short-Term Resource Procurement Target shall be the sum of the Short-Term Resource Procurement Targets of all Zones in the LDA.

2.65B Short-Term Resource Procurement Target Applicable Share

"Short-Term Resource Procurement Target Applicable Share" shall mean: (i) for the PJM Region, as to the First and Second Incremental Auctions, 0.2 times the Short-Term Resource Procurement Target used in the Base Residual Auction and, as to the Third Incremental Auction for the PJM Region, 0.6 times such target; and (ii) for an LDA, as to the First and Second Incremental Auctions, 0.2 times the Short-Term Resource Procurement Target used in the Base Residual Auction for such LDA and, as to the Third Incremental Auction, 0.6 times such target.

2.66 Third Incremental Auction

"Third Incremental Auction" shall mean an Incremental Auction conducted three months before the Delivery Year to which it relates.

2.67 Transition Adder

"Transition Adder" shall mean a component of a Sell Offer permitted for certain Capacity Market Sellers for the Transition Period, as set forth in section 17.

2.68 Transition Period

"Transition Period" shall mean the four-year period consisting of the Delivery Years commencing June 1, 2007, June 1, 2008, June 1, 2009, and June 1, 2010.

2.69 Unforced Capacity

"Unforced Capacity" shall have the meaning specified in the Reliability Assurance Agreement.

2.69A Updated VRR Curve

"Updated VRR Curve" shall mean the Variable Resource Requirement Curve as defined in section 5.10(a) of this Attachment for use in the Base Residual Auction of the relevant Delivery Year, updated to reflect the Short-term Resource Procurement Target applicable to the relevant Incremental Auction and any change in the Reliability Requirement from the Base Residual Auction to such Incremental Auction.

2.69B Updated VRR Curve Increment

"Updated VRR Curve Increment" shall mean the portion of the Updated VRR Curve to the right of a vertical line at the level of Unforced Capacity on the x-axis of such curve equal to the net Unforced Capacity committed to the PJM Region as a result of all prior auctions conducted for such Delivery Year.

2.69C Updated VRR Curve Decrement

"Updated VRR Curve Decrement" shall mean the portion of the Updated VRR Curve to the left of a vertical line at the level of Unforced Capacity on the x-axis of such curve equal to the net Unforced Capacity committed to the PJM Region as a result of all prior auctions conducted for such Delivery Year.

2.70 Variable Resource Requirement Curve

"Variable Resource Requirement Curve" shall mean a series of maximum prices that can be cleared in a Base Residual Auction for Unforced Capacity, corresponding to a series of varying resource requirements based on varying installed reserve margins, as determined by the Office of the Interconnection for the PJM Region and for certain Locational Deliverability Areas in accordance with the methodology provided in Section 5.

2.71 Zonal Capacity Price

"Zonal Capacity Price" shall mean the clearing price required in each Zone to meet the demand for Unforced Capacity and satisfy Locational Deliverability Requirements for the LDA or LDAs associated with such Zone. If the Zone contains multiple LDAs with different Capacity Resource Clearing Prices, the Zonal Capacity Price shall be a weighted average of the Capacity

Resource Clearing Prices for such LDAs, weighted by the Unforced Capacity of Capacity Resources cleared in each such LDA.

3. RESPONSIBILITIES OF THE OFFICE OF THE INTERCONNECTION

3.1 Support for Self-Supply and Bilateral Transactions

The Office of the Interconnection shall:

(a) support electronic tools to facilitate communication by Market Sellers and Market Buyers of information to the Office of the Interconnection concerning Self-Supply arrangements;

(b) support an electronic bulletin board providing a forum for prospective buyers and sellers to transact Capacity Resources outside the Reliability Pricing Model Auctions, including Locational UCAP transactions (including mechanisms to allow prospective Sellers with partial-year resources to explore voluntary opportunities to combine their resources such that they can be offered together for a full Delivery Year) and support electronic tools to report bilateral capacity transactions between Market Participants to the Office of the Interconnection, in accordance with procedures set forth in the PJM Manuals; and

(c) define one or more capacity trading hubs and determine and publicize values for such hubs based on the capacity prices determined for one or more Locational Deliverability Areas, in accordance with the PJM Manuals.

3.2 Administration of the Base Residual Auction and Incremental Auctions

The Office of the Interconnection shall conduct and administer the Base Residual Auction and Incremental Auctions in accordance with this Attachment, the Operating Agreement, and the Reliability Assurance Agreement. Administration of the Base Residual Auction and Incremental Auctions shall include, but not be limited to, the following:

a) Determining the qualification of entities to become Capacity Market Sellers and Capacity Market Buyers;

b) Determining PJM Region Peak Load Forecasts and Locational Deliverability Area Reliability Requirements;

c) Determining the Minimum Annual Resource Requirements and the Minimum Extended Summer Resource Requirements for the PJM Region and the MAAC, Eastern MAAC and Southwestern MAAC LDAs for Delivery Years starting June 1, 2014;

d) Determining ILR Forecasts for Delivery Years through May 31, 2012;

~~d~~e) Determining the need, if any, for a Conditional Incremental Auction and providing appropriate prior notice of any such auction

~~e~~f) Calculating the EFORd for each Generation Capacity Resource in the PJM Region to be used in the Third Incremental Auction;

~~f~~g) Receiving Buy Bids and Sell Offers, determining Locational Deliverability Requirements and Variable Resource Requirement Curves, and determining the clearing price that reflects all such inputs;

~~g~~h) Conducting settlements for auction transactions, including but not limited to rendering bills to, receiving payments from, and disbursing payments to, participants in Base Residual Auctions and Incremental Auctions.

~~h~~i) Maintaining such records of Sell Offers and Buy Bids, clearing price determinations, and other aspects of auction transactions, as may be appropriate to the administration of Base Residual Auctions and Incremental Auctions; and

~~i~~j) Posting of selected non-confidential data used in Reliability Pricing Model Auctions to calculate clearing prices and other auction results, as appropriate to inform market participants of auction conditions.

3.3 Records and Reports

The Office of the Interconnection shall prepare and maintain such records as are required for the administration of the Base Residual Auction and Incremental Auctions. For each auction conducted, the Office of the Interconnection shall, consistent with section 18.17 of the Operating Agreement, publish the following: (i) Zonal Capacity Prices for each LDA; (ii) Capacity Resource Clearing Prices for each LDA; (iii) Locational Price Adders; (iv) the total megawatts of Unforced Capacity that cleared; and (v) such other auction data as may be appropriate to the efficient and competitive conduct of the Base Residual Auction and Incremental Auctions. Such information shall be available on the PJM internet site through the end of the Delivery Year to which such auctions apply.

3.4 Counterparty

(a) PJMSettlement shall be the Counterparty to the transactions arising from the cleared Base Residual Auctions and Incremental Auctions; provided, however, PJMSettlement shall not be a contracting party to (i) any bilateral transactions between Market Participants, or (ii) with respect to Self-Supply for which designation of Self-Supply has been reported to the Office of the Interconnection.

(b) Charges. PJMSettlement shall be the Counterparty with respect to the obligations to pay, and the payment of, charges pursuant to this Attachment DD.

5.4 Reliability Pricing Model Auctions

The Office of the Interconnection shall conduct the following Reliability Pricing Model Auctions:

a) Base Residual Auction.

PJM shall conduct for each Delivery Year a Base Residual Auction to secure commitments of Capacity Resources as needed to satisfy the portion of the RTO Unforced Capacity Obligation not satisfied through Self-Supply of Capacity Resources for such Delivery Year. All Self-Supply Capacity Resources must be offered in the Base Residual Auction. As set forth in section 6.6, all other Capacity Resources, and certain other existing generation resources, must be offered in the Base Residual Auction. The Base Residual Auction shall be conducted in the month of May that is three years prior to the start of such Delivery Year. The cost of payments to Capacity Market Sellers for Capacity Resources that clear such auction shall be *paid by PJMSettlement from amounts* collected by *PJMSettlement* from Load Serving Entities through the Locational Reliability Charge during such Delivery Year. *PJMSettlement shall be the Counterparty to the sales that clear in such auction and to the obligations to pay, and the payments, by Load Serving Entities; provided, however, that PJMSettlement shall not be a Counterparty to committed Self-Supply Capacity Resources.*

b) Scheduled Incremental Auctions.

PJM shall conduct for each Delivery Year a First, a Second, and a Third Incremental Auction for the purposes set forth in section 2.34. The First Incremental Auction shall be conducted in the month of September that is twenty months prior to the start of the Delivery Year; the Second Incremental Auction shall be conducted in the month of July that is ten months prior to the start of the Delivery Year; and the Third Incremental Auction shall be conducted in the month of February that is three months prior to the start of the Delivery Year.

c) Adjustment through Scheduled Incremental Auctions of Capacity Previously Committed.

The Office of the Interconnection shall recalculate the PJM Region Reliability Requirement and each LDA Reliability Requirement prior to each Scheduled Incremental Auction, based on an updated peak load forecast, updated Installed Reserve Margin and an updated Capacity Emergency Transfer Objective; shall update such reliability requirements for the Third Incremental Auction to reflect any change from such recalculation; and shall update such reliability requirements for the First Incremental Auction or Second Incremental Auction only if the change is greater than or equal to the lesser of: (i) 500 MW or (ii) one percent of the applicable prior reliability requirement. Based on such update, the Office of the Interconnection shall, under certain conditions, seek through the Scheduled Incremental Auction to secure additional commitments of capacity or release sellers from prior capacity commitments. Specifically, the Office of the Interconnection shall:

1) seek additional capacity commitments to serve the PJM Region or an LDA if the PJM Region Reliability Requirement or LDA Reliability Requirement utilized in the most recent prior auction conducted for the Delivery Year is less than, respectively, the updated PJM Region Reliability Requirement or updated LDA Reliability Requirement; provided, however, that in the First Incremental Auction or Second Incremental Auction the Office of the Interconnection shall seek such additional capacity commitments only if such shortfall is in an amount greater than or equal to the lesser of: (i) 500 MW or (ii) one percent of the applicable prior reliability requirement;

2) seek additional capacity commitments to serve the PJM Region or an LDA if:

i) the updated PJM Region Reliability Requirement less the PJM Region Short-Term Resource Procurement Target utilized in the most recent auction conducted for the Delivery Year, or if the LDA Reliability Requirement less the LDA Short Term Resource Procurement Target applicable to such auction, exceeds the total capacity committed in all prior auctions in such region or area, respectively, for such Delivery Year by an amount greater than or equal to the lesser of: (A) 500 MW or (B) one percent of the applicable prior reliability requirement; or

ii) PJM conducts a Conditional Incremental Auction for such Delivery Year and does not obtain all additional commitments of Capacity Resources sought in such Conditional Incremental Auction, in which case, PJM shall seek in the Incremental Auction the commitments that were sought in the Conditional Incremental Auction but not obtained.

3) seek agreements to release prior capacity commitments to the PJM Region or to an LDA if:

i) the PJM Region Reliability Requirement or LDA Reliability Requirement utilized in the most recent prior auction conducted for the Delivery Year exceeds, respectively, the updated PJM Region Reliability Requirement or updated LDA Reliability Requirement; provided, however, that in the First Incremental Auction or Second Incremental Auction the Office of the Interconnection shall seek such agreements only if such excess is in an amount greater than or equal to the lesser of: (A) 500 MW or (B) one percent of the applicable prior reliability requirement; or

ii) PJM obtains additional commitments of Capacity Resources in a Conditional Incremental Auction, in which case PJM shall seek release of an equal number of megawatts (comparing the total purchase amount for all LDAs and the PJM Region related to the delay in Backbone Transmission with the total sell amount for all LDAs and the PJM Region related to the delay in Backbone Transmission) of prior committed capacity that would not have been committed had the delayed Backbone Transmission upgrade that prompted the Conditional

Incremental Auction not been assumed, at the time of the Base Residual Auction, to be in service for the relevant Delivery Year; and if PJM obtains additional commitments of capacity in an incremental auction pursuant to subsection c.2.ii above, PJM shall seek in such Incremental Auction to release an equal amount of capacity (in total for all LDAs and the PJM Region related to the delay in Backbone Transmission) previously committed that would not have been committed absent the Backbone Transmission upgrade.

4) The cost of payments to Market Sellers for additional Capacity Resources cleared in such auctions, and the credits from payments from Market Sellers for the release of previously committed Capacity Resources, shall be apportioned to Load Serving Entities in the PJM Region or LDA, as applicable, through adjustments to the Locational Reliability Charge for such Delivery Year.

5) PJMSettlement shall be the Counterparty to the sales (including releases) of Capacity Resources that clear in such auctions and to the obligations to pay, and the payments, by Load Serving Entities, provided, however, that PJMSettlement shall not be a Counterparty to committed Self-Supply Capacity Resources.

d) Commitment of Replacement Capacity through Scheduled Incremental Auctions.

Each Scheduled Incremental Auction for each Delivery Year shall allow Capacity Market Sellers that committed Capacity Resources in any prior Reliability Pricing Model Auction for such Delivery Year to submit Buy Bids for replacement Capacity Resources. Capacity Market Sellers that submit Buy Bids into an Incremental Auction must specify the type of Unforced Capacity desired, i.e., Annual Resource, Extended Summer Demand Resource, or Limited Demand Resource. The need to purchase replacement Capacity Resources may arise for any reason, including but not limited to resource retirement, resource cancellation or construction delay, resource derating, EFORd increase, a decrease in the Nominated Demand Resource Value of a Planned Demand Resource, delay or cancellation of a Qualifying Transmission Upgrade, or similar occurrences. The cost of payments to Capacity Market Sellers for Capacity Resources that clear such auction shall be *paid by PJMSettlement from amounts* collected *by PJMSettlement* from Capacity Market Buyers that purchase replacement Capacity Resources in such auction. *PJMSettlement shall be the Counterparty to the sales and purchases that clear in such auction, provided, however, PJMSettlement shall not be a Counterparty to committed Self-Supply Capacity Resources.*

e) Conditional Incremental Auction.

PJM shall conduct for any Delivery Year a Conditional Incremental Auction if the in service date of a Backbone Transmission Upgrade that was modeled in the Base Residual Auction is announced as delayed by the Office of the Interconnection beyond July 1 of the Delivery Year for which it was modeled and if such delay causes a reliability criteria violation. If conducted, the Conditional Incremental Auction shall be for the purpose of securing commitments of

additional capacity for the PJM Region or for any LDA to address the identified reliability criteria violation. If PJM determines to conduct a Conditional Incremental Auction, PJM shall post on its website the date and parameters for such auction (including whether such auction is for the PJM Region or for an LDA) at least one month prior to the start of such auction. The cost of payments to Market Sellers for Capacity Resources cleared in such auction shall be collected *by PJMSettlement* from Load Serving Entities in the PJM Region or LDA, as applicable, through an adjustment to the Locational Reliability Charge for such Delivery Year. *PJMSettlement shall be the Counterparty to the sales that clear in such auction and to the obligations to pay, and payments, by Load Serving Entities, provided, however, that PJMSettlement shall not be a Counterparty to committed Self-Supply Capacity Resources.*

5.6 Sell Offers

Sell Offers shall be submitted or withdrawn via the internet site designated by the Office of the Interconnection, in accordance with the procedures and time schedule set forth in the PJM Manuals.

5.6.1 Specifications

A Sell Offer shall state quantities in increments of 0.1 megawatts and shall specify, as appropriate:

a) Identification of the Generation Capacity Resource, Annual Demand Resource, Extended Summer Demand Resource, Limited Demand Resource or Energy Efficiency Resource on which such Sell Offer is based;

b) Minimum and maximum megawatt quantity of installed capacity that the Capacity Market Seller is willing to offer (notwithstanding such specification, the product offered shall be Unforced Capacity), or designate as Self-Supply, from a Generation Capacity Resource;

i) Price, in dollars and cents per megawatt-day, that will be accepted by the Capacity Market Seller for the megawatt quantity of Unforced Capacity offered from such Generation Capacity Resource.

ii) The Sell Offer may take the form of offer segments with varying price-quantity pairs for varying output levels from the underlying resource, but may not take the form of an offer curve with nonzero slope.

c) EFORd of each Generation Capacity Resource offered.

i) If a Capacity Market Seller is offering such resource in a Base Residual Auction, First Incremental Auction, Second Incremental Auction, or Conditional Incremental Auction occurring before the Third Incremental Auction, the Capacity Market Seller shall specify the EFORd to apply to the offer.

ii) If a Capacity Market Seller is committing the resource as Self-Supply, the Capacity Market Seller shall specify the EFORd to apply to the commitment.

iii) The EFORd applied to the Third Incremental Auction will be the final EFORd established by the Office of the Interconnection six (6) months prior to the Delivery Year, based on the actual EFORd in the PJM Region during the 12-month period ending September 30 that last precedes such Delivery Year.

d) The Nominated Demand Resource Value for each Demand Resource offered and the Nominated Energy Efficiency Value for each Energy Efficiency Resource offered. The Office of the Interconnection shall, in both cases, convert such value to an Unforced Capacity basis by multiplying such value by the DR Factor times the Forecast Pool Requirement. Demand

Resources shall specify the LDA in which the Demand Resource is located, including the location of such resource within any Zone that includes more than one LDA as identified on Schedule 10.1 of the RAA.

e) A Demand Resource with the potential to qualify as two or more of a Limited Demand Resource, Extended Summer Demand Resource or Annual Demand Resource may submit separate but coupled Sell Offers for each Demand Resource type for which it qualifies at different prices and the auction clearing algorithm will select the Sell Offer that yields the least-cost solution. For such coupled Demand Resource offers, the offer price of an Annual Demand Resource offer must be at least $.01 per MW-day greater than the offer price of a coupled Extended Summer Demand Resource offer and the offer price of a Extended Summer Demand Resource offer must be at least $.01 per MW-day greater than the offer price of a coupled Limited Demand Resource offer.

f) For a Qualifying Transmission Upgrade, the Sell Offer shall identify such upgrade, and the Office of the Interconnection shall determine and certify the increase in CETL provided by such upgrade. The Capacity Market Seller may offer the upgrade with an associated increase in CETL to an LDA in accordance with such certification, including an offer price that will be accepted by the Capacity Market Seller, stated in dollars and cents per megawatt-day as a price difference between a Capacity Resource located outside such an LDA and a Capacity Resource located inside such LDA; and the increase in CETL into such LDA to be provided by such Qualifying Transmission Upgrade, as certified by the Office of the Interconnection.

5.6.2 Compliance with PJM Credit Policy

Capacity Market Sellers shall comply with the provisions of the PJM Credit Policy as set forth in Attachment Q to this Tariff, including the provisions specific to the Reliability Pricing Model, prior to submission of Sell Offers in any Reliability Pricing Model Auction.

5.6.3 [reserved]

5.6.4 Qualifying Transmission Upgrades

A Qualifying Transmission Upgrade may not be the subject of any Sell Offer in a Base Residual Auction unless it has been approved by the Office of the Interconnection, including certification of the increase in Import Capability to be provided by such Qualifying Transmission Upgrade, no later than 45 days prior to such Base Residual Auction. No such approval shall be granted unless, at a minimum, a Facilities Study Agreement has been executed with respect to such upgrade, and such upgrade conforms to all applicable standards of the Regional Transmission Expansion Plan process.

5.6.5 Market-based Sell Offers

Subject to section 6, a Market Seller authorized by FERC to sell electric generating capacity at market-based prices, or that is not required to have such authorization, may submit Sell Offers that specify market-based prices in any Base Residual Auction or Incremental Auction.

5.6.6 Availability of Capacity Resources for Sale

(a) The Office of the Interconnection shall determine the quantity of megawatts of *available installed c*apacity *that* each *Capacity* Market Seller *must* offer in any *RPM* Auction *pursuant to Section 6.6 of Attachment DD*, through verification of the availability of megawatts of *installedc*apacity from: (i) *all Generation* Capacity Resources owned by or under contract to the *Capacity* Market Seller, including *all Generation* Capacity Resources obtained through bilateral contract; (ii) the results of prior Reliability Pricing Model Auctions, if any, for such Delivery Year *(including consideration of any restriction imposed as a consequence of a prior failure to offer)*; and (iii) such other information as may be available to the Office of the Interconnection. The Office of the Interconnection shall reject Sell Offers or portions of Sell Offers for Capacity Resources *in excess of the quantity of installed capacity that it* determines to be available for sale.

(b) The Office of the Interconnection shall determine the *quantity* of *installed c*apacity available for sale in a Base Residual Auction or Incremental Auction as of the beginning of the period during which Buy Bids and Sell Offers are accepted for *such auction*, as applicable, in accordance with the time schedule set forth in the PJM Manuals. *Removal of a resource from Capacity Resource status shall not be reflected in the determination of available installed capacity unless the associated unit-specific bilateral transaction is approved, the designation of such resource (or portion thereof) as a network resource for the external load is demonstrated to the Office of the Interconnection, or equivalent evidence of a firm external sale is provided prior to the deadline established therefor. The determination of available installed capacity shall also take into account, as they apply in proportion to the share of each resource owned or controlled by a Capacity Market Seller, any approved capacity modifications, and existing capacity commitments established in a prior RPM Auction, an FRR Capacity Plan, Locational UCAP transactions and/or replacement capacity transactions under this Attachment DD.* To enable the Office of the Interconnection to make this determination, no bilateral transactions for Capacity Resources applicable to the period covered by an auction will be processed from the beginning of the period for submission of Sell Offers and Buy Bids, as appropriate, for that auction until completion of the clearing determination for *such auction*. Processing of such bilateral transactions will reconvene once clearing for that auction is completed. *A Generation Capacity Resource located in the PJM Region shall not be removed from Capacity Resource status to the extent the resource is committed to service of PJM loads as a result of an RPM Auction, FRR Capacity Plan, Locational UCAP transaction and/or by designation as a replacement resource under this Attachment DD.*

(c) In order for a bilateral transaction for the purchase and sale of a Capacity Resource to be processed by the Office of the Interconnection, both parties to the transaction must notify the Office of the Interconnection of the transfer of the Capacity Resource from the seller to the buyer in accordance with procedures established by the Office of the Interconnection and set forth in the PJM Manuals. *If a material change with respect to any of the prerequisites for the application of Section 5.6.6 to the Generation Capacity Resource occurs, the Capacity Resource Owner shall immediately notify the Market Monitoring Unit and the Office of the Interconnection.*

5.7 Buy Bids

Buy Bids may be submitted in any Incremental Auction. Buy Bids shall specify, as appropriate:

a) The quantity of Unforced Capacity desired, in increments of 0.1 megawatt;

b) The maximum price, in dollars and cents per megawatt per day, that will be paid by the buyer for the megawatt quantity of Unforced Capacity desired; ~~and~~

c) The type of Unforced Capacity desired, i.e., Annual Resource, Extended Summer Demand Resource, or Limited Demand Resource; and

d) The desired LDA for a replacement Capacity Resource. In the event of delay or cancellation of a Qualifying Transmission Upgrade, the Buy Bid shall specify Capacity Resources in the LDA for which such Qualifying Transmission Upgrade was to increase CETL.

5.8 Submission of Sell Offers and Buy Bids

Submission of Sell Offers and Buy Bids shall be subject to the following requirements:

a) A Sell Offer or Buy Bid that fails to specify a positive megawatt quantity shall be rejected by the Office of the Interconnection.

b) A Buy Bid that fails to specify price shall be rejected by the Office of the Interconnection. A Sell Offer that fails to either designate such offer as self-scheduled or to specify an offer price shall be rejected by the Office of the Interconnection.

c) A Buy Bid that fails to designate the type of Unforced Capacity desired, i.e., an Annual Resource, Extended Summer Demand Resource, or Limited Demand Resource, shall be rejected by the Office of the Interconnection.

d) All Sell Offers and Buy Bids must be received by the Office of the Interconnection during a specified period, as determined by the Office of the Interconnection, in accordance with the PJM Manuals. A Sell Offer or Buy Bid may be withdrawn by a notification of withdrawal received by the Office of the Interconnection at any time during the foregoing period, but may not be withdrawn after such period.

~~d~~e) Sell Offers or Buy Bids shall be submitted or withdrawn via the Internet site designated by the Office of the Interconnection; provided, however, that if the Internet site cannot be accessed at any time during the period specified for the applicable auction, a Sell Offer or Buy Bid may be submitted or withdrawn by electronic mail transmitted to the e-mail address, or faxed to the fax number, specified by the Office of the Interconnection in the PJM Manuals.

~~e~~f) Sell Offers must be based on the Capacity Market Seller's Capacity Resource position at the opening of the auction's bidding window.

~~f~~g) The Office of the Interconnection shall accept a Sell Offer only up to the megawatt amount of installed capacity of Capacity Resources owned or controlled by such Capacity Market Seller that has not previously been committed for the applicable Delivery Year.

~~g~~h) No Sell Offer shall be accepted from an FRR Entity unless it meets the requirements applicable to such offers under Schedule 8.1 of the Reliability Assurance Agreement.

~~h~~i) The Office of the Interconnection shall have final authority to determine whether to accept a Sell Offer in accordance with the terms of the Tariff and the PJM Manuals.

5.10 Auction Clearing Requirements

The Office of the Interconnection shall clear each Base Residual Auction and Incremental Auction for a Delivery Year in accordance with the following:

a) Variable Resource Requirement Curve

The Office of the Interconnection shall determine Variable Resource Requirement Curves for the PJM Region and for such Locational Deliverability Areas as determined appropriate in accordance with subsection (a)(iii) for such Delivery Year to establish the level of Capacity Resources that will provide an acceptable level of reliability consistent with the Reliability Principles and Standards. It is recognized that the variable resource requirement reflected in the Variable Resource Requirement Curve can result in an optimized auction clearing in which the level of Capacity Resources committed for a Delivery Year exceeds the PJM Region Reliability Requirement (less the Forecast RTO ILR Obligation for Delivery Years through May 31, 2012, or less the Short-Term Resource Procurement Target for Delivery Years thereafter) or Locational Deliverability Area Reliability Requirement (less the Forecast Zonal ILR Obligation for Delivery Years through May 31, 2012, or less the Short-Term Resource Procurement Target for Delivery Years thereafter for the Zones associated with such LDA) for such Delivery Year. For any auction, the Updated Forecast Peak Load, and Short-Term Resource Procurement Target applicable to such auction, shall be used.

i) Methodology to Establish the Variable Resource Requirement Curve

Prior to the Base Residual Auction, in accordance with the schedule in the PJM Manuals, the Office of the Interconnection shall establish the Variable Resource Requirement Curve for the PJM Region as follows:

- Each Variable Resource Requirement Curve shall be plotted on a graph on which Unforced Capacity is on the x-axis and price is on the y-axis;

- The Variable Resource Requirement Curve for the PJM Region shall be plotted by first combining (i) a horizontal line from the y-axis to point (1), (ii) a straight line connecting points (1) and (2), (iii) a straight line connecting points (2) and (3), and (iv) a vertical line from point (3) to the x-axis, where:

    - For point (1), price equals: [1.5 times (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset)] divided by (one minus the pool-wide average EFORd) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus the approved PJM Region Installed Reserve Margin ("IRM")% minus 3%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation for Delivery Years through May 31, 2012 or less the Short-Term Resource Procurement Target for Delivery Years thereafter;

- For point (2), price equals: (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset) divided by (one minus the pool-wide average EFORd) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 1%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation for Delivery Years through May 31, 2012 or less the Short-Term Resource Procurement Target for Delivery Years thereafter; and

- For point (3), price equals [0.2 times (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset)] divided by (one minus the pool-wide average EFORd) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 5%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation for Delivery Years through May 31, 2012 or less the Short-Term Resource Procurement Target for Delivery Years thereafter;

ii) For any Delivery Year, the Office of the Interconnection shall establish a separate Variable Resource Requirement Curve for each LDA for which:

A. the Capacity Emergency Transfer Limit is less than 1.15 times the Capacity Emergency Transfer Objective, as determined by the Office of the Interconnection in accordance with NERC and Applicable Regional Reliability Council guidelines; or

B. such LDA had a Locational Price Adder in any one or more of the three immediately preceding Base Residual Auctions; or

C. such LDA is determined in a preliminary analysis by the Office of the Interconnection to be likely to have a Locational Price Adder, based on historic offer price levels; provided however that for the Base Residual Auction conducted for the Delivery Year commencing on June 1, 2012, the EMAAC, SWMAAC and MAAC LDAs shall employ separate Variable Resource Requirement Curves regardless of the outcome of the above three tests; and provided further that the Office of the Interconnection may establish a separate Variable Resource Requirement Curve for an LDA not otherwise qualifying under the above three tests if it finds that such is required to achieve an acceptable level of reliability consistent with the Reliability Principles and Standards, in which case the Office of the Interconnection shall post such finding, such LDA, and such Variable Resource Requirement Curve on its internet site no later than the March 31 last preceding the Base Residual Auction for such Delivery Year. The same process as set forth in subsection (a)(i) shall be used to establish the Variable Resource Requirement Curve for any such LDA,

except that the Locational Deliverability Area Reliability Requirement for such LDA shall be substituted for the PJM Region Reliability Requirement and the LDA Short-Term Resource Procurement Target shall be substituted for the PJM Region Short-Term Resource Procurement Target. For purposes of calculating the Capacity Emergency Transfer Limit under this section, all generation resources located in the PJM Region that are, or that qualify to become, Capacity Resources, shall be modeled at their full capacity rating, regardless of the amount of capacity cleared from such resource for the immediately preceding Delivery Year.

iii) Procedure for ongoing review of Variable Resource Requirement Curve shape.

Beginning no later than for the Delivery Year that commences June 1, 2015, and continuing no later than for every third Delivery Year thereafter, the Office of the Interconnection shall perform a review of the shape of the Variable Resource Requirement Curve, as established by the requirements of the foregoing subsection. Such analysis shall be based on simulation of market conditions to quantify the ability of the market to invest in new Capacity Resources and to meet the applicable reliability requirements on a probabilistic basis. Based on the results of such review, PJM shall prepare a recommendation to either modify or retain the existing Variable Resource Requirement Curve shape. The Office of the Interconnection shall post the recommendation and shall review the recommendation through the stakeholder process to solicit stakeholder input. If a modification of the Variable Resource Requirement Curve shape is recommended, the following process shall be followed:

A) If the Office of the Interconnection determines that the Variable Resource Requirement Curve shape should be modified, Staff of the Office of the Interconnection shall propose a new Variable Resource Requirement Curve shape on or before September 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

B) The PJM Members shall review the proposed modification to the Variable Resource Requirement Curve shape.

C) The PJM Members shall either vote to endorse the proposed modification, to propose alternate modifications or to recommend no modification by October 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

D) The PJM Board of Managers shall consider a proposed modification to the Variable Resource Requirement Curve shape, and the Office of the Interconnection shall file any approved modified Variable Resource Requirement Curve shape with the FERC by December 1, prior to the conduct of the Base Residual

Auction for the first Delivery Year in which the new values would be applied.

iv) Cost of New Entry

A) For the Delivery Year commencing on June 1, 2012, and continuing thereafter unless and until changed pursuant to subsection (B) below, the Cost of New Entry for the PJM Region shall be $112,868 per MW-year. The Cost of New Entry for each LDA shall be determined based upon the Transmission Owner zones that comprise such LDA, as provided in the table below. If an LDA combines transmission zones with differing Cost of New Entry values, the lowest such value shall be used.

Geographic Location Within the PJM Region Encompassing These Zones	Cost of New Entry in $/MW-Year
PS, JCP&L, AE, PECO, DPL, RECO ("CONE Area 1")	122,040
BGE, PEPCO ("CONE Area 2")	112,868
AEP, Dayton, ComEd, APS, DQL ("CONE Area 3")	115,479
PPL, MetEd, Penelec ("CONE Area 4")	112,868
Dominion ("CONE Area 5")	112,868

B) Beginning with the 2013-2014 Delivery Year, the CONE shall be adjusted to reflect changes in generating plant construction costs based on changes in the Applicable H-W Index, in accordance with the following:

(1) The Applicable H-W Index for any Delivery Year shall be the most recently published twelve-month change, at the time CONE values are required to be posted for the Base Residual Auction for such Delivery Year, in the Total Other Production Plant Index shown in the Handy-Whitman Index of Public Utility Construction Costs for the North Atlantic Region for purposes of CONE Areas 1, 2, and 4, for the North Central Region for purposes of CONE Area 3, and for the South Atlantic Region for purposes of CONE Area 5.

(2) The CONE in a CONE Area shall be adjusted prior to the Base Residual Auction for each Delivery Year by applying the Applicable H-W Index for such CONE Area to the Benchmark CONE for such CONE Area.

(3) The Benchmark CONE for a CONE Area shall be the CONE used for such CONE Area in the Base Residual Auction for the prior Delivery Year.

(4) Notwithstanding the foregoing, CONE values for any CONE Area for any Delivery Year shall be subject to amendment pursuant to appropriate filings with FERC under the Federal Power Act, including, without limitation, any filings resulting from the process described in section 5.10(a)(vii)(C) or any filing to establish new or revised CONE Areas.

v) Net Energy and Ancillary Services Revenue Offset

A) The Office of the Interconnection shall determine the Net Energy and Ancillary Services Revenue Offset each year for the PJM Region as (A) the annual average of the revenues that would have been received by the Reference Resource during a period of three consecutive calendar years preceding the time of the determination, based on (1) the heat rate and other characteristics

of such Reference Resource; (2) fuel prices reported during such period at an appropriate pricing point for the PJM Region with a fuel transmission adder appropriate for such region, as set forth in the PJM Manuals, assumed variable operation and maintenance expenses for such resource of $6.47 per MWh, and actual PJM hourly average Locational Marginal Prices recorded in the PJM Region during such period; and (3) an assumption that the Reference Resource would be dispatched on a Peak-Hour Dispatch basis; plus (B) ancillary service revenues of $2,199 per MW-year.

Energy and Ancillary Market Revenue Offset each year for each sub-region of the PJM Region for which the Cost of New Entry is determined, as identified above, using the same procedures and methods as set forth in the previous subsection; provided, however, that: (1) the average hourly LMPs for the transmission zone in which such resource was assumed to be installed for purposes of the CONE estimate (as specified in the PJM Manuals) shall be used in place of the PJM Region average hourly LMPs; (2) if such sub-region was not integrated into the PJM Region for the entire applicable period, then the offset shall be calculated using only those whole calendar years during which the sub-region was integrated; and (3) a posted fuel pricing point in such sub-region, if available, and (if such pricing point is not available) a fuel transmission adder appropriate to each assumed Cost of New Entry location from an appropriate PJM Region pricing point shall be used for each such sub-region.

vi) Adjustment to Net Energy and Ancillary Services Revenue Offset

Beginning with the Base Residual Auction scheduled for May 2010, the Net Energy and Ancillary Services Revenue Offset for a CONE Area shall be adjusted following any Delivery Year during which Scarcity Pricing was effective in such CONE Area pursuant to the Scarcity Pricing provisions of section 6A of Schedule 1 to the PJM Operating Agreement. Following each Delivery Year, the Scarcity Pricing revenues the Reference Resource in each CONE Area would have received during such Delivery Year shall be calculated based on the assumed heat rate and other characteristics of the Reference Resource, assumed Peak-Hour Dispatch, and the actual locational marginal prices and actual fuel prices during the Delivery Year for the applicable location, which shall be the transmission zone in which such resource was assumed to be installed for purposes of the estimate of CONE applicable to such CONE Area. The Scarcity Pricing revenues so determined shall be subtracted from the Net CONE otherwise calculated for such CONE Area for use in the Base Residual Auction next occurring after the Delivery Year in which Scarcity Pricing was effective in such CONE Area.

vii) Process for Establishing Parameters of Variable Resource Requirement Curve

A) The parameters of the Variable Resource Requirement Curve will be established prior to the conduct of the Base Residual Auction for a Delivery Year and will be used for such Base Residual Auction.

B) The Office of the Interconnection shall determine the PJM Region Reliability Requirement and the Locational Deliverability Area Reliability Requirement for each Locational Deliverability Area for which a Variable Resource Requirement Curve has been established for such Base Residual Auction on or before February 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values will be applied, in accordance with the Reliability Assurance Agreement.

C) Beginning no later than for the Delivery Year that commences June 1, 2015, and continuing no later than for every third Delivery Year thereafter, the Office of the Interconnection shall review the calculation of the Cost of New Entry for each CONE Area.

1) If the Office of the Interconnection determines that the Cost of New Entry values should be modified, the Staff of the Office of the Interconnection shall propose new Cost of New Entry values on or before September 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

2) The PJM Members shall review the proposed values.

3) The PJM Members shall either vote to endorse the proposed values or propose alternate values by October 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

4) The PJM Board of Managers shall consider Cost of New Entry values, and the Office of the Interconnection shall file any approved modified Cost of New Entry values with the FERC by December 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

D) Beginning no later than for the Delivery Year that commences June 1, 2015, and continuing no later than for every third Delivery Year thereafter, the Office of the Interconnection shall review the methodology set forth in this Attachment for determining the Net

Energy and Ancillary Services Revenue Offset for the PJM Region and for each Zone.

1) If the Office of the Interconnection determines that the Net Energy and Ancillary Services Revenue Offset methodology should be modified, Staff of the Office of the Interconnection shall propose a new Net Energy and Ancillary Services Revenue Offset methodology on or before September 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new methodology would be applied.

2) The PJM Members shall review the proposed methodology.

3) The PJM Members shall either vote to endorse the proposed methodology or propose an alternate methodology by October 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new methodology would be applied.

4) The PJM Board of Managers shall consider the Net Revenue Offset methodology, and the Office of the Interconnection shall file any approved modified Net Energy and Ancillary Services Revenue Offset values with the FERC by December 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

b) Locational Requirements

The Office of Interconnection shall establish locational requirements prior to the Base Residual Auction to quantify the amount of Unforced Capacity that must be committed in each Locational Deliverability Area, in accordance with the PJM Reliability Assurance Agreement.

c) Minimum Annual Resource Requirements

The Office of the Interconnection shall establish the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and the Mid-Atlantic Area Council ("MAAC"), Eastern MAAC and Southwestern MAAC Locational Deliverability Areas prior to the Base Residual Auction for each Delivery Year, beginning with the Delivery Year that starts on June 1, 2014.

d) Preliminary PJM Region Peak Load Forecast for the Delivery Year

The Office of the Interconnection shall establish the Preliminary PJM Region Load Forecast for the Delivery Year in accordance with the PJM Manuals by February 1, prior to the conduct of the Base Residual Auction for such Delivery Year.

~~d~~e) Updated PJM Region Peak Load Forecasts for Incremental Auctions

The Office of the Interconnection shall establish the updated PJM Region Peak Load Forecast for a Delivery Year in accordance with the PJM Manuals by February 1, prior to the conduct of the First, Second, and Third Incremental Auction for such Delivery Year.

5.11 Posting of Information Relevant to the RPM Auctions

a) In accordance with the schedule provided in the PJM Manuals, PJM will post the following information for a Delivery Year prior to conducting the Base Residual Auction for such Delivery Year:

i) The Preliminary PJM Region Peak Load Forecast (for the PJM Region, and allocated to each Zone) and, for Delivery Years through May 31, 2012, the ILR Forecast by Locational Deliverability Area;

ii) The PJM Region Installed Reserve Margin, the Pool-wide average EFORd, and the Forecast Pool Requirement;

iii) The Demand Resource Factor;

iv) The PJM Region Reliability Requirement, and the Variable Resource Requirement Curve for the PJM Region;

v) The Locational Deliverability Area Reliability Requirement and the Variable Resource Requirement Curve for each Locational Deliverability Area for which a separate Variable Resource Requirement Curve has been established for such Base Residual Auction, and the CETO and CETL values for all Locational Deliverability Areas;

vi) The Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and the Mid-Atlantic Area Council ("MAAC"), Eastern MAAC and Southwestern MAAC Locational Deliverability Areas for Delivery Years starting with June 1, 2014;

vii) Any Transmission Upgrades that are expected to be in service for such Delivery Year, provided that a Transmission Upgrade that is Backbone Transmission satisfies the project development milestones set forth in section 5.11A;

viii) The bidding window time schedule for each auction to be conducted for such Delivery Year;

~~viii~~ix) The Net Energy and Ancillary Services Revenue Offset values for the PJM Region for use in the Variable Resource Requirement Curves for the PJM Region and each Locational Deliverability Area for which a separate Variable Resource Requirement Curve has been established for such Base Residual Auction; and

~~i~~x) The results of the Preliminary Market Structure Screen in accordance with section 6.2(a).

b) The information listed in (a) will be posted and applicable for the First, Second, Third, and Conditional Incremental Auctions for such Delivery Year, except to the extent updated as required by other provisions of this Tariff.

c) In accordance with the schedule provided in the PJM Manuals, PJM will post the Final PJM Region Peak Load Forecast and the allocation to each zone of the obligation resulting from such final forecast, following the completion of the final Incremental Auction (including any Conditional Incremental Auction) conducted for such Delivery Year;

d) In accordance with the schedule provided in the PJM Manuals, PJM will advise owners of Generation Capacity Resources of the updated EFORd values for such Generation Capacity Resources prior to the conduct of the Third Incremental Auction for such Delivery Year.

e) After conducting the Reliability Pricing Model Auctions, PJM will post the results of each auction *as soon thereafter as possible. The posted results shall include graphical supply curves that are (a) provided for the entire PJM Region, (b) provided for any Locational Deliverability Area for which there are four (4) or more suppliers, and (c) developed using a formulaic approach to smooth the curves using a statistical technique that fits a smooth curve to the underlying supply curve data while ensuring that the point of intersection between supply and demand curves is at the market clearing price.*

If PJM discovers an error in the initial posting of auction results for a particular Reliability Pricing Model Auction, it shall notify Market Participants of the error as soon as possible after it is found, but in no event later than 5:00 p.m. of the fifth business day following the initial publication of the results of the auction. After this initial notification, if PJM determines it is necessary to post modified results, it shall provide notification of its intent to do so, together with all available supporting documentation, by no later than 5:00 p.m. of the seventh business day following the initial publication of the results of the auction. Thereafter, PJM must post on its Web site any corrected auction results by no later than 5:00 p.m. of the tenth business day following the initial publication of the results of the auction. Should any of the above deadlines pass without the associated action on the part of the Office of the Interconnection, the originally posted results will be considered final. Notwithstanding the foregoing, the deadlines set forth above shall not apply if the referenced auction results are under publicly noticed review by the FERC.

5.12 Conduct of RPM Auctions

The Office of the Interconnection shall employ an optimization algorithm for each Base Residual Auction and each Incremental Auction to evaluate the Sell Offers and other inputs to such auction to determine the Sell Offers that clear such auction.

a) Base Residual Auction

For each Base Residual Auction, the optimization algorithm shall consider:

- all Sell Offers submitted in such auction;
- the Variable Resource Requirement Curves for the PJM Region and each LDA;
- any constraints resulting from the Locational Deliverability Requirement;
- the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and the Mid-Atlantic Area Council ("MAAC"), Eastern MAAC and Southwestern MAAC Locational Deliverability Areas for Delivery Years starting with June 1, 2014 ;
- the PJM Region Reliability Requirement, minus, for Delivery Years through May 31, 2012, the Forecast RTO ILR Obligation and, for Delivery Years thereafter, minus the Short-Term Resource Procurement Target.

The optimization algorithm shall be applied to calculate the overall clearing result to minimize the cost of satisfying the reliability requirements across the PJM Region, regardless of whether the quantity clearing the Base Residual Auction is above or below the applicable target quantity, while respecting all applicable requirements and constraints. Where the supply curve formed by the Sell Offers submitted in an auction falls entirely below the Variable Resource Requirement Curve, the auction shall clear at the price-capacity point on the Variable Resource Requirement Curve corresponding to the total Unforced Capacity provided by all such Sell Offers. Where the supply curve consists only of Sell Offers located entirely below the Variable Resource Requirement Curve and Sell Offers located entirely above the Variable Resource Requirement Curve, the auction shall clear at the price-capacity point on the Variable Resource Requirement Curve corresponding to the total Unforced Capacity provided by all Sell Offers located entirely below the Variable Resource Requirement Curve. In determining the lowest-cost overall clearing result that satisfies all applicable constraints and requirements, the optimization may select from among multiple possible alternative clearing results that satisfy such requirements, including, for example (without limitation by such example), accepting a lower-priced Sell Offer that intersects the Variable Resource Requirement Curve and that specifies a minimum capacity block, accepting a higher-priced Sell Offer that intersects the Variable Resource Requirement Curve and that contains no minimum-block limitations, or rejecting both of the above

alternatives and clearing the auction at the higher-priced point on the Variable Resource Requirement Curve that corresponds to the Unforced Capacity provided by all Sell Offers located entirely below the Variable Resource Requirement Curve.

The Sell Offer price of a Qualifying Transmission Upgrade shall be treated as a capacity price differential between the LDAs specified in such Sell Offer between which CETL is increased, and the Import Capability provided by such upgrade shall clear to the extent the difference in clearing prices between such LDAs is greater than the price specified in such Sell Offer. The Capacity Resource clearing results and Capacity Resource Clearing Prices so determined shall be applicable for such Delivery Year.

b) Scheduled Incremental Auctions

For purposes of a Scheduled Incremental Auction, the optimization algorithm shall consider:

- The PJM Region Reliability Requirement, less the Forecast RTO ILR Obligation or Short-term Resource Procurement Target, as applicable;
- Updated LDA Reliability Requirements taking into account any updated Capacity Emergency Transfer Objectives;
- the Capacity Emergency Transfer Limit used in the Base Residual Auction, or any updated value resulting from a Conditional Incremental Auction;
- For each LDA, such LDA's updated Reliability Requirement, less the Forecast LDA ILR Obligation or Short-Term Resource Procurement Target, as applicable;
- the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and the Mid-Atlantic Area Council ("MAAC"), Eastern MAAC and Southwestern MAAC Locational Deliverability Areas for Delivery Years starting with June 1, 2014 ;
- A demand curve consisting of the Buy Bids submitted in such auction and, if indicated for use in such auction in accordance with the provisions below, the Updated VRR Curve Increment;
- The Sell Offers submitted in such auction; and
- The Unforced Capacity previously committed for such Delivery Year.

(i) When the requirement to seek additional resource commitments in a Scheduled Incremental Auction is triggered by section 5.4(c)(2) of this Attachment, the Office of the Interconnection shall employ in the clearing of such auction the Updated VRR Curve Increment.

(ii) When the requirement to seek additional resource commitments in a Scheduled Incremental Auction is triggered by section 5.4(c)(1) of this Attachment, and the conditions stated in section 5.4(c)(2) do not apply, the Office of the Interconnection shall employ in the clearing of such auction a portion of the Updated VRR Curve Increment extending right from the left-most point on that curve in a megawatt quantity equal to (A) the Short-Term Resource Procurement Target Applicable Share for such auction plus (B) the difference between the updated PJM Region Reliability Requirement or updated LDA Reliability Requirement and, respectively, the PJM Region Reliability Requirement, or LDA Reliability Requirement, utilized in the most recent prior auction conducted for such Delivery Year plus any amount required by section 5.4(c)(2)(ii).

(iii) When the possible need to seek agreements to release capacity commitments in any Scheduled Incremental Auction is indicated for the PJM Region or any LDA by section 5.4(c)(3)(i) of this Attachment, the Office of the Interconnection first shall subtract such auction's Short-Term Resource Procurement Target Applicable Share for such region or LDA from the difference between (A) the Reliability Requirement for such region or LDA utilized in the most recent prior auction conducted for the Delivery Year and (B) the updated Reliability Requirement for such region or LDA, plus (C) any capacity sell-back amount determined by PJM to be required for the PJM Region or such LDA by section 5.4(c)(3)(ii) of this Attachment; provided, however, that the amount sold in total for all LDAs and the PJM Region related to a delay in a Backbone Transmission upgrade may not exceed the amounts purchased in total for all LDAs and the PJM Region related to a delay in a Backbone Transmission upgrade. If the result of that subtraction is a negative quantity, the Office of the Interconnection shall employ in the clearing of such auction a portion of the Updated VRR Curve Increment extending right from the left-most point on that curve in a megawatt amount equal to that negative quantity defined above, to seek to procure such quantity. If the result of such subtraction is a positive quantity, the Office of the Interconnection shall employ in the clearing of the auction a portion of the Updated VRR Curve Decrement, extending and ascending to the left from the right-most point on that curve in a megawatt amount corresponding to the positive quantity defined above, to seek to sell back such quantity.

(iv) If none of the tests for adjustment of capacity procurement in subsections (i), (ii), or (iii) is satisfied for the PJM Region or an LDA in a Scheduled Incremental Auction, the Office of the Interconnection shall employ in the clearing of such auction for the region or such LDA a portion of the Updated VRR Curve Increment extending right from the left-most point on that curve in megawatt quantity equal to the Short-Term Resource Procurement Target Applicable Share. If more than one of the tests for adjustment of capacity procurement in subsections (i), (ii), or (iii) is satisfied for the PJM Region or an LDA in a Scheduled Incremental Auction, the Office of the Interconnection shall not seek to procure the Short-Term Resource Procurement Target Applicable Share more than once for such region or area for such auction.

(i) If PJM seeks to procure additional capacity in an Incremental Auction due to a triggering of the tests in subsections (i), (ii), (iii) or (iv) then the Minimum Annual Resource Requirement for such Auction will be equal to the updated Minimum Annual Resource Requirement minus the amount of previously committed capacity from Annual Resources, and the Minimum Extended Summer Resource Requirement for such Auction will be equal to the

updated Minimum Extended Summer Resource Requirement minus the amount of previously committed capacity from Annual Resources and Extended Summer Demand Resources. If PJM seeks to release prior committed capacity due to a triggering of the test in subsection (iii) then PJM may not release prior committed capacity from Annual Resources or Extended Summer Demand Resources below the updated Minimum Annual Resource Requirement and updated Minimum Extended Summer Resource Requirement, respectively.

(v) If the above tests are triggered for an LDA and for another LDA wholly located within the first LDA, the Office of the Interconnection may adjust the amount of any Sell Offer or Buy Bids otherwise required by subsections (i), (ii~~i~~), or (iii) above in one LDA as appropriate to take into account any reliability impacts on the other LDA.

~~(vi) If the above tests are triggered for an LDA and for another LDA wholly located within the first LDA, the Office of the Interconnection may adjust the amount of any Sell Offer or Buy Bids otherwise required by subsections (i), (iii), or (iii) above in one LDA as appropriate to take into account any reliability impacts on the other LDA.~~

~~(vii)~~(vi) The optimization algorithm shall calculate the overall clearing result to minimize the cost to satisfy the Unforced Capacity Obligation of the PJM Region to account for the updated PJM Peak Load Forecast and the cost of committing replacement capacity in response to the Buy Bids submitted, while satisfying or honoring such reliability requirements and constraints, in the same manner as set forth in subsection (a) above.

~~(viii)~~(vii) Load Serving Entities may be entitled to certain credits ("Excess Commitment Credits") under certain circumstances as follows:

(A) For either or both of the Delivery Years commencing on June 1, 2010 or June 1, 2011, if the PJM Region Reliability Requirement used for purposes of the Base Residual Auction for such Delivery Year exceeds the PJM Region Reliability Requirement that is based on the last updated load forecast prior to such Delivery Year, then such excess will be allocated to Load Serving Entities as set forth below;

(B) For any Delivery Year beginning with the Delivery Year that commences June 1, 2012, the total amount from Sell Offers submitted by the Office of the Interconnection pursuant to subsection (b)(iii) above in the Scheduled Incremental Auctions for such Delivery Year that does not clear such auctions will be allocated to Load Serving Entities as set forth below;

(C) the amount from (A) or (B) above for the PJM Region shall be allocated among Locational Deliverability Areas pro rata based on the reduction for each such Locational Deliverability Area in the peak load forecast from the time of the Base Residual Auction to the time of the Third Incremental Auction; provided, however, that the amount allocated to a Locational Deliverability Area may not exceed the reduction in the corresponding

Reliability Requirement for such Locational Deliverability Area; and provided further that any LDA with an increase in its load forecast shall not be allocated any Excess Commitment Credits;

(D) the amount, if any, allocated to a Locational Deliverability Area shall be further allocated among Load Serving Entities in such areas that are charged a Locational Reliability Charge based on the Daily Unforced Capacity Obligation of such Load Serving Entities as of June 1 of the Delivery Year and shall be constant for the entire Delivery Year. Excess Commitment Credits may be used as Replacement Capacity or traded bilaterally.

c) Conditional Incremental Auction

For each Conditional Incremental Auction, the optimization algorithm shall consider:

- The quantity and location of capacity required to address the identified reliability concern that gave rise to the Conditional Incremental Auction;
- the same Capacity Emergency Transfer Limits that were modeled in the Base Residual Auction, or any updated value resulting from a Conditional Incremental Auction; and
- the Sell Offers submitted in such auction.

The Office of the Interconnection shall submit a Buy Bid based on the quantity and location of capacity required to address the identified reliability violation at a Buy Bid price equal to 1.5 times Net CONE.

The optimization algorithm shall calculate the overall clearing result to minimize the cost to address the identified reliability concern, while satisfying or honoring such reliability requirements and constraints.

(d) Equal-priced Sell Offers

If two or more Sell Offers submitted in any auction satisfying all applicable constraints include the same offer price, and some, but not all, of the Unforced Capacity of such Sell Offers is required to clear the auction, then the auction shall be cleared in a manner that minimizes total costs, including total make-whole payments if any such offer includes a minimum block and, to the extent consistent with the foregoing, in accordance with the following additional principles:

1) as necessary, the optimization shall clear such offers that have a flexible megawatt quantity, and the flexible portions of such offers that include a minimum block that already has cleared, where some but not all of such equal-priced flexible quantities are required to clear the auction, pro rata based on their flexible megawatt quantities; and

2) when equal-priced minimum-block offers would result in equal overall costs, including make-whole payments, and only one such offer is required to clear the auction, then the offer that was submitted earliest to the Office of the Interconnection, based on its assigned timestamp, will clear.

5.14 Clearing Prices and Charges

a) Capacity Resource Clearing Prices

For each Base Residual Auction and Incremental Auction, the Office of the Interconnection shall calculate a clearing price to be paid for each megawatt-day of Unforced Capacity that clears in such auction. The Capacity Resource Clearing Price for each LDA will be the sum of the following: (1) the marginal value of system capacity for the PJM Region, without considering locational constraints, ~~and~~ (2) the Locational Price Adder, if any in such LDA, ~~and~~ (3) the Annual Resource Price Adder, if any, and (4) the Extended Summer Resource Price Adder, if any, all as determined by the Office of the Interconnection based on the optimization algorithm. If a Capacity Resource is located in more than one Locational Deliverability Area, it shall be paid the highest Locational Price Adder in any applicable LDA in which the Sell Offer for such Capacity Resource cleared. The Annual Resource Price Adder is applicable for Annual Resources only. The Extended Summer Resource Price Adder is applicable for Annual Resources and Extended Summer Demand Resources.

b) Resource Make-Whole Payments

If a Sell Offer specifies a minimum block, and only a portion of such block is needed to clear the market in a Base Residual or Incremental Auction, the MW portion of such Sell Offer needed to clear the market shall clear, and such Sell Offer shall set the marginal value of system capacity. In addition, the Capacity Market Seller shall receive a Resource Make-Whole Payment equal to the Capacity Resource Clearing Price in such auction times the difference between the Sell Offer's minimum block MW quantity and the Sell Offer's cleared MW quantity. The cost for any such Resource Make-Whole Payments required in a Base Residual Auction or Incremental Auction for adjustment of prior capacity commitments shall be collected pro rata from all LSEs in the LDA in which such payments were made, based on their Daily UnforcedCapacity Obligations. The cost for any such Resource Make-Whole Payments required in an Incremental Auction for capacity replacement shall be collected from all Capacity Market Buyers in the LDA in which such payments were made, on a pro-rata basis based on the MWs purchased in such auction.

c) New Entry Price Adjustment

A Capacity Market Seller that submits a Sell Offer based on a Planned Generation Capacity Resource that clears in the BRA for a Delivery Year may, at its election, submit Sell Offers with a New Entry Price Adjustment in the BRAs for the two immediately succeeding Delivery Years if:

a. Such Capacity Market Seller provides notice of such election at the time it submits its Sell Offer for such resource in the BRA for the first Delivery Year for which such resource is eligible to be considered a Planned Generation Capacity Resource;

b. Acceptance of such Sell Offer in such BRA increases the total Unforced Capacity in the LDA in which such Resource will be located from a megawatt quantity below the LDA Reliability Requirement to a megawatt quantity corresponding to a point on the VRR Curve where price is no greater than 0.40 times the applicable Net CONE divided by (one minus the pool-wide average EFORd); and

c. Such Capacity Market Seller submits Sell Offers in the BRA for the two immediately succeeding Delivery Years for the entire Unforced Capacity of such Generation Capacity Resource equal to the lesser of: 1) the price in such seller's Sell Offer for the BRA in which such resource qualified as a Planned Generation Capacity Resource; or 2) 0.90 times the then-current Net CONE, on an Unforced Capacity basis, for such LDA.

If the Sell Offer is submitted consistent with the foregoing conditions, then:

(i) in the first Delivery Year, the Resource sets the Capacity Resource Clearing Price for the LDA and all resources in the LDA receive the Capacity Resource Clearing Price.

(ii) in the subsequent two BRAs, if the Resource clears, it shall receive the Capacity Resource Clearing Price for such LDA. If the Resource does not clear, it shall be deemed resubmitted at the highest price per MW at which the Unforced Capacity of such Resource that cleared the first-year BRA will clear the subsequent-year BRA pursuant to the optimization algorithm described in section 5.12(a) of this Attachment, and it shall clear and shall be committed to the PJM Region in the amount cleared, plus any additional minimum-block quantity from its Sell Offer for such Delivery Year, but such additional amount shall be no greater than the portion of a minimum-block quantity, if any, from its first-year Sell Offer that is entitled to compensation for such first year pursuant to section 5.14(b) of this Attachment. The Capacity Resource Clearing Price, and the resources cleared, shall be re-determined to reflect such resubmission. In such case, the Resource submitted under this provision shall be paid for the entire committed quantity the Sell Offer price that it initially submitted in such subsequent BRA. The difference between such Sell Offer Price and the Capacity Resource Clearing Price (as well as any difference between the cleared quantity and the committed quantity), will be treated as a Resource Make-Whole Payment in accordance with Section 5.14(b). Other capacity resources that clear the BRA in such LDA receive the Capacity Resource Clearing Price as determined in Section 5.14(a).

The failure to submit a Sell Offer consistent with Section 5.14(c)(i)-(iii) in the BRA for Delivery Year 3 shall not retroactively revoke the New Entry Price Adjustment for Delivery Year 2.

For each Delivery Year that the foregoing conditions are satisfied, the Office of the Interconnection shall maintain and employ in the auction

clearing for such LDA a separate VRR Curve, notwithstanding the outcome of the test referenced in Section 5.10(a)(ii) of this Attachment.

d) Qualifying Transmission Upgrade Payments

A Capacity Market Seller that submitted a Sell Offer based on a Qualifying Transmission Upgrade that clears in the Base Residual Auction shall receive a payment equal to the Capacity Resource Clearing Price, including any Locational Price Adder, of the LDA into which the Qualifying Transmission Upgrade is to increase Capacity Emergency Transfer Limit, less the Capacity Resource Clearing Price, including any Locational Price Adder, of the LDA from which the upgrade was to provide such increased CETL, multiplied by the megawatt quantity of increased CETL cleared from such Sell Offer. Such payments shall be reflected in the Locational Price Adder determined as part of the Final Zonal Capacity Price for the Zone associated with such LDAs, and shall be funded through a reduction in the Capacity Transfer Rights allocated to Load-Serving Entities under section 5.15, as set forth in that section. *PJMSettlement shall be the Counterparty to any cleared capacity transaction resulting from a Sell Offer based on a Qualifying Transmission Upgrade.*

e) Locational Reliability Charge

In accordance with the Reliability Assurance Agreement, each LSE shall incur a Locational Reliability Charge (subject to certain offsets as described in sections 5.13 and 5.15) equal to such LSE's Daily Unforced Capacity Obligation in a Zone during such Delivery Year multiplied by the applicable Final Zonal Capacity Price in such Zone. *PJMSettlement shall be the Counterparty to the LSEs' obligations to pay, and payments of, Locational Reliability Charges.*

f) The Office of the Interconnection shall determine Zonal Capacity Prices in accordance with the following, based on the optimization algorithm:

i) The Office of the Interconnection shall calculate and post the Preliminary Zonal Capacity Prices for each Delivery Year following the Base Residual Auction for such Delivery Year. The Preliminary Zonal Capacity Price for each Zone shall be the sum of: 1) the marginal value of system capacity for the PJM Region, without considering locational constraints; 2) the Locational Price Adder, if any, for the LDA in which such Zone is located; provided however, that if the Zone contains multiple LDAs with different Capacity Resource Clearing Prices, the Zonal Capacity Price shall be a weighted average of the Capacity Resource Clearing Prices for such LDAs, weighted by the Unforced Capacity of Capacity Resources cleared in each such LDA; 3) an adjustment, if required, to account for adders paid to Annual Resources and Extended Summer Demand Resources in the LDA for which the zone is located; and ~~3~~4) an adjustment, if required, to account for Resource Make-Whole Payments, all as determined in accordance with the optimization algorithm.

ii) The Office of the Interconnection shall calculate and post the Adjusted Zonal Capacity Price following each Incremental Auction. The Adjusted Zonal Capacity Price for each Zone shall equal the sum of: (1) the ~~sum, for~~ average marginal value of system capacity

weighted by the Unforced Capacity cleared in all auctions previously conducted for such Delivery Year~~, of the Resource Clearing Price for each auction times the Unforced Capacity cleared for such auction~~ (excluding any Unforced Capacity cleared as replacement capacity)~~,~~; ~~divided by~~ (2) ~~the sum of~~ the average Locational Price Adder weighted by the Unforced Capacity cleared in all ~~such~~ auctions previously conducted for such Delivery Year (excluding any Unforced Capacity cleared as replacement capacity)~~,~~; (3) an adjustment, if required, to account for adders paid to Annual Resources and Extended Summer Demand Resources for all auctions previously conducted for such Delivery Year (excluding any Unforced Capacity cleared as replacement capacity); and (4) ~~plus~~ an adjustment, if required, to account for Resource Make-Whole Payments for all actions previously conducted (excluding any Resource Make-Whole Payments to be charged to the buyers of replacement capacity). The Adjusted Zonal Capacity Price may decrease if Unforced Capacity is decommitted or the Resource Clearing Price decreases in an Incremental Auction.

iii) The Office of the Interconnection shall, through May 31, 2012, calculate and post the Final Zonal Capacity Price after all ILR resources are certified for the Delivery Years and, thereafter, shall calculate and post such price after the final auction is held for such Delivery Year, as set forth above. The Final Zonal Capacity Price for each Zone shall equal the Adjusted Zonal Capacity Price, as further adjusted (for the Delivery Years through May 31, 2012) to reflect the certified ILR compared to the ILR Forecast previously used for such Delivery Year, and any decreases in the Nominated Demand Resource Value of any existing Demand Resource cleared in the Base Residual Auction and Second Incremental Auction. For such purpose, for the three consecutive Delivery Years ending May 31, 2012 only, the Forecast ILR allocated to loads located in the AEP transmission zone that are served under the Reliability Pricing Model shall be in proportion for each such year to the load ratio share of such RPM loads compared to the total peak loads of such zone for such year; and any remaining ILR Forecast that otherwise would be allocated to such loads shall be allocated to all Zones in the PJM Region pro rata based on their Preliminary Zonal Peak Load Forecasts.

g) Resource Substitution Charge

Each Capacity Market Buyer in an Incremental Auction securing replacement capacity shall pay a Resource Substitution Charge equal to the Capacity Resource Clearing Price resulting from such auction multiplied by the megawatt quantity of Unforced Capacity purchased by such Market Buyer in such auction.

h) Minimum Offer Price Rule for Certain Planned Generation Capacity Resources

(1) For purposes of this section, the Net Asset Class Costs of New Entry shall be asset-class estimates of competitive, cost-based, real levelized (year one) Cost of New Entry, net of energy and ancillary service revenues. Other than the levelization approach, determination of the Cost of New Entry component of the Net Asset Class Cost of New Entry shall be consistent with the methodology used to determine the Cost of New Entry set forth in Section 5.10(a)(iv)(A) of this Attachment. Until changed, the Net Asset Class Cost of New Entry for a combustion turbine generator shall be $ 96,485MW-year, and the Net Asset Class Cost of New Entry for a combined cycle generator shall be $ 117,035/MW-year. Notwithstanding the

foregoing, the Net Asset Class Cost of New Entry shall be zero for: (i) base load resources, such as nuclear, coal and Integrated Gasification Combined Cycle, that require a period for development greater than three years; (ii) any facility associated with the production of hydroelectric power; (iii) any upgrade or addition to an ~~e~~E~~E~~xisting Generation Capacity Resource; or (iv) any Planned Generation Capacity Resource being developed in response to a state regulatory or legislative mandate to resolve a projected capacity shortfall in the Delivery Year affecting that state, as determined pursuant to a state evidentiary proceeding that includes due notice, PJM participation, and an opportunity to be heard.

(2) Any Sell Offer that is based on a Planned Generation Capacity Resource submitted in a Base Residual Auction for the first Delivery Year in which such resource qualifies as such a resource, in any LDA for which a separate VRR Curve has been established, and that meets each of the following criteria, shall be subject to the provisions of subsection (3) hereof, unless the Capacity Market Seller obtains a determination from FERC prior to such Base Residual Auction that such Sell Offer is consistent with the real levelized (year one) competitive, cost-based, fixed, net cost of new entry were the resource to rely solely on revenues from PJM-administered markets (i.e., were all output from the unit sold in PJM-administered spot markets):

i. Sell Offer affects the Clearing Price;

ii. Sell Offer is less than 80 percent of the applicable Net Asset Class Cost of New Entry or, if there is no applicable Net Asset Class Cost of New Entry, less than 70 percent of the Net Asset Class Cost of New Entry for a combustion turbine generator as stated in subsection (h)(1) above; and

iii. The Capacity Market Seller and any Affiliates has or have a "net short position" in such Base Residual Auction for such LDA that equals or exceeds (a) ten percent of the LDA Reliability Requirement, if less than 10,000 megawatts, or (b) five percent of the total LDA Reliability Requirement, if equal to or greater than 10,000 megawatts. A "net short position" shall be calculated as the actual retail load obligation minus the portfolio of supply. An "actual retail load obligation" shall mean the LSE's combined load served in the LDA at or around the time of the Base Residual Auction adjusted to account for load growth up to the Delivery Year, using the Forecast Pool Requirement. A "portfolio of supply" shall mean the Generation Capacity Resources (on an unforced capacity basis) owned by the Capacity Market Seller and any Affiliates at the time of the Base Residual Auction plus or minus any generation that is, at the time of the BRA, under contract for the Delivery Year.

(3) The Office of the Interconnection shall perform a sensitivity analysis on any Base Residual Auction that included Sell Offers meeting the criteria of Section 5.14(h)(2), for which the Capacity Market Seller has not obtained a prior favorable determination from FERC as described in subsection (2) hereof. Such analysis shall re-calculate the clearing price for the Base Residual Auction employing in place of each actual Sell Offer meeting the criteria a substitute Sell Offer equal to 90 percent of the applicable estimated cost determined in

accordance with Section 5.14(h)(1) above, or, if there is no applicable estimated cost, equal to 80 percent of the then-applicable Net CONE. If the resulting difference in price between the new clearing price and the initial clearing price differs by an amount greater than the greater of 20 percent or 25 dollars per megawatt-day for a total LDA Reliability Requirement greater than 15,000 megawatts; or the greater of 25 percent or 25 dollars per megawatt-day for a total LDA Reliability Requirement greater than 5,000 and less than 15,000 megawatts; or the greater of 30 percent or 25 dollars per megawatt-day for a total LDA Reliability Requirement of less than 5,000 megawatts; then the Office of the interconnection shall discard the results of the Base Residual Auction and determine a replacement clearing price and the identity of the accepted Capacity Resources using the procedure set forth in section 5.14(h)(4) below.

(4) Including all of the Sell Offers in a single Base Residual Auction that meet the criteria of 5.14(h)(3) above, PJM shall first calculate the replacement clearing price and the total quantity of Capacity Resources needed for the LDA. PJM shall then accept Sell Offers to provide Capacity Resources in accordance with the following priority and criteria for allocation: (i) first, all Sell Offers in their entirety designated as self-supply *committed regardless of price*; (ii) then, all Sell Offers of zero, prorating to the extent necessary, and (iii) then all remaining Sell Offers in order of the lowest price, subject to the optimization principles set forth in Section 5.14.

(5) Notwithstanding the foregoing, this provision shall terminate when there exists a positive net demand for new resources, as defined in Section 5.10(a)(iv)(B) of this Attachment, calculated over a period of consecutive Delivery Years beginning with the first Delivery Year for which this Attachment is effective and concluding with the last Delivery Year preceding such calculation, in an area comprised of the Unconstrained LDA Group (as defined in section 6.3) in existence during such first Delivery Year. Notwithstanding the foregoing, the Office of the Interconnection shall reinstate the provisions of this section, solely under conditions in which a constrained LDA has a gross Cost of New Entry equal to or greater than 150 percent of the greatest prevailing gross Cost of New Entry in any adjacent LDA.

(i) Capacity Export Charges and Credits

(1) Charge

Each Capacity Export Transmission Customer shall incur for each day of each Delivery Year a Capacity Export Charge equal to the Reserved Capacity of Long-Term Firm Transmission Service used for such export ("Export Reserved Capacity") multiplied by (the Final Zonal Capacity Price for such Delivery Year for the Zone encompassing the interface with the Control Area to which such capacity is exported minus the Final Zonal Capacity Price for such Delivery Year for the Zone in which the resources designated for export are located, but not less than zero). If more than one Zone forms the interface with such Control Area, then the amount of Reserved Capacity described above shall be apportioned among such Zones for purposes of the above calculation in proportion to the flows from such resource through each such Zone directly to such interface under CETO/CETL analysis conditions, as determined by the Office of the Interconnection using procedures set forth in the PJM Manuals. The amount of the Reserved

Capacity that is associated with a fully controllable facility that crosses such interface shall be completely apportioned to the Zone within which such facility terminates.

(2) Credit

To recognize the value of firm Transmission Service held by any such Capacity Export Transmission Customer, such customer assessed a charge under section 5.14(i)(1) also shall receive a credit, comparable to the Capacity Transfer Rights provided to Load-Serving Entities under section 5.15. Such credit shall be equal to the locational capacity price difference specified in section 5.14(i)(1) times the Export Customer's Allocated Share determined as follows:

Export Customer's Allocated Share equals

(Export Path Import * Export Reserved Capacity) /

(Export Reserved Capacity + Daily Unforced Capacity Obligations of all LSEs in such Zone).

Where:

"Export Path Import" means the megawatts of Unforced Capacity imported into the export interface Zone from the Zone in which the resource designated for export is located.

If more than one Zone forms the interface with such Control Area, then the amount of Export Reserved Capacity shall be apportioned among such Zones for purposes of the above calculation in the same manner as set forth in subsection (i)(1) above.

(3) Distribution of Revenues

Any revenues collected from the Capacity Export Charge with respect to any capacity export for a Delivery Year, less the credit provided in subsection (i)(2) for such Delivery Year, shall be distributed to the Load Serving Entities in the export-interface Zone that were assessed a

Locational Reliability Charge for such Delivery Year, pro rata based on the Daily Unforced Capacity Obligations of such Load-serving Entities in such Zone during such Delivery Year. If more than one Zone forms the interface with such Control Area, then the revenues shall be apportioned among such Zones for purposes of the above calculation in the same manner as set forth in subsection (i)(1) above.

8. CAPACITY RESOURCE DEFICIENCY CHARGE

8.1

A Capacity Resource Deficiency Charge shall be assessed on any Capacity Market Seller that commits a Capacity Resource, and on any Locational UCAP Seller that sells Locational UCAP for a Delivery Year based on a Generation Capacity Resource, for a Delivery Year that is unable or unavailable to deliver Unforced Capacity for all or any part of such Delivery Year for any reason, including but not limited to the following, and that does not obtain replacement Unforced Capacity meeting the same locational requirements and same or better temporal availability characteristics (i.e., Annual Resource, Extended Summer Demand Resource, or Limited Demand Resource) in the megawatt quantity required to satisfy the capacity committed from such resource by such seller as a result of all cleared Sell Offers from such seller based on such resource in any RPM Auctions for such Delivery Year, the reduction in any such commitment for such resource to the extent and for the time period of any replacement capacity committed in lieu of such resource, and the increase in any such commitment for such resource to the extent and for the time period that such resource is committed as replacement capacity for any other resource:

a) Unit Derating – Such Capacity Resource is a Generation Capacity Resource and its capacity value is derated prior to or during the Delivery Year;

b) EFORD Increase – Such Capacity Resource is a Generation Capacity Resource and the EFORD value determined for such resource at least two (2) months prior to the Third Incremental Auction is higher than the EFORD value submitted in the Capacity Market Seller's cleared Sell Offer;

c) External Generation Resource – Such Capacity Resource is an existing Generation Capacity Resource that is located outside of the PJM Control Area and arrangements for the firm delivery of the output of such resource to the interface with the PJM Region are not in place for such resource prior to the start of the Delivery Year;

d) Planned Generation Resource – Such Capacity Resource is a Planned Generation Capacity Resource and Interconnection Service has not commenced as to such resource prior to the start of the Delivery Year;

e) Planned Demand Resource - Such Capacity Resource is a Planned Demand Resource or an Energy Efficiency Resource and the associated demand response program or energy efficiency measure is not installed prior to the start of the Delivery Year; or

f) Existing Demand Resource – Such Capacity Resource is an existing Demand Resource or Energy Efficiency Resource and, subject to section 8.4, is not capable of providing the megawatt quantity of load response specified in the cleared Sell Offer for the time periods of availability associated with the product type.

8.2. Capacity Resource Deficiency Charge

The Capacity Resource Deficiency Charge shall equal the Daily Deficiency Rate (as defined in section 7) multiplied by the megawatt quantity of deficiency below the level of capacity committed in such Capacity Market Seller's Sell Offer(s) or bilateral capacity commitments, or Locational UCAP Seller's Locational UCAP sale for each day such seller is deficient.

8.3. Allocation of Revenue Collected from Capacity Resource Deficiency Charges

The revenue collected from the assessment of a Capacity Resource Deficiency Charge shall be distributed on a pro-rata basis to all LSEs that were charged a Locational Reliability Charge for the day for which such Capacity Resource Deficiency Charge was assessed. Such revenues shall be distributed on a pro-rata basis to such LSEs based on their Daily Unforced Capacity Obligations.

8.4 Relief from Charges

A Capacity Market Seller or Locational UCAP Seller that is otherwise subject to the Capacity Resource Deficiency Charge solely as a result of section 8.1(e) may receive relief from such Charge if it demonstrates that the inability to provide the level of demand response specified in its Sell Offer is due to the permanent departure (due to plant closure, efficiency gains, or similar reasons) from the Transmission System of load that was relied upon for load response in such Sell Offer; provided, however, that such seller must provide the Office of the Interconnection with all information deemed necessary by the Office of the Interconnection to assess the merits of the request for relief. Such seller shall receive no RPM Auction Credit for the amount of reduction in the committed Planned Demand Resources.

9. PEAK SEASON MAINTENANCE COMPLIANCE PENALTY CHARGE.

a) Purpose

To preserve and maintain the reliability of the PJM Region and to recognize the impact of planned outages and maintenance outages of Generation Capacity Resources during the Peak Season, each Capacity Market Seller that commits a Generation Capacity Resource for a Delivery Year, and each Locational UCAP Seller that sells Locational UCAP from a Generation Capacity Resource for a Delivery Year, must ensure that such Generation Capacity Resource has available sufficient Unforced Capacity during the Peak Season to satisfy the megawatt amount committed from such resource as a result of all Sell Offers by such seller based on such resource in any RPM Auctions for such Delivery Year the reduction in any such commitment for such resource to the extent and for the time period of any replacement capacity committed in lieu of such resource, and the increase in any such commitment for such resource to the extent and for the time period that such resource is committed as replacement capacity for any other resource.

b) Peak Season Requirement

To the extent the Generation Capacity Resource will not be available due to a planned or maintenance outage that occurs during the Peak Season without the approval of the Office of the Interconnection, the Capacity Market Seller or Locational UCAP Seller must obtain replacement Unforced Capacity meeting the same locational requirements and same or better temporal availability characteristics (i.e., Annual Resources) from a Capacity Resource that is not already committed for such Delivery Year and that meets all characteristics specified in the Sell Offer or Locational UCAP transaction, including the megawatt quantity of Unforced Capacity committed for such Delivery Year (with such Unforced Capacity, in the case of a Generation Capacity Resource, determined on the basis of such Generation Capacity Resource's EFORD for the twelve months ending on the September 30 last preceding the Delivery Year), or otherwise pay a Peak Season Maintenance Compliance Penalty Charge. The Capacity Market Seller or Locational UCAP Seller shall commit such replacement Capacity Resource in accordance with the procedure set forth in the PJM Manuals.

c) Peak Season Planned and Maintenance Outages

The Office of the Interconnection shall adopt and maintain rules and procedures for determining the allowable Peak Season planned and maintenance outages.

d) Peak Season Maintenance Compliance Penalty Charge

The Peak Season Maintenance Compliance Penalty Charge shall equal the Daily Deficiency Rate (as defined in section 7) multiplied by the unforced value of a positive shortfall calculated for the capacity committed for each day during the Peak Season that such resource is out-of-service on a maintenance outage that is not authorized by the Office of the Interconnection. The shortfall shall equal (i) the annual average of the installed capacity committed for each day of such Delivery Year as a result of all cleared Sell Offers in all RPM Auctions for such Delivery Year relying on such resource, reduction in any such commitment for such resource to the extent and

for the time period of any replacement capacity committed in lieu of such resource, and increase in any such commitment for such resource to the extent and for the time period that such resource is committed as replacement capacity for any other resource, minus (ii) the summer net dependable rating minus the amount of capacity out-of-service on unapproved planned or maintenance outage on a peak season day.

e) Allocation of Revenue Collected from Peak Season Maintenance Compliance Penalty Charges

The revenue collected from assessment of a Peak Season Maintenance Compliance Penalty Charge shall be distributed on a pro-rata basis to all LSEs that were charged a Locational Reliability Charge for the day for which the Capacity Resource Deficiency Charge was assessed. Such revenues shall be distributed on a pro-rata basis to all such LSEs based on their Daily Unforced Capacity Obligation.

10. PEAK-HOUR-PERIOD AVAILABILITY CHARGES AND CREDITS

(a) To preserve and maintain the reliability of the PJM Region and to encourage Capacity Market Sellers and Locational UCAP Sellers to maintain the availability of Generation Capacity Resources during critical peak hours of the Delivery Year, each Capacity Market Seller that commits a Generation Capacity Resource for a Delivery Year, and each Locational UCAP Seller that sells Locational UCAP from a Generation Capacity Resource for a Delivery Year, shall be credited or charged to the extent the critical peak-period availability of its committed Generation Capacity Resources exceeds or falls short, respectively, of the expected availability of such resources. Charges and credits hereunder shall not apply to wind or solar resources.

(b) Critical peak periods for purposes of this assessment ("Peak-Hour Periods") shall be 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 holiday, and the hour ending 800 EPT through the hour ending 900 EPT and the hour ending 1900 EPT through 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.

c) Peak-Period Equivalent Forced Outage Rate and Peak-Period Capacity Calculations

The Peak-Period Equivalent Forced Outage Rate shall be calculated for Peak-Hour Periods based on the following formula:

EFORP (%) = (FOH + EFPOH) / (SH + FOH)

where

FOH = full forced outage hours when the unit was called upon, excluding those outages deemed as OMC (as defined below);

EFPOH = equivalent forced partial outage hours when the unit was called upon, excluding those outages deemed as OMC (as defined below); and

SH = service hours as defined pursuant to NERC GADS standards.

The Peak-Period Capacity of a Generation Capacity Resource shall be calculated as follows:

$PCAP = ICAP * (1.0 - EFOR_P)$

where

ICAP = the installed capacity rating of such Generation Capacity Resource

d) Determination of Expected $EFOR_P$ and PCAP for Generation Capacity Resources

For each Delivery Year, the expected $EFOR_P$ and PCAP of each Generation Capacity Resource committed to serve load in such Delivery Year shall be the EFORD and UCAP, respectively, calculated on a rolling-average basis using such resource's service history during the five consecutive annual periods of twelve consecutive months ending September 30 last preceding such Delivery Year. Such $EFOR_D$ and UCAP shall be determined in accordance with Schedule 5 of the Reliability Assurance Agreement, which excludes (for purposes of Capacity Resource UCAP calculations) outages deemed outside management control in accordance with the standards and guidelines of NERC, as defined in the Generating Availability Data System, Data Reporting Instructions in Attachment K or its successor ("Outside Plant Management Control" or "OMC").

(e) For each Delivery Year, the actual $EFOR_P$ and PCAP of each Generation Capacity Resource shall be calculated during the Peak-Hour Periods of such Delivery Year, provided however, that such calculation shall not include any day such a resource was unavailable if such unavailability resulted in a charge or penalty due to delay, cancellation, retirement, de-rating, or rating test failure. The full or partial forced outage hours when called upon shall be those outage hours during which the cost-based offer for energy from the resource would have been less than the applicable Locational Marginal Price for such resource, or when the Office of the Interconnection would have called upon the resource (absent the outage) for Operating Reserves, in both cases as determined by the Office of the Interconnection in accordance with the procedures specified in the PJM Manuals (including, without limitation, respecting such unit's current operating constraints). In addition, for single-fueled, natural gas-fired units, a failure to perform during the winter Peak-Hour Period shall be excused for purposes of this section if the Capacity Market Seller, or Locational UCAP Seller, as applicable, can demonstrate to the Office of the Interconnection that such failure was due to non-availability of gas to supply the unit.

(f) If the calculation under subsection (e) for any Generation Capacity Resource for a Delivery Year results in fewer than fifty total Service Hours during Peak Hours, then the actual EFORP for purposes of such calculation shall be the lower of the resource's $EFOR_D$ (based on Delivery Year outage data) and its $EFOR_P$ and the actual PCAP for purposes of such calculation shall be, respectively, the resource's UCAP or its PCAP.

(g) For each Delivery Year, the excess or shortfall in Peak-Hour Period availability for each Generation Capacity Resource shall be determined by comparing such resource's expected and actual PCAP, subject to the limitation under subsection (i) below. The net Peak-Hour Period availability shortfall or excess for each Capacity Market Seller and FRR Entity in each Locational Deliverability Area shall be the net of the shortfalls and excesses of all Generation Capacity Resources in such Locational Deliverability Area committed by such Capacity Market Seller or Locational UCAP Seller for such Delivery Year. If there is a net positive Peak Hour Period availability shortfall in the LDA for such committed resources in the LDA, the sum of the excesses of all Generation Capacity Resources in such Locational Deliverability Area owned or controlled by such Capacity Market Seller, available for the Delivery Year but not committed for such Delivery Year, and satisfying all obligations of a committed Capacity Resource for such Delivery Year shall be used to reduce the net positive Peak Hour Period availability shortfall in the LDA of committed resources by the amount of the

sum of the excesses of such available uncommitted resources; however, such reduction shall not result in a net Peak Hour Period availability excess in the LDA.

(h) As to any Generation Capacity Resource experiencing or expected to experience a full or partial outage during any Peak-Hour Period that would or could result in a shortfall under subsection (g) above, a Capacity Market Seller or Locational UCAP Seller may obtain and commit Unforced Capacity from a replacement Capacity Resource (not previously committed) meeting the same locational requirements and same or better temporal availability characteristics (i.e., Annual Resources) as such resource. Such Unforced Capacity shall be recognized for purposes of this section prospectively from the effective date of commitment of such replacement resource, and to the extent such replacement Unforced Capacity thereafter is available during Peak-Hour Periods, any shortfall that otherwise would have been calculated shall be reduced to that extent. Any such commitment of replacement capacity shall be effective upon no less than one day's notice to the Office of the Interconnection.

(i) The shortfall determined for any Generation Capacity Resource shall not exceed an amount equal to 0.50 times the Unforced Capacity of such resource; provided, however, that if such limitation is triggered as to any Generation Capacity Resource for a Delivery Year, then the decimal multiplier for this calculation as to such resource in the immediately succeeding Delivery Year shall be increased to 0.75, and if such limitation again is triggered in such succeeding Delivery Year, then the multiplier shall be increased to 1.00. The multiplier shall remain at either such elevated level for each succeeding Delivery Year until the shortfall experienced by such resource is less than 0.50 times the Unforced Capacity of such resource for three consecutive Delivery Years.

(j) A Peak-Hour Period Availability Charge shall be assessed on each Capacity Market Seller or Locational UCAP Seller with a net shortfall in PCAP in an LDA, where such charge is equal to such shortfall times the Capacity Resource Clearing Price determined for such Locational Deliverability Area for such Delivery Year.

(k) The revenues from such charges shall be distributed to the Capacity Market Sellers, Locational UCAP Sellers, and FRR Entities that committed Generation Capacity Resources, in such Locational Deliverability Area that have net excess PCAP for such Delivery Year, provided however that any such seller shall be paid no more than the product of such seller's net excess PCAP times the Capacity Clearing Price determined for such Locational Deliverability Area for such Delivery Year. Any excess revenues remaining after such distribution shall be distributed on a pro-rata basis to all LSEs in the Zone that were charged the same Locational Reliability Charge for the Delivery Year for which the Peak Hour Availability Charge was assessed, and to all FRR Entities in the Zone that are LSEs and whose FRR Capacity Plan resources over-performed in the Delivery Year, on a pro-rata basis in accordance with each LSE's Daily Unforced Capacity Obligation.

(l) The Office of the Interconnection shall provide estimated charges and credits based on the summer Peak-Hour Periods within three calendar months after the end of the summer period. Final charges and credits for the Delivery Year shall be billed within three calendar months following the end of the Delivery Year.

11. DEMAND RESOURCE AND ILR COMPLIANCE PENALTY CHARGE

(a) The Office of the Interconnection shall separately evaluate compliance of each Demand Resource committed and each nominated ILR resource certified for a Delivery Year, in accordance with procedures set forth in the PJM Manuals. The compliance is evaluated separately by event in each Zone for Demand Resources and ILR resources dispatched by the Office of Interconnection. To the extent an ILR resource or Demand Resource cannot respond, another ILR resource or Demand Resource in the same geographic location defined by the PJM dispatch instruction with the same designated lead time and comparable capacity commitment may be substituted. Any Demand Resource or ILR resource used as a substitute during an event will have the same obligation to respond to future event(s) as if it did not respond to such event. Capacity Market Sellers that committed Demand Resources, Locational UCAP Sellers that sold Demand Resources, and ILR Providers that nominated ILR for a Delivery Year that cannot demonstrate the hourly performance of such resource in real-time based on the capacity commitment or ILR certification shall be assessed a Demand Resource and ILR Compliance Penalty ~~c~~Charge; provided, however, that such under compliance shall be determined on an aggregate basis for all Demand Resources and ILR committed by the same Capacity Market Seller, same Locational UCAP Seller, or same ILR Provider in a single Zone. To the extent a Capacity Market Seller is also an ILR Provider, compliance of all Demand Resources committed and ILR resources certified in the same Zone will be evaluated in aggregate. To the extent a Capacity Market Seller is also an ILR Provider, compliance of all Demand Resources committed and ILR resources certified in the same Zone will be evaluated in aggregate.

(b) The Demand Resource and ILR Compliance Penalty Charge for a Capacity Market Seller/ILR Provider in a Zone for the on-peak period, which includes all hours specified in the Reliability Assurance Agreement definition of the Limited Demand Resource, ~~a Delivery Year~~ shall equal the lesser of (1/the number of load management events during the year, or 0.50) times the Weighted Annual Revenue Rate for such seller/provider, multiplied by the net under-compliance in such on-peak period, if any, for such seller/provider resulting from all resources it has committed and ILR it has certified for such Delivery Year for such Zone for each load reduction event called by the Office of the Interconnection. The Demand Resource and ILR Compliance Penalty Charge for a Capacity Market Seller/ILR Provider in a Zone for the off-peak period, which includes all hours specified in the Reliability Assurance Agreement definitions of Extended Summer Demand Resource or Annual Demand Resource, but does not included in the on-peak period, shall equal 1/52 times the Weighted Annual Revenue Rate for such seller/provider, multiplied by the net under-compliance in such off-peak period, if any, for such seller/provider resulting from all resources it has committed and ILR it has certified for such Delivery Year for such Zone for each load reduction event called by the Office of the Interconnection. If a load management event is comprised of both an on-peak period and an off-peak period then such Demand Resource and ILR Compliance Penalty Charge will be the higher of the charges calculated under the prior two sentences. The total Compliance Penalty Charge for the Delivery Year is not to exceed the annual revenue received for such resources. The net undercompliance for each such load reduction event shall be the following megawatt quantity, converted to an Unforced Capacity basis using the applicable DR Factor and Forecast Pool Requirement: (i) the megawatts of load reduction capability committed and/or ILR certified by such seller/provider minus (ii) the megawatts of load reduction actually provided by all such

Demand Resources and ILR during such reduction event. The Annual Revenue Rate for a Demand Resource shall be the Resource Clearing Price that the resource received in the auction in which it cleared, including any adjustment pursuant to Attachment DD-1, section C of this Tariff, multiplied by the number of days in the Delivery Year. The Annual Revenue Rate for an ILR resource shall be the Final Zonal ILR Price multiplied by the number of days in the Delivery Year. The Weighted Annual Revenue Rate for a Capacity Market Seller/ILR Provider shall be the average rate for all cleared Demand Resources and certified ILR, weighted by the megawatts cleared or certified at each price, multiplied by the number of days in the Delivery Year. The total charge per megawatt that may be assessed on a Capacity Market Seller/ILR Provider in a Delivery Year shall be capped at the Weighted Annual Revenue Rate the Capacity Market Seller/ILR Provider would receive in the Delivery Year.

c) Revenues from assessment of a Demand Resource and ILR Compliance Penalty Charge shall be distributed by the later of June of the following Delivery Year~~the month of October during such Delivery Year~~ or the third billing month following the event that gave rise to such charge, on a pro-rata basis to Demand Resource Providers, Locational UCAP Sellers, and ILR Providers that provided load reductions in excess of the amount such resources were committed or certified to provide. Such revenue distribution, however, shall not exceed for any Capacity Market Seller/ILR Provider the quantity of excess megawatts provided by such Capacity Market Seller/ILR Provider during a single event times 0.20 times the Weighted Annual Revenue Rate for such Capacity Market Seller/ILR Provider. To the extent any such revenues remain after such distribution, the remaining revenues shall be distributed to LSEs based on each LSE's average Daily Unforced Capacity Obligation for the month in which the non-compliance event occurred.

11A LOAD MANAGEMENT AND DEMAND RESOURCES TEST FAILURE CHARGE

a) Beginning with the Delivery Year that commences on June 1, 2009, Capacity Market Sellers that commit Demand Resources and ILR Providers may be charged to the extent their committed resources or certified ILR fail performance tests, as set forth herein.

b)

(i) For ILR or for Limited Demand Resources: ~~If no load management events in a zone are called prior to August 15 during a Delivery Year, then all~~ If a Limited Demand Resource~~s~~ committed ~~and all~~or an ILR certified by a Capacity Market Seller/ILR Provider is not dispatched by the Office of the Interconnection for a load management event prior to August 15 of the relevant Delivery Year, then such resource must demonstrate that ~~the Demand Resource committed and ILR certified in a zone were~~it was tested as described below in (ii), in a zone for a one-hour period during any hour when a PJM load management event may be called ~~occurring~~ between June 1 and September 30, inclusive. If a Limited Demand Resource committed or an ILR certified by a Capacity Market Seller/ILR Provider is dispatched by the Office of the Interconnection for a PJM load management event in ~~such~~ a zone ~~occurs~~ between August 16 and September 30, no test will be required. If a Limited Demand Resource committed or an ILR certified by a Capacity Market Seller/ILR Provider is dispatched by the Office of the Interconnection for a PJM load management event in ~~such~~ a zone ~~occurs~~ between June 1 and September 30, inclusive, then Load Management and Demand Resources Test Failure Charges will not be assessed.

For Annual Demand Resources: if an Annual Demand Resource is not dispatched by the Office of the Interconnection for a load management event in a Delivery Year, then the Annual Demand Resource committed by a Capacity Market Seller must demonstrate that the Annual Demand Resource committed in a zone was tested as described below in (iii), for a one-hour period during any hour when a PJM load management event may be called during June through October or the following May of the relevant Delivery Year. If an Annual Demand Resource is dispatched by the Office of the Interconnection for a load management event during the Delivery Year, then no test will be required.

For Extended Summer Demand Resources: if an Extended Summer Demand Resource is not dispatched by the Office of the Interconnection for a load management event during June through October or the following May, then the Extended Summer Demand Resource committed by a Capacity Market Seller must demonstrate that the Extended Summer Demand Resource was tested as described below in (iii), for a one-hour

period during any hour when a PJM load management event may be called during June through October or the following May of the relevant Delivery Year.

(ii) All resources in a zone must be tested simultaneously except that, when less than 25 percent (by megawatts) of a provider's total resources in a zone fail a test, the provider may conduct a re-test limited to all resources that failed the prior test, provided that such re-test must be at the same time of day and under approximately the same weather conditions as the prior test, and provided further that all affiliated resources must test simultaneously, where affiliated means resources that have any ability to shift load and are owned or controlled by the same entity.

c) a Capacity Market Seller/ILR Provider that committed Demand Resources and/or certified ILR shall be assessed a Load Management and Demand Resources Test Failure Charge ~~Load Management Test Failure Charge~~ equal to the net capability testing shortfall in a Zone during such test in the aggregate of all of such Seller's/Provider's Demand Resources/ILR in such Zone times the Load Management and Demand Resources Test Failure Charge ~~Load Management Test Failure Charge~~ Rate.

d) the Load Management and Demand Resources Test Failure Charge ~~Load Management Test Failure Charge~~ Rate shall equal such Seller/Provider's Weighted Annual Revenue Rate in such Zone plus the greater of (0.20 times the Weighted Annual Revenue Rate in such Zone or $20/MW-day) times the number of days in the Delivery Year. Such charge shall be assessed daily and charged monthly (or otherwise in accordance with customary PJM billing practices in effect at the time); provided, however, that a lump sum payment may be required to reflect amounts due, as a result of a test failure, from the start of the Delivery Year to the day that charges are reflected in regular billing.

e) revenues collected from assessment of Load Management and Demand Resources Test Failure Charges ~~Load Management Test Failure Charges~~ shall be distributed to Load Serving Entities that were charged a Locational Reliability Charge for the Delivery Year for which the Load Management and Demand Resources Test Failure Charge ~~Load Management Test Failure Charge~~ was assessed, pro-rata based on such Load Serving Entities' Daily Unforced Capacity Obligations.

ATTACHMENT DD-1

Preface: The provisions of this Attachment incorporate into the Tariff for ease of reference the provisions of Schedule 6 of the Reliability Assurance Agreement among Load Serving Entities in the PJM Region. As a result, this Attachment will be modified, subject to FERC approval, so that the terms and conditions set forth herein remain consistent with the corresponding terms and conditions of Schedule 6 of the RAA. Capitalized terms used herein that are not otherwise defined in Attachment DD or elsewhere in this Tariff have the meaning set forth in the RAA.

PROCEDURES FOR DEMAND RESOURCES, ILR, AND ENERGY EFFICIENCY

A. Parties can partially or wholly offset the amounts payable for the Locational Reliability Charge with Demand Resources or ILR that are operated under the direction of the Office of the Interconnection. FRR Entities may reduce their capacity obligations with Demand Resources that are operated under the direction of the Office of the Interconnection and detailed in such entity's FRR Capacity Plan. Demand Resources qualifying under the criteria set forth below may be offered for sale or designated as Self-Supply in the Base Residual Auction, included in an FRR Capacity Plan, or offered for sale in any Incremental Auction, for any Delivery Year for which such resource qualifies. In addition, for Delivery Years through May 31, 2012, resources qualifying under the criteria set forth below may be certified as ILR on behalf of a Party that has not elected the FRR Alternative for a Delivery Year no later than three months prior to the first day of such Delivery Year; provided, however, that for the 2011-2012 Delivery Year only, the ILR certification deadline shall be no later than two months prior to the first day of such Delivery Year. Qualified Demand Resources and ILR generally fall in one of three categories, i.e., Guaranteed Load Drop, Firm Service Level, or Direct Load Control, as further specified in section H and the PJM Manuals. Qualified Demand Resources and ILR may be provided by a Demand Resource Provider or ILR Provider (hereinafter, "Provider"), notwithstanding that such Provider is not a Party to this Agreement. Such Providers must satisfy the requirements in section I and the PJM Manuals.

1. A Party must formally notify, in accordance with the requirements of the PJM Manuals and section G of this schedule as applicable, the Office of the Interconnection of the Demand Resource or ILR that it is placing under the direction of the Office of the Interconnection. A Party must further notify the Office of the Interconnection whether the resource is an ILR resource, a Limited Demand Resource, an Extended Summer Demand Resource or an Annual Demand Resource.

~~2. A Party must agree to reserve, for interruption at the direction of the Office of the Interconnection, at least 10 interruptions per Planning Period.~~

~~3. The Demand Resource or ILR must be available during the summer period of June through September in the corresponding Delivery Year to be certified, offered for sale or Self-Supplied in an auction, or included as a Demand Resource in an FRR Capacity Plan for the corresponding Delivery Year.~~

~~4~~2. A period of no more than 2 hours prior notification must apply to interruptible customers.

~~5~~3. The initiation of load interruption, upon the request of the Office of the Interconnection, must be within the authority of the dispatchers of the Party. No additional approvals should be required.

~~6~~4. The initiation of load reduction upon the request of the Office of the Interconnection is considered an emergency action and must be implementable prior to a voltage reduction.

~~7. A Party must agree to reserve interruptions of at least 6-hour duration. As a minimum, such 6-hour duration for interruptions should be available on weekdays during the 8-hour daily peak window for the appropriate season. There will be no credit given to Parties who choose to provide interruption less than 6 hours and/or exclusive of the above time period.~~

~~8~~5. An entity offering for sale, designating for self-supply, or including in any FRR Capacity Plan any Planned Demand Resource must demonstrate, in accordance with standards and procedures set forth in the PJM Manuals, that such resource shall have the capability to provide a reduction in demand, or otherwise control load, on or before the start of the Delivery Year for which such resource is committed. Providers of Planned Demand Resources must provide a timeline including the milestones, which demonstrates to PJM's satisfaction that the Planned Demand Resources will be available for the start of the Delivery Year, 15 business days prior to a Base Residual Auction or Incremental Auction. PJM may verify the Provider's adherence to the timetable at any time.

~~9~~6. Selection of a Demand Resource in an RPM Auction results in commitment of capacity to the PJM Region. Demand Resources that are so committed must be registered to participate in the Full Program Option or as a Capacity Only resource of the Emergency Load Response program and thus available for dispatch during PJM-declared emergency events.

B. The Unforced Capacity value of a Demand Resource and ILR will be determined as:

the product of the Nominated Value of the Demand Resource, or the Nominated Value of the ILR, times the DR Factor, times the Forecast Pool Requirement. Nominated Values shall be determined and reviewed in accordance with sections J and K, respectively, and the PJM Manuals. The DR Factor is a factor established by the PJM Board with the advice of the Members Committee to reflect the increase in the peak load carrying capability in the PJM Region due to Demand Resources and ILR. Peak load carrying capability is defined to be the peak load that the PJM Region is able to serve at the loss of load expectation defined in the Reliability Principles and Standards. The DR Factor is the increase in the peak load carrying capability in the PJM Region due to Demand Resources and ILR, divided by the total Nominated Value of Demand Resources and ILR in the PJM Region. The DR Factor will be determined using an analytical program that uses a probabilistic approach to determine reliability. The

determination of the DR Factor will consider the reliability of Demand Resources and ILR, the number of interruptions, and the total amount of load reduction.

C. Demand Resources offered and cleared in a Base Residual or Incremental Auction shall receive the corresponding Capacity Resource Clearing Price as determined in such auction, in accordance with Attachment DD of the PJM Tariff. For Delivery Years beginning with the Delivery Year that commences on June 1, 2013, any Demand Resources located in a Zone with multiple LDAs shall receive the Capacity Resource Clearing Price applicable to the location of such resource within such Zone, as identified in such resource's offer. Further, the Demand Resource ~~p~~Provider shall register its resource in the same location within the Zone as specified in its cleared sell offer, and shall be subject to deficiency charges under Attachment DD of this Tariff to the extent it fails to provide the resource in such location consistent with its cleared offer. For either of the Delivery Year commencing on June 1, 2010 or ~~that~~ commencing on June 1, 2012, if the location of a Demand Resource is not specified by a Seller in the Sell Offer on an individual LDA basis in a Zone with multiple LDAs, then Demand Resources cleared by such Seller will be paid a DR Weighted Zonal Resource Clearing Price, determined as follows: (i) for a Zone that includes non-overlapping LDAs, calculated as the weighted average of the Resource Clearing Prices for such LDAs, weighted by the cleared Demand Resources registered by such Seller in each such LDA; or (ii) for a Zone that contains a smaller LDA within a larger LDA, calculated treating the smaller LDA and the remaining portion of the larger LDA as if they were separate LDAs, and weight-averaging in the same manner as (i) above.

D. Certified ILR resources shall receive the Final Zonal ILR Price.

E. The Party, Electric Distributor, Demand Resource Provider, or ILR Provider that establishes a contractual relationship (by contract or tariff rate) with a customer for load reductions is entitled to receive the compensation specified in sections C and D for a committed Demand Resource or certified ILR, notwithstanding that such provider is not the customer's energy supplier.

F. Any Party hereto shall demonstrate that its Demand Resources or ILR performed during periods when load management procedures were invoked by the Office of the Interconnection. The Office of the Interconnection shall adopt and maintain rules and procedures for verifying the performance of such resources, as set forth in section L and the PJM Manuals. In addition, committed Demand Resources and certified ILR that do not comply with the directions of the Office of the Interconnection to reduce load during an emergency shall be subject to the penalty charge set forth in Attachment DD to the PJM Tariff.

G. Parties may elect to place Demand Resources associated with Behind The Meter Generation under the direction of the Office of the Interconnection for a Delivery Year by submitting a Sell Offer for such resource (as Self Supply, or with an offer price) in the Base Residual Auction for such Delivery Year. This election shall remain in effect for the entirety of such Delivery Year. In the event such an election is made, such Behind The Meter Generation will not be netted from load for the purposes of calculating the Daily Unforced Capacity Obligations under this Agreement.

H. PJM recognizes three types of Demand Resource and ILR:

Direct Load Control (DLC) – Load management that is initiated directly by the Provider's market operations center or its agent, employing a communication signal to cycle equipment (typically water heaters or central air conditioners). DLC programs are qualified based on load research and customer subscription data. Providers may rely on the results of load research studies identified in the PJM Manuals to set the per-participant load reduction for DLC programs. Each Provider relying on DLC load management must periodically update its DLC switch operability rates, in accordance with the PJM Manuals.

Firm Service Level (FSL) – Load management achieved by a customer reducing its load to a pre-determined level (the Firm Service Level), upon notification from the Provider's market operations center or its agent.

Guaranteed Load Drop (GLD) – Load management achieved by a customer reducing its load by a pre-determined amount (the Guaranteed Load Drop), upon notification from the Provider's market operations center or its agent. Typically, the load reduction is achieved through running customer-owned backup generators, or by shutting down process equipment.

For each type of Demand Resource and ILR above, there can be two notification periods:

Step 1 (Short Lead Time) – Demand Resource or ILR which must be fully implemented in one hour or less from the time the PJM dispatcher notifies the market operations center of a curtailment event.

Step 2 (Long Lead Time) – Demand Resource or ILR which requires more than one hour but no more than two hours, from the time the PJM dispatcher notifies the market operations center of a curtailment event, to be fully implemented.

I. Each Provider must satisfy (or contract with another LSE, Provider, or EDC to provide) the following requirements:

- A point of contact with appropriate backup to ensure single call notification from PJM and timely execution of the notification process;

- supplemental status reports, detailing Demand Resources and ILR available, as requested by PJM;

- Entry of customer-specific Demand Resource and ILR credit information, for planning and verification purposes, into the designated PJM electronic system.

- Customer-specific compliance and verification information for each PJM-initiated Demand Resource or ILR event, as well as aggregated Provider load drop data for Provider-initiated events, in accordance with established reporting guidelines.

- Load drop estimates for all Demand Resource or ILR events, prepared in accordance with the PJM Manuals.

J. The Nominated Value of each Demand Resource or ILR shall be determined consistent with the process for determination of the capacity obligation for the customer.

The Nominated Value for a Firm Service Level customer will be based on the peak load contribution for the customer, as determined by the 5CP methodology utilized to determine other ICAP obligation values. The maximum Demand Resource or ILR load reduction value for a Firm Service Level customer will be equal to Peak Load Contribution – Firm Contract Level adjusted for system losses.

The Nominated Value for a Guaranteed Load Drop customer will be the guaranteed load drop amount, adjusted for system losses, as established by the customer's contract with the Provider. The maximum credit nominated shall not exceed the customer's Peak Load Contribution.

The Nominated Value for a Direct Load Control program will be based on load research and customer subscription. The maximum value of the program is equal to the approved per-participant load reduction multiplied by the number of active participants, adjusted for system losses. The per-participant impact is to be estimated at long-term average local weather conditions at the time of the summer peak.

Customer-specific Demand Resource or ILR information (EDC account number, peak load, notification period, etc.) will be entered into the designated PJM electronic system to establish credit values. Additional data may be required, as defined in sections K and L.

K. Nominated Values shall be reviewed based on documentation of customer-specific data and Demand Resource or ILR information, to verify the amount of load management available, and to set a maximum allowable Nominated Value. Data is provided by both the zone EDC and the Provider on templates supplied by PJM, and must include the EDC meter number or other unique customer identifier, Peak Load Contribution (5CP), contract firm service level or guaranteed load drop values, applicable loss factor, zone/area location of the load drop, LSE contact information, number of active participants, etc. Such data must be uploaded and approved prior to the first day of the Delivery Year for such resource as a Demand Resource, or certification of such resource as ILR. Providers must provide this information concurrently to host EDCs.

For Firm Service Level and Guaranteed Load Drop customers, the 5CP values, for the zone and affected customers, will be adjusted to reflect an "unrestricted" peak for a zone, based on information provided by the Provider. Load drop levels shall be estimated in accordance with guidelines in the PJM Manuals.

For Direct Load Control programs, the Provider must provide information detailing the number of active participants in each program. Other information on approved DLC programs will be provided by PJM.

L. Compliance is the process utilized to review Provider performance during PJM-initiated Demand Resource and ILR events. The process establishes potential under/over compliance values for the Provider. Compliance ~~is event based, i.e., compliance is verified only if an event occurs between June and September.~~ will be established for each Provider on an event specific basis for the Provider's Demand Resources or ILR dispatched by the Office of the Interconnection during such event.

PJM will establish and communicate reasonable deadlines for the timely submittal of event data to expedite compliance reviews. Compliance reviews will be completed as soon after the event as possible, with the expectation that reviews of a single event will be completed within two months of the end of the month in which the event took place. Providers are responsible for the submittal of compliance information to PJM for each PJM-initiated event during the compliance period. Compliance for Direct Load Control programs will consider only the transmission of the control signal. Providers are required to report the time period (during the Demand Resource and ILR event) that the control signal was actually sent. Compliance is checked on an individual customer basis for FSL, by comparing actual load during the event to the firm service level. Providers must submit actual customer load levels (for the event period) for the compliance report. Compliance is checked on an individual customer basis for GLD, by comparing actual load dropped during the event to the nominated amount of load drop. Providers must submit actual loads and comparison loads for the compliance hours. Comparison loads must be developed from the guidelines in the PJM Manuals, and note which method was employed.

Compliance is averaged over the full hours of a ~~Demand Resource and ILR~~load management event, for each customer or DLC program dispatched by the Office of the Interconnection. Demand Resource or ILR ~~customers~~ resources may not reduce their load below zero (i.e., export energy into the system). No compliance credit will be given for an incremental load drop below zero. Compliance will be totaled over all FSL and GLD customers and DLC programs to determine a net compliance position for the event for each Provider by Zone, for all Demand Resources committed and ILR Certified by such Provider and dispatched by the Office of the Interconnection in the zone. Deficiencies shall be as further determined in accordance with section 11 of Schedule DD to the PJM Tariff.

M. Energy Efficiency Resources

1. An Energy Efficiency Resource is a project, including installation of more efficient devices or equipment or implementation of more efficient processes or systems, exceeding then-current building codes, appliance standards, or other relevant standards, designed to achieve a continuous (during peak periods as described herein) reduction in electric energy consumption *at the End-Use Customer's retail site* that is not reflected in the peak load forecast prepared for the Delivery Year for which the Energy Efficiency Resource is proposed, and that is fully implemented at all times during such Delivery Year, without any requirement of notice, dispatch, or operator intervention.

2. An Energy Efficiency Resource may be offered as a Capacity Resource in the Base Residual or Incremental Auctions for any Delivery Year beginning on or after June 1, 2012. No later than 30 days prior to the auction in which the resource is to be offered, the

Capacity Market Seller shall submit to the Office of the Interconnection a notice of intent to offer the resource into such auction and a measurement and verification plan. The notice of intent shall include all pertinent project design data, including but not limited to the peak-load contribution of affected customers, a full description of the equipment, device, system or process intended to achieve the load reduction, the load reduction pattern, the project location, the project development timeline, and any other relevant data. Such notice also shall state the seller's proposed Nominated Energy Efficiency Value, which shall be the expected average load reduction between the hour ending 15:00 EPT and the hour ending 18:00 EPT during all days from June 1 through August 31, inclusive, of such Delivery Year that is not a weekend or federal holiday. The measurement and verification plan shall describe the methods and procedures, consistent with the PJM Manuals, for determining the amount of the load reduction and confirming that such reduction is achieved. The Office of the Interconnection shall determine, upon review of such notice, the Nominated Energy Efficiency Value that may be offered in the Reliability Pricing Model Auction.

3. An Energy Efficiency Resource may be offered with a price offer or as Self-Supply. If an Energy Efficiency Resource clears the auction, it shall receive the applicable Capacity Resource Clearing Price, subject to section 5 below. A Capacity Market Seller offering an Energy Efficiency Resource must comply with all applicable credit requirements as set forth in Attachment Q to the PJM Tariff. The Unforced Capacity value of an Energy Efficiency Resource offered into an RPM Auction shall be the Nominated Energy Efficiency value times the DR Factor and the Forecast Pool Requirement.

4. An Energy Efficiency Resource that clears an auction for a Delivery Year may be offered in auctions for up to three additional consecutive Delivery Years, but shall not be assured of clearing in any such auction; provided, however, an Energy Efficiency Resource may not be offered for any Delivery Year in which any part of the peak season is beyond the expected life of the equipment, device, system, or process providing the expected load reduction; and provided further that a Capacity Market Seller that offers and clears an Energy Efficiency Resource in a BRA may elect a New Entry Price Adjustment on the same terms as set forth in section 5.14(c) of this Attachment DD.

5. For every Energy Efficiency Resource clearing an RPM Auction for a Delivery Year, the Capacity Market Seller shall submit to the Office of the Interconnection, by no later than 30 days prior to each Auction an updated project status and measurement and verification plan subject to the criteria set forth in the PJM Manuals.

6. For every Energy Efficiency Resource clearing an RPM Auction for a Delivery Year, the Capacity Market Seller shall submit to the Office of the Interconnection, by no later than the start of such Delivery Year, an updated project status and detailed measurement and verification data meeting the standards for precision and accuracy set forth in the PJM Manuals. The final value of the Energy Efficiency Resource during such Delivery Year shall be as determined by the Office of the Interconnection based on the submitted data.

7. The Office of the Interconnection may audit, at the Capacity Market Seller's expense, any Energy Efficiency Resource committed to the PJM Region. The audit may be conducted any time including the Performance Hours of the Delivery Year.

ARTICLE 1 -- DEFINITIONS

Unless the context otherwise specifies or requires, capitalized terms used herein shall have the respective meanings assigned herein or in the Schedules hereto for all purposes of this Agreement (such definitions to be equally applicable to both the singular and the plural forms of the terms defined). Unless otherwise specified, all references herein to Articles, Sections or Schedules, are to Articles, Sections or Schedules of this Agreement. As used in this Agreement:

1.1 Agreement

Agreement shall mean this Reliability Assurance Agreement, together with all Schedules hereto, as amended from time to time.

1.1A Annual Demand Resource

Annual Demand Resource shall mean a resource that is placed under the direction of the Office of the Interconnection during the Delivery Year, and will be available for an unlimited number of interruptions during such Delivery Year by the Office of the Interconnection, and will be capable of maintaining each such interruption for at least a 10-hour duration between the hours of 10:00AM to 10:00PM Eastern Prevailing Time for the months of June through October and the following May, and 6:00AM through 9:00PM Eastern Prevailing Time for the months of November through April unless there is an Office of the Interconnection approved maintenance outage during October through April. The Annual Demand Resource must be available in the corresponding Delivery year to be offered for sale or Self-Supplied in an RPM Auction, or included as an Annual Demand Resource in an FRR Capacity Plan for the corresponding Delivery Year.

1 .2 Applicable Regional Reliability Council

Applicable Regional Reliability Council shall have the same meaning as in the PJM Tariff.

1.3 Base Residual Auction

Base Residual Auction shall have the same meaning as in Attachment DD to the PJM Tariff.

1.4 Behind The Meter Generation

Behind The Meter Generation shall mean a generating unit that delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities consented to such use of the distribution facilities and such consent has been demonstrated to the satisfaction of the Office of the Interconnection; provided, however, that Behind The Meter Generation does not include (i) at any time, any portion of such generating unit's capacity that is designated as a Capacity Resource or (ii) in any hour, any

portion of the output of such generating unit that is sold to another entity for consumption at another electrical location or into the PJM Interchange Energy Market.

1.5 Black Start Capability

Black Start Capability shall mean the ability of a generating unit or station to go from a shutdown condition to an operating condition and start delivering power without assistance from the power system.

1.6 Capacity Emergency Transfer Objective ("CETO")

Capacity Emergency Transfer Objective ("CETO") shall mean the amount of electric energy that a given area must be able to import in order to remain within a loss of load expectation of one event in 25 years when the area is experiencing a localized capacity emergency, as determined in accordance with the PJM Manuals. Without limiting the foregoing, CETO shall be calculated based in part on EFORD determined in accordance with Paragraph C of Schedule 5.

1.7 Capacity Emergency Transmission Limit ("CETL")

Capacity Emergency Transmission Limit ("CETL") shall mean the capability of the transmission system to support deliveries of electric energy to a given area experiencing a localized capacity emergency as determined in accordance with the PJM Manuals.

1.8 Capacity Resources

Capacity Resources shall mean megawatts of (i) net capacity from existing or Planned Generation Capacity Resources meeting the requirements of Schedules 9 and 10 that are or will be owned by or contracted to a Party and that are or will be committed to satisfy that Party's obligations under this Agreement, or to satisfy the reliability requirements of the PJM Region, for a Delivery Year; (ii) net capacity from existing or Planned Generation Capacity Resources within the PJM Region not owned or contracted for by a Party which are accredited to the PJM Region pursuant to the procedures set forth in Schedules 9 and 10; and (iii) load reduction capability provided by Demand Resources, Energy Efficiency Resources, or ILR that are accredited to the PJM Region pursuant to the procedures set forth in Schedule 6.

1.9 Capacity Transfer Right

Capacity Transfer Right shall have the meaning specified in Attachment DD to the PJM Tariff.

1.10 Control Area

Control Area shall mean an electric power system or combination of electric power systems bounded by interconnection metering and telemetry to which a common generation control scheme is applied in order to:

(a) match the power output of the generators within the electric power system(s) and energy purchased from entities outside the electric power system(s), with the load within the electric power system(s);

(b) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice;

(c) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice and the criteria of NERC and Applicable Regional Reliability Councils;

(d) maintain power flows on transmission facilities within appropriate limits to preserve reliability; and

(e) provide sufficient generating capacity to maintain operating reserves in accordance with Good Utility Practice.

1.11 Daily Unforced Capacity Obligation

Daily Unforced Capacity Obligation shall have the meaning set forth in Schedule 8 or, as to an FRR Entity, in Schedule 8.1.

1.12 Delivery Year

Delivery Year shall mean a Planning Period for which a Capacity Resource is committed pursuant to the auction procedures specified in Attachment DD to the Tariff or pursuant to an FRR Capacity Plan.

1.13 Demand Resource

Demand Resource or "DR" shall mean a Limited Demand Resource, Extended Summer Demand Resource, or Annual Demand R~~r~~esource with a demonstrated capability to provide a reduction in demand or otherwise control load in accordance with the requirements of Schedule 6 that offers and that clears load reduction capability in a Base Residual Auction or Incremental Auction or that is committed through an FRR Capacity Plan. As set forth in Schedule 6, a Limited Demand Resource, Extended Summer Demand Resource or Annual Demand Resource may be an existing demand response resource or a Planned Demand Resource.

1.14 Demand Resource Provider

Demand Resource Provider shall have the meaning specified in Attachment DD to the PJM Tariff.

1.15 DR Factor

DR Factor shall mean that factor approved from time to time by the PJM Board used to determine the unforced capacity value of a Demand Resource or ILR in accordance with Schedule 6.

1.16 East RAA

East RAA shall mean that certain Reliability Assurance Agreement among Load-Serving Entities in the PJM Region, PJM Rate Schedule FERC No. 27.

1.17 Electric Cooperative

Electric Cooperative shall mean an entity owned in cooperative form by its customers that is engaged in the generation, transmission, and/or distribution of electric energy.

1.18 Electric Distributor

Electric Distributor shall mean an entity that owns or leases with rights equivalent to ownership electric distribution facilities that are providing electric distribution service to electric load within the PJM Region.

1.19 Emergency

Emergency shall mean (i) an abnormal system condition requiring manual or automatic action to maintain system frequency, or to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property; or (ii) a fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel; or (iii) a condition that requires implementation of emergency procedures as defined in the PJM Manuals.

1.20 End-Use Customer

End-Use Customer shall mean a Member that is a retail end-user of electricity within the PJM Region.

1.20A Energy Efficiency Resource

Energy Efficiency Resource shall mean a project, including installation of more efficient devices or equipment or implementation of more efficient processes or systems, meeting the requirements of Schedule 6 of this Agreement and exceeding then-current building codes, appliance standards, or other relevant standards, designed to achieve a continuous (during peak periods as described in Schedule 6 and the PJM Manuals) reduction in electric energy consumption that is not reflected in the peak load forecast prepared for the Delivery Year for which the Energy Efficiency Resource is proposed, and that is fully implemented at all times during such Delivery Year, without any requirement of notice, dispatch, or operator intervention.

1.20B Existing Generation Capacity Resource

Existing Generation Capacity Resource shall mean, for purposes of the must-offer requirement and mitigation of offers for any RPM Auction for a Delivery Year, a Generation Capacity Resource that, as of the date on which bidding commences for such auction: (a) is in service; or (b) is not yet in service, but has cleared any RPM Auction for any prior Delivery Year. Notwithstanding the foregoing, a Generation Capacity Resource for which construction has not commenced and which would otherwise have been treated as a Planned Generation Capacity Resource but for the fact that it was bid into RPM Auctions for at least two consecutive Delivery Years, and cleared the last such auction only because it was considered existing and its mitigated offer cap was accepted when its price offer would not have otherwise been accepted, shall be deemed to be a Planned Generation Capacity Resource. A Generation Capacity Resource shall be deemed to be in service if interconnection service has ever commenced (for resources located in the PJM Region), or if it is physically and electrically interconnected to an external Control Area and is in full commercial operation (for resources not located in the PJM Region). The additional megawatts of a Generation Capacity Resource that is being, or has been, modified to increase the number of megawatts of available installed capacity thereof shall not be deemed to be an Existing Generation Capacity Resource until such time as those megawatts (a) are in service; or (b) are not yet in service, but have cleared any RPM Auction for any prior Delivery Year.

1.20C Extended Summer Demand Resource

Extended Summer Demand Resource shall mean a resource that is placed under the direction of the Office of the Interconnection and that will be available– June through October and the following May, and will be available for an unlimited number of interruptions during such months by the Office of the Interconnection, and will be capable of maintaining each such interruption for at least a 10-hour duration between the hours of 10:00AM to 10:00PM Eastern Prevailing Time. The Extended Summer Demand Resource must be available June through October and the following May in the corresponding Delivery Year to be offered for sale or Self-Supplied in an RPM Auction, or included as an Extended Summer Demand Resource in an FRR Capacity Plan for the corresponding Delivery Year.

1.21 Facilities Study Agreement

Facilities Study Agreement shall have the same meaning as in the PJM Tariff

1.22 FERC

FERC shall mean the Federal Energy Regulatory Commission or any successor federal agency, commission or department.

1.23 Firm Point-To-Point Transmission Service

Firm Point-To-Point Transmission Service shall mean Firm Transmission Service provided pursuant to the rates, terms and conditions set forth in Part II of the PJM Tariff.

1.24 Firm Transmission Service

Firm Transmission Service shall mean transmission service that is intended to be available at all times to the maximum extent practicable, subject to an Emergency, an unanticipated failure of a facility, or other event beyond the control of the owner or operator of the facility or the Office of the Interconnection.

1.25 Fixed Resource Requirement Alternative or FRR Alternative

Fixed Resource Requirement Alternative or FRR Alternative shall mean an alternative method for a Party to satisfy its obligation to provide Unforced Capacity hereunder, as set forth in Schedule 8.1 to this Agreement.

1.26 Forecast Pool Requirement

Forecast Pool Requirement shall mean the amount equal to one plus the unforced reserve margin (stated as a decimal number) for the PJM Region required pursuant to this Agreement, as approved by the PJM Board pursuant to Schedule 4.1.

1.27 Forecast RTO ILR Obligation

Forecast RTO ILR Obligation shall have the same meaning as in the PJM Tariff.

1.28 Forecast Zonal ILR Obligation

Forecast Zonal ILR Obligation shall have the same meaning as in the PJM Tariff.

1.29 FRR Capacity Plan

FRR Capacity Plan shall mean a long-term plan for the commitment of Capacity Resources to satisfy the capacity obligations of a Party that has elected the FRR Alternative, as more fully set forth in Schedule 8.1 to this Agreement.

1.30 FRR Entity

FRR Entity shall mean, for the duration of such election, a Party that has elected the FRR Alternative hereunder.

1.31 FRR Service Area

FRR Service Area shall mean (a) the service territory of an IOU as recognized by state law, rule or order; (b) the service area of a Public Power Entity or Electric Cooperative as recognized by franchise or other state law, rule, or order; or (c) a separately identifiable geographic area that is: (i) bounded by wholesale metering, or similar appropriate multi-site aggregate metering, that is visible to, and regularly reported to, the Office of the Interconnection,

or that is visible to, and regularly reported to an Electric Distributor and such Electric Distributor agrees to aggregate the load data from such meters for such FRR Service Area and regularly report such aggregated information, by FRR Service Area, to the Office of the Interconnection; and (ii) for which the FRR Entity has or assumes the obligation to provide capacity for all load (including load growth) within such area excluding the load of Single-Customer LSEs that are FRR Entities. In the event that the service obligations of an Electric Cooperative or Public Power Entity are not defined by geographic boundaries but by physical connections to a defined set of customers, the FRR Service Area in such circumstances shall be defined as all customers physically connected to transmission or distribution facilities of such Electric Cooperative or Public Power Entity within an area bounded by appropriate wholesale aggregate metering as described above.

1.32 Full Requirements Service

Full Requirements Service shall mean wholesale service to supply all of the power needs of a Load Serving Entity to serve end-users within the PJM Region that are not satisfied by its own generating facilities.

1.33 Generation Capacity Resource

Generation Capacity Resource shall mean a generation unit, or the right to capacity from a specified generation unit, that meets the requirements of Schedules 9 and 10 of this Agreement. A Generation Capacity Resource may be an *E*xisting Generation Capacity Resource or a Planned Generation Capacity Resource.

1.34 Generation Owner

Generation Owner shall mean a Member that owns or leases with rights equivalent to ownership facilities for the generation of electric energy that are located within the PJM Region. Purchasing all or a portion of the output of a generation facility shall not be sufficient to qualify a Member as a Generation Owner.

1.35 Generator Forced Outage

Generator Forced Outage shall mean an immediate reduction in output or capacity or removal from service, in whole or in part, of a generating unit by reason of an Emergency or threatened Emergency, unanticipated failure, or other cause beyond the control of the owner or operator of the facility, as specified in the relevant portions of the PJM Manuals. A reduction in output or removal from service of a generating unit in response to changes in market conditions shall not constitute a Generator Forced Outage.

1.36 Generator Maintenance Outage

Generator Maintenance Outage shall mean the scheduled removal from service, in whole or in part, of a generating unit in order to perform repairs on specific components of the facility, if removal of the facility qualifies as a maintenance outage pursuant to the PJM Manuals.

1.37 Generator Planned Outage

Generator Planned Outage shall mean the scheduled removal from service, in whole or in part, of a generating unit for inspection, maintenance or repair with the approval of the Office of the Interconnection in accordance with the PJM Manuals.

1.38 Good Utility Practice

Good Utility Practice shall mean any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather is intended to include acceptable practices, methods, or acts generally accepted in the region.

1.39 ILR Provider

ILR Provider shall have the meaning specified in Attachment DD to the PJM Tariff.

1.40 Incremental Auction

Incremental Auction shall mean the First Incremental Auction, the Second Incremental Auction, the Third Incremental Auction, or the Conditional Incremental Auction, each as defined in Attachment DD to the PJM Tariff.

1.41 Interconnection Agreement

Interconnection Agreement shall have the same meaning as in the PJM Tariff.

1.42 Interruptible Load for Reliability, or ILR

Interruptible Load for Reliability, or ILR, shall mean a resource with a demonstrated capability to provide a reduction in demand or otherwise control load in accordance with the requirements of Schedule 6 that is certified by PJM no later than three months prior to a Delivery Year. At a minimum, ILR shall be available for interruption for at least 10 times during the summer period of June through September in the Delivery Year, and will be capable of maintaining each such interruption for at least a 6-hour duration. At a minimum, the ILR shall be available for such interruptions on weekdays, other than NERC holidays, from 12:00PM (noon) to 8:00PM Eastern Prevailing Time in the corresponding Delivery Year.

1.43 IOU

IOU shall mean an investor-owned utility with substantial business interest in owning and/or operating electric facilities in any two or more of the following three asset categories: generation, transmission, distribution.

1.43A Limited Demand Resource

Limited Demand Resource shall mean a resource that is placed under the direction of the Office of the Interconnection and that will, at a minimum, be available for interruption for at least 10 times during the summer period of June through September in the Delivery Year, and will be capable of maintaining each such interruption for at least a 6-hour duration. At a minimum, the Limited Demand Resource shall be available for such interruptions on weekdays, other than NERC holidays, from 12:00PM (noon) to 8:00PM Eastern Prevailing Time. The Limited Demand Resource must be available during the summer period of June through September in the corresponding Delivery Year to be offered for sale or Self-Supplied in an RPM Auction, or included as a Limited Demand Resource in an FRR Capacity Plan for the corresponding Delivery Year.

1.44 Load Serving Entity or LSE

Load Serving Entity or LSE shall mean any entity (or the duly designated agent of such an entity), including a load aggregator or power marketer, (i) serving end-users within the PJM Region, and (ii) that has been granted the authority or has an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Region. Load Serving Entity shall include any end-use customer that qualifies under state rules or a utility retail tariff to manage directly its own supply of electric power and energy and use of transmission and ancillary services.

1.45 Locational Reliability Charge

Locational Reliability Charge shall mean the charge determined pursuant to Schedule 8.

1.46 Markets and Reliability Committee

Markets and Reliability Committee shall mean the committee established pursuant to the Operating Agreement as a Standing Committee of the Members Committee.

1.47 Member

Member shall mean an entity that satisfies the requirements of Sections 1.24 and 11.6 of the PJM Operating Agreement. In accordance with Article 4 of this Agreement, each Party to this Agreement also is a Member.

1.48 Members Committee

Members Committee shall mean the committee specified in Section 8 of the PJM Operating Agreement composed of the representatives of all the Members.

1.49 NERC

NERC shall mean the North American Electric Reliability Council or any successor thereto.

1.50 Network Resources

Network Resources shall have the meaning set forth in the PJM Tariff.

1.51 Network Transmission Service

Network Transmission Service shall mean transmission service provided pursuant to the rates, terms and conditions set forth in Part III of the PJM Tariff or transmission service comparable to such service that is provided to a Load Serving Entity that is also a Transmission Owner (as that term is defined in the PJM Tariff).

1.52 Nominated Demand Resource Value

Nominated Demand Resource Value shall have the meaning specified in Attachment DD to the PJM Tariff.

1.53 Nominated ILR Value

Nominated ILR Value shall have the meaning specified in Attachment DD to the PJM Tariff.

1.54 Non-Retail Behind the Meter Generation

Non-Retail Behind the Meter Generation shall mean Behind the Meter Generation that is used by municipal electric systems, electric cooperatives, and electric distribution companies to serve load.

1.55 Obligation Peak Load

Obligation Peak Load shall have the meaning specified in Schedule 8 of this Agreement.

1.56 Office of the Interconnection

Office of the Interconnection shall mean the employees and agents of PJM Interconnection, L.L.C., subject to the supervision and oversight of the PJM Board, acting pursuant to the Operating Agreement.

1.57 Operating Agreement of PJM Interconnection, L.L.C. or Operating Agreement

Operating Agreement of PJM Interconnection, L.L.C. or Operating Agreement shall mean that certain agreement, dated April 1, 1997 and as amended and restated June 2, 1997 and as amended from time to time thereafter, among the members of the PJM Interconnection, L.L.C.

1.58 Operating Reserve

Operating Reserve shall mean the amount of generating capacity scheduled to be available for a specified period of an operating day to ensure the reliable operation of the PJM Region, as specified in the PJM Manuals.

1.59 Other Supplier

Other Supplier shall mean a Member that is (i) a seller, buyer or transmitter of electric capacity or energy in, from or through the PJM Region, and (ii) is not a Generation Owner, Electric Distributor, Transmission Owner or End-Use Customer.

1.60 Partial Requirements Service

Partial Requirements Service shall mean wholesale service to supply a specified portion, but not all, of the power needs of a Load Serving Entity to serve end-users within the PJM Region that are not satisfied by its own generating facilities.

1.61 Percentage Internal Resources Required

Percentage Internal Resources Required shall mean, for purposes of an FRR Capacity Plan, the percentage of the LDA Reliability Requirement for an LDA that must be satisfied with Capacity Resources located in such LDA.

1.62 Party

Party shall mean an entity bound by the terms of this Agreement.

1.63 PJM

PJM shall mean the PJM Board and the Office of the Interconnection.

1.64 PJM Board

PJM Board shall mean the Board of Managers of the PJM Interconnection, L.L.C., acting pursuant to the Operating Agreement.

1.65 PJM Manuals

PJM Manuals shall mean the instructions, rules, procedures and guidelines established by the Office of the Interconnection for the operation, planning and accounting requirements of the PJM Region.

1.66 PJM Open Access Transmission Tariff or PJM Tariff

PJM Open Access Transmission Tariff or PJM Tariff shall mean the tariff for transmission service within the PJM Region, as in effect from time to time, including any schedules, appendices, or exhibits attached thereto.

1.67 PJM Region

PJM Region shall have the same meaning as provided in the Operating Agreement.

1.68 PJM Region Installed Reserve Margin

PJM Region Installed Reserve Margin shall mean the percent installed reserve margin for the PJM Region required pursuant to this Agreement, as approved by the PJM Board pursuant to Schedule 4.1.

1.69 Planned Demand Resource

Planned Demand Resource shall mean a Demand Resource that does not currently have the capability to provide a reduction in demand or to otherwise control load, but that is scheduled to be capable of providing such reduction or control on or before the start of the Delivery Year for which such resource is to be committed, as determined in accordance with the requirements of Schedule 6.

1.69A Planned External Generation Capacity Resource

Planned External Generation Capacity Resource shall mean a proposed Generation Capacity Resource, or a proposed increase in the capability of a Generation Capacity Resource, that (a) is to be located outside the PJM Region, (b) participates in the generation interconnection process of a Control Area external to PJM, (c) is scheduled to be physically and electrically interconnected to the transmission facilities of such Control Area on or before the first day of the Delivery Year for which such resource is to be committed to satisfy the reliability requirements of the PJM Region, and (d) is in full commercial operation prior to the first day of such Delivery Year, such that it is sufficient to provide the Installed Capacity set forth in the Sell Offer forming the basis of such resource's commitment to the PJM Region. Prior to participation in any Reliability Pricing Model Auction for such Delivery Year, the Capacity Market Seller must demonstrate that it has executed an interconnection agreement (functionally equivalent to a System Impact Study Agreement under the PJM Tariff for Base Residual Auction and an Interconnection Service Agreement under the PJM Tariff for Incremental Auction) with the transmission owner to whose transmission facilities or distribution facilities the resource is being directly connected, and if applicable the transmission provider. A Planned External Generation Capacity Resource must provide evidence to PJM that it has been studied as a Network

Resource, or such other similar interconnection product in such external Control Area, must provide contractual evidence that it has applied for or purchased transmission service to be deliverable to the PJM border, and must provide contractual evidence that it has applied for transmission service to be deliverable to the bus at which energy is to delivered, the agreements for which must have been executed prior to participation in any Reliability Pricing Model Auction for such Delivery Year. An External Generation Capacity Resource shall cease to be considered a Planned External Generation Capacity Resource as of the *earlier of (i) the* date that interconnection service commences *as to such resource; or (ii) the resource has cleared an RPM Auction, in which case it shall become an Existing Generation Capacity Resource for purposes of the mitigation of offers for any RPM Auction for all subsequent Delivery Years.*

1.70 Planned Generation Capacity Resource

Planned Generation Capacity Resource shall mean a Generation Capacity Resource participating in the generation interconnection process under *P*art IV, *S*ubpart A of the PJM Tariff, for which*: (i)* Interconnection Service is scheduled to commence on or before the first day of the Delivery Year for which such resource is to be committed *to RPM or to an FRR Plan; (ii)* a System Impact Study Agreement has been executed prior to the Base Residual Auction for such Delivery Year*; (iii)* an Interconnection Service Agreement has been executed prior to any Incremental Auction for such Delivery Year *in which such resource plans to participate; and (iv) no megawatts of capacity have cleared an RPM Auction for any prior Delivery Year. For purposes of the must-offer requirement and mitigation of offers for any RPM Auction for a Delivery Year, a* Generation Capacity Resource shall cease to be considered a Planned Generation Capacity Resource as of the *earlier of the* date that Interconnection Service commences as to such resource*; or (ii) the resource has cleared an RPM Auction for any Delivery Year, in which case it shall become an Existing Generation Capacity Resource for any RPM Auction for all subsequent Delivery Years. Notwithstanding the foregoing, a Generation Capacity Resource for which construction has not commenced and which would otherwise have been treated as a Planned Generation Capacity Resource but for the fact that it was bid into RPM Auctions for at least two consecutive Delivery Years, and cleared the last such auction only because it was considered existing and its mitigated offer cap was accepted when its price offer would not have otherwise been accepted, shall be deemed to be a Planned Generation Capacity Resource*.

1.71 Planning Period

Planning Period shall mean the 12 months beginning June 1 and extending through May 31 of the following year, or such other period approved by the Members Committee.

1.72 Public Power Entity

Public Power Entity shall mean any agency, authority, or instrumentality of a state or of a political subdivision of a state, or any corporation wholly owned by any one or more of the foregoing, that is engaged in the generation, transmission, and/or distribution of electric energy.

1.73 Qualifying Transmission Upgrades

Qualifying Transmission Upgrades shall have the meaning specified in Attachment DD to the PJM Tariff.

1.74 Markets and Reliability Committee

Markets and Reliability Committee shall mean the committee established pursuant to the Operating Agreement as a Standing Committee of the Members Committee.

1.75 Reliability Principles and Standards

Reliability Principles and Standards shall mean the principles and standards established by NERC or an Applicable Regional Reliability Council to define, among other things, an acceptable probability of loss of load due to inadequate generation or transmission capability, as amended from time to time.

1.76 Required Approvals

Required Approvals shall mean all of the approvals required for this Agreement to be modified or to be terminated, in whole or in part, including the acceptance for filing by FERC and every other regulatory authority with jurisdiction over all or any part of this Agreement.

1.77 Self-Supply

Self Supply shall have the meaning provided in Attachment DD to the PJM Tariff.

1.78 Single-Customer LSE

Single-Customer LSE shall mean a Party that (a) serves only retail customers that are Affiliates of such Party; (b) owns or controls generation facilities located at one or more of the retail customer location(s) that in the aggregate satisfy at least 50% of such Party's Unforced Capacity obligations; and (c) serves retail customers having (i) an Obligation Peak Load at all locations of no less than 100 MW, where such peak load of each such location is no less than 10 MW; or (ii) an Obligation Peak Load at each location served of no less than 25 MW.

1.79 South RAA

South RAA shall mean that certain Reliability Assurance Agreement among Load-Serving Entities in the PJM South Region, on file with FERC as PJM Rate Schedule FERC No. 40.

1.80 State Consumer Advocate

State Consumer Advocate shall mean a legislatively created office from any State, all or any part of the territory of which is within the PJM Region, and the District of Columbia

established, inter alia, for the purpose of representing the interests of energy consumers before the utility regulatory commissions of such states and the District of Columbia and the FERC.

1.81 State Regulatory Structural Change

State Regulatory Structural Change shall mean as to any Party, a state law, rule, or order that, after September 30, 2006, initiates a program that allows retail electric consumers served by such Party to choose from among alternative suppliers on a competitive basis, terminates such a program, expands such a program to include classes of customers or localities served by such Party that were not previously permitted to participate in such a program, or that modifies retail electric market structure or market design rules in a manner that materially increases the likelihood that a substantial proportion of the customers of such Party that are eligible for retail choice under such a program (a) that have not exercised such choice will exercise such choice; or (b) that have exercised such choice will no longer exercise such choice, including for example, without limitation, mandating divestiture of utility-owned generation or structural changes to such Party's default service rules that materially affect whether retail choice is economically viable.

1.82 Threshold Quantity

Threshold Quantity shall mean, as to any FRR Entity for any Delivery Year, the sum of (a) the Unforced Capacity equivalent (determined using the Pool-Wide Average EFORD) of the Installed Reserve Margin for such Delivery Year multiplied by the Preliminary Forecast Peak Load for which such FRR Entity is responsible under its FRR Capacity Plan for such Delivery Year, plus (b) the lesser of (i) 3% of the Unforced Capacity amount determined in (a) above or (ii) 450 MW. If the FRR Entity is not responsible for all load within a Zone, the Preliminary Forecast Peak Load for such entity shall be the FRR Entity's Obligation Peak Load last determined prior to the Base Residual Auction for such Delivery Year, times the Base FRR Scaling Factor (as determined in accordance with Schedule 8.1).

1.83 Transmission Facilities

Transmission Facilities shall mean facilities that: (i) are within the PJM Region; (ii) meet the definition of transmission facilities pursuant to FERC's Uniform System of Accounts or have been classified as transmission facilities in a ruling by FERC addressing such facilities; and (iii) have been demonstrated to the satisfaction of the Office of the Interconnection to be integrated with the PJM Region transmission system and integrated into the planning and operation of the PJM Region to serve all of the power and transmission customers within the PJM Region.

1.84 Transmission Owner

Transmission Owner shall mean a Member that owns or leases with rights equivalent to ownership Transmission Facilities. Taking transmission service shall not be sufficient to qualify a Member as a Transmission Owner.

1.85 Transmission Owners Agreement

Transmission Owners Agreement shall mean that certain Consolidated Transmission Owners Agreement, dated as of December 15, 2005 and as amended from time to time, among transmission owners within the PJM Region.

1.86 Unforced Capacity

Unforced Capacity shall mean installed capacity rated at summer conditions that is not on average experiencing a forced outage or forced derating, calculated for each Capacity Resource on the 12-month period from October to September without regard to the ownership of or the contractual rights to the capacity of the unit.

1.87 West RAA

West RAA shall mean the "PJM West Reliability Assurance Agreement among the Load Serving Entities in the PJM West Region," on file with FERC as PJM Rate Schedule FERC No. 32.

1.88 Zonal Capacity Price

Zonal Capacity Price shall mean the price of Unforced Capacity in a Zone that an LSE that has not elected the FRR Alternative is obligated to pay for a Delivery Year as determined pursuant to Attachment DD to the PJM Tariff.

1.89 Zone

Zone shall mean an area within the PJM Region, as set forth in Schedule 15, or as such areas may be (i) combined as a result of mergers or acquisitions or (ii) added as a result of the expansion of the boundaries of the PJM Region. A Zone shall include any Non-Zone Network Load (as defined in the PJM Tariff) located outside the PJM Region that is served from such Zone under Schedule H-A of the PJM Tariff.

SCHEDULE 6

PROCEDURES FOR DEMAND RESOURCES, ILR, AND ENERGY EFFICIENCY

A. Parties can partially or wholly offset the amounts payable for the Locational Reliability Charge with Demand Resources or ILR that are operated under the direction of the Office of the Interconnection. FRR Entities may reduce their capacity obligations with Demand Resources that are operated under the direction of the Office of the Interconnection and detailed in such entity's FRR Capacity Plan. Demand Resources qualifying under the criteria set forth below may be offered for sale or designated as Self-Supply in the Base Residual Auction, included in an FRR Capacity Plan, or offered for sale in any Incremental Auction, for any Delivery Year for which such resource qualifies. In addition, for Delivery Years through May 31, 2012, resources qualifying under the criteria set forth below may be certified as ILR on behalf of a Party that has not elected the FRR Alternative for a Delivery Year no later than three months prior to the first day of such Delivery Year; provided, however, that for the 2011-2012 Delivery Year only, the ILR certification deadline shall be no later than two months prior to the first day of such Delivery Year. Qualified Demand Resources and ILR generally fall in one of three categories, i.e., Guaranteed Load Drop, Firm Service Level, or Direct Load Control, as further specified in section H and the PJM Manuals. Qualified Demand Resources and ILR may be provided by a Demand Resource Provider or ILR Provider (hereinafter, "Provider"), notwithstanding that such Provider is not a Party to this Agreement. Such Providers must satisfy the requirements in section I and the PJM Manuals.

1. A Party must formally notify, in accordance with the requirements of the PJM Manuals and paragraph G of this schedule as applicable, the Office of the Interconnection of the Demand Resource or ILR that it is placing under the direction of the Office of the Interconnection. A Party must further notify the Office of the Interconnection whether the resource is an ILR resource, a Limited Demand Resource, an Extended Summer Demand Resource or an Annual Demand Resource.

~~2. A Party must agree to reserve, for interruption at the direction of the Office of the Interconnection, at least 10 interruptions per Planning Period.~~

~~3. The Demand Resource or ILR must be available during the summer period of June through September in the corresponding Delivery Year to be certified, offered for sale or Self-Supplied in an auction, or included as a Demand Resource in an FRR Capacity Plan for the corresponding Delivery Year.~~

~~4~~2. A period of no more than 2 hours prior notification must apply to interruptible customers.

~~5~~3. The initiation of load interruption, upon the request of the Office of the Interconnection, must be within the authority of the dispatchers of the Party. No additional approvals should be required.

~~6~~4. The initiation of load reduction upon the request of the Office of the Interconnection is considered an emergency action and must be implementable prior to a voltage reduction.

~~7. A Party must agree to reserve interruptions of at least 6-hour duration. As a minimum, such 6-hour duration for interruptions should be available on weekdays during the 8-hour daily peak window for the appropriate season. There will be no credit given to Parties who choose to provide interruption less than 6 hours and/or exclusive of the above time period.~~

~~8~~5. An entity offering for sale, designating for self-supply, or including in any FRR Capacity Plan any Planned Demand Resource must demonstrate, in accordance with standards and procedures set forth in the PJM Manuals, that such resource shall have the capability to provide a reduction in demand, or otherwise control load, on or before the start of the Delivery Year for which such resource is committed. Providers of Planned Demand Resources must provide a timeline including the milestones, which demonstrates to PJM's satisfaction that the Planned Demand Resources will be available for the start of the Delivery Year, 15 business days prior to a Base Residual Auction or Incremental Auction. PJM may verify the Provider's adherence to the timetable at any time.

~~9~~6. Selection of a Demand Resource in an RPM Auction results in commitment of capacity to the PJM Region. Demand Resources that are so committed must be registered to participate in the Full Program Option or as a Capacity Only resource of the Emergency Load Response program and thus available for dispatch during PJM-declared emergency events.

B. The Unforced Capacity value of a Demand Resource and ILR will be determined as:

the product of the Nominated Value of the Demand Resource, or the Nominated Value of the ILR, times the DR Factor, times the Forecast Pool Requirement. Nominated Values shall be determined and reviewed in accordance with sections J and K, respectively, and the PJM Manuals. The DR Factor is a factor established by the PJM Board with the advice of the Members Committee to reflect the increase in the peak load carrying capability in the PJM Region due to Demand Resources and ILR. Peak load carrying capability is defined to be the peak load that the PJM Region is able to serve at the loss of load expectation defined in the Reliability Principles and Standards. The DR Factor is the increase in the peak load carrying capability in the PJM Region due to Demand Resources and ILR, divided by the total Nominated Value of Demand Resources and ILR in the PJM Region. The DR Factor will be determined using an analytical program that uses a probabilistic approach to determine reliability. The determination of the DR Factor will consider the reliability of Demand Resources and ILR, the number of interruptions, and the total amount of load reduction.

C. Demand Resources offered and cleared in a Base Residual or Incremental Auction shall receive the corresponding Capacity Resource Clearing Price as determined in such auction, in accordance with Attachment DD of the PJM Tariff. For Delivery Years beginning with the Delivery Year that commences on June 1, 2013, any Demand Resources located in a Zone with multiple LDAs shall receive the Capacity Resource Clearing Price applicable to the location of such resource within such Zone, as identified in such resource's offer. Further, the Demand Resource ~~p~~Provider shall register its resource in the same location within the Zone as specified in its cleared sell offer, and shall be subject to deficiency charges under Attachment DD of this Tariff to the extent it fails to provide the resource in such location consistent with its cleared offer. For either of the Delivery Year commencing on June 1, 2010 or commencing on June 1, 2012, if the location of a Demand Resource is not specified by a Seller in the Sell Offer on an individual LDA basis in a Zone with multiple LDAs, then Demand Resources cleared by such Seller will be paid a DR Weighted Zonal Resource Clearing Price, determined as follows: (i) for a Zone that includes non-overlapping LDAs, calculated as the weighted average of the Resource Clearing Prices for such LDAs, weighted by the cleared Demand Resources registered by such Seller in each such LDA; or (ii) for a Zone that contains a smaller LDA within a larger LDA, calculated treating the smaller LDA and the remaining portion of the larger LDA as if they were separate LDAs, and weight-averaging in the same manner as (i) above.

D. Certified ILR resources shall receive the Final Zonal ILR Price.

E. The Party, Electric Distributor, Demand Resource Provider, or ILR Provider that establishes a contractual relationship (by contract or tariff rate) with a customer for load reductions is entitled to receive the compensation specified in sections C and D for a committed Demand Resource or certified ILR, notwithstanding that such provider is not the customer's energy supplier.

F. Any Party hereto shall demonstrate that its Demand Resources or ILR performed during periods when load management procedures were invoked by the Office of the Interconnection. The Office of the Interconnection shall adopt and maintain rules and procedures for verifying the performance of such resources, as set forth in section L and the PJM Manuals. In addition, committed Demand Resources and certified ILR that do not comply with the directions of the Office of the Interconnection to reduce load during an emergency shall be subject to the penalty charge set forth in Attachment DD to the PJM Tariff.

G. Parties may elect to place Demand Resources associated with Behind The Meter Generation under the direction of the Office of the Interconnection for a Delivery Year by submitting a Sell Offer for such resource (as Self Supply, or with an offer price) in the Base Residual Auction for such Delivery Year. This election shall remain in effect for the entirety of such Delivery Year. In the event such an election is made, such Behind The Meter Generation will not be netted from load for the purposes of calculating the Daily Unforced Capacity Obligations under this Agreement.

H. PJM recognizes three types of Demand Resource and ILR:

Direct Load Control (DLC) – Load management that is initiated directly by the Provider's market operations center or its agent, employing a communication signal to cycle equipment (typically water heaters or central air conditioners). DLC programs are qualified based on load research and customer subscription data. Providers may rely on the results of load research studies identified in the PJM Manuals to set the per-participant load reduction for DLC programs. Each Provider relying on DLC load management must periodically update its DLC switch operability rates, in accordance with the PJM Manuals.

Firm Service Level (FSL) – Load management achieved by a customer reducing its load to a pre-determined level (the Firm Service Level), upon notification from the Provider's market operations center or its agent.

Guaranteed Load Drop (GLD) – Load management achieved by a customer reducing its load by a pre-determined amount (the Guaranteed Load Drop), upon notification from the Provider's market operations center or its agent. Typically, the load reduction is achieved through running customer-owned backup generators, or by shutting down process equipment.

For each type of Demand Resource and ILR above, there can be two notification periods:

Step 1 (Short Lead Time) – Demand Resource or ILR which must be fully implemented in one hour or less from the time the PJM dispatcher notifies the market operations center of a curtailment event.

Step 2 (Long Lead Time) – Demand Resource or ILR which requires more than one hour but no more than two hours, from the time the PJM dispatcher notifies the market operations center of a curtailment event, to be fully implemented.

I. Each Provider must satisfy (or contract with another LSE, Provider, or EDC to provide) the following requirements:

- A point of contact with appropriate backup to ensure single call notification from PJM and timely execution of the notification process;

- supplemental status reports, detailing Demand Resources and ILR available, as requested by PJM;

- Entry of customer-specific Demand Resource and ILR credit information, for planning and verification purposes, into the designated PJM electronic system.

- Customer-specific compliance and verification information for each PJM-initiated Demand Resource or ILR event, as well as aggregated Provider load drop data for Provider-initiated events, in accordance with established reporting guidelines.

- Load drop estimates for all Demand Resource or ILR events, prepared in accordance with the PJM Manuals.

J. The Nominated Value of each Demand Resource or ILR shall be determined consistent with the process for determination of the capacity obligation for the customer.

The Nominated Value for a Firm Service Level customer will be based on the peak load contribution for the customer, as determined by the 5CP methodology utilized to determine other ICAP obligation values. The maximum Demand Resource or ILR load reduction value for a Firm Service Level customer will be equal to Peak Load Contribution – Firm Contract Level adjusted for system losses.

The Nominated Value for a Guaranteed Load Drop customer will be the guaranteed load drop amount, adjusted for system losses, as established by the customer's contract with the Provider. The maximum credit nominated shall not exceed the customer's Peak Load Contribution.

The Nominated Value for a Direct Load Control program will be based on load research and customer subscription. The maximum value of the program is equal to the approved per-participant load reduction multiplied by the number of active participants, adjusted for system losses. The per-participant impact is to be estimated at long-term average local weather conditions at the time of the summer peak.

Customer-specific Demand Resource or ILR information (EDC account number, peak load, notification period, etc.) will be entered into the designated PJM electronic system to establish credit values. Additional data may be required, as defined in sections K and L.

K. Nominated Values shall be reviewed based on documentation of customer-specific data and Demand Resource or ILR information, to verify the amount of load management available, and to set a maximum allowable Nominated Value. Data is provided by both the zone EDC and the Provider on templates supplied by PJM, and must include the EDC meter number or other unique customer identifier, Peak Load Contribution (5CP), contract firm service level or guaranteed load drop values, applicable loss factor, zone/area location of the load drop, LSE contact information, number of active participants, etc. Such data must be uploaded and approved prior to the first day of the Delivery Year for such resource as a Demand Resource, or certification of such resource as ILR. Providers must provide this information concurrently to host EDCs.

For Firm Service Level and Guaranteed Load Drop customers, the 5CP values, for the zone and affected customers, will be adjusted to reflect an "unrestricted" peak for a zone,

based on information provided by the Provider. Load drop levels shall be estimated in accordance with guidelines in the PJM Manuals.

For Direct Load Control programs, the Provider must provide information detailing the number of active participants in each program. Other information on approved DLC programs will be provided by PJM.

L. ~~-~~Compliance is the process utilized to review Provider performance during PJM-initiated Demand Resource and ILR events. The process establishes potential under/over compliance values for the Provider. Compliance ~~is event based, i.e., compliance is verified only if an event occurs between June and September.~~ will be established for each Provider on an event specific basis for the Provider's Demand Resources or ILR dispatched by the Office of the Interconnection during such event.

PJM will establish and communicate reasonable deadlines for the timely submittal of event data to expedite compliance reviews. Compliance reviews will be completed as soon after the event as possible, with the expectation that reviews of a single event will be completed within two months of the end of the month in which the event took place. Providers are responsible for the submittal of compliance information to PJM for each PJM-initiated event during the compliance period. Compliance for Direct Load Control programs will consider only the transmission of the control signal. Providers are required to report the time period (during the Demand Resource and ILR event) that the control signal was actually sent. Compliance is checked on an individual customer basis for FSL, by comparing actual load during the event to the firm service level. Providers must submit actual customer load levels (for the event period) for the compliance report. Compliance is checked on an individual customer basis for GLD, by comparing actual load dropped during the event to the nominated amount of load drop. Providers must submit actual loads and comparison loads for the compliance hours. Comparison loads must be developed from the guidelines in the PJM Manuals, and note which method was employed.

Compliance is averaged over the full hours of a ~~Demand Resource and ILR~~load management event, for each customer or DLC program dispatched by the Office of the Interconnection. Demand Resource or ILR ~~customers~~ resources may not reduce their load below zero (i.e., export energy into the system). No compliance credit will be given for an incremental load drop below zero. Compliance will be totaled over all FSL and GLD customers and DLC programs to determine a net compliance position for the event for each Provider by Zone, for all Demand Resources committed and ILR Certified by such Provider and dispatched by the Office of the Interconnection in the zone. Deficiencies shall be as further determined in accordance with section 11 of Schedule DD to the PJM Tariff.

M. Energy Efficiency Resources

1. An Energy Efficiency Resource is a project, including installation of more efficient devices or equipment or implementation of more efficient processes or

systems, exceeding then-current building codes, appliance standards, or other relevant standards, designed to achieve a continuous (during peak periods as described herein) reduction in electric energy consumption that is not reflected in the peak load forecast prepared for the Delivery Year for which the Energy Efficiency Resource is proposed, and that is fully implemented at all times during such Delivery Year, without any requirement of notice, dispatch, or operator intervention.

2. An Energy Efficiency Resource may be offered as a Capacity Resource in the Base Residual or Incremental Auctions for any Delivery Year beginning on or after June 1, 2011. No later than 30 days prior to the auction in which the resource is to be offered, the Capacity Market Seller shall submit to the Office of the Interconnection a notice of intent to offer the resource into such auction and a measurement and verification plan. The notice of intent shall include all pertinent project design data, including but not limited to the peak-load contribution of affected customers, a full description of the equipment, device, system or process intended to achieve the load reduction, the load reduction pattern, the project location, the project development timeline, and any other relevant data. Such notice also shall state the seller's proposed Nominated Energy Efficiency Value, which shall be the expected average load reduction between the hour ending 15:00 EPT and the hour ending 18:00 EPT during all days from June 1 through August 31, inclusive, of such Delivery Year that is not a weekend or federal holiday. The measurement and verification plan shall describe the methods and procedures, consistent with the PJM Manuals, for determining the amount of the load reduction and confirming that such reduction is achieved. The Office of the Interconnection shall determine, upon review of such notice, the Nominated Energy Efficiency Value that may be offered in the Reliability Pricing Model Auction.

3. An Energy Efficiency Resource may be offered with a price offer or as Self-Supply. If an Energy Efficiency Resource clears the auction, it shall receive the applicable Capacity Resource Clearing Price, subject to section 5 below. A Capacity Market Seller offering an Energy Efficiency Resource must comply with all applicable credit requirements as set forth in Attachment Q to the PJM Tariff. The Unforced Capacity value of an Energy Efficiency Resource offered into an RPM Auction shall be the Nominated Energy Efficiency value times the DR Factor and the Forecast Pool Requirement.

4. An Energy Efficiency Resource that clears an auction for a Delivery Year may be offered in auctions for up to three additional consecutive Delivery Years, but shall not be assured of clearing in any such auction; provided, however, an Energy Efficiency Resource may not be offered for any Delivery Year in which any part of the peak season is beyond the expected life of the equipment, device, system, or process providing the expected load reduction; and provided further that a Capacity Market Seller that offers and clears an Energy Efficiency Resource in a

BRA may elect a New Entry Price Adjustment on the same terms as set forth in section 5.14(c) of this Attachment DD.

5. For every Energy Efficiency Resource clearing an RPM Auction for a Delivery Year, the Capacity Market Seller shall submit to the Office of the Interconnection, by no later than 30 days prior to each Auction an updated project status and measurement and verification plan subject to the criteria set forth in the PJM Manuals.

6. For every Energy Efficiency Resource clearing an RPM Auction for a Delivery Year, the Capacity Market Seller shall submit to the Office of the Interconnection, by no later than the start of such Delivery Year, an updated project status and detailed measurement and verification data meeting the standards for precision and accuracy set forth in the PJM Manuals. The final value of the Energy Efficiency Resource during such Delivery Year shall be as determined by the Office of the Interconnection based on the submitted data.

7. The Office of the Interconnection may audit, at the Capacity Market Seller's expense, any Energy Efficiency Resource committed to the PJM Region. The audit may be conducted any time including the Performance Hours of the Delivery Year.

D. FRR Capacity Plans

1. Each FRR Entity shall submit its initial FRR Capacity Plan as required by subsection C.1 of this Schedule, and shall annually extend and update such plan by no later than one month prior to the Base Residual Auction for each succeeding Delivery Year in such plan. Each FRR Capacity Plan shall indicate the nature and current status of each resource, including the status of each Planned Generation Capacity Resource or Planned Demand Resource, the planned deactivation or retirement of any Generation Capacity Resource or Demand Resource, and the status of commitments for each sale or purchase of capacity included in such plan.

2. The FRR Capacity Plan of each FRR Entity that commits that it will not sell surplus Capacity Resources as a Capacity Market Seller in any auction conducted under Attachment DD of the PJM Tariff, or to any direct or indirect purchaser that uses such resource as the basis of any Sell Offer in such auction, shall designate Capacity Resources in a megawatt quantity no less than the Forecast Pool Requirement for each applicable Delivery Year times the FRR Entity's allocated share of the Preliminary Zonal Peak Load Forecast for such Delivery Year, as determined in accordance with procedures set forth in the PJM Manuals. The set of Capacity Resources designated in the FRR Capacity Plan must meet the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement associated with the FRR Entity's capacity obligation. If the FRR Entity is not responsible for all load within a Zone, the Preliminary Forecast Peak Load for such entity shall be the FRR Entity's Obligation Peak Load last determined prior to the Base Residual Auction for such Delivery Year, times the Base Zonal FRR Scaling Factor. The FRR Capacity Plan of each FRR Entity that does not commit that it will not sell surplus Capacity Resources as set forth above shall designate Capacity Resources at least equal to the Threshold Quantity. To the extent the FRR Entity's allocated share of the Final Zonal Peak Load Forecast exceeds the FRR Entity's allocated share of the Preliminary Zonal Peak Load Forecast, such FRR Entity's FRR Capacity Plan shall be updated to designate additional Capacity Resources in an amount no less than the Forecast Pool Requirement times such increase; provided, however, any excess megawatts of Capacity Resources included in such FRR Entity's previously designated Threshold Quantity, if any, may be used to satisfy the capacity obligation for such increased load. To the extent the FRR Entity's allocated share of the Final Zonal Peak Load Forecast is less than the FRR Entity's allocated share of the Preliminary Zonal Peak Load Forecast, such FRR Entity's FRR Capacity Plan may be updated to release previously designated Capacity Resources in an amount no greater than the Forecast Pool Requirement times such decrease.

3. As to any FRR Entity, the Base Zonal FRR Scaling Factor for each Zone in which it serves load for a Delivery Year shall equal ZPLDY/ZWNSP, where:

ZPLDY = Preliminary Zonal Peak Load Forecast for such Zone for such Delivery Year; and

ZWNSP = Zonal Weather-Normalized Summer Peak Load for such Zone for the summer concluding four years prior to the commencement of such Delivery Year.

4. Capacity Resources identified and committed in an FRR Capacity Plan shall meet all requirements under this Agreement and the PJM Operating Agreement applicable to Capacity

Resources, including, as applicable, requirements and milestones for Planned Generation Capacity Resources and Planned Demand Resources. A Capacity Resource submitted in an FRR Capacity Plan must be on a unit-specific basis, and may not include "slice of system" or similar agreements that are not unit specific. An FRR Capacity Plan may include bilateral transactions that commit capacity for less than a full Delivery Year only if the resources included in such plan in the aggregate satisfy all obligations for all Delivery Years. All demand response, load management, energy efficiency, or similar programs on which such FRR Entity intends to rely for a Delivery Year must be included in the FRR Capacity Plan submitted three years in advance of such Delivery Year and must satisfy all requirements applicable to Demand Resources or Energy Efficiency Resources, as applicable, including, without limitation, those set forth in Schedule 6 to this Agreement and the PJM Manuals; provided, however, that previously uncommitted Unforced Capacity from such programs may be used to satisfy any increased capacity obligation for such FRR Entity resulting from a Final Zonal Peak Load Forecast applicable to such FRR Entity.

5. For each LDA for which the Office of the Interconnection has established a separate Variable Resource Requirement Curve for any Delivery Year addressed by such FRR Capacity Plan, the plan must include a minimum percentage of Capacity Resources for such Delivery Year located within such LDA. Such minimum percentage ("Percentage Internal Resources Required") will be calculated as the LDA Reliability Requirement less the CETL for the Delivery Year, as determined by the RTEP process as set forth in the PJM Manuals. Such requirement shall be expressed as a percentage of the Unforced Capacity Obligation based on the Preliminary Zonal Peak Load Forecast multiplied by the Forecast Pool Requirement.

6. An FRR Entity may reduce such minimum percentage as to any LDA to the extent the FRR Entity commits to a transmission upgrade that increases the capacity emergency transfer limit for such LDA. Any such transmission upgrade shall adhere to all requirements for a Qualified Transmission Upgrade as set forth in Attachment DD to the PJM Tariff. The increase in CETL used in the FRR Capacity Plan shall be that approved by PJM prior to inclusion of any such upgrade in an FRR Capacity Plan. The FRR Entity shall designate specific additional Capacity Resources located in the LDA from which the CETL was increased, to the extent of such increase.

7. The Office of the Interconnection will review the adequacy of all submittals hereunder both as to timing and content. A Party that seeks to elect the FRR Alternative that submits an FRR Capacity Plan which, upon review by the Office of the Interconnection, is determined not to satisfy such Party's capacity obligations hereunder, shall not be permitted to elect the FRR Alternative. If a previously approved FRR Entity submits an FRR Capacity Plan that, upon review by the Office of the Interconnection, is determined not to satisfy such Party's capacity obligations hereunder, the Office of the Interconnection shall notify the FRR Entity, in writing, of the insufficiency within five (5) business days of the submittal of the FRR Capacity Plan. If the FRR Entity does not cure such insufficiency within five (5) business days after receiving such notice of insufficiency, then such FRR Entity shall be assessed an FRR Commitment Insufficiency Charge, in an amount equal to two times the Cost of New Entry for the relevant location, in $/MW-day, times the shortfall of Capacity Resources below the FRR Entity's

capacity obligation (including any Threshold Quantity requirement) in such FRR Capacity Plan, for the remaining term of such plan.

8. In a state regulatory jurisdiction that has implemented retail choice, the FRR Entity must include in its FRR Capacity Plan all load, including expected load growth, in the FRR Service Area, notwithstanding the loss of any such load to or among alternative retail LSEs. In the case of load reflected in the FRR Capacity Plan that switches to an alternative retail LSE, where the state regulatory jurisdiction requires switching customers or the LSE to compensate the FRR Entity for its FRR capacity obligations, such state compensation mechanism will prevail. In the absence of a state compensation mechanism, the applicable alternative retail LSE shall compensate the FRR Entity at the capacity price in the unconstrained portions of the PJM Region, as determined in accordance with Attachment DD to the PJM Tariff, provided that the FRR Entity may, at any time, make a filing with FERC under Sections 205 of the Federal Power Act proposing to change the basis for compensation to a method based on the FRR Entity's cost or such other basis shown to be just and reasonable, and a retail LSE may at any time exercise its rights under Section 206 of the FPA.

9. Notwithstanding the foregoing, in lieu of providing the compensation described above, such alternative retail LSE may, for any Delivery Year subsequent to those addressed in the FRR Entity's then-current FRR Capacity Plan, provide to the FRR Entity Capacity Resources sufficient to meet the capacity obligation described in paragraph D.2 for the switched load. Such Capacity Resources shall meet all requirements applicable to Capacity Resources pursuant to this Agreement and the PJM Operating Agreement, all requirements applicable to resources committed to an FRR Capacity Plan under this Agreement, and shall be committed to service to the switched load under the FRR Capacity Plan of such FRR Entity. The alternative retail LSE shall provide the FRR Entity all information needed to fulfill these requirements and permit the resource to be included in the FRR Capacity Plan. The alternative retail LSE, rather than the FRR Entity, shall be responsible for any performance charges or compliance penalties related to the performance of the resources committed by such LSE to the switched load. For any Delivery Year, or portion thereof, the foregoing obligations apply to the alternative retail LSE serving the load during such time period. PJM shall manage the transfer accounting associated with such compensation and shall administer the collection and payment of amounts pursuant to the compensation mechanism.

Such load shall remain under the FRR Capacity Plan until the effective date of any termination of the FRR Alternative and, for such period, shall not be subject to Locational Reliability Charges under Section 7.2 of this Agreement.

F. FRR Daily Unforced Capacity Obligations and Deficiency Charges

1. For each billing month during a Delivery Year, the Daily Unforced Capacity Obligation of an FRR Entity shall be determined on a daily basis for each Zone as follows:

Daily Unforced Capacity Obligation = OPL * Final Zonal FRR Scaling Factor * FPR

where:

OPL =Obligation Peak Load, defined as the daily summation of the weather-adjusted coincident summer peak, last preceding the Delivery Year, of the end-users in such Zone (net of operating Behind The Meter Generation, but not to be less than zero) for which such Party was responsible on that billing day, as determined in accordance with the procedures set forth in the PJM Manuals

Final Zonal FRR Scaling Factor = FZPLDY/FZWNSP;

FZPLDY = Final Zonal Peak Load Forecast for such Delivery Year; and

FZWNSP = Zonal Weather-Normalized Peak Load for the summer concluding prior to the commencement of such Delivery Year.

2. An FRR Entity shall be assessed an FRR Capacity Deficiency Charge in each Zone addressed in such entity's FRR Capacity Plan for each day during a Delivery Year that it fails to satisfy its Daily Unforced Capacity Obligation in each Zone. Such FRR Capacity Deficiency Charge shall be in an amount equal to the deficiency below such FRR Entity's Daily Unforced Capacity Obligation for such Zone times (1.20 times the Capacity Resource Clearing Price resulting from all RPM Auctions for such Delivery Year for the LDA encompassing such Zone, weight-averaged for the Delivery Year based on the prices established and quantities cleared in such auctions).

3. If an FRR Entity acquires load that is not included in the Preliminary Zonal Peak Load Forecast such acquired load shall be treated in the same manner as provided in Sections H.1 and H.2 of this Schedule.

4. The shortages in meeting the minimum requirement within the constrained zones and the shortage in meeting the total obligation are first calculated. The shortage in the unconstrained area is calculated as the total shortage less shortages in constrained zones and excesses in constrained zones (the shortage is zero if this is a negative number). The Capacity Deficiency Charge is charged to the shortage in each zone and in the unconstrained area separately. This procedure is used to allow the use of capacity excesses from constrained zones to reduce shortage in the unconstrained area and to disallow the use of capacity excess from unconstrained area to reduce shortage in constrained zones.

5. The shortages in meeting the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement associated with the FRR Entity's capacity obligation

are calculated separately. The applicable penalty rate is calculated for Annual Resources, Extended Summer Demand Resources, and Limited Resources as (1.20 times the Capacity Resource Clearing Price resulting from all RPM Auctions for such Delivery Year for the LDA encompassing such Zone, weight-averaged for the Delivery Year based on the prices established and quantities cleared in such auctions).

Clean Sections

2. DEFINITIONS

Definitions specific to this Attachment are set forth below. In addition, any capitalized terms used in this Attachment not defined herein shall have the meaning given to such terms elsewhere in this Tariff or in the RAA. References to section numbers in this Attachment DD refer to sections of this attachment, unless otherwise specified.

2.1A Annual Demand Resource

"Annual Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.1B Annual Resource

"Annual Resource" shall mean a Generation Capacity Resource, an Energy Efficiency Resource or an Annual Demand Resource.

2.1C Annual Resource Price Adder

"Annual Resource Price Adder" shall mean an addition to the marginal value of Unforced Capacity and the Extended Summer Resource Price Adder as necessary to reflect the price of Annual Resources required to meet the applicable Minimum Annual Resource Requirement.

2.1D Annual Revenue Rate

"Annual Revenue Rate" shall mean the rate employed to assess a compliance penalty charge on a Demand Resource Provider or ILR Provider under section 11.

2.2 Avoidable Cost Rate

"Avoidable Cost Rate" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

2.3 Base Load Generation Resource

"Base Load Generation Resource" shall mean a Generation Capacity Resource that operates at least 90 percent of the hours that it is available to operate, as determined by the Office of the Interconnection in accordance with the PJM Manuals.

2.4 Base Offer Segment

"Base Offer Segment" shall mean a component of a Sell Offer based on an existing Generation Capacity Resource, equal to the Unforced Capacity of such resource, as determined in accordance with the PJM Manuals. If the Sell Offers of multiple Market Sellers are based on a single existing Generation Capacity Resource, the Base Offer Segments of such Market Sellers

shall be determined pro rata based on their entitlements to Unforced Capacity from such resource.

2.5 Base Residual Auction

"Base Residual Auction" shall mean the auction conducted three years prior to the start of the Delivery Year to secure commitments from Capacity Resources as necessary to satisfy any portion of the Unforced Capacity Obligation of the PJM Region not satisfied through Self-Supply.

2.6 Buy Bid

"Buy Bid" shall mean a bid to buy Capacity Resources in any Incremental Auction.

2.7 Capacity Credit

"Capacity Credit" shall have the meaning specified in Schedule 11 of the Operating Agreement, including Capacity Credits obtained prior to the termination of such Schedule applicable to periods after the termination of such Schedule.

2.8 Capacity Emergency Transfer Limit

"Capacity Emergency Transfer Limit" or "CETL" shall have the meaning provided in the Reliability Assurance Agreement.

2.9 Capacity Emergency Transfer Objective

"Capacity Emergency Transfer Objective" or "CETO" shall have the meaning provided in the Reliability Assurance Agreement.

2.9A Capacity Export Transmission Customer

"Capacity Export Transmission Customer" shall mean a customer taking point to point transmission service under Part II of this Tariff to export capacity from a generation resource located in the PJM Region that is delisted from Capacity Resource status as described in section 5.6.6(d).

2.10 Capacity Market Buyer

"Capacity Market Buyer" shall mean a Member that submits bids to buy Capacity Resources in any Incremental Auction.

2.11 Capacity Market Seller

"Capacity Market Seller" shall mean a Member that owns, or has the contractual authority to control the output or load reduction capability of, a Capacity Resource, that has not transferred

such authority to another entity, and that offers such resource in the Base Residual Auction or an Incremental Auction.

2.12 Capacity Resource

"Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.13 Capacity Resource Clearing Price

"Capacity Resource Clearing Price" shall mean the price calculated for a Capacity Resource that offered and cleared in a Base Residual Auction or Incremental Auction, in accordance with Section 5.

2.14 Capacity Transfer Right

"Capacity Transfer Right" shall mean a right, allocated to LSEs serving load in a Locational Deliverability Area, to receive payments, based on the transmission import capability into such Locational Deliverability Area, that offset, in whole or in part, the charges attributable to the Locational Price Adder, if any, included in the Zonal Capacity Price calculated for a Locational Delivery Area.

2.14A Conditional Incremental Auction

"Conditional Incremental Auction" shall mean an Incremental Auction conducted for a Delivery Year if and when necessary to secure commitments of additional capacity to address reliability criteria violations arising from the delay in a Backbone Transmission upgrade that was modeled in the Base Residual Auction for such Delivery Year.

2.15 CONE Area

"CONE Area" shall mean the areas listed in section 5.10(a)(iv)(A) and any LDAs established as CONE Areas pursuant to section 5.10(a)(iv)(B).

2.16 Cost of New Entry

"Cost of New Entry" or "CONE" shall mean the nominal levelized cost of a Reference Resource, as determined in accordance with section 5.

2.17 Daily Deficiency Rate

"Daily Deficiency Rate" shall mean the rate employed to assess certain deficiency charges under sections 7, 8, 9, or 13.

2.18 Daily Unforced Capacity Obligation

"Daily Unforced Capacity Obligation" shall mean the capacity obligation of a Load Serving Entity during the Delivery Year, determined in accordance with Schedule 8 of the Reliability Assurance Agreement.

2.19 Delivery Year

Delivery Year shall mean the Planning Period for which a Capacity Resource is committed pursuant to the auction procedures specified in Section 5.

2.20 Demand Resource

"Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.21 Demand Resource Factor

"Demand Resource Factor" shall have the meaning specified in the Reliability Assurance Agreement.

2.22 Demand Resource Provider

"Demand Resource Provider" shall mean a PJM Member that has the capability to reduce load, or that aggregates customers capable of reducing load. The Demand Resource Provider shall notify the Office of the Interconnection whether such load reduction is provided by a Limited Demand Resource, Extended Summer Demand Resource or an Annual Demand Resource. A Curtailment Service Provider, as defined in the Operating Agreement, may be a Demand Resource Provider, provided it qualifies its load reduction capability as a Limited Demand Resource, Extended Summer Demand Resource, or Annual Demand Resource.

2.23 EFORd

"EFORd" shall have the meaning specified in the PJM Reliability Assurance Agreement.

2.24 Energy Efficiency Resource

"Energy Efficiency Resource" shall have the meaning specified in the PJM Reliability Assurance Agreement.

2.24A Extended Summer Demand Resource

"Extended Summer Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.24B Extended Summer Resource Price Adder

"Extended Summer Resource Price Adder" shall mean an addition to the marginal value of Unforced Capacity as necessary to reflect the price of Annual Resources and Extended Summer

Demand Resources required to meet the applicable Minimum Extended Summer Resource Requirement.

2.24C Extended Summer Demand Resource Reliability Target

"Extended Summer Demand Resource Reliability Target" for the PJM Region or an LDA, shall mean the maximum amount of Extended Summer Demand Resources in Unforced Capacity determined by PJM, in accordance with procedures specified in the PJM Manuals, to be consistent with the maintenance of reliability, stated in Unforced Capacity, that shall be used to calculate the Minimum Annual Resource Requirement. The Extended Summer Demand Resource Reliability Target shall be expressed as a percentage of the forecasted peak load of the PJM Region or such LDA and is converted to Unforced Capacity by multiplying [the reliability target percentage] times [the Forecast Pool Requirement] times [the DR Factor] times [the forecasted peak load of the PJM Region or such LDA, reduced by the amount of load served under the FRR Alternative].

2.25 [Reserved]

2.26 Final RTO Unforced Capacity Obligation

"Final RTO Unforced Capacity Obligation" shall mean the capacity obligation for the PJM Region, determined in accordance with Schedule 8 of the Reliability Assurance Agreement.

2.26A Final Zonal ILR Price

"Final Zonal ILR Price" shall mean the Adjusted Zonal Capacity Price after the Second Incremental Auction, less the amount paid in CTR credits per MW of load in the Zone in which the ILR is to be certified.

2.27 First Incremental Auction

"First Incremental Auction" shall mean an Incremental Auction conducted 20 months prior to the start of the Delivery Year to which it relates.

2.28 Forecast Pool Requirement

"Forecast Pool Requirement" shall have the meaning specified in the Reliability Assurance Agreement.

2.29 Forecast RTO ILR Obligation

"Forecast RTO ILR Obligation" shall mean, in unforced capacity terms, the ILR Forecast for the PJM Region times the DR Factor, times the Forecast Pool Requirement, less the Unforced Capacity of all Demand Resources committed in FRR Capacity Plans by all FRR Entities in the PJM Region, for use in Delivery Years through May 31, 2012.

2.30 Forecast Zonal ILR Obligation

"Forecast Zonal ILR Obligation" shall mean, in unforced capacity terms, the ILR Forecast for the Zone times the DR Factor, times the Forecast Pool Requirement, less the Unforced Capacity of all Demand Resources committed in FRR Capacity Plans by all FRR Entities in such Zone, for use in Delivery Years through May 31, 2012.

2.31 Generation Capacity Resource

"Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.32 ILR Forecast

"ILR Forecast" shall mean, for any Delivery Year ending on or before May 31, 2012, the average annual megawatt quantity of ILR certified for the five Planning Periods preceding the date of the forecast; provided, however, that before such data becomes available for five Delivery Years under the Reliability Pricing Model, comparable data on Active Load Management (as defined in the preexisting reliability assurance agreements) from up to five prior Planning Periods shall be substituted as necessary; and provided further that, for transmission zones that were integrated into the PJM Region less than five years prior to the conduct of the Base Residual Auction for the Delivery Year, data on incremental load subject to mandatory interruption by Electric Distribution Companies within such zones shall be substituted as necessary.

2.33 ILR Provider

"ILR Provider" shall mean a Member that has the capability to reduce load, or that aggregates customers capable of reducing load. A Curtailment Service Provider, as such term is defined in the PJM Operating Agreement, may be an ILR Provider, provided it obtains certification of its load reduction capability as ILR.

2.34 Incremental Auction

"Incremental Auction" shall mean any of several auctions conducted for a Delivery Year after the Base Residual Auction for such Delivery Year and before the first day of such Delivery Year, including the First Incremental Auction, Second Incremental Auction, Third Incremental Auction or Conditional Incremental Auction. Incremental Auctions (other than the Conditional Incremental Auction), shall be held for the purposes of:

(i) allowing Market Sellers that committed Capacity Resources in the Base Residual Auction for a Delivery Year, which subsequently are determined to be unavailable to deliver the committed Unforced Capacity in such Delivery Year (due to resource retirement, resource cancellation or construction delay, resource derating, EFORD increase, a decrease in the Nominated Demand Resource Value of a Planned Demand Resource, delay or cancellation of a Qualifying Transmission Upgrade, or similar occurrences) to submit Buy Bids for replacement Capacity Resources; and

(ii) allowing the Office of the Interconnection to reduce or increase the amount of committed capacity secured in prior auctions for such Delivery Year if, as a result of changed circumstances or expectations since the prior auction(s), there is, respectively, a significant excess or significant deficit of committed capacity for such Delivery Year, for the PJM Region or for an LDA.

2.35 Incremental Capacity Transfer Right

"Incremental Capacity Transfer Right" shall mean a Capacity Transfer Right allocated to a Generation Interconnection Customer or Transmission Interconnection Customer obligated to fund a transmission facility or upgrade, to the extent such upgrade or facility increases the transmission import capability into a Locational Deliverability Area, or a Capacity Transfer Right allocated to a Responsible Customer in accordance with Schedule 12A of the Tariff.

2.36 Interruptible Load for Reliability (ILR)

"Interruptible Load for Reliability" or "ILR" shall have the meaning specified in the Reliability Assurance Agreement.

2.36A Limited Demand Resource

"Limited Demand Resource**"** shall have the meaning specified in the Reliability Assurance Agreement.

2.36B Limited Demand Resource Reliability Target

"Limited Demand Resource Reliability Target**"** for the PJM Region or an LDA, shall mean the maximum amount of Limited Demand Resources determined by PJM, in accordance with procedures specified in the PJM Manuals, to be consistent with the maintenance of reliability, stated in Unforced Capacity that shall be used to calculate the Minimum Extended Summer Demand Resource Requirement for the PJM Region or such LDA. The Limited Demand Resource Reliability Target shall be expressed as a percentage of the forecasted peak load of the PJM Region or such LDA and is converted to Unforced Capacity by multiplying [the reliability target percentage] times [the Forecast Pool Requirement] times [the DR Factor] times [the forecasted peak load of the PJM Region or such LDA, reduced by the amount of load served under the FRR Alternative].

2.37 Load Serving Entity (LSE)

"Load Serving Entity" or "LSE" shall have the meaning specified in the Reliability Assurance Agreement.

2.38 Locational Deliverability Area (LDA)

"Locational Deliverability Area" or "LDA" shall mean a geographic area within the PJM Region that has limited transmission capability to import capacity to satisfy such area's reliability requirement, as determined by the Office of the Interconnection in connection with preparation of the Regional Transmission Expansion Plan, and as specified in Schedule 10.1 of the Reliability Assurance Agreement.

2.39 Locational Deliverability Area Reliability Requirement

"Locational Deliverability Area Reliability Requirement" shall mean the projected internal capacity in the Locational Deliverability Area plus the Capacity Emergency Transfer Objective for the Delivery Year, as determined by the Office of the Interconnection in connection with preparation of the Regional Transmission Expansion Plan, less the minimum internal resources required for all FRR Entities in such Locational Deliverability Area.

2.40 Locational Price Adder

"Locational Price Adder" shall mean an addition to the marginal value of Unforced Capacity within an LDA as necessary to reflect the price of Capacity Resources required to relieve applicable binding locational constraints.

2.41 Locational Reliability Charge

"Locational Reliability Charge" shall have the meaning specified in the Reliability Assurance Agreement.

2.41A Locational UCAP

"Locational UCAP" shall mean unforced capacity that a Member with available uncommitted capacity sells in a bilateral transaction to a Member that previously committed capacity through an RPM Auction but now requires replacement capacity to fulfill its RPM Auction commitment. The Locational UCAP Seller retains responsibility for performance of the resource providing such replacement capacity.

2.41B Locational UCAP Seller

"Locational UCAP Seller" shall mean a Member that sells Locational UCAP.

2.41C Market Seller Offer Cap

"Market Seller Offer Cap" shall mean a maximum offer price applicable to certain Market Sellers under certain conditions, as determined in accordance with section 6 of Attachment DD and section II.E of Attachment M - Appendix.

2.41D Minimum Annual Resource Requirement

"Minimum Annual Resource Requirement" shall mean the minimum amount of capacity that PJM will seek to procure from Annual Resources for the PJM Region and for the MAAC, Eastern MAAC and Southwestern MAAC LDAs in the RPM Auctions for a Delivery Year. For the PJM Region, the Minimum Annual Resource Requirement shall be equal to the RTO Reliability Requirement minus [the Short-Term Resource Procurement Target for the PJM Region in Unforced Capacity] minus [the Extended Summer Demand Resource Reliability Target for the RTO in Unforced Capacity]. For an LDA, the Minimum Annual Resource Requirement shall be equal to the LDA Reliability Requirement minus [the Short-Term Resource Procurement Target for such LDA in Unforced Capacity] minus [the LDA CETL] minus [the Extended Summer Demand Resource Reliability Target for such LDA in Unforced Capacity]. The LDA CETL may be adjusted pro rata for the amount of load served under the FRR Alternative.

2.41E Minimum Extended Summer Resource Requirement

"Minimum Extended Summer Resource Requirement" shall mean the minimum amount of capacity that PJM will seek to procure from Extended Summer Demand Resources and Annual Resources for the PJM Region and for the MAAC, Eastern MAAC and Southwestern MAAC LDAs in the RPM Auctions for a Delivery Year. For the PJM Region, the Minimum Extended Summer Resource Requirement shall be equal to the RTO Reliability Requirement minus [the Short-Term Resource Procurement Target for the RTO in Unforced Capacity] minus [the Limited Demand Resource Reliability Target for the PJM Region in Unforced Capacity]. For an LDA, the Minimum Extended Summer Resource Requirement shall be equal to the LDA Reliability Requirement minus [the Short-Term Resource Procurement Target for the LDA in Unforced Capacity] minus [the LDA CETL] minus [the Limited Demand Resource Reliability Target for such LDA in Unforced Capacity]. The LDA CETL may be adjusted pro rata for the amount of load served under the FRR Alternative.

2.42 Net Cost of New Entry

"Net Cost of New Entry" shall mean the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset, as defined in Section 5.

2.43 Nominated Demand Resource Value

"Nominated Demand Resource Value" shall mean the amount of load reduction that a Demand Resource commits to provide either through direct load control, firm service level or guaranteed load drop programs. For existing Demand Resources, the maximum Nominated Demand

Resource Value is limited, in accordance with the PJM Manuals, to the value appropriate for the method by which the load reduction would be accomplished, at the time the Base Residual Auction or Incremental Auction is being conducted.

2.43A Nominated Energy Efficiency Value

"Nominated Energy Efficiency Value" shall mean the amount of load reduction that an Energy Efficiency Resource commits to provide through installation of more efficient devices or equipment or implementation of more efficient processes or systems.

2.44 Nominated ILR Value

"Nominated ILR Value" shall mean the amount of load reduction that an ILR resource commits to provide either through direct load control, firm service level or guaranteed load drop programs. For ILR, the maximum Nominated ILR Capacity Value is limited, in accordance with the PJM Manuals, to the value appropriate for the method by which the load reduction would be accomplished, at the time the ILR is certified.

2.45 Opportunity Cost

"Opportunity Cost" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

2.46 Peak-Hour Dispatch

"Peak-Hour Dispatch" shall mean, for purposes of calculating the Energy and Ancillary Services Revenue Offset under section 5 of this Attachment, an assumption, as more fully set forth in the PJM Manuals, that the Reference Resource is dispatched in four distinct blocks of four hours of continuous output for each block from the peak-hour period beginning with the hour ending 0800 EPT through to the hour ending 2300 EPT for any day when the average real-time LMP for the area for which the Net Cost of New Entry is being determined is greater than, or equal to, the cost to generate (including the cost for a complete start and shutdown cycle) for at least two hours during each four-hour block, where such blocks shall be assumed to be dispatched independently; provided that, if there are not at least two economic hours in any given four-hour block, then the Reference Resource shall be assumed not to be dispatched for such block.

2.47 Peak Season

"Peak Season" shall mean the weeks containing the 24th through 36th Wednesdays of the calendar year. Each such week shall begin on a Monday and end on the following Sunday, except for the week containing the 36th Wednesday, which shall end on the following Friday.

2.48 Percentage Internal Resources Required

"Percentage Internal Resources Required" shall have the meaning specified in the Reliability Assurance Agreement.

2.49 Planned Demand Resource

"Planned Demand Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.50 Planned External Generation Capacity Resource

"Planned External Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.50A Planned Generation Capacity Resource

"Planned Generation Capacity Resource" shall have the meaning specified in the Reliability Assurance Agreement.

2.51 Planning Period

"Planning Period" shall have the meaning specified in the Reliability Assurance Agreement.

2.52 PJM Region

"PJM Region" shall have the meaning specified in the Reliability Assurance Agreement.

2.53 PJM Region Installed Reserve Margin

"PJM Region Installed Reserve Margin" shall have the meaning specified in the Reliability Assurance Agreement.

2.54 PJM Region Peak Load Forecast

"PJM Region Peak Load Forecast" shall mean the peak load forecast used by the Office of the Interconnection in determining the PJM Region Reliability Requirement, and shall be determined on both a preliminary and final basis as set forth in section 5.

2.55 PJM Region Reliability Requirement

"PJM Region Reliability Requirement" shall mean, for purposes of the Base Residual Auction, the Forecast Pool Requirement multiplied by the Preliminary PJM Region Peak Load Forecast, less the sum of all Preliminary Unforced Capacity Obligations of FRR Entities in the PJM Region; and, for purposes of the Incremental Auctions, the Forecast Pool Requirement multiplied by the updated PJM Region Peak Load Forecast, less the sum of all updated Unforced Capacity Obligations of FRR Entities in the PJM Region.

2.56 Projected PJM Market Revenues

"Projected PJM Market Revenues" shall mean a component of the Market Seller Offer Cap calculated in accordance with section 6.

2.57 Qualifying Transmission Upgrade

"Qualifying Transmission Upgrade" shall mean a proposed enhancement or addition to the Transmission System that: (a) will increase the Capacity Emergency Transfer Limit into an LDA by a megawatt quantity certified by the Office of the Interconnection; (b) the Office of the Interconnection has determined will be in service on or before the commencement of the first Delivery Year for which such upgrade is the subject of a Sell Offer in the Base Residual Auction; (c) is the subject of a Facilities Study Agreement executed before the conduct of the Base Residual Auction for such Delivery Year and (d) a New Service Customer is obligated to fund through a rate or charge specific to such facility or upgrade.

2.58 Reference Resource

"Reference Resource" shall mean a combustion turbine generating station, configured with two General Electric Frame 7FA turbines with inlet air cooling to 50 degrees, Selective Catalytic Reduction technology, dual fuel capability, and a heat rate of 10,500 Mmbtu/ MWh.

2.59 Reliability Assurance Agreement

"Reliability Assurance Agreement" shall mean that certain "Reliability Assurance Agreement Among Load-Serving Entities in the PJM Region," on file with FERC as PJM Interconnection, L.L.C. Rate Schedule FERC No.44.

2.60 Reliability Pricing Model Auction

"Reliability Pricing Model Auction" *or "RPM Auction"* shall mean the Base Residual Auction or any Incremental Auction.

2.61 Resource Substitution Charge

"Resource Substitution Charge" shall mean a charge assessed on Capacity Market Buyers in an Incremental Auction to recover the cost of replacement Capacity Resources.

2.61A Scheduled Incremental Auctions

"Scheduled Incremental Auctions" shall refer to the First, Second, or Third Incremental Auction.

2.62 Second Incremental Auction

"Second Incremental Auction" shall mean an Incremental Auction conducted ten months before the Delivery Year to which it relates.

2.63 Sell Offer

"Sell Offer" shall mean an offer to sell Capacity Resources in a Base Residual Auction, Incremental Auction, or Reliability Backstop Auction.

2.64 [Reserved for Future Use]

2.65 Self-Supply

"Self-Supply" shall mean Capacity Resources secured by a Load-Serving Entity, by ownership or contract, outside a Reliability Pricing Model Auction, and used to meet obligations under this Attachment or the Reliability Assurance Agreement through submission in a Base Residual Auction *or an Incremental Auction* of a Sell Offer indicating such Market Seller's intent that such Capacity Resource be *Self-Supply. Self-Supply may be either* committed regardless of clearing price *or submitted as a Sell Offer with a price bid.* A *Load Serving Entity's* Sell Offer with a price bid for an owned or contracted Capacity Resource shall not be deemed "Self-Supply," *unless it is designated as Self-Supply and used by the LSE to meet obligations under this Attachment or the Reliability Assurance Agreement*.

2.65A Short-Term Resource Procurement Target

"Short-Term Resource Procurement Target" shall mean, as to the PJM Region, for purposes of the Base Residual Auction, 2.5% of the PJM Region Reliability Requirement determined for such Base Residual Auction, for purposes of the First Incremental Auction, 2% of the of the PJM Region Reliability Requirement as calculated at the time of the Base Residual Auction; and, for purposes of the Second Incremental Auction, 1.5% of the of the PJM Region Reliability Requirement as calculated at the time of the Base Residual Auction; and, as to any Zone, an allocation of the PJM Region Short-Term Resource Procurement Target based on the Preliminary Zonal Forecast Peak Load, reduced by the amount of load served under the FRR Alternative. For any LDA, the LDA Short-Term Resource Procurement Target shall be the sum of the Short-Term Resource Procurement Targets of all Zones in the LDA.

2.65B Short-Term Resource Procurement Target Applicable Share

"Short-Term Resource Procurement Target Applicable Share" shall mean: (i) for the PJM Region, as to the First and Second Incremental Auctions, 0.2 times the Short-Term Resource Procurement Target used in the Base Residual Auction and, as to the Third Incremental Auction for the PJM Region, 0.6 times such target; and (ii) for an LDA, as to the First and Second Incremental Auctions, 0.2 times the Short-Term Resource Procurement Target used in the Base Residual Auction for such LDA and, as to the Third Incremental Auction, 0.6 times such target.

2.66 Third Incremental Auction

"Third Incremental Auction" shall mean an Incremental Auction conducted three months before the Delivery Year to which it relates.

2.67 Transition Adder

"Transition Adder" shall mean a component of a Sell Offer permitted for certain Capacity Market Sellers for the Transition Period, as set forth in section 17.

2.68 Transition Period

"Transition Period" shall mean the four-year period consisting of the Delivery Years commencing June 1, 2007, June 1, 2008, June 1, 2009, and June 1, 2010.

2.69 Unforced Capacity

"Unforced Capacity" shall have the meaning specified in the Reliability Assurance Agreement.

2.69A Updated VRR Curve

"Updated VRR Curve" shall mean the Variable Resource Requirement Curve as defined in section 5.10(a) of this Attachment for use in the Base Residual Auction of the relevant Delivery Year, updated to reflect the Short-term Resource Procurement Target applicable to the relevant Incremental Auction and any change in the Reliability Requirement from the Base Residual Auction to such Incremental Auction.

2.69B Updated VRR Curve Increment

"Updated VRR Curve Increment" shall mean the portion of the Updated VRR Curve to the right of a vertical line at the level of Unforced Capacity on the x-axis of such curve equal to the net Unforced Capacity committed to the PJM Region as a result of all prior auctions conducted for such Delivery Year.

2.69C Updated VRR Curve Decrement

"Updated VRR Curve Decrement" shall mean the portion of the Updated VRR Curve to the left of a vertical line at the level of Unforced Capacity on the x-axis of such curve equal to the net Unforced Capacity committed to the PJM Region as a result of all prior auctions conducted for such Delivery Year.

2.70 Variable Resource Requirement Curve

"Variable Resource Requirement Curve" shall mean a series of maximum prices that can be cleared in a Base Residual Auction for Unforced Capacity, corresponding to a series of varying resource requirements based on varying installed reserve margins, as determined by the Office of the Interconnection for the PJM Region and for certain Locational Deliverability Areas in accordance with the methodology provided in Section 5.

2.71 Zonal Capacity Price

"Zonal Capacity Price" shall mean the clearing price required in each Zone to meet the demand for Unforced Capacity and satisfy Locational Deliverability Requirements for the LDA or LDAs associated with such Zone. If the Zone contains multiple LDAs with different Capacity Resource Clearing Prices, the Zonal Capacity Price shall be a weighted average of the Capacity Resource Clearing Prices for such LDAs, weighted by the Unforced Capacity of Capacity Resources cleared in each such LDA.

3. RESPONSIBILITIES OF THE OFFICE OF THE INTERCONNECTION

3.1 Support for Self-Supply and Bilateral Transactions

The Office of the Interconnection shall:

(a) support electronic tools to facilitate communication by Market Sellers and Market Buyers of information to the Office of the Interconnection concerning Self-Supply arrangements;

(b) support an electronic bulletin board providing a forum for prospective buyers and sellers to transact Capacity Resources outside the Reliability Pricing Model Auctions, including Locational UCAP transactions (including mechanisms to allow prospective Sellers with partial-year resources to explore voluntary opportunities to combine their resources such that they can be offered together for a full Delivery Year) and support electronic tools to report bilateral capacity transactions between Market Participants to the Office of the Interconnection, in accordance with procedures set forth in the PJM Manuals; and

(c) define one or more capacity trading hubs and determine and publicize values for such hubs based on the capacity prices determined for one or more Locational Deliverability Areas, in accordance with the PJM Manuals.

3.2 Administration of the Base Residual Auction and Incremental Auctions

The Office of the Interconnection shall conduct and administer the Base Residual Auction and Incremental Auctions in accordance with this Attachment, the Operating Agreement, and the Reliability Assurance Agreement. Administration of the Base Residual Auction and Incremental Auctions shall include, but not be limited to, the following:

a) Determining the qualification of entities to become Capacity Market Sellers and Capacity Market Buyers;

b) Determining PJM Region Peak Load Forecasts and Locational Deliverability Area Reliability Requirements;

c) Determining the Minimum Annual Resource Requirements and the Minimum Extended Summer Resource Requirements for the PJM Region and the MAAC, Eastern MAAC and Southwestern MAAC LDAs for Delivery Years starting June 1, 2014;

d) Determining ILR Forecasts for Delivery Years through May 31, 2012;

e) Determining the need, if any, for a Conditional Incremental Auction and providing appropriate prior notice of any such auction

f) Calculating the EFORd for each Generation Capacity Resource in the PJM Region to be used in the Third Incremental Auction;

g) Receiving Buy Bids and Sell Offers, determining Locational Deliverability Requirements and Variable Resource Requirement Curves, and determining the clearing price that reflects all such inputs;

h) Conducting settlements for auction transactions, including but not limited to rendering bills to, receiving payments from, and disbursing payments to, participants in Base Residual Auctions and Incremental Auctions.

i) Maintaining such records of Sell Offers and Buy Bids, clearing price determinations, and other aspects of auction transactions, as may be appropriate to the administration of Base Residual Auctions and Incremental Auctions; and

j) Posting of selected non-confidential data used in Reliability Pricing Model Auctions to calculate clearing prices and other auction results, as appropriate to inform market participants of auction conditions.

3.3 Records and Reports

The Office of the Interconnection shall prepare and maintain such records as are required for the administration of the Base Residual Auction and Incremental Auctions. For each auction conducted, the Office of the Interconnection shall, consistent with section 18.17 of the Operating Agreement, publish the following: (i) Zonal Capacity Prices for each LDA; (ii) Capacity Resource Clearing Prices for each LDA; (iii) Locational Price Adders; (iv) the total megawatts of Unforced Capacity that cleared; and (v) such other auction data as may be appropriate to the efficient and competitive conduct of the Base Residual Auction and Incremental Auctions. Such information shall be available on the PJM internet site through the end of the Delivery Year to which such auctions apply.

3.4 Counterparty

(a) PJMSettlement shall be the Counterparty to the transactions arising from the cleared Base Residual Auctions and Incremental Auctions; provided, however, PJMSettlement shall not be a contracting party to (i) any bilateral transactions between Market Participants, or (ii) with respect to Self-Supply for which designation of Self-Supply has been reported to the Office of the Interconnection.

(b) Charges. PJMSettlement shall be the Counterparty with respect to the obligations to pay, and the payment of, charges pursuant to this Attachment DD.

5.4 Reliability Pricing Model Auctions

The Office of the Interconnection shall conduct the following Reliability Pricing Model Auctions:

a) Base Residual Auction.

PJM shall conduct for each Delivery Year a Base Residual Auction to secure commitments of Capacity Resources as needed to satisfy the portion of the RTO Unforced Capacity Obligation not satisfied through Self-Supply of Capacity Resources for such Delivery Year. All Self-Supply Capacity Resources must be offered in the Base Residual Auction. As set forth in section 6.6, all other Capacity Resources, and certain other existing generation resources, must be offered in the Base Residual Auction. The Base Residual Auction shall be conducted in the month of May that is three years prior to the start of such Delivery Year. The cost of payments to Capacity Market Sellers for Capacity Resources that clear such auction shall be *paid by PJMSettlement from amounts* collected by *PJMSettlement* from Load Serving Entities through the Locational Reliability Charge during such Delivery Year. *PJMSettlement shall be the Counterparty to the sales that clear in such auction and to the obligations to pay, and the payments, by Load Serving Entities; provided, however, that PJMSettlement shall not be a Counterparty to committed Self-Supply Capacity Resources.*

b) Scheduled Incremental Auctions.

PJM shall conduct for each Delivery Year a First, a Second, and a Third Incremental Auction for the purposes set forth in section 2.34. The First Incremental Auction shall be conducted in the month of September that is twenty months prior to the start of the Delivery Year; the Second Incremental Auction shall be conducted in the month of July that is ten months prior to the start of the Delivery Year; and the Third Incremental Auction shall be conducted in the month of February that is three months prior to the start of the Delivery Year.

c) Adjustment through Scheduled Incremental Auctions of Capacity Previously Committed.

The Office of the Interconnection shall recalculate the PJM Region Reliability Requirement and each LDA Reliability Requirement prior to each Scheduled Incremental Auction, based on an updated peak load forecast, updated Installed Reserve Margin and an updated Capacity Emergency Transfer Objective; shall update such reliability requirements for the Third Incremental Auction to reflect any change from such recalculation; and shall update such reliability requirements for the First Incremental Auction or Second Incremental Auction only if the change is greater than or equal to the lesser of: (i) 500 MW or (ii) one percent of the applicable prior reliability requirement. Based on such update, the Office of the Interconnection shall, under certain conditions, seek through the Scheduled Incremental Auction to secure additional commitments of capacity or release sellers from prior capacity commitments. Specifically, the Office of the Interconnection shall:

1) seek additional capacity commitments to serve the PJM Region or an LDA if the PJM Region Reliability Requirement or LDA Reliability Requirement utilized in the most recent prior auction conducted for the Delivery Year is less than, respectively, the updated PJM Region Reliability Requirement or updated LDA Reliability Requirement; provided, however, that in the First Incremental Auction or Second Incremental Auction the Office of the Interconnection shall seek such additional capacity commitments only if such shortfall is in an amount greater than or equal to the lesser of: (i) 500 MW or (ii) one percent of the applicable prior reliability requirement;

2) seek additional capacity commitments to serve the PJM Region or an LDA if:

i) the updated PJM Region Reliability Requirement less the PJM Region Short-Term Resource Procurement Target utilized in the most recent auction conducted for the Delivery Year, or if the LDA Reliability Requirement less the LDA Short Term Resource Procurement Target applicable to such auction, exceeds the total capacity committed in all prior auctions in such region or area, respectively, for such Delivery Year by an amount greater than or equal to the lesser of: (A) 500 MW or (B) one percent of the applicable prior reliability requirement; or

ii) PJM conducts a Conditional Incremental Auction for such Delivery Year and does not obtain all additional commitments of Capacity Resources sought in such Conditional Incremental Auction, in which case, PJM shall seek in the Incremental Auction the commitments that were sought in the Conditional Incremental Auction but not obtained.

3) seek agreements to release prior capacity commitments to the PJM Region or to an LDA if:

i) the PJM Region Reliability Requirement or LDA Reliability Requirement utilized in the most recent prior auction conducted for the Delivery Year exceeds, respectively, the updated PJM Region Reliability Requirement or updated LDA Reliability Requirement; provided, however, that in the First Incremental Auction or Second Incremental Auction the Office of the Interconnection shall seek such agreements only if such excess is in an amount greater than or equal to the lesser of: (A) 500 MW or (B) one percent of the applicable prior reliability requirement; or

ii) PJM obtains additional commitments of Capacity Resources in a Conditional Incremental Auction, in which case PJM shall seek release of an equal number of megawatts (comparing the total purchase amount for all LDAs and the PJM Region related to the delay in Backbone Transmission with the total sell amount for all LDAs and the PJM Region related to the delay in Backbone Transmission) of prior committed capacity that would not have been committed had the delayed Backbone Transmission upgrade that prompted the Conditional

Incremental Auction not been assumed, at the time of the Base Residual Auction, to be in service for the relevant Delivery Year; and if PJM obtains additional commitments of capacity in an incremental auction pursuant to subsection c.2.ii above, PJM shall seek in such Incremental Auction to release an equal amount of capacity (in total for all LDAs and the PJM Region related to the delay in Backbone Transmission) previously committed that would not have been committed absent the Backbone Transmission upgrade.

4) The cost of payments to Market Sellers for additional Capacity Resources cleared in such auctions, and the credits from payments from Market Sellers for the release of previously committed Capacity Resources, shall be apportioned to Load Serving Entities in the PJM Region or LDA, as applicable, through adjustments to the Locational Reliability Charge for such Delivery Year.

5) PJMSettlement shall be the Counterparty to the sales (including releases) of Capacity Resources that clear in such auctions and to the obligations to pay, and the payments, by Load Serving Entities, provided, however, that PJMSettlement shall not be a Counterparty to committed Self-Supply Capacity Resources.

d) Commitment of Replacement Capacity through Scheduled Incremental Auctions.

Each Scheduled Incremental Auction for each Delivery Year shall allow Capacity Market Sellers that committed Capacity Resources in any prior Reliability Pricing Model Auction for such Delivery Year to submit Buy Bids for replacement Capacity Resources. Capacity Market Sellers that submit Buy Bids into an Incremental Auction must specify the type of Unforced Capacity desired, i.e., Annual Resource, Extended Summer Demand Resource, or Limited Demand Resource. The need to purchase replacement Capacity Resources may arise for any reason, including but not limited to resource retirement, resource cancellation or construction delay, resource derating, EFORd increase, a decrease in the Nominated Demand Resource Value of a Planned Demand Resource, delay or cancellation of a Qualifying Transmission Upgrade, or similar occurrences. The cost of payments to Capacity Market Sellers for Capacity Resources that clear such auction shall be *paid by PJMSettlement from amounts* collected *by PJMSettlement* from Capacity Market Buyers that purchase replacement Capacity Resources in such auction. *PJMSettlement shall be the Counterparty to the sales and purchases that clear in such auction, provided, however, PJMSettlement shall not be a Counterparty to committed Self-Supply Capacity Resources.*

e) Conditional Incremental Auction.

PJM shall conduct for any Delivery Year a Conditional Incremental Auction if the in service date of a Backbone Transmission Upgrade that was modeled in the Base Residual Auction is announced as delayed by the Office of the Interconnection beyond July 1 of the Delivery Year for which it was modeled and if such delay causes a reliability criteria violation. If conducted, the Conditional Incremental Auction shall be for the purpose of securing commitments of

additional capacity for the PJM Region or for any LDA to address the identified reliability criteria violation. If PJM determines to conduct a Conditional Incremental Auction, PJM shall post on its website the date and parameters for such auction (including whether such auction is for the PJM Region or for an LDA) at least one month prior to the start of such auction. The cost of payments to Market Sellers for Capacity Resources cleared in such auction shall be collected *by PJMSettlement* from Load Serving Entities in the PJM Region or LDA, as applicable, through an adjustment to the Locational Reliability Charge for such Delivery Year. *PJMSettlement shall be the Counterparty to the sales that clear in such auction and to the obligations to pay, and payments, by Load Serving Entities, provided, however, that PJMSettlement shall not be a Counterparty to committed Self-Supply Capacity Resources.*

5.6 Sell Offers

Sell Offers shall be submitted or withdrawn via the internet site designated by the Office of the Interconnection, in accordance with the procedures and time schedule set forth in the PJM Manuals.

5.6.1 Specifications

A Sell Offer shall state quantities in increments of 0.1 megawatts and shall specify, as appropriate:

a) Identification of the Generation Capacity Resource, Annual Demand Resource, Extended Summer Demand Resource, Limited Demand Resource or Energy Efficiency Resource on which such Sell Offer is based;

b) Minimum and maximum megawatt quantity of installed capacity that the Capacity Market Seller is willing to offer (notwithstanding such specification, the product offered shall be Unforced Capacity), or designate as Self-Supply, from a Generation Capacity Resource;

i) Price, in dollars and cents per megawatt-day, that will be accepted by the Capacity Market Seller for the megawatt quantity of Unforced Capacity offered from such Generation Capacity Resource.

ii) The Sell Offer may take the form of offer segments with varying price-quantity pairs for varying output levels from the underlying resource, but may not take the form of an offer curve with nonzero slope.

c) EFORd of each Generation Capacity Resource offered.

i) If a Capacity Market Seller is offering such resource in a Base Residual Auction, First Incremental Auction, Second Incremental Auction, or Conditional Incremental Auction occurring before the Third Incremental Auction, the Capacity Market Seller shall specify the EFORd to apply to the offer.

ii) If a Capacity Market Seller is committing the resource as Self-Supply, the Capacity Market Seller shall specify the EFORd to apply to the commitment.

iii) The EFORd applied to the Third Incremental Auction will be the final EFORd established by the Office of the Interconnection six (6) months prior to the Delivery Year, based on the actual EFORd in the PJM Region during the 12-month period ending September 30 that last precedes such Delivery Year.

d) The Nominated Demand Resource Value for each Demand Resource offered and the Nominated Energy Efficiency Value for each Energy Efficiency Resource offered. The Office of the Interconnection shall, in both cases, convert such value to an Unforced Capacity basis by multiplying such value by the DR Factor times the Forecast Pool Requirement. Demand

Resources shall specify the LDA in which the Demand Resource is located, including the location of such resource within any Zone that includes more than one LDA as identified on Schedule 10.1 of the RAA.

e) A Demand Resource with the potential to qualify as two or more of a Limited Demand Resource, Extended Summer Demand Resource or Annual Demand Resource may submit separate but coupled Sell Offers for each Demand Resource type for which it qualifies at different prices and the auction clearing algorithm will select the Sell Offer that yields the least-cost solution. For such coupled Demand Resource offers, the offer price of an Annual Demand Resource offer must be at least $.01 per MW-day greater than the offer price of a coupled Extended Summer Demand Resource offer and the offer price of a Extended Summer Demand Resource offer must be at least $.01 per MW-day greater than the offer price of a coupled Limited Demand Resource offer.

f) For a Qualifying Transmission Upgrade, the Sell Offer shall identify such upgrade, and the Office of the Interconnection shall determine and certify the increase in CETL provided by such upgrade. The Capacity Market Seller may offer the upgrade with an associated increase in CETL to an LDA in accordance with such certification, including an offer price that will be accepted by the Capacity Market Seller, stated in dollars and cents per megawatt-day as a price difference between a Capacity Resource located outside such an LDA and a Capacity Resource located inside such LDA; and the increase in CETL into such LDA to be provided by such Qualifying Transmission Upgrade, as certified by the Office of the Interconnection.

5.6.2 Compliance with PJM Credit Policy

Capacity Market Sellers shall comply with the provisions of the PJM Credit Policy as set forth in Attachment Q to this Tariff, including the provisions specific to the Reliability Pricing Model, prior to submission of Sell Offers in any Reliability Pricing Model Auction.

5.6.3 [reserved]

5.6.4 Qualifying Transmission Upgrades

A Qualifying Transmission Upgrade may not be the subject of any Sell Offer in a Base Residual Auction unless it has been approved by the Office of the Interconnection, including certification of the increase in Import Capability to be provided by such Qualifying Transmission Upgrade, no later than 45 days prior to such Base Residual Auction. No such approval shall be granted unless, at a minimum, a Facilities Study Agreement has been executed with respect to such upgrade, and such upgrade conforms to all applicable standards of the Regional Transmission Expansion Plan process.

5.6.5 Market-based Sell Offers

Subject to section 6, a Market Seller authorized by FERC to sell electric generating capacity at market-based prices, or that is not required to have such authorization, may submit Sell Offers that specify market-based prices in any Base Residual Auction or Incremental Auction.

5.6.6 Availability of Capacity Resources for Sale

(a) The Office of the Interconnection shall determine the quantity of megawatts of *available installed c*apacity *that* each *Capacity* Market Seller *must* offer in any *RPM* Auction *pursuant to Section 6.6 of Attachment DD*, through verification of the availability of megawatts of *installedc*apacity from: (i) *all Generation* Capacity Resources owned by or under contract to the *Capacity* Market Seller, including *all Generation* Capacity Resources obtained through bilateral contract; (ii) the results of prior Reliability Pricing Model Auctions, if any, for such Delivery Year *(including consideration of any restriction imposed as a consequence of a prior failure to offer)*; and (iii) such other information as may be available to the Office of the Interconnection. The Office of the Interconnection shall reject Sell Offers or portions of Sell Offers for Capacity Resources *in excess of the quantity of installed capacity that it* determines to be available for sale.

(b) The Office of the Interconnection shall determine the *quantity* of *installed c*apacity available for sale in a Base Residual Auction or Incremental Auction as of the beginning of the period during which Buy Bids and Sell Offers are accepted for *such auction*, as applicable, in accordance with the time schedule set forth in the PJM Manuals. *Removal of a resource from Capacity Resource status shall not be reflected in the determination of available installed capacity unless the associated unit-specific bilateral transaction is approved, the designation of such resource (or portion thereof) as a network resource for the external load is demonstrated to the Office of the Interconnection, or equivalent evidence of a firm external sale is provided prior to the deadline established therefor. The determination of available installed capacity shall also take into account, as they apply in proportion to the share of each resource owned or controlled by a Capacity Market Seller, any approved capacity modifications, and existing capacity commitments established in a prior RPM Auction, an FRR Capacity Plan, Locational UCAP transactions and/or replacement capacity transactions under this Attachment DD.* To enable the Office of the Interconnection to make this determination, no bilateral transactions for Capacity Resources applicable to the period covered by an auction will be processed from the beginning of the period for submission of Sell Offers and Buy Bids, as appropriate, for that auction until completion of the clearing determination for *such auction*. Processing of such bilateral transactions will reconvene once clearing for that auction is completed. *A Generation Capacity Resource located in the PJM Region shall not be removed from Capacity Resource status to the extent the resource is committed to service of PJM loads as a result of an RPM Auction, FRR Capacity Plan, Locational UCAP transaction and/or by designation as a replacement resource under this Attachment DD.*

(c) In order for a bilateral transaction for the purchase and sale of a Capacity Resource to be processed by the Office of the Interconnection, both parties to the transaction must notify the Office of the Interconnection of the transfer of the Capacity Resource from the seller to the buyer in accordance with procedures established by the Office of the Interconnection and set forth in the PJM Manuals. *If a material change with respect to any of the prerequisites for the application of Section 5.6.6 to the Generation Capacity Resource occurs, the Capacity Resource Owner shall immediately notify the Market Monitoring Unit and the Office of the Interconnection.*

5.7 Buy Bids

Buy Bids may be submitted in any Incremental Auction. Buy Bids shall specify, as appropriate:

a) The quantity of Unforced Capacity desired, in increments of 0.1 megawatt;

b) The maximum price, in dollars and cents per megawatt per day, that will be paid by the buyer for the megawatt quantity of Unforced Capacity desired;

c) The type of Unforced Capacity desired, i.e., Annual Resource, Extended Summer Demand Resource, or Limited Demand Resource; and

d) The desired LDA for a replacement Capacity Resource. In the event of delay or cancellation of a Qualifying Transmission Upgrade, the Buy Bid shall specify Capacity Resources in the LDA for which such Qualifying Transmission Upgrade was to increase CETL.

5.8 Submission of Sell Offers and Buy Bids

Submission of Sell Offers and Buy Bids shall be subject to the following requirements:

a) A Sell Offer or Buy Bid that fails to specify a positive megawatt quantity shall be rejected by the Office of the Interconnection.

b) A Buy Bid that fails to specify price shall be rejected by the Office of the Interconnection. A Sell Offer that fails to either designate such offer as self-scheduled or to specify an offer price shall be rejected by the Office of the Interconnection.

c) A Buy Bid that fails to designate the type of Unforced Capacity desired, i.e., an Annual Resource, Extended Summer Demand Resource, or Limited Demand Resource, shall be rejected by the Office of the Interconnection.

d) All Sell Offers and Buy Bids must be received by the Office of the Interconnection during a specified period, as determined by the Office of the Interconnection, in accordance with the PJM Manuals. A Sell Offer or Buy Bid may be withdrawn by a notification of withdrawal received by the Office of the Interconnection at any time during the foregoing period, but may not be withdrawn after such period.

e) Sell Offers or Buy Bids shall be submitted or withdrawn via the Internet site designated by the Office of the Interconnection; provided, however, that if the Internet site cannot be accessed at any time during the period specified for the applicable auction, a Sell Offer or Buy Bid may be submitted or withdrawn by electronic mail transmitted to the e-mail address, or faxed to the fax number, specified by the Office of the Interconnection in the PJM Manuals.

f) Sell Offers must be based on the Capacity Market Seller's Capacity Resource position at the opening of the auction's bidding window.

g) The Office of the Interconnection shall accept a Sell Offer only up to the megawatt amount of installed capacity of Capacity Resources owned or controlled by such Capacity Market Seller that has not previously been committed for the applicable Delivery Year.

h) No Sell Offer shall be accepted from an FRR Entity unless it meets the requirements applicable to such offers under Schedule 8.1 of the Reliability Assurance Agreement.

i) The Office of the Interconnection shall have final authority to determine whether to accept a Sell Offer in accordance with the terms of the Tariff and the PJM Manuals.

5.10 Auction Clearing Requirements

The Office of the Interconnection shall clear each Base Residual Auction and Incremental Auction for a Delivery Year in accordance with the following:

a) Variable Resource Requirement Curve

The Office of the Interconnection shall determine Variable Resource Requirement Curves for the PJM Region and for such Locational Deliverability Areas as determined appropriate in accordance with subsection (a)(iii) for such Delivery Year to establish the level of Capacity Resources that will provide an acceptable level of reliability consistent with the Reliability Principles and Standards. It is recognized that the variable resource requirement reflected in the Variable Resource Requirement Curve can result in an optimized auction clearing in which the level of Capacity Resources committed for a Delivery Year exceeds the PJM Region Reliability Requirement (less the Forecast RTO ILR Obligation for Delivery Years through May 31, 2012, or less the Short-Term Resource Procurement Target for Delivery Years thereafter) or Locational Deliverability Area Reliability Requirement (less the Forecast Zonal ILR Obligation for Delivery Years through May 31, 2012, or less the Short-Term Resource Procurement Target for Delivery Years thereafter for the Zones associated with such LDA) for such Delivery Year. For any auction, the Updated Forecast Peak Load, and Short-Term Resource Procurement Target applicable to such auction, shall be used.

i) Methodology to Establish the Variable Resource Requirement Curve

Prior to the Base Residual Auction, in accordance with the schedule in the PJM Manuals, the Office of the Interconnection shall establish the Variable Resource Requirement Curve for the PJM Region as follows:

- Each Variable Resource Requirement Curve shall be plotted on a graph on which Unforced Capacity is on the x-axis and price is on the y-axis;

- The Variable Resource Requirement Curve for the PJM Region shall be plotted by first combining (i) a horizontal line from the y-axis to point (1), (ii) a straight line connecting points (1) and (2), (iii) a straight line connecting points (2) and (3), and (iv) a vertical line from point (3) to the x-axis, where:

    - For point (1), price equals: [1.5 times (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset)] divided by (one minus the pool-wide average EFORd) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus the approved PJM Region Installed Reserve Margin ("IRM")% minus 3%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation for Delivery Years through May 31, 2012 or less the Short-Term Resource Procurement Target for Delivery Years thereafter;

- For point (2), price equals: (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset) divided by (one minus the pool-wide average EFORd) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 1%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation for Delivery Years through May 31, 2012 or less the Short-Term Resource Procurement Target for Delivery Years thereafter; and

- For point (3), price equals [0.2 times (the Cost of New Entry minus the Net Energy and Ancillary Service Revenue Offset)] divided by (one minus the pool-wide average EFORd) and Unforced Capacity equals: [the PJM Region Reliability Requirement multiplied by (100% plus IRM% plus 5%) divided by (100% plus IRM%)] minus the Forecast RTO ILR Obligation for Delivery Years through May 31, 2012 or less the Short-Term Resource Procurement Target for Delivery Years thereafter;

ii) For any Delivery Year, the Office of the Interconnection shall establish a separate Variable Resource Requirement Curve for each LDA for which:

A. the Capacity Emergency Transfer Limit is less than 1.15 times the Capacity Emergency Transfer Objective, as determined by the Office of the Interconnection in accordance with NERC and Applicable Regional Reliability Council guidelines; or

B. such LDA had a Locational Price Adder in any one or more of the three immediately preceding Base Residual Auctions; or

C. such LDA is determined in a preliminary analysis by the Office of the Interconnection to be likely to have a Locational Price Adder, based on historic offer price levels; provided however that for the Base Residual Auction conducted for the Delivery Year commencing on June 1, 2012, the EMAAC, SWMAAC and MAAC LDAs shall employ separate Variable Resource Requirement Curves regardless of the outcome of the above three tests; and provided further that the Office of the Interconnection may establish a separate Variable Resource Requirement Curve for an LDA not otherwise qualifying under the above three tests if it finds that such is required to achieve an acceptable level of reliability consistent with the Reliability Principles and Standards, in which case the Office of the Interconnection shall post such finding, such LDA, and such Variable Resource Requirement Curve on its internet site no later than the March 31 last preceding the Base Residual Auction for such Delivery Year. The same process as set forth in subsection (a)(i) shall be used to establish the Variable Resource Requirement Curve for any such LDA,

except that the Locational Deliverability Area Reliability Requirement for such LDA shall be substituted for the PJM Region Reliability Requirement and the LDA Short-Term Resource Procurement Target shall be substituted for the PJM Region Short-Term Resource Procurement Target. For purposes of calculating the Capacity Emergency Transfer Limit under this section, all generation resources located in the PJM Region that are, or that qualify to become, Capacity Resources, shall be modeled at their full capacity rating, regardless of the amount of capacity cleared from such resource for the immediately preceding Delivery Year.

iii) Procedure for ongoing review of Variable Resource Requirement Curve shape.

Beginning no later than for the Delivery Year that commences June 1, 2015, and continuing no later than for every third Delivery Year thereafter, the Office of the Interconnection shall perform a review of the shape of the Variable Resource Requirement Curve, as established by the requirements of the foregoing subsection. Such analysis shall be based on simulation of market conditions to quantify the ability of the market to invest in new Capacity Resources and to meet the applicable reliability requirements on a probabilistic basis. Based on the results of such review, PJM shall prepare a recommendation to either modify or retain the existing Variable Resource Requirement Curve shape. The Office of the Interconnection shall post the recommendation and shall review the recommendation through the stakeholder process to solicit stakeholder input. If a modification of the Variable Resource Requirement Curve shape is recommended, the following process shall be followed:

A) If the Office of the Interconnection determines that the Variable Resource Requirement Curve shape should be modified, Staff of the Office of the Interconnection shall propose a new Variable Resource Requirement Curve shape on or before September 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

B) The PJM Members shall review the proposed modification to the Variable Resource Requirement Curve shape.

C) The PJM Members shall either vote to endorse the proposed modification, to propose alternate modifications or to recommend no modification by October 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

D) The PJM Board of Managers shall consider a proposed modification to the Variable Resource Requirement Curve shape, and the Office of the Interconnection shall file any approved modified Variable Resource Requirement Curve shape with the FERC by December 1, prior to the conduct of the Base Residual

Auction for the first Delivery Year in which the new values would be applied.

iv) Cost of New Entry

A) For the Delivery Year commencing on June 1, 2012, and continuing thereafter unless and until changed pursuant to subsection (B) below, the Cost of New Entry for the PJM Region shall be $112,868 per MW-year. The Cost of New Entry for each LDA shall be determined based upon the Transmission Owner zones that comprise such LDA, as provided in the table below. If an LDA combines transmission zones with differing Cost of New Entry values, the lowest such value shall be used.

Geographic Location Within the PJM Region Encompassing These Zones	Cost of New Entry in $/MW-Year
PS, JCP&L, AE, PECO, DPL, RECO ("CONE Area 1")	122,040
BGE, PEPCO ("CONE Area 2")	112,868
AEP, Dayton, ComEd, APS, DQL ("CONE Area 3")	115,479
PPL, MetEd, Penelec ("CONE Area 4")	112,868
Dominion ("CONE Area 5")	112,868

B) Beginning with the 2013-2014 Delivery Year, the CONE shall be adjusted to reflect changes in generating plant construction costs based on changes in the Applicable H-W Index, in accordance with the following:

(1) The Applicable H-W Index for any Delivery Year shall be the most recently published twelve-month change, at the time CONE values are required to be posted for the Base Residual Auction for such Delivery Year, in the Total Other Production Plant Index shown in the Handy-Whitman Index of Public Utility Construction Costs for the North Atlantic Region for purposes of CONE Areas 1, 2, and 4, for the North Central Region for purposes of CONE Area 3, and for the South Atlantic Region for purposes of CONE Area 5.

(2) The CONE in a CONE Area shall be adjusted prior to the Base Residual Auction for each Delivery Year by applying the Applicable H-W Index for such CONE Area to the Benchmark CONE for such CONE Area.

(3) The Benchmark CONE for a CONE Area shall be the CONE used for such CONE Area in the Base Residual Auction for the prior Delivery Year.

(4) Notwithstanding the foregoing, CONE values for any CONE Area for any Delivery Year shall be subject to amendment pursuant to appropriate filings with FERC under the Federal Power Act, including, without limitation, any filings resulting from the process described in section 5.10(a)(vii)(C) or any filing to establish new or revised CONE Areas.

v) Net Energy and Ancillary Services Revenue Offset

A) The Office of the Interconnection shall determine the Net Energy and Ancillary Services Revenue Offset each year for the PJM Region as (A) the annual average of the revenues that would have been received by the Reference Resource during a period of three consecutive calendar years preceding the time of the determination, based on (1) the heat rate and other characteristics

of such Reference Resource; (2) fuel prices reported during such period at an appropriate pricing point for the PJM Region with a fuel transmission adder appropriate for such region, as set forth in the PJM Manuals, assumed variable operation and maintenance expenses for such resource of $6.47 per MWh, and actual PJM hourly average Locational Marginal Prices recorded in the PJM Region during such period; and (3) an assumption that the Reference Resource would be dispatched on a Peak-Hour Dispatch basis; plus (B) ancillary service revenues of $2,199 per MW-year.

Energy and Ancillary Market Revenue Offset each year for each sub-region of the PJM Region for which the Cost of New Entry is determined, as identified above, using the same procedures and methods as set forth in the previous subsection; provided, however, that: (1) the average hourly LMPs for the transmission zone in which such resource was assumed to be installed for purposes of the CONE estimate (as specified in the PJM Manuals) shall be used in place of the PJM Region average hourly LMPs; (2) if such sub-region was not integrated into the PJM Region for the entire applicable period, then the offset shall be calculated using only those whole calendar years during which the sub-region was integrated; and (3) a posted fuel pricing point in such sub-region, if available, and (if such pricing point is not available) a fuel transmission adder appropriate to each assumed Cost of New Entry location from an appropriate PJM Region pricing point shall be used for each such sub-region.

vi) Adjustment to Net Energy and Ancillary Services Revenue Offset

Beginning with the Base Residual Auction scheduled for May 2010, the Net Energy and Ancillary Services Revenue Offset for a CONE Area shall be adjusted following any Delivery Year during which Scarcity Pricing was effective in such CONE Area pursuant to the Scarcity Pricing provisions of section 6A of Schedule 1 to the PJM Operating Agreement. Following each Delivery Year, the Scarcity Pricing revenues the Reference Resource in each CONE Area would have received during such Delivery Year shall be calculated based on the assumed heat rate and other characteristics of the Reference Resource, assumed Peak-Hour Dispatch, and the actual locational marginal prices and actual fuel prices during the Delivery Year for the applicable location, which shall be the transmission zone in which such resource was assumed to be installed for purposes of the estimate of CONE applicable to such CONE Area. The Scarcity Pricing revenues so determined shall be subtracted from the Net CONE otherwise calculated for such CONE Area for use in the Base Residual Auction next occurring after the Delivery Year in which Scarcity Pricing was effective in such CONE Area.

vii) Process for Establishing Parameters of Variable Resource Requirement Curve

A) The parameters of the Variable Resource Requirement Curve will be established prior to the conduct of the Base Residual Auction for a Delivery Year and will be used for such Base Residual Auction.

B) The Office of the Interconnection shall determine the PJM Region Reliability Requirement and the Locational Deliverability Area Reliability Requirement for each Locational Deliverability Area for which a Variable Resource Requirement Curve has been established for such Base Residual Auction on or before February 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values will be applied, in accordance with the Reliability Assurance Agreement.

C) Beginning no later than for the Delivery Year that commences June 1, 2015, and continuing no later than for every third Delivery Year thereafter, the Office of the Interconnection shall review the calculation of the Cost of New Entry for each CONE Area.

1) If the Office of the Interconnection determines that the Cost of New Entry values should be modified, the Staff of the Office of the Interconnection shall propose new Cost of New Entry values on or before September 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

2) The PJM Members shall review the proposed values.

3) The PJM Members shall either vote to endorse the proposed values or propose alternate values by October 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

4) The PJM Board of Managers shall consider Cost of New Entry values, and the Office of the Interconnection shall file any approved modified Cost of New Entry values with the FERC by December 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

D) Beginning no later than for the Delivery Year that commences June 1, 2015, and continuing no later than for every third Delivery Year thereafter, the Office of the Interconnection shall review the methodology set forth in this Attachment for determining the Net

Energy and Ancillary Services Revenue Offset for the PJM Region and for each Zone.

1) If the Office of the Interconnection determines that the Net Energy and Ancillary Services Revenue Offset methodology should be modified, Staff of the Office of the Interconnection shall propose a new Net Energy and Ancillary Services Revenue Offset methodology on or before September 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new methodology would be applied.

2) The PJM Members shall review the proposed methodology.

3) The PJM Members shall either vote to endorse the proposed methodology or propose an alternate methodology by October 31, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new methodology would be applied.

4) The PJM Board of Managers shall consider the Net Revenue Offset methodology, and the Office of the Interconnection shall file any approved modified Net Energy and Ancillary Services Revenue Offset values with the FERC by December 1, prior to the conduct of the Base Residual Auction for the first Delivery Year in which the new values would be applied.

b) Locational Requirements

The Office of Interconnection shall establish locational requirements prior to the Base Residual Auction to quantify the amount of Unforced Capacity that must be committed in each Locational Deliverability Area, in accordance with the PJM Reliability Assurance Agreement.

c) Minimum Annual Resource Requirements

The Office of the Interconnection shall establish the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and the Mid-Atlantic Area Council ("MAAC"), Eastern MAAC and Southwestern MAAC Locational Deliverability Areas prior to the Base Residual Auction for each Delivery Year, beginning with the Delivery Year that starts on June 1, 2014.

d) Preliminary PJM Region Peak Load Forecast for the Delivery Year

The Office of the Interconnection shall establish the Preliminary PJM Region Load Forecast for the Delivery Year in accordance with the PJM Manuals by February 1, prior to the conduct of the Base Residual Auction for such Delivery Year.

e) Updated PJM Region Peak Load Forecasts for Incremental Auctions

The Office of the Interconnection shall establish the updated PJM Region Peak Load Forecast for a Delivery Year in accordance with the PJM Manuals by February 1, prior to the conduct of the First, Second, and Third Incremental Auction for such Delivery Year.

5.11 Posting of Information Relevant to the RPM Auctions

a) In accordance with the schedule provided in the PJM Manuals, PJM will post the following information for a Delivery Year prior to conducting the Base Residual Auction for such Delivery Year:

i) The Preliminary PJM Region Peak Load Forecast (for the PJM Region, and allocated to each Zone) and, for Delivery Years through May 31, 2012, the ILR Forecast by Locational Deliverability Area;

ii) The PJM Region Installed Reserve Margin, the Pool-wide average EFORd, and the Forecast Pool Requirement;

iii) The Demand Resource Factor;

iv) The PJM Region Reliability Requirement, and the Variable Resource Requirement Curve for the PJM Region;

v) The Locational Deliverability Area Reliability Requirement and the Variable Resource Requirement Curve for each Locational Deliverability Area for which a separate Variable Resource Requirement Curve has been established for such Base Residual Auction, and the CETO and CETL values for all Locational Deliverability Areas;

vi) The Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and the Mid-Atlantic Area Council ("MAAC"), Eastern MAAC and Southwestern MAAC Locational Deliverability Areas for Delivery Years starting with June 1, 2014;

vii) Any Transmission Upgrades that are expected to be in service for such Delivery Year, provided that a Transmission Upgrade that is Backbone Transmission satisfies the project development milestones set forth in section 5.11A;

viii) The bidding window time schedule for each auction to be conducted for such Delivery Year;

ix) The Net Energy and Ancillary Services Revenue Offset values for the PJM Region for use in the Variable Resource Requirement Curves for the PJM Region and each Locational Deliverability Area for which a separate Variable Resource Requirement Curve has been established for such Base Residual Auction; and

x) The results of the Preliminary Market Structure Screen in accordance with section 6.2(a).

b) The information listed in (a) will be posted and applicable for the First, Second, Third, and Conditional Incremental Auctions for such Delivery Year, except to the extent updated as required by other provisions of this Tariff.

c) In accordance with the schedule provided in the PJM Manuals, PJM will post the Final PJM Region Peak Load Forecast and the allocation to each zone of the obligation resulting from such final forecast, following the completion of the final Incremental Auction (including any Conditional Incremental Auction) conducted for such Delivery Year;

d) In accordance with the schedule provided in the PJM Manuals, PJM will advise owners of Generation Capacity Resources of the updated EFORd values for such Generation Capacity Resources prior to the conduct of the Third Incremental Auction for such Delivery Year.

e) After conducting the Reliability Pricing Model Auctions, PJM will post the results of each auction *as soon thereafter as possible. The posted results shall include graphical supply curves that are (a) provided for the entire PJM Region, (b) provided for any Locational Deliverability Area for which there are four (4) or more suppliers, and (c) developed using a formulaic approach to smooth the curves using a statistical technique that fits a smooth curve to the underlying supply curve data while ensuring that the point of intersection between supply and demand curves is at the market clearing price.*

If PJM discovers an error in the initial posting of auction results for a particular Reliability Pricing Model Auction, it shall notify Market Participants of the error as soon as possible after it is found, but in no event later than 5:00 p.m. of the fifth business day following the initial publication of the results of the auction. After this initial notification, if PJM determines it is necessary to post modified results, it shall provide notification of its intent to do so, together with all available supporting documentation, by no later than 5:00 p.m. of the seventh business day following the initial publication of the results of the auction. Thereafter, PJM must post on its Web site any corrected auction results by no later than 5:00 p.m. of the tenth business day following the initial publication of the results of the auction. Should any of the above deadlines pass without the associated action on the part of the Office of the Interconnection, the originally posted results will be considered final. Notwithstanding the foregoing, the deadlines set forth above shall not apply if the referenced auction results are under publicly noticed review by the FERC.

5.12 Conduct of RPM Auctions

The Office of the Interconnection shall employ an optimization algorithm for each Base Residual Auction and each Incremental Auction to evaluate the Sell Offers and other inputs to such auction to determine the Sell Offers that clear such auction.

a) Base Residual Auction

For each Base Residual Auction, the optimization algorithm shall consider:

- all Sell Offers submitted in such auction;
- the Variable Resource Requirement Curves for the PJM Region and each LDA;
- any constraints resulting from the Locational Deliverability Requirement;
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- the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and the Mid-Atlantic Area Council ("MAAC"), Eastern MAAC and Southwestern MAAC Locational Deliverability Areas for Delivery Years starting with June 1, 2014 ;
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- the PJM Region Reliability Requirement, minus, for Delivery Years through May 31, 2012, the Forecast RTO ILR Obligation and, for Delivery Years thereafter, minus the Short-Term Resource Procurement Target.

The optimization algorithm shall be applied to calculate the overall clearing result to minimize the cost of satisfying the reliability requirements across the PJM Region, regardless of whether the quantity clearing the Base Residual Auction is above or below the applicable target quantity, while respecting all applicable requirements and constraints. Where the supply curve formed by the Sell Offers submitted in an auction falls entirely below the Variable Resource Requirement Curve, the auction shall clear at the price-capacity point on the Variable Resource Requirement Curve corresponding to the total Unforced Capacity provided by all such Sell Offers. Where the supply curve consists only of Sell Offers located entirely below the Variable Resource Requirement Curve and Sell Offers located entirely above the Variable Resource Requirement Curve, the auction shall clear at the price-capacity point on the Variable Resource Requirement Curve corresponding to the total Unforced Capacity provided by all Sell Offers located entirely below the Variable Resource Requirement Curve. In determining the lowest-cost overall clearing result that satisfies all applicable constraints and requirements, the optimization may select from among multiple possible alternative clearing results that satisfy such requirements, including, for example (without limitation by such example), accepting a lower-priced Sell Offer that intersects the Variable Resource Requirement Curve and that specifies a minimum capacity block, accepting a higher-priced Sell Offer that intersects the Variable Resource Requirement Curve and that contains no minimum-block limitations, or rejecting both of the above

alternatives and clearing the auction at the higher-priced point on the Variable Resource Requirement Curve that corresponds to the Unforced Capacity provided by all Sell Offers located entirely below the Variable Resource Requirement Curve.

The Sell Offer price of a Qualifying Transmission Upgrade shall be treated as a capacity price differential between the LDAs specified in such Sell Offer between which CETL is increased, and the Import Capability provided by such upgrade shall clear to the extent the difference in clearing prices between such LDAs is greater than the price specified in such Sell Offer. The Capacity Resource clearing results and Capacity Resource Clearing Prices so determined shall be applicable for such Delivery Year.

b) Scheduled Incremental Auctions

For purposes of a Scheduled Incremental Auction, the optimization algorithm shall consider:

- The PJM Region Reliability Requirement, less the Forecast RTO ILR Obligation or Short-term Resource Procurement Target, as applicable;

- Updated LDA Reliability Requirements taking into account any updated Capacity Emergency Transfer Objectives;

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- the Capacity Emergency Transfer Limit used in the Base Residual Auction, or any updated value resulting from a Conditional Incremental Auction;

- For each LDA, such LDA's updated Reliability Requirement, less the Forecast LDA ILR Obligation or Short-Term Resource Procurement Target, as applicable;

- the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement for the PJM Region and the Mid-Atlantic Area Council ("MAAC"), Eastern MAAC and Southwestern MAAC Locational Deliverability Areas for Delivery Years starting with June 1, 2014 ;

- A demand curve consisting of the Buy Bids submitted in such auction and, if indicated for use in such auction in accordance with the provisions below, the Updated VRR Curve Increment;

- The Sell Offers submitted in such auction; and

- The Unforced Capacity previously committed for such Delivery Year.

(i) When the requirement to seek additional resource commitments in a Scheduled Incremental Auction is triggered by section 5.4(c)(2) of this Attachment, the Office of the Interconnection shall employ in the clearing of such auction the Updated VRR Curve Increment.

(ii) When the requirement to seek additional resource commitments in a Scheduled Incremental Auction is triggered by section 5.4(c)(1) of this Attachment, and the conditions stated in section 5.4(c)(2) do not apply, the Office of the Interconnection shall employ in the clearing of such auction a portion of the Updated VRR Curve Increment extending right from the left-most point on that curve in a megawatt quantity equal to (A) the Short-Term Resource Procurement Target Applicable Share for such auction plus (B) the difference between the updated PJM Region Reliability Requirement or updated LDA Reliability Requirement and, respectively, the PJM Region Reliability Requirement, or LDA Reliability Requirement, utilized in the most recent prior auction conducted for such Delivery Year plus any amount required by section 5.4(c)(2)(ii).

(iii) When the possible need to seek agreements to release capacity commitments in any Scheduled Incremental Auction is indicated for the PJM Region or any LDA by section 5.4(c)(3)(i) of this Attachment, the Office of the Interconnection first shall subtract such auction's Short-Term Resource Procurement Target Applicable Share for such region or LDA from the difference between (A) the Reliability Requirement for such region or LDA utilized in the most recent prior auction conducted for the Delivery Year and (B) the updated Reliability Requirement for such region or LDA, plus (C) any capacity sell-back amount determined by PJM to be required for the PJM Region or such LDA by section 5.4(c)(3)(ii) of this Attachment; provided, however, that the amount sold in total for all LDAs and the PJM Region related to a delay in a Backbone Transmission upgrade may not exceed the amounts purchased in total for all LDAs and the PJM Region related to a delay in a Backbone Transmission upgrade. If the result of that subtraction is a negative quantity, the Office of the Interconnection shall employ in the clearing of such auction a portion of the Updated VRR Curve Increment extending right from the left-most point on that curve in a megawatt amount equal to that negative quantity defined above, to seek to procure such quantity. If the result of such subtraction is a positive quantity, the Office of the Interconnection shall employ in the clearing of the auction a portion of the Updated VRR Curve Decrement, extending and ascending to the left from the right-most point on that curve in a megawatt amount corresponding to the positive quantity defined above, to seek to sell back such quantity.

(iv) If none of the tests for adjustment of capacity procurement in subsections (i), (ii), or (iii) is satisfied for the PJM Region or an LDA in a Scheduled Incremental Auction, the Office of the Interconnection shall employ in the clearing of such auction for the region or such LDA a portion of the Updated VRR Curve Increment extending right from the left-most point on that curve in megawatt quantity equal to the Short-Term Resource Procurement Target Applicable Share. If more than one of the tests for adjustment of capacity procurement in subsections (i), (ii), or (iii) is satisfied for the PJM Region or an LDA in a Scheduled Incremental Auction, the Office of the Interconnection shall not seek to procure the Short-Term Resource Procurement Target Applicable Share more than once for such region or area for such auction.

(v) If PJM seeks to procure additional capacity in an Incremental Auction due to a triggering of the tests in subsections (i), (ii), (iii) or (iv) then the Minimum Annual Resource Requirement for such Auction will be equal to the updated Minimum Annual Resource Requirement minus the amount of previously committed capacity from Annual Resources, and the Minimum Extended Summer Resource Requirement for such Auction will be equal to the

updated Minimum Extended Summer Resource Requirement minus the amount of previously committed capacity from Annual Resources and Extended Summer Demand Resources. If PJM seeks to release prior committed capacity due to a triggering of the test in subsection (iii) then PJM may not release prior committed capacity from Annual Resources or Extended Summer Demand Resources below the updated Minimum Annual Resource Requirement and updated Minimum Extended Summer Resource Requirement, respectively.

(vi) If the above tests are triggered for an LDA and for another LDA wholly located within the first LDA, the Office of the Interconnection may adjust the amount of any Sell Offer or Buy Bids otherwise required by subsections (i), (ii), or (iii) above in one LDA as appropriate to take into account any reliability impacts on the other LDA.

(vii) The optimization algorithm shall calculate the overall clearing result to minimize the cost to satisfy the Unforced Capacity Obligation of the PJM Region to account for the updated PJM Peak Load Forecast and the cost of committing replacement capacity in response to the Buy Bids submitted, while satisfying or honoring such reliability requirements and constraints, in the same manner as set forth in subsection (a) above.

(viii) Load Serving Entities may be entitled to certain credits ("Excess Commitment Credits") under certain circumstances as follows:

(A) For either or both of the Delivery Years commencing on June 1, 2010 or June 1, 2011, if the PJM Region Reliability Requirement used for purposes of the Base Residual Auction for such Delivery Year exceeds the PJM Region Reliability Requirement that is based on the last updated load forecast prior to such Delivery Year, then such excess will be allocated to Load Serving Entities as set forth below;

(B) For any Delivery Year beginning with the Delivery Year that commences June 1, 2012, the total amount from Sell Offers submitted by the Office of the Interconnection pursuant to subsection (b)(iii) above in the Scheduled Incremental Auctions for such Delivery Year that does not clear such auctions will be allocated to Load Serving Entities as set forth below;

(C) the amount from (A) or (B) above for the PJM Region shall be allocated among Locational Deliverability Areas pro rata based on the reduction for each such Locational Deliverability Area in the peak load forecast from the time of the Base Residual Auction to the time of the Third Incremental Auction; provided, however, that the amount allocated to a Locational Deliverability Area may not exceed the reduction in the corresponding Reliability Requirement for such Locational Deliverability Area; and provided further that any LDA with an increase in its load forecast shall not be allocated any Excess Commitment Credits;

(D) the amount, if any, allocated to a Locational Deliverability Area shall be further allocated among Load Serving Entities in such areas that are charged a Locational Reliability Charge based on the Daily Unforced Capacity Obligation of such Load Serving Entities as of June 1 of the Delivery Year and shall be constant for the entire Delivery Year. Excess Commitment Credits may be used as Replacement Capacity or traded bilaterally.

c) Conditional Incremental Auction

For each Conditional Incremental Auction, the optimization algorithm shall consider:

- The quantity and location of capacity required to address the identified reliability concern that gave rise to the Conditional Incremental Auction;

- the same Capacity Emergency Transfer Limits that were modeled in the Base Residual Auction, or any updated value resulting from a Conditional Incremental Auction; and

- the Sell Offers submitted in such auction.

The Office of the Interconnection shall submit a Buy Bid based on the quantity and location of capacity required to address the identified reliability violation at a Buy Bid price equal to 1.5 times Net CONE.

The optimization algorithm shall calculate the overall clearing result to minimize the cost to address the identified reliability concern, while satisfying or honoring such reliability requirements and constraints.

(d) Equal-priced Sell Offers

If two or more Sell Offers submitted in any auction satisfying all applicable constraints include the same offer price, and some, but not all, of the Unforced Capacity of such Sell Offers is required to clear the auction, then the auction shall be cleared in a manner that minimizes total costs, including total make-whole payments if any such offer includes a minimum block and, to the extent consistent with the foregoing, in accordance with the following additional principles:

1) as necessary, the optimization shall clear such offers that have a flexible megawatt quantity, and the flexible portions of such offers that include a minimum block that already has cleared, where some but not all of such equal-priced flexible quantities are required to clear the auction, pro rata based on their flexible megawatt quantities; and

2) when equal-priced minimum-block offers would result in equal overall costs, including make-whole payments, and only one such offer is required to clear the auction, then the offer that was submitted earliest to the Office of the Interconnection, based on its assigned timestamp, will clear.

5.14 Clearing Prices and Charges

a) Capacity Resource Clearing Prices

For each Base Residual Auction and Incremental Auction, the Office of the Interconnection shall calculate a clearing price to be paid for each megawatt-day of Unforced Capacity that clears in such auction. The Capacity Resource Clearing Price for each LDA will be the sum of the following: (1) the marginal value of system capacity for the PJM Region, without considering locational constraints, (2) the Locational Price Adder, if any in such LDA, (3) the Annual Resource Price Adder, if any, and (4) the Extended Summer Resource Price Adder, if any, all as determined by the Office of the Interconnection based on the optimization algorithm. If a Capacity Resource is located in more than one Locational Deliverability Area, it shall be paid the highest Locational Price Adder in any applicable LDA in which the Sell Offer for such Capacity Resource cleared. The Annual Resource Price Adder is applicable for Annual Resources only. The Extended Summer Resource Price Adder is applicable for Annual Resources and Extended Summer Demand Resources.

b) Resource Make-Whole Payments

If a Sell Offer specifies a minimum block, and only a portion of such block is needed to clear the market in a Base Residual or Incremental Auction, the MW portion of such Sell Offer needed to clear the market shall clear, and such Sell Offer shall set the marginal value of system capacity. In addition, the Capacity Market Seller shall receive a Resource Make-Whole Payment equal to the Capacity Resource Clearing Price in such auction times the difference between the Sell Offer's minimum block MW quantity and the Sell Offer's cleared MW quantity. The cost for any such Resource Make-Whole Payments required in a Base Residual Auction or Incremental Auction for adjustment of prior capacity commitments shall be collected pro rata from all LSEs in the LDA in which such payments were made, based on their Daily UnforcedCapacity Obligations. The cost for any such Resource Make-Whole Payments required in an Incremental Auction for capacity replacement shall be collected from all Capacity Market Buyers in the LDA in which such payments were made, on a pro-rata basis based on the MWs purchased in such auction.

c) New Entry Price Adjustment

A Capacity Market Seller that submits a Sell Offer based on a Planned Generation Capacity Resource that clears in the BRA for a Delivery Year may, at its election, submit Sell Offers with a New Entry Price Adjustment in the BRAs for the two immediately succeeding Delivery Years if:

a. Such Capacity Market Seller provides notice of such election at the time it submits its Sell Offer for such resource in the BRA for the first Delivery Year for which such resource is eligible to be considered a Planned Generation Capacity Resource;

b. Acceptance of such Sell Offer in such BRA increases the total Unforced Capacity in the LDA in which such Resource will be located from a megawatt quantity below the LDA Reliability Requirement to a megawatt quantity corresponding to a point on the VRR Curve where price is no greater than 0.40 times the applicable Net CONE divided by (one minus the pool-wide average EFORd); and

c. Such Capacity Market Seller submits Sell Offers in the BRA for the two immediately succeeding Delivery Years for the entire Unforced Capacity of such Generation Capacity Resource equal to the lesser of: 1) the price in such seller's Sell Offer for the BRA in which such resource qualified as a Planned Generation Capacity Resource; or 2) 0.90 times the then-current Net CONE, on an Unforced Capacity basis, for such LDA.

If the Sell Offer is submitted consistent with the foregoing conditions, then:

(i) in the first Delivery Year, the Resource sets the Capacity Resource Clearing Price for the LDA and all resources in the LDA receive the Capacity Resource Clearing Price.

(ii) in the subsequent two BRAs, if the Resource clears, it shall receive the Capacity Resource Clearing Price for such LDA. If the Resource does not clear, it shall be deemed resubmitted at the highest price per MW at which the Unforced Capacity of such Resource that cleared the first-year BRA will clear the subsequent-year BRA pursuant to the optimization algorithm described in section 5.12(a) of this Attachment, and it shall clear and shall be committed to the PJM Region in the amount cleared, plus any additional minimum-block quantity from its Sell Offer for such Delivery Year, but such additional amount shall be no greater than the portion of a minimum-block quantity, if any, from its first-year Sell Offer that is entitled to compensation for such first year pursuant to section 5.14(b) of this Attachment. The Capacity Resource Clearing Price, and the resources cleared, shall be re-determined to reflect such resubmission. In such case, the Resource submitted under this provision shall be paid for the entire committed quantity the Sell Offer price that it initially submitted in such subsequent BRA. The difference between such Sell Offer Price and the Capacity Resource Clearing Price (as well as any difference between the cleared quantity and the committed quantity), will be treated as a Resource Make-Whole Payment in accordance with Section 5.14(b). Other capacity resources that clear the BRA in such LDA receive the Capacity Resource Clearing Price as determined in Section 5.14(a).

The failure to submit a Sell Offer consistent with Section 5.14(c)(i)-(iii) in the BRA for Delivery Year 3 shall not retroactively revoke the New Entry Price Adjustment for Delivery Year 2.

For each Delivery Year that the foregoing conditions are satisfied, the Office of the Interconnection shall maintain and employ in the auction

clearing for such LDA a separate VRR Curve, notwithstanding the outcome of the test referenced in Section 5.10(a)(ii) of this Attachment.

d) Qualifying Transmission Upgrade Payments

A Capacity Market Seller that submitted a Sell Offer based on a Qualifying Transmission Upgrade that clears in the Base Residual Auction shall receive a payment equal to the Capacity Resource Clearing Price, including any Locational Price Adder, of the LDA into which the Qualifying Transmission Upgrade is to increase Capacity Emergency Transfer Limit, less the Capacity Resource Clearing Price, including any Locational Price Adder, of the LDA from which the upgrade was to provide such increased CETL, multiplied by the megawatt quantity of increased CETL cleared from such Sell Offer. Such payments shall be reflected in the Locational Price Adder determined as part of the Final Zonal Capacity Price for the Zone associated with such LDAs, and shall be funded through a reduction in the Capacity Transfer Rights allocated to Load-Serving Entities under section 5.15, as set forth in that section. *PJMSettlement shall be the Counterparty to any cleared capacity transaction resulting from a Sell Offer based on a Qualifying Transmission Upgrade.*

e) Locational Reliability Charge

In accordance with the Reliability Assurance Agreement, each LSE shall incur a Locational Reliability Charge (subject to certain offsets as described in sections 5.13 and 5.15) equal to such LSE's Daily Unforced Capacity Obligation in a Zone during such Delivery Year multiplied by the applicable Final Zonal Capacity Price in such Zone. *PJMSettlement shall be the Counterparty to the LSEs' obligations to pay, and payments of, Locational Reliability Charges.*

f) The Office of the Interconnection shall determine Zonal Capacity Prices in accordance with the following, based on the optimization algorithm:

i) The Office of the Interconnection shall calculate and post the Preliminary Zonal Capacity Prices for each Delivery Year following the Base Residual Auction for such Delivery Year. The Preliminary Zonal Capacity Price for each Zone shall be the sum of: 1) the marginal value of system capacity for the PJM Region, without considering locational constraints; 2) the Locational Price Adder, if any, for the LDA in which such Zone is located; provided however, that if the Zone contains multiple LDAs with different Capacity Resource Clearing Prices, the Zonal Capacity Price shall be a weighted average of the Capacity Resource Clearing Prices for such LDAs, weighted by the Unforced Capacity of Capacity Resources cleared in each such LDA; 3) an adjustment, if required, to account for adders paid to Annual Resources and Extended Summer Demand Resources in the LDA for which the zone is located; and 4) an adjustment, if required, to account for Resource Make-Whole Payments, all as determined in accordance with the optimization algorithm.

ii) The Office of the Interconnection shall calculate and post the Adjusted Zonal Capacity Price following each Incremental Auction. The Adjusted Zonal Capacity Price for each Zone shall equal the sum of: (1) the average marginal value of system capacity weighted

by the Unforced Capacity cleared in all auctions previously conducted for such Delivery Year (excluding any Unforced Capacity cleared as replacement capacity); (2) the average Locational Price Adder weighted by the Unforced Capacity cleared in all auctions previously conducted for such Delivery Year (excluding any Unforced Capacity cleared as replacement capacity); (3) an adjustment, if required, to account for adders paid to Annual Resources and Extended Summer Demand Resources for all auctions previously conducted for such Delivery Year (excluding any Unforced Capacity cleared as replacement capacity); and (4) an adjustment, if required, to account for Resource Make-Whole Payments for all actions previously conducted (excluding any Resource Make-Whole Payments to be charged to the buyers of replacement capacity). The Adjusted Zonal Capacity Price may decrease if Unforced Capacity is decommitted or the Resource Clearing Price decreases in an Incremental Auction.

iii) The Office of the Interconnection shall, through May 31, 2012, calculate and post the Final Zonal Capacity Price after all ILR resources are certified for the Delivery Years and, thereafter, shall calculate and post such price after the final auction is held for such Delivery Year, as set forth above. The Final Zonal Capacity Price for each Zone shall equal the Adjusted Zonal Capacity Price, as further adjusted (for the Delivery Years through May 31, 2012) to reflect the certified ILR compared to the ILR Forecast previously used for such Delivery Year, and any decreases in the Nominated Demand Resource Value of any existing Demand Resource cleared in the Base Residual Auction and Second Incremental Auction. For such purpose, for the three consecutive Delivery Years ending May 31, 2012 only, the Forecast ILR allocated to loads located in the AEP transmission zone that are served under the Reliability Pricing Model shall be in proportion for each such year to the load ratio share of such RPM loads compared to the total peak loads of such zone for such year; and any remaining ILR Forecast that otherwise would be allocated to such loads shall be allocated to all Zones in the PJM Region pro rata based on their Preliminary Zonal Peak Load Forecasts.

g) Resource Substitution Charge

Each Capacity Market Buyer in an Incremental Auction securing replacement capacity shall pay a Resource Substitution Charge equal to the Capacity Resource Clearing Price resulting from such auction multiplied by the megawatt quantity of Unforced Capacity purchased by such Market Buyer in such auction.

h) Minimum Offer Price Rule for Certain Planned Generation Capacity Resources

(1) For purposes of this section, the Net Asset Class Costs of New Entry shall be asset-class estimates of competitive, cost-based, real levelized (year one) Cost of New Entry, net of energy and ancillary service revenues. Other than the levelization approach, determination of the Cost of New Entry component of the Net Asset Class Cost of New Entry shall be consistent with the methodology used to determine the Cost of New Entry set forth in Section 5.10(a)(iv)(A) of this Attachment. Until changed, the Net Asset Class Cost of New Entry for a combustion turbine generator shall be $ 96,485MW-year, and the Net Asset Class Cost of New Entry for a combined cycle generator shall be $ 117,035/MW-year. Notwithstanding the foregoing, the Net Asset Class Cost of New Entry shall be zero for: (i) base load resources, such as nuclear, coal and Integrated Gasification Combined Cycle, that require a period for

development greater than three years; (ii) any facility associated with the production of hydroelectric power; (iii) any upgrade or addition to an *E*xisting Generation Capacity Resource; or (iv) any Planned Generation Capacity Resource being developed in response to a state regulatory or legislative mandate to resolve a projected capacity shortfall in the Delivery Year affecting that state, as determined pursuant to a state evidentiary proceeding that includes due notice, PJM participation, and an opportunity to be heard.

(2) Any Sell Offer that is based on a Planned Generation Capacity Resource submitted in a Base Residual Auction for the first Delivery Year in which such resource qualifies as such a resource, in any LDA for which a separate VRR Curve has been established, and that meets each of the following criteria, shall be subject to the provisions of subsection (3) hereof, unless the Capacity Market Seller obtains a determination from FERC prior to such Base Residual Auction that such Sell Offer is consistent with the real levelized (year one) competitive, cost-based, fixed, net cost of new entry were the resource to rely solely on revenues from PJM-administered markets (i.e., were all output from the unit sold in PJM-administered spot markets):

i. Sell Offer affects the Clearing Price;

ii. Sell Offer is less than 80 percent of the applicable Net Asset Class Cost of New Entry or, if there is no applicable Net Asset Class Cost of New Entry, less than 70 percent of the Net Asset Class Cost of New Entry for a combustion turbine generator as stated in subsection (h)(1) above; and

iii. The Capacity Market Seller and any Affiliates has or have a "net short position" in such Base Residual Auction for such LDA that equals or exceeds (a) ten percent of the LDA Reliability Requirement, if less than 10,000 megawatts, or (b) five percent of the total LDA Reliability Requirement, if equal to or greater than 10,000 megawatts. A "net short position" shall be calculated as the actual retail load obligation minus the portfolio of supply. An "actual retail load obligation" shall mean the LSE's combined load served in the LDA at or around the time of the Base Residual Auction adjusted to account for load growth up to the Delivery Year, using the Forecast Pool Requirement. A "portfolio of supply" shall mean the Generation Capacity Resources (on an unforced capacity basis) owned by the Capacity Market Seller and any Affiliates at the time of the Base Residual Auction plus or minus any generation that is, at the time of the BRA, under contract for the Delivery Year.

(3) The Office of the Interconnection shall perform a sensitivity analysis on any Base Residual Auction that included Sell Offers meeting the criteria of Section 5.14(h)(2), for which the Capacity Market Seller has not obtained a prior favorable determination from FERC as described in subsection (2) hereof. Such analysis shall re-calculate the clearing price for the Base Residual Auction employing in place of each actual Sell Offer meeting the criteria a substitute Sell Offer equal to 90 percent of the applicable estimated cost determined in accordance with Section 5.14(h)(1) above, or, if there is no applicable estimated cost, equal to 80 percent of the then-applicable Net CONE. If the resulting difference in price between the new

clearing price and the initial clearing price differs by an amount greater than the greater of 20 percent or 25 dollars per megawatt-day for a total LDA Reliability Requirement greater than 15,000 megawatts; or the greater of 25 percent or 25 dollars per megawatt-day for a total LDA Reliability Requirement greater than 5,000 and less than 15,000 megawatts; or the greater of 30 percent or 25 dollars per megawatt-day for a total LDA Reliability Requirement of less than 5,000 megawatts; then the Office of the interconnection shall discard the results of the Base Residual Auction and determine a replacement clearing price and the identity of the accepted Capacity Resources using the procedure set forth in section 5.14(h)(4) below.

(4) Including all of the Sell Offers in a single Base Residual Auction that meet the criteria of 5.14(h)(3) above, PJM shall first calculate the replacement clearing price and the total quantity of Capacity Resources needed for the LDA. PJM shall then accept Sell Offers to provide Capacity Resources in accordance with the following priority and criteria for allocation: (i) first, all Sell Offers in their entirety designated as self-supply *committed regardless of price*; (ii) then, all Sell Offers of zero, prorating to the extent necessary, and (iii) then all remaining Sell Offers in order of the lowest price, subject to the optimization principles set forth in Section 5.14.

(5) Notwithstanding the foregoing, this provision shall terminate when there exists a positive net demand for new resources, as defined in Section 5.10(a)(iv)(B) of this Attachment, calculated over a period of consecutive Delivery Years beginning with the first Delivery Year for which this Attachment is effective and concluding with the last Delivery Year preceding such calculation, in an area comprised of the Unconstrained LDA Group (as defined in section 6.3) in existence during such first Delivery Year. Notwithstanding the foregoing, the Office of the Interconnection shall reinstate the provisions of this section, solely under conditions in which a constrained LDA has a gross Cost of New Entry equal to or greater than 150 percent of the greatest prevailing gross Cost of New Entry in any adjacent LDA.

(i) Capacity Export Charges and Credits

(1) Charge

Each Capacity Export Transmission Customer shall incur for each day of each Delivery Year a Capacity Export Charge equal to the Reserved Capacity of Long-Term Firm Transmission Service used for such export ("Export Reserved Capacity") multiplied by (the Final Zonal Capacity Price for such Delivery Year for the Zone encompassing the interface with the Control Area to which such capacity is exported minus the Final Zonal Capacity Price for such Delivery Year for the Zone in which the resources designated for export are located, but not less than zero). If more than one Zone forms the interface with such Control Area, then the amount of Reserved Capacity described above shall be apportioned among such Zones for purposes of the above calculation in proportion to the flows from such resource through each such Zone directly to such interface under CETO/CETL analysis conditions, as determined by the Office of the Interconnection using procedures set forth in the PJM Manuals. The amount of the Reserved Capacity that is associated with a fully controllable facility that crosses such interface shall be completely apportioned to the Zone within which such facility terminates.

(2) Credit

To recognize the value of firm Transmission Service held by any such Capacity Export Transmission Customer, such customer assessed a charge under section 5.14(i)(1) also shall receive a credit, comparable to the Capacity Transfer Rights provided to Load-Serving Entities under section 5.15. Such credit shall be equal to the locational capacity price difference specified in section 5.14(i)(1) times the Export Customer's Allocated Share determined as follows:

Export Customer’s Allocated Share equals

(Export Path Import * Export Reserved Capacity) /

(Export Reserved Capacity + Daily Unforced Capacity Obligations of all LSEs in such Zone).

Where:

“Export Path Import” means the megawatts of Unforced Capacity imported into the export interface Zone from the Zone in which the resource designated for export is located.

If more than one Zone forms the interface with such Control Area, then the amount of Export Reserved Capacity shall be apportioned among such Zones for purposes of the above calculation in the same manner as set forth in subsection (i)(1) above.

(3) Distribution of Revenues

Any revenues collected from the Capacity Export Charge with respect to any capacity export for a Delivery Year, less the credit provided in subsection (i)(2) for such Delivery Year, shall be distributed to the Load Serving Entities in the export-interface Zone that were assessed a

Locational Reliability Charge for such Delivery Year, pro rata based on the Daily Unforced Capacity Obligations of such Load-serving Entities in such Zone during such Delivery Year. If more than one Zone forms the interface with such Control Area, then the revenues shall be apportioned among such Zones for purposes of the above calculation in the same manner as set forth in subsection (i)(1) above.

8. CAPACITY RESOURCE DEFICIENCY CHARGE

8.1

A Capacity Resource Deficiency Charge shall be assessed on any Capacity Market Seller that commits a Capacity Resource, and on any Locational UCAP Seller that sells Locational UCAP for a Delivery Year based on a Generation Capacity Resource, for a Delivery Year that is unable or unavailable to deliver Unforced Capacity for all or any part of such Delivery Year for any reason, including but not limited to the following, and that does not obtain replacement Unforced Capacity meeting the same locational requirements and same or better temporal availability characteristics (i.e., Annual Resource, Extended Summer Demand Resource, or Limited Demand Resource) in the megawatt quantity required to satisfy the capacity committed from such resource by such seller as a result of all cleared Sell Offers from such seller based on such resource in any RPM Auctions for such Delivery Year, the reduction in any such commitment for such resource to the extent and for the time period of any replacement capacity committed in lieu of such resource, and the increase in any such commitment for such resource to the extent and for the time period that such resource is committed as replacement capacity for any other resource:

a) Unit Derating – Such Capacity Resource is a Generation Capacity Resource and its capacity value is derated prior to or during the Delivery Year;

b) EFORD Increase – Such Capacity Resource is a Generation Capacity Resource and the EFORD value determined for such resource at least two (2) months prior to the Third Incremental Auction is higher than the EFORD value submitted in the Capacity Market Seller's cleared Sell Offer;

c) External Generation Resource – Such Capacity Resource is an existing Generation Capacity Resource that is located outside of the PJM Control Area and arrangements for the firm delivery of the output of such resource to the interface with the PJM Region are not in place for such resource prior to the start of the Delivery Year;

d) Planned Generation Resource – Such Capacity Resource is a Planned Generation Capacity Resource and Interconnection Service has not commenced as to such resource prior to the start of the Delivery Year;

e) Planned Demand Resource - Such Capacity Resource is a Planned Demand Resource or an Energy Efficiency Resource and the associated demand response program or energy efficiency measure is not installed prior to the start of the Delivery Year; or

f) Existing Demand Resource – Such Capacity Resource is an existing Demand Resource or Energy Efficiency Resource and, subject to section 8.4, is not capable of providing the megawatt quantity of load response specified in the cleared Sell Offer for the time periods of availability associated with the product type.

8.2. Capacity Resource Deficiency Charge

The Capacity Resource Deficiency Charge shall equal the Daily Deficiency Rate (as defined in section 7) multiplied by the megawatt quantity of deficiency below the level of capacity committed in such Capacity Market Seller's Sell Offer(s) or bilateral capacity commitments, or Locational UCAP Seller's Locational UCAP sale for each day such seller is deficient.

8.3. Allocation of Revenue Collected from Capacity Resource Deficiency Charges

The revenue collected from the assessment of a Capacity Resource Deficiency Charge shall be distributed on a pro-rata basis to all LSEs that were charged a Locational Reliability Charge for the day for which such Capacity Resource Deficiency Charge was assessed. Such revenues shall be distributed on a pro-rata basis to such LSEs based on their Daily Unforced Capacity Obligations.

8.4 Relief from Charges

A Capacity Market Seller or Locational UCAP Seller that is otherwise subject to the Capacity Resource Deficiency Charge solely as a result of section 8.1(e) may receive relief from such Charge if it demonstrates that the inability to provide the level of demand response specified in its Sell Offer is due to the permanent departure (due to plant closure, efficiency gains, or similar reasons) from the Transmission System of load that was relied upon for load response in such Sell Offer; provided, however, that such seller must provide the Office of the Interconnection with all information deemed necessary by the Office of the Interconnection to assess the merits of the request for relief. Such seller shall receive no RPM Auction Credit for the amount of reduction in the committed Planned Demand Resources.

9. PEAK SEASON MAINTENANCE COMPLIANCE PENALTY CHARGE.

a) Purpose

To preserve and maintain the reliability of the PJM Region and to recognize the impact of planned outages and maintenance outages of Generation Capacity Resources during the Peak Season, each Capacity Market Seller that commits a Generation Capacity Resource for a Delivery Year, and each Locational UCAP Seller that sells Locational UCAP from a Generation Capacity Resource for a Delivery Year, must ensure that such Generation Capacity Resource has available sufficient Unforced Capacity during the Peak Season to satisfy the megawatt amount committed from such resource as a result of all Sell Offers by such seller based on such resource in any RPM Auctions for such Delivery Year the reduction in any such commitment for such resource to the extent and for the time period of any replacement capacity committed in lieu of such resource, and the increase in any such commitment for such resource to the extent and for the time period that such resource is committed as replacement capacity for any other resource.

b) Peak Season Requirement

To the extent the Generation Capacity Resource will not be available due to a planned or maintenance outage that occurs during the Peak Season without the approval of the Office of the Interconnection, the Capacity Market Seller or Locational UCAP Seller must obtain replacement Unforced Capacity meeting the same locational requirements and same or better temporal availability characteristics (i.e., Annual Resources) from a Capacity Resource that is not already committed for such Delivery Year and that meets all characteristics specified in the Sell Offer or Locational UCAP transaction, including the megawatt quantity of Unforced Capacity committed for such Delivery Year (with such Unforced Capacity, in the case of a Generation Capacity Resource, determined on the basis of such Generation Capacity Resource's EFORD for the twelve months ending on the September 30 last preceding the Delivery Year), or otherwise pay a Peak Season Maintenance Compliance Penalty Charge. The Capacity Market Seller or Locational UCAP Seller shall commit such replacement Capacity Resource in accordance with the procedure set forth in the PJM Manuals.

c) Peak Season Planned and Maintenance Outages

The Office of the Interconnection shall adopt and maintain rules and procedures for determining the allowable Peak Season planned and maintenance outages.

d) Peak Season Maintenance Compliance Penalty Charge

The Peak Season Maintenance Compliance Penalty Charge shall equal the Daily Deficiency Rate (as defined in section 7) multiplied by the unforced value of a positive shortfall calculated for the capacity committed for each day during the Peak Season that such resource is out-of-service on a maintenance outage that is not authorized by the Office of the Interconnection. The shortfall shall equal (i) the annual average of the installed capacity committed for each day of such Delivery Year as a result of all cleared Sell Offers in all RPM Auctions for such Delivery Year relying on such resource, reduction in any such commitment for such resource to the extent and

for the time period of any replacement capacity committed in lieu of such resource, and increase in any such commitment for such resource to the extent and for the time period that such resource is committed as replacement capacity for any other resource, minus (ii) the summer net dependable rating minus the amount of capacity out-of-service on unapproved planned or maintenance outage on a peak season day.

e) Allocation of Revenue Collected from Peak Season Maintenance Compliance Penalty Charges

The revenue collected from assessment of a Peak Season Maintenance Compliance Penalty Charge shall be distributed on a pro-rata basis to all LSEs that were charged a Locational Reliability Charge for the day for which the Capacity Resource Deficiency Charge was assessed. Such revenues shall be distributed on a pro-rata basis to all such LSEs based on their Daily Unforced Capacity Obligation.

10. PEAK-HOUR-PERIOD AVAILABILITY CHARGES AND CREDITS

(a) To preserve and maintain the reliability of the PJM Region and to encourage Capacity Market Sellers and Locational UCAP Sellers to maintain the availability of Generation Capacity Resources during critical peak hours of the Delivery Year, each Capacity Market Seller that commits a Generation Capacity Resource for a Delivery Year, and each Locational UCAP Seller that sells Locational UCAP from a Generation Capacity Resource for a Delivery Year, shall be credited or charged to the extent the critical peak-period availability of its committed Generation Capacity Resources exceeds or falls short, respectively, of the expected availability of such resources. Charges and credits hereunder shall not apply to wind or solar resources.

(b) Critical peak periods for purposes of this assessment ("Peak-Hour Periods") shall be 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 holiday, and the hour ending 800 EPT through the hour ending 900 EPT and the hour ending 1900 EPT through 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.

c) Peak-Period Equivalent Forced Outage Rate and Peak-Period Capacity Calculations

The Peak-Period Equivalent Forced Outage Rate shall be calculated for Peak-Hour Periods based on the following formula:

EFORP (%) = (FOH + EFPOH) / (SH + FOH)

where

FOH = full forced outage hours when the unit was called upon, excluding those outages deemed as OMC (as defined below);

EFPOH = equivalent forced partial outage hours when the unit was called upon, excluding those outages deemed as OMC (as defined below); and

SH = service hours as defined pursuant to NERC GADS standards.

The Peak-Period Capacity of a Generation Capacity Resource shall be calculated as follows:

$PCAP = ICAP * (1.0 - EFOR_P)$

where

ICAP = the installed capacity rating of such Generation Capacity Resource

d) Determination of Expected $EFOR_P$ and PCAP for Generation Capacity Resources

For each Delivery Year, the expected $EFOR_P$ and PCAP of each Generation Capacity Resource committed to serve load in such Delivery Year shall be the EFORD and UCAP, respectively, calculated on a rolling-average basis using such resource's service history during the five consecutive annual periods of twelve consecutive months ending September 30 last preceding such Delivery Year. Such $EFOR_D$ and UCAP shall be determined in accordance with Schedule 5 of the Reliability Assurance Agreement, which excludes (for purposes of Capacity Resource UCAP calculations) outages deemed outside management control in accordance with the standards and guidelines of NERC, as defined in the Generating Availability Data System, Data Reporting Instructions in Attachment K or its successor ("Outside Plant Management Control" or "OMC").

(e) For each Delivery Year, the actual $EFOR_P$ and PCAP of each Generation Capacity Resource shall be calculated during the Peak-Hour Periods of such Delivery Year, provided however, that such calculation shall not include any day such a resource was unavailable if such unavailability resulted in a charge or penalty due to delay, cancellation, retirement, de-rating, or rating test failure. The full or partial forced outage hours when called upon shall be those outage hours during which the cost-based offer for energy from the resource would have been less than the applicable Locational Marginal Price for such resource, or when the Office of the Interconnection would have called upon the resource (absent the outage) for Operating Reserves, in both cases as determined by the Office of the Interconnection in accordance with the procedures specified in the PJM Manuals (including, without limitation, respecting such unit's current operating constraints). In addition, for single-fueled, natural gas-fired units, a failure to perform during the winter Peak-Hour Period shall be excused for purposes of this section if the Capacity Market Seller, or Locational UCAP Seller, as applicable, can demonstrate to the Office of the Interconnection that such failure was due to non-availability of gas to supply the unit.

(f) If the calculation under subsection (e) for any Generation Capacity Resource for a Delivery Year results in fewer than fifty total Service Hours during Peak Hours, then the actual EFORP for purposes of such calculation shall be the lower of the resource's $EFOR_D$ (based on Delivery Year outage data) and its $EFOR_P$ and the actual PCAP for purposes of such calculation shall be, respectively, the resource's UCAP or its PCAP.

(g) For each Delivery Year, the excess or shortfall in Peak-Hour Period availability for each Generation Capacity Resource shall be determined by comparing such resource's expected and actual PCAP, subject to the limitation under subsection (i) below. The net Peak-Hour Period availability shortfall or excess for each Capacity Market Seller and FRR Entity in each Locational Deliverability Area shall be the net of the shortfalls and excesses of all Generation Capacity Resources in such Locational Deliverability Area committed by such Capacity Market Seller or Locational UCAP Seller for such Delivery Year. If there is a net positive Peak Hour Period availability shortfall in the LDA for such committed resources in the LDA, the sum of the excesses of all Generation Capacity Resources in such Locational Deliverability Area owned or controlled by such Capacity Market Seller, available for the Delivery Year but not committed for such Delivery Year, and satisfying all obligations of a committed Capacity Resource for such Delivery Year shall be used to reduce the net positive Peak Hour Period availability shortfall in the LDA of committed resources by the amount of the

sum of the excesses of such available uncommitted resources; however, such reduction shall not result in a net Peak Hour Period availability excess in the LDA.

(h) As to any Generation Capacity Resource experiencing or expected to experience a full or partial outage during any Peak-Hour Period that would or could result in a shortfall under subsection (g) above, a Capacity Market Seller or Locational UCAP Seller may obtain and commit Unforced Capacity from a replacement Capacity Resource (not previously committed) meeting the same locational requirements and same or better temporal availability characteristics (i.e., Annual Resources) as such resource. Such Unforced Capacity shall be recognized for purposes of this section prospectively from the effective date of commitment of such replacement resource, and to the extent such replacement Unforced Capacity thereafter is available during Peak-Hour Periods, any shortfall that otherwise would have been calculated shall be reduced to that extent. Any such commitment of replacement capacity shall be effective upon no less than one day's notice to the Office of the Interconnection.

(i) The shortfall determined for any Generation Capacity Resource shall not exceed an amount equal to 0.50 times the Unforced Capacity of such resource; provided, however, that if such limitation is triggered as to any Generation Capacity Resource for a Delivery Year, then the decimal multiplier for this calculation as to such resource in the immediately succeeding Delivery Year shall be increased to 0.75, and if such limitation again is triggered in such succeeding Delivery Year, then the multiplier shall be increased to 1.00. The multiplier shall remain at either such elevated level for each succeeding Delivery Year until the shortfall experienced by such resource is less than 0.50 times the Unforced Capacity of such resource for three consecutive Delivery Years.

(j) A Peak-Hour Period Availability Charge shall be assessed on each Capacity Market Seller or Locational UCAP Seller with a net shortfall in PCAP in an LDA, where such charge is equal to such shortfall times the Capacity Resource Clearing Price determined for such Locational Deliverability Area for such Delivery Year.

(k) The revenues from such charges shall be distributed to the Capacity Market Sellers, Locational UCAP Sellers, and FRR Entities that committed Generation Capacity Resources, in such Locational Deliverability Area that have net excess PCAP for such Delivery Year, provided however that any such seller shall be paid no more than the product of such seller's net excess PCAP times the Capacity Clearing Price determined for such Locational Deliverability Area for such Delivery Year. Any excess revenues remaining after such distribution shall be distributed on a pro-rata basis to all LSEs in the Zone that were charged the same Locational Reliability Charge for the Delivery Year for which the Peak Hour Availability Charge was assessed, and to all FRR Entities in the Zone that are LSEs and whose FRR Capacity Plan resources over-performed in the Delivery Year, on a pro-rata basis in accordance with each LSE's Daily Unforced Capacity Obligation.

(l) The Office of the Interconnection shall provide estimated charges and credits based on the summer Peak-Hour Periods within three calendar months after the end of the summer period. Final charges and credits for the Delivery Year shall be billed within three calendar months following the end of the Delivery Year.

11. DEMAND RESOURCE AND ILR COMPLIANCE PENALTY CHARGE

(a) The Office of the Interconnection shall separately evaluate compliance of each Demand Resource committed and each nominated ILR resource certified for a Delivery Year, in accordance with procedures set forth in the PJM Manuals. The compliance is evaluated separately by event in each Zone for Demand Resources and ILR resources dispatched by the Office of Interconnection. To the extent an ILR resource or Demand Resource cannot respond, another ILR resource or Demand Resource in the same geographic location defined by the PJM dispatch instruction with the same designated lead time and comparable capacity commitment may be substituted. Any Demand Resource or ILR resource used as a substitute during an event will have the same obligation to respond to future event(s) as if it did not respond to such event. Capacity Market Sellers that committed Demand Resources, Locational UCAP Sellers that sold Demand Resources, and ILR Providers that nominated ILR for a Delivery Year that cannot demonstrate the hourly performance of such resource in real-time based on the capacity commitment or ILR certification shall be assessed a Demand Resource and ILR Compliance Penalty Charge; provided, however, that such under compliance shall be determined on an aggregate basis for all Demand Resources and ILR committed by the same Capacity Market Seller, same Locational UCAP Seller, or same ILR Provider in a single Zone. To the extent a Capacity Market Seller is also an ILR Provider, compliance of all Demand Resources committed and ILR resources certified in the same Zone will be evaluated in aggregate. To the extent a Capacity Market Seller is also an ILR Provider, compliance of all Demand Resources committed and ILR resources certified in the same Zone will be evaluated in aggregate.

(b) The Demand Resource and ILR Compliance Penalty Charge for a Capacity Market Seller/ILR Provider in a Zone for the on-peak period, which includes all hours specified in the Reliability Assurance Agreement definition of the Limited Demand Resource, shall equal the lesser of (1/the number of load management events during the year, or 0.50) times the Weighted Annual Revenue Rate for such seller/provider, multiplied by the net under-compliance in such on-peak period, if any, for such seller/provider resulting from all resources it has committed and ILR it has certified for such Delivery Year for such Zone for each load reduction event called by the Office of the Interconnection. The Demand Resource and ILR Compliance Penalty Charge for a Capacity Market Seller/ILR Provider in a Zone for the off-peak period, which includes all hours specified in the Reliability Assurance Agreement definitions of Extended Summer Demand Resource or Annual Demand Resource, but does not included in the on-peak period, shall equal 1/52 times the Weighted Annual Revenue Rate for such seller/provider, multiplied by the net undercompliance in such off-peak period, if any, for such seller/provider resulting from all resources it has committed and ILR it has certified for such Delivery Year for such Zone for each load reduction event called by the Office of the Interconnection. If a load management event is comprised of both an on-peak period and an off-peak period then such Demand Resource and ILR Compliance Penalty Charge will be the higher of the charges calculated under the prior two sentences. The total Compliance Penalty Charge for the Delivery Year is not to exceed the annual revenue received for such resources. The net undercompliance for each such load reduction event shall be the following megawatt quantity, converted to an Unforced Capacity basis using the applicable DR Factor and Forecast Pool Requirement: (i) the megawatts of load reduction capability committed and/or ILR certified by

such seller/provider minus (ii) the megawatts of load reduction actually provided by all such Demand Resources and ILR during such reduction event. The Annual Revenue Rate for a Demand Resource shall be the Resource Clearing Price that the resource received in the auction in which it cleared, including any adjustment pursuant to Attachment DD-1, section C of this Tariff, multiplied by the number of days in the Delivery Year. The Annual Revenue Rate for an ILR resource shall be the Final Zonal ILR Price multiplied by the number of days in the Delivery Year. The Weighted Annual Revenue Rate for a Capacity Market Seller/ILR Provider shall be the average rate for all cleared Demand Resources and certified ILR, weighted by the megawatts cleared or certified at each price, multiplied by the number of days in the Delivery Year. The total charge per megawatt that may be assessed on a Capacity Market Seller/ILR Provider in a Delivery Year shall be capped at the Weighted Annual Revenue Rate the Capacity Market Seller/ILR Provider would receive in the Delivery Year.

c) Revenues from assessment of a Demand Resource and ILR Compliance Penalty Charge shall be distributed by the later of June of the following Delivery Year or the third billing month following the event that gave rise to such charge, on a pro-rata basis to Demand Resource Providers, Locational UCAP Sellers, and ILR Providers that provided load reductions in excess of the amount such resources were committed or certified to provide. Such revenue distribution, however, shall not exceed for any Capacity Market Seller/ILR Provider the quantity of excess megawatts provided by such Capacity Market Seller/ILR Provider during a single event times 0.20 times the Weighted Annual Revenue Rate for such Capacity Market Seller/ILR Provider. To the extent any such revenues remain after such distribution, the remaining revenues shall be distributed to LSEs based on each LSE's average Daily Unforced Capacity Obligation for the month in which the non-compliance event occurred.

11A LOAD MANAGEMENT AND DEMAND RESOURCES TEST FAILURE CHARGE

a) Beginning with the Delivery Year that commences on June 1, 2009, Capacity Market Sellers that commit Demand Resources and ILR Providers may be charged to the extent their committed resources or certified ILR fail performance tests, as set forth herein.

b)

(i) For ILR or for Limited Demand Resources: If a Limited Demand Resource committed or an ILR certified by a Capacity Market Seller/ILR Provider is not dispatched by the Office of the Interconnection for a load management event prior to August 15 of the relevant Delivery Year, then such resource must demonstrate that it was tested as described below in (ii), in a zone for a one-hour period during any hour when a PJM load management event may be called between June 1 and September 30, inclusive. If a Limited Demand Resource committed or an ILR certified by a Capacity Market Seller/ILR Provider is dispatched by the Office of the Interconnection for a PJM load management event in a zone between August 16 and September 30, no test will be required. If a Limited Demand Resource committed or an ILR certified by a Capacity Market Seller/ILR Provider is dispatched by the Office of the Interconnection for a PJM load management event in a zone between June 1 and September 30, inclusive, then Load Management and Demand Resources Test Failure Charges will not be assessed.

For Annual Demand Resources: if an Annual Demand Resource is not dispatched by the Office of the Interconnection for a load management event in a Delivery Year, then the Annual Demand Resource committed by a Capacity Market Seller must demonstrate that the Annual Demand Resource committed in a zone was tested as described below in (iii), for a one-hour period during any hour when a PJM load management event may be called during June through October or the following May of the relevant Delivery Year. If an Annual Demand Resource is dispatched by the Office of the Interconnection for a load management event during the Delivery Year, then no test will be required.

For Extended Summer Demand Resources: if an Extended Summer Demand Resource is not dispatched by the Office of the Interconnection for a load management event during June through October or the following May, then the Extended Summer Demand Resource committed by a Capacity Market Seller must demonstrate that the Extended Summer Demand Resource was tested as described below in (iii), for a one-hour period during any hour when a PJM load management event may be called during June through October or the following May of the relevant Delivery Year.

(ii) All resources in a zone must be tested simultaneously except that, when less than 25 percent (by megawatts) of a provider's total resources in a zone fail a test, the provider may conduct a re-test limited to all resources that failed the prior test, provided that such re-test must be at the same time of day and under approximately the same weather conditions as the prior test, and provided further that all affiliated resources must test simultaneously, where affiliated means resources that have any ability to shift load and are owned or controlled by the same entity.

c) a Capacity Market Seller/ILR Provider that committed Demand Resources and/or certified ILR shall be assessed a Load Management and Demand Resources Test Failure Charge equal to the net capability testing shortfall in a Zone during such test in the aggregate of all of such Seller's/Provider's Demand Resources/ILR in such Zone times the Load Management and Demand Resources Test Failure Charge Rate.

d) the Load Management and Demand Resources Test Failure Charge Rate shall equal such Seller/Provider's Weighted Annual Revenue Rate in such Zone plus the greater of (0.20 times the Weighted Annual Revenue Rate in such Zone or $20/MW-day) times the number of days in the Delivery Year. Such charge shall be assessed daily and charged monthly (or otherwise in accordance with customary PJM billing practices in effect at the time); provided, however, that a lump sum payment may be required to reflect amounts due, as a result of a test failure, from the start of the Delivery Year to the day that charges are reflected in regular billing.

e) revenues collected from assessment of Load Management and Demand Resources Test Failure Charges shall be distributed to Load Serving Entities that were charged a Locational Reliability Charge for the Delivery Year for which the Load Management and Demand Resources Test Failure Charge was assessed, pro-rata based on such Load Serving Entities' Daily Unforced Capacity Obligations.

ATTACHMENT DD-1

Preface: The provisions of this Attachment incorporate into the Tariff for ease of reference the provisions of Schedule 6 of the Reliability Assurance Agreement among Load Serving Entities in the PJM Region. As a result, this Attachment will be modified, subject to FERC approval, so that the terms and conditions set forth herein remain consistent with the corresponding terms and conditions of Schedule 6 of the RAA. Capitalized terms used herein that are not otherwise defined in Attachment DD or elsewhere in this Tariff have the meaning set forth in the RAA.

PROCEDURES FOR DEMAND RESOURCES, ILR, AND ENERGY EFFICIENCY

A. Parties can partially or wholly offset the amounts payable for the Locational Reliability Charge with Demand Resources or ILR that are operated under the direction of the Office of the Interconnection. FRR Entities may reduce their capacity obligations with Demand Resources that are operated under the direction of the Office of the Interconnection and detailed in such entity's FRR Capacity Plan. Demand Resources qualifying under the criteria set forth below may be offered for sale or designated as Self-Supply in the Base Residual Auction, included in an FRR Capacity Plan, or offered for sale in any Incremental Auction, for any Delivery Year for which such resource qualifies. In addition, for Delivery Years through May 31, 2012, resources qualifying under the criteria set forth below may be certified as ILR on behalf of a Party that has not elected the FRR Alternative for a Delivery Year no later than three months prior to the first day of such Delivery Year; provided, however, that for the 2011-2012 Delivery Year only, the ILR certification deadline shall be no later than two months prior to the first day of such Delivery Year. Qualified Demand Resources and ILR generally fall in one of three categories, i.e., Guaranteed Load Drop, Firm Service Level, or Direct Load Control, as further specified in section H and the PJM Manuals. Qualified Demand Resources and ILR may be provided by a Demand Resource Provider or ILR Provider (hereinafter, "Provider"), notwithstanding that such Provider is not a Party to this Agreement. Such Providers must satisfy the requirements in section I and the PJM Manuals.

1. A Party must formally notify, in accordance with the requirements of the PJM Manuals and section G of this schedule as applicable, the Office of the Interconnection of the Demand Resource or ILR that it is placing under the direction of the Office of the Interconnection. A Party must further notify the Office of the Interconnection whether the resource is an ILR resource, a Limited Demand Resource, an Extended Summer Demand Resource or an Annual Demand Resource.

2. A period of no more than 2 hours prior notification must apply to interruptible customers.

3. The initiation of load interruption, upon the request of the Office of the Interconnection, must be within the authority of the dispatchers of the Party. No additional approvals should be required.

4. The initiation of load reduction upon the request of the Office of the Interconnection is considered an emergency action and must be implementable prior to a voltage reduction.

5. An entity offering for sale, designating for self-supply, or including in any FRR Capacity Plan any Planned Demand Resource must demonstrate, in accordance with standards and procedures set forth in the PJM Manuals, that such resource shall have the capability to provide a reduction in demand, or otherwise control load, on or before the start of the Delivery Year for which such resource is committed. Providers of Planned Demand Resources must provide a timeline including the milestones, which demonstrates to PJM's satisfaction that the Planned Demand Resources will be available for the start of the Delivery Year, 15 business days prior to a Base Residual Auction or Incremental Auction. PJM may verify the Provider's adherence to the timetable at any time.

6. Selection of a Demand Resource in an RPM Auction results in commitment of capacity to the PJM Region. Demand Resources that are so committed must be registered to participate in the Full Program Option or as a Capacity Only resource of the Emergency Load Response program and thus available for dispatch during PJM-declared emergency events.

B. The Unforced Capacity value of a Demand Resource and ILR will be determined as:

the product of the Nominated Value of the Demand Resource, or the Nominated Value of the ILR, times the DR Factor, times the Forecast Pool Requirement. Nominated Values shall be determined and reviewed in accordance with sections J and K, respectively, and the PJM Manuals. The DR Factor is a factor established by the PJM Board with the advice of the Members Committee to reflect the increase in the peak load carrying capability in the PJM Region due to Demand Resources and ILR. Peak load carrying capability is defined to be the peak load that the PJM Region is able to serve at the loss of load expectation defined in the Reliability Principles and Standards. The DR Factor is the increase in the peak load carrying capability in the PJM Region due to Demand Resources and ILR, divided by the total Nominated Value of Demand Resources and ILR in the PJM Region. The DR Factor will be determined using an analytical program that uses a probabilistic approach to determine reliability. The determination of the DR Factor will consider the reliability of Demand Resources and ILR, the number of interruptions, and the total amount of load reduction.

C. Demand Resources offered and cleared in a Base Residual or Incremental Auction shall receive the corresponding Capacity Resource Clearing Price as determined in such auction, in accordance with Attachment DD of the PJM Tariff. For Delivery Years beginning with the Delivery Year that commences on June 1, 2013, any Demand Resources located in a Zone with multiple LDAs shall receive the Capacity Resource Clearing Price applicable to the location of such resource within such Zone, as identified in such resource's offer. Further, the Demand Resource Provider shall register its resource in the same location within the Zone as specified in

its cleared sell offer, and shall be subject to deficiency charges under Attachment DD of this Tariff to the extent it fails to provide the resource in such location consistent with its cleared offer. For either of the Delivery Year commencing on June 1, 2010 or commencing on June 1, 2012, if the location of a Demand Resource is not specified by a Seller in the Sell Offer on an individual LDA basis in a Zone with multiple LDAs, then Demand Resources cleared by such Seller will be paid a DR Weighted Zonal Resource Clearing Price, determined as follows: (i) for a Zone that includes non-overlapping LDAs, calculated as the weighted average of the Resource Clearing Prices for such LDAs, weighted by the cleared Demand Resources registered by such Seller in each such LDA; or (ii) for a Zone that contains a smaller LDA within a larger LDA, calculated treating the smaller LDA and the remaining portion of the larger LDA as if they were separate LDAs, and weight-averaging in the same manner as (i) above.

D. Certified ILR resources shall receive the Final Zonal ILR Price.

E. The Party, Electric Distributor, Demand Resource Provider, or ILR Provider that establishes a contractual relationship (by contract or tariff rate) with a customer for load reductions is entitled to receive the compensation specified in sections C and D for a committed Demand Resource or certified ILR, notwithstanding that such provider is not the customer's energy supplier.

F. Any Party hereto shall demonstrate that its Demand Resources or ILR performed during periods when load management procedures were invoked by the Office of the Interconnection. The Office of the Interconnection shall adopt and maintain rules and procedures for verifying the performance of such resources, as set forth in section L and the PJM Manuals. In addition, committed Demand Resources and certified ILR that do not comply with the directions of the Office of the Interconnection to reduce load during an emergency shall be subject to the penalty charge set forth in Attachment DD to the PJM Tariff.

G. Parties may elect to place Demand Resources associated with Behind The Meter Generation under the direction of the Office of the Interconnection for a Delivery Year by submitting a Sell Offer for such resource (as Self Supply, or with an offer price) in the Base Residual Auction for such Delivery Year. This election shall remain in effect for the entirety of such Delivery Year. In the event such an election is made, such Behind The Meter Generation will not be netted from load for the purposes of calculating the Daily Unforced Capacity Obligations under this Agreement.

H. PJM recognizes three types of Demand Resource and ILR:

Direct Load Control (DLC) – Load management that is initiated directly by the Provider's market operations center or its agent, employing a communication signal to cycle equipment (typically water heaters or central air conditioners). DLC programs are qualified based on load research and customer subscription data. Providers may rely on the results of load research studies identified in the PJM Manuals to set the per-participant load reduction for DLC programs. Each Provider relying on DLC load management must periodically update its DLC switch operability rates, in accordance with the PJM Manuals.

Firm Service Level (FSL) – Load management achieved by a customer reducing its load to a pre-determined level (the Firm Service Level), upon notification from the Provider's market operations center or its agent.

Guaranteed Load Drop (GLD) – Load management achieved by a customer reducing its load by a pre-determined amount (the Guaranteed Load Drop), upon notification from the Provider's market operations center or its agent. Typically, the load reduction is achieved through running customer-owned backup generators, or by shutting down process equipment.

For each type of Demand Resource and ILR above, there can be two notification periods:

Step 1 (Short Lead Time) – Demand Resource or ILR which must be fully implemented in one hour or less from the time the PJM dispatcher notifies the market operations center of a curtailment event.

Step 2 (Long Lead Time) – Demand Resource or ILR which requires more than one hour but no more than two hours, from the time the PJM dispatcher notifies the market operations center of a curtailment event, to be fully implemented.

I. Each Provider must satisfy (or contract with another LSE, Provider, or EDC to provide) the following requirements:

- A point of contact with appropriate backup to ensure single call notification from PJM and timely execution of the notification process;

- supplemental status reports, detailing Demand Resources and ILR available, as requested by PJM;

- Entry of customer-specific Demand Resource and ILR credit information, for planning and verification purposes, into the designated PJM electronic system.

- Customer-specific compliance and verification information for each PJM-initiated Demand Resource or ILR event, as well as aggregated Provider load drop data for Provider-initiated events, in accordance with established reporting guidelines.

- Load drop estimates for all Demand Resource or ILR events, prepared in accordance with the PJM Manuals.

J. The Nominated Value of each Demand Resource or ILR shall be determined consistent with the process for determination of the capacity obligation for the customer.

The Nominated Value for a Firm Service Level customer will be based on the peak load contribution for the customer, as determined by the 5CP methodology utilized to determine other ICAP obligation values. The maximum Demand Resource or ILR load reduction value for a Firm Service Level customer will be equal to Peak Load Contribution – Firm Contract Level adjusted for system losses.

The Nominated Value for a Guaranteed Load Drop customer will be the guaranteed load drop amount, adjusted for system losses, as established by the customer's contract with the Provider. The maximum credit nominated shall not exceed the customer's Peak Load Contribution.

The Nominated Value for a Direct Load Control program will be based on load research and customer subscription. The maximum value of the program is equal to the approved per-participant load reduction multiplied by the number of active participants, adjusted for system losses. The per-participant impact is to be estimated at long-term average local weather conditions at the time of the summer peak.

Customer-specific Demand Resource or ILR information (EDC account number, peak load, notification period, etc.) will be entered into the designated PJM electronic system to establish credit values. Additional data may be required, as defined in sections K and L.

K. Nominated Values shall be reviewed based on documentation of customer-specific data and Demand Resource or ILR information, to verify the amount of load management available, and to set a maximum allowable Nominated Value. Data is provided by both the zone EDC and the Provider on templates supplied by PJM, and must include the EDC meter number or other unique customer identifier, Peak Load Contribution (5CP), contract firm service level or guaranteed load drop values, applicable loss factor, zone/area location of the load drop, LSE contact information, number of active participants, etc. Such data must be uploaded and approved prior to the first day of the Delivery Year for such resource as a Demand Resource, or certification of such resource as ILR. Providers must provide this information concurrently to host EDCs.

For Firm Service Level and Guaranteed Load Drop customers, the 5CP values, for the zone and affected customers, will be adjusted to reflect an "unrestricted" peak for a zone, based on information provided by the Provider. Load drop levels shall be estimated in accordance with guidelines in the PJM Manuals.

For Direct Load Control programs, the Provider must provide information detailing the number of active participants in each program. Other information on approved DLC programs will be provided by PJM.

L. Compliance is the process utilized to review Provider performance during PJM-initiated Demand Resource and ILR events. The process establishes potential under/over compliance values for the Provider. Compliance will be established for each Provider on an event specific basis for the Provider's Demand Resources or ILR dispatched by the Office of the Interconnection during such event.
PJM will establish and communicate reasonable deadlines for the timely submittal of event data to expedite compliance reviews. Compliance reviews will be completed as soon after the event as possible, with the expectation that reviews of a single event will be completed within two months of the end of the month in which the event took place. Providers are responsible for the submittal of compliance information to PJM for each PJM-initiated event during the compliance period. Compliance for Direct Load Control programs will consider only the transmission of the

control signal. Providers are required to report the time period (during the Demand Resource and ILR event) that the control signal was actually sent. Compliance is checked on an individual customer basis for FSL, by comparing actual load during the event to the firm service level. Providers must submit actual customer load levels (for the event period) for the compliance report. Compliance is checked on an individual customer basis for GLD, by comparing actual load dropped during the event to the nominated amount of load drop. Providers must submit actual loads and comparison loads for the compliance hours. Comparison loads must be developed from the guidelines in the PJM Manuals, and note which method was employed.

Compliance is averaged over the full hours of a load management event, for each customer or DLC program dispatched by the Office of the Interconnection. Demand Resource or ILR resources may not reduce their load below zero (i.e., export energy into the system). No compliance credit will be given for an incremental load drop below zero. Compliance will be totaled over all FSL and GLD customers and DLC programs to determine a net compliance position for the event for each Provider by Zone, for all Demand Resources committed and ILR Certified by such Provider and dispatched by the Office of the Interconnection in the zone. Deficiencies shall be as further determined in accordance with section 11 of Schedule DD to the PJM Tariff.

M. Energy Efficiency Resources

1. An Energy Efficiency Resource is a project, including installation of more efficient devices or equipment or implementation of more efficient processes or systems, exceeding then-current building codes, appliance standards, or other relevant standards, designed to achieve a continuous (during peak periods as described herein) reduction in electric energy consumption *at the End-Use Customer's retail site* that is not reflected in the peak load forecast prepared for the Delivery Year for which the Energy Efficiency Resource is proposed, and that is fully implemented at all times during such Delivery Year, without any requirement of notice, dispatch, or operator intervention.

2. An Energy Efficiency Resource may be offered as a Capacity Resource in the Base Residual or Incremental Auctions for any Delivery Year beginning on or after June 1, 2012. No later than 30 days prior to the auction in which the resource is to be offered, the Capacity Market Seller shall submit to the Office of the Interconnection a notice of intent to offer the resource into such auction and a measurement and verification plan. The notice of intent shall include all pertinent project design data, including but not limited to the peak-load contribution of affected customers, a full description of the equipment, device, system or process intended to achieve the load reduction, the load reduction pattern, the project location, the project development timeline, and any other relevant data. Such notice also shall state the seller's proposed Nominated Energy Efficiency Value, which shall be the expected average load reduction between the hour ending 15:00 EPT and the hour ending 18:00 EPT during all days from June 1 through August 31, inclusive, of such Delivery Year that is not a weekend or federal holiday. The measurement and verification plan shall describe the methods and procedures, consistent with the PJM Manuals, for determining the amount of the load reduction and confirming that such reduction is achieved. The Office of the Interconnection shall determine,

upon review of such notice, the Nominated Energy Efficiency Value that may be offered in the Reliability Pricing Model Auction.

3. An Energy Efficiency Resource may be offered with a price offer or as Self-Supply. If an Energy Efficiency Resource clears the auction, it shall receive the applicable Capacity Resource Clearing Price, subject to section 5 below. A Capacity Market Seller offering an Energy Efficiency Resource must comply with all applicable credit requirements as set forth in Attachment Q to the PJM Tariff. The Unforced Capacity value of an Energy Efficiency Resource offered into an RPM Auction shall be the Nominated Energy Efficiency value times the DR Factor and the Forecast Pool Requirement.

4. An Energy Efficiency Resource that clears an auction for a Delivery Year may be offered in auctions for up to three additional consecutive Delivery Years, but shall not be assured of clearing in any such auction; provided, however, an Energy Efficiency Resource may not be offered for any Delivery Year in which any part of the peak season is beyond the expected life of the equipment, device, system, or process providing the expected load reduction; and provided further that a Capacity Market Seller that offers and clears an Energy Efficiency Resource in a BRA may elect a New Entry Price Adjustment on the same terms as set forth in section 5.14(c) of this Attachment DD.

5. For every Energy Efficiency Resource clearing an RPM Auction for a Delivery Year, the Capacity Market Seller shall submit to the Office of the Interconnection, by no later than 30 days prior to each Auction an updated project status and measurement and verification plan subject to the criteria set forth in the PJM Manuals.

6. For every Energy Efficiency Resource clearing an RPM Auction for a Delivery Year, the Capacity Market Seller shall submit to the Office of the Interconnection, by no later than the start of such Delivery Year, an updated project status and detailed measurement and verification data meeting the standards for precision and accuracy set forth in the PJM Manuals. The final value of the Energy Efficiency Resource during such Delivery Year shall be as determined by the Office of the Interconnection based on the submitted data.

7. The Office of the Interconnection may audit, at the Capacity Market Seller's expense, any Energy Efficiency Resource committed to the PJM Region. The audit may be conducted any time including the Performance Hours of the Delivery Year.

ARTICLE 1 -- DEFINITIONS

Unless the context otherwise specifies or requires, capitalized terms used herein shall have the respective meanings assigned herein or in the Schedules hereto for all purposes of this Agreement (such definitions to be equally applicable to both the singular and the plural forms of the terms defined). Unless otherwise specified, all references herein to Articles, Sections or Schedules, are to Articles, Sections or Schedules of this Agreement. As used in this Agreement:

1.1 Agreement

Agreement shall mean this Reliability Assurance Agreement, together with all Schedules hereto, as amended from time to time.

1.1A Annual Demand Resource

Annual Demand Resource shall mean a resource that is placed under the direction of the Office of the Interconnection during the Delivery Year, and will be available for an unlimited number of interruptions during such Delivery Year by the Office of the Interconnection, and will be capable of maintaining each such interruption for at least a 10-hour duration between the hours of 10:00AM to 10:00PM Eastern Prevailing Time for the months of June through October and the following May, and 6:00AM through 9:00PM Eastern Prevailing Time for the months of November through April unless there is an Office of the Interconnection approved maintenance outage during October through April. The Annual Demand Resource must be available in the corresponding Delivery year to be offered for sale or Self-Supplied in an RPM Auction, or included as an Annual Demand Resource in an FRR Capacity Plan for the corresponding Delivery Year.

1 .2 Applicable Regional Reliability Council

Applicable Regional Reliability Council shall have the same meaning as in the PJM Tariff.

1.3 Base Residual Auction

Base Residual Auction shall have the same meaning as in Attachment DD to the PJM Tariff.

1.4 Behind The Meter Generation

Behind The Meter Generation shall mean a generating unit that delivers energy to load without using the Transmission System or any distribution facilities (unless the entity that owns or leases the distribution facilities consented to such use of the distribution facilities and such consent has been demonstrated to the satisfaction of the Office of the Interconnection; provided, however, that Behind The Meter Generation does not include (i) at any time, any portion of such generating unit's capacity that is designated as a Capacity Resource or (ii) in any hour, any

portion of the output of such generating unit that is sold to another entity for consumption at another electrical location or into the PJM Interchange Energy Market.

1.5 Black Start Capability

Black Start Capability shall mean the ability of a generating unit or station to go from a shutdown condition to an operating condition and start delivering power without assistance from the power system.

1.6 Capacity Emergency Transfer Objective ("CETO")

Capacity Emergency Transfer Objective ("CETO") shall mean the amount of electric energy that a given area must be able to import in order to remain within a loss of load expectation of one event in 25 years when the area is experiencing a localized capacity emergency, as determined in accordance with the PJM Manuals. Without limiting the foregoing, CETO shall be calculated based in part on EFORD determined in accordance with Paragraph C of Schedule 5.

1.7 Capacity Emergency Transmission Limit ("CETL")

Capacity Emergency Transmission Limit ("CETL") shall mean the capability of the transmission system to support deliveries of electric energy to a given area experiencing a localized capacity emergency as determined in accordance with the PJM Manuals.

1.8 Capacity Resources

Capacity Resources shall mean megawatts of (i) net capacity from existing or Planned Generation Capacity Resources meeting the requirements of Schedules 9 and 10 that are or will be owned by or contracted to a Party and that are or will be committed to satisfy that Party's obligations under this Agreement, or to satisfy the reliability requirements of the PJM Region, for a Delivery Year; (ii) net capacity from existing or Planned Generation Capacity Resources within the PJM Region not owned or contracted for by a Party which are accredited to the PJM Region pursuant to the procedures set forth in Schedules 9 and 10; and (iii) load reduction capability provided by Demand Resources, Energy Efficiency Resources, or ILR that are accredited to the PJM Region pursuant to the procedures set forth in Schedule 6.

1.9 Capacity Transfer Right

Capacity Transfer Right shall have the meaning specified in Attachment DD to the PJM Tariff.

1.10 Control Area

Control Area shall mean an electric power system or combination of electric power systems bounded by interconnection metering and telemetry to which a common generation control scheme is applied in order to:

(a) match the power output of the generators within the electric power system(s) and energy purchased from entities outside the electric power system(s), with the load within the electric power system(s);

(b) maintain scheduled interchange with other Control Areas, within the limits of Good Utility Practice;

(c) maintain the frequency of the electric power system(s) within reasonable limits in accordance with Good Utility Practice and the criteria of NERC and Applicable Regional Reliability Councils;

(d) maintain power flows on transmission facilities within appropriate limits to preserve reliability; and

(e) provide sufficient generating capacity to maintain operating reserves in accordance with Good Utility Practice.

1.11 Daily Unforced Capacity Obligation

Daily Unforced Capacity Obligation shall have the meaning set forth in Schedule 8 or, as to an FRR Entity, in Schedule 8.1.

1.12 Delivery Year

Delivery Year shall mean a Planning Period for which a Capacity Resource is committed pursuant to the auction procedures specified in Attachment DD to the Tariff or pursuant to an FRR Capacity Plan.

1.13 Demand Resource

Demand Resource or "DR" shall mean a Limited Demand Resource, Extended Summer Demand Resource, or Annual Demand Resource with a demonstrated capability to provide a reduction in demand or otherwise control load in accordance with the requirements of Schedule 6 that offers and that clears load reduction capability in a Base Residual Auction or Incremental Auction or that is committed through an FRR Capacity Plan. As set forth in Schedule 6, a Limited Demand Resource, Extended Summer Demand Resource or Annual Demand Resource may be an existing demand response resource or a Planned Demand Resource.

1.14 Demand Resource Provider

Demand Resource Provider shall have the meaning specified in Attachment DD to the PJM Tariff.

1.15 DR Factor

DR Factor shall mean that factor approved from time to time by the PJM Board used to determine the unforced capacity value of a Demand Resource or ILR in accordance with Schedule 6.

1.16 East RAA

East RAA shall mean that certain Reliability Assurance Agreement among Load-Serving Entities in the PJM Region, PJM Rate Schedule FERC No. 27.

1.17 Electric Cooperative

Electric Cooperative shall mean an entity owned in cooperative form by its customers that is engaged in the generation, transmission, and/or distribution of electric energy.

1.18 Electric Distributor

Electric Distributor shall mean an entity that owns or leases with rights equivalent to ownership electric distribution facilities that are providing electric distribution service to electric load within the PJM Region.

1.19 Emergency

Emergency shall mean (i) an abnormal system condition requiring manual or automatic action to maintain system frequency, or to prevent loss of firm load, equipment damage, or tripping of system elements that could adversely affect the reliability of an electric system or the safety of persons or property; or (ii) a fuel shortage requiring departure from normal operating procedures in order to minimize the use of such scarce fuel; or (iii) a condition that requires implementation of emergency procedures as defined in the PJM Manuals.

1.20 End-Use Customer

End-Use Customer shall mean a Member that is a retail end-user of electricity within the PJM Region.

1.20A Energy Efficiency Resource

Energy Efficiency Resource shall mean a project, including installation of more efficient devices or equipment or implementation of more efficient processes or systems, meeting the requirements of Schedule 6 of this Agreement and exceeding then-current building codes, appliance standards, or other relevant standards, designed to achieve a continuous (during peak periods as described in Schedule 6 and the PJM Manuals) reduction in electric energy consumption that is not reflected in the peak load forecast prepared for the Delivery Year for which the Energy Efficiency Resource is proposed, and that is fully implemented at all times during such Delivery Year, without any requirement of notice, dispatch, or operator intervention.

1.20B Existing Generation Capacity Resource

Existing Generation Capacity Resource shall mean, for purposes of the must-offer requirement and mitigation of offers for any RPM Auction for a Delivery Year, a Generation Capacity Resource that, as of the date on which bidding commences for such auction: (a) is in service; or (b) is not yet in service, but has cleared any RPM Auction for any prior Delivery Year. Notwithstanding the foregoing, a Generation Capacity Resource for which construction has not commenced and which would otherwise have been treated as a Planned Generation Capacity Resource but for the fact that it was bid into RPM Auctions for at least two consecutive Delivery Years, and cleared the last such auction only because it was considered existing and its mitigated offer cap was accepted when its price offer would not have otherwise been accepted, shall be deemed to be a Planned Generation Capacity Resource. A Generation Capacity Resource shall be deemed to be in service if interconnection service has ever commenced (for resources located in the PJM Region), or if it is physically and electrically interconnected to an external Control Area and is in full commercial operation (for resources not located in the PJM Region). The additional megawatts of a Generation Capacity Resource that is being, or has been, modified to increase the number of megawatts of available installed capacity thereof shall not be deemed to be an Existing Generation Capacity Resource until such time as those megawatts (a) are in service; or (b) are not yet in service, but have cleared any RPM Auction for any prior Delivery Year.

1.20C Extended Summer Demand Resource

Extended Summer Demand Resource shall mean a resource that is placed under the direction of the Office of the Interconnection and that will be available June through October and the following May, and will be available for an unlimited number of interruptions during such months by the Office of the Interconnection, and will be capable of maintaining each such interruption for at least a 10-hour duration between the hours of 10:00AM to 10:00PM Eastern Prevailing Time. The Extended Summer Demand Resource must be available June through October and the following May in the corresponding Delivery Year to be offered for sale or Self-Supplied in an RPM Auction, or included as an Extended Summer Demand Resource in an FRR Capacity Plan for the corresponding Delivery Year.

1.21 Facilities Study Agreement

Facilities Study Agreement shall have the same meaning as in the PJM Tariff

1.22 FERC

FERC shall mean the Federal Energy Regulatory Commission or any successor federal agency, commission or department.

1.23 Firm Point-To-Point Transmission Service

Firm Point-To-Point Transmission Service shall mean Firm Transmission Service provided pursuant to the rates, terms and conditions set forth in Part II of the PJM Tariff.

1.24 Firm Transmission Service

Firm Transmission Service shall mean transmission service that is intended to be available at all times to the maximum extent practicable, subject to an Emergency, an unanticipated failure of a facility, or other event beyond the control of the owner or operator of the facility or the Office of the Interconnection.

1.25 Fixed Resource Requirement Alternative or FRR Alternative

Fixed Resource Requirement Alternative or FRR Alternative shall mean an alternative method for a Party to satisfy its obligation to provide Unforced Capacity hereunder, as set forth in Schedule 8.1 to this Agreement.

1.26 Forecast Pool Requirement

Forecast Pool Requirement shall mean the amount equal to one plus the unforced reserve margin (stated as a decimal number) for the PJM Region required pursuant to this Agreement, as approved by the PJM Board pursuant to Schedule 4.1.

1.27 Forecast RTO ILR Obligation

Forecast RTO ILR Obligation shall have the same meaning as in the PJM Tariff.

1.28 Forecast Zonal ILR Obligation

Forecast Zonal ILR Obligation shall have the same meaning as in the PJM Tariff.

1.29 FRR Capacity Plan

FRR Capacity Plan shall mean a long-term plan for the commitment of Capacity Resources to satisfy the capacity obligations of a Party that has elected the FRR Alternative, as more fully set forth in Schedule 8.1 to this Agreement.

1.30 FRR Entity

FRR Entity shall mean, for the duration of such election, a Party that has elected the FRR Alternative hereunder.

1.31 FRR Service Area

FRR Service Area shall mean (a) the service territory of an IOU as recognized by state law, rule or order; (b) the service area of a Public Power Entity or Electric Cooperative as recognized by franchise or other state law, rule, or order; or (c) a separately identifiable geographic area that is: (i) bounded by wholesale metering, or similar appropriate multi-site aggregate metering, that is visible to, and regularly reported to, the Office of the Interconnection,

or that is visible to, and regularly reported to an Electric Distributor and such Electric Distributor agrees to aggregate the load data from such meters for such FRR Service Area and regularly report such aggregated information, by FRR Service Area, to the Office of the Interconnection; and (ii) for which the FRR Entity has or assumes the obligation to provide capacity for all load (including load growth) within such area excluding the load of Single-Customer LSEs that are FRR Entities. In the event that the service obligations of an Electric Cooperative or Public Power Entity are not defined by geographic boundaries but by physical connections to a defined set of customers, the FRR Service Area in such circumstances shall be defined as all customers physically connected to transmission or distribution facilities of such Electric Cooperative or Public Power Entity within an area bounded by appropriate wholesale aggregate metering as described above.

1.32 Full Requirements Service

Full Requirements Service shall mean wholesale service to supply all of the power needs of a Load Serving Entity to serve end-users within the PJM Region that are not satisfied by its own generating facilities.

1.33 Generation Capacity Resource

Generation Capacity Resource shall mean a generation unit, or the right to capacity from a specified generation unit, that meets the requirements of Schedules 9 and 10 of this Agreement. A Generation Capacity Resource may be an *E*xisting Generation Capacity Resource or a Planned Generation Capacity Resource.

1.34 Generation Owner

Generation Owner shall mean a Member that owns or leases with rights equivalent to ownership facilities for the generation of electric energy that are located within the PJM Region. Purchasing all or a portion of the output of a generation facility shall not be sufficient to qualify a Member as a Generation Owner.

1.35 Generator Forced Outage

Generator Forced Outage shall mean an immediate reduction in output or capacity or removal from service, in whole or in part, of a generating unit by reason of an Emergency or threatened Emergency, unanticipated failure, or other cause beyond the control of the owner or operator of the facility, as specified in the relevant portions of the PJM Manuals. A reduction in output or removal from service of a generating unit in response to changes in market conditions shall not constitute a Generator Forced Outage.

1.36 Generator Maintenance Outage

Generator Maintenance Outage shall mean the scheduled removal from service, in whole or in part, of a generating unit in order to perform repairs on specific components of the facility, if removal of the facility qualifies as a maintenance outage pursuant to the PJM Manuals.

1.37 Generator Planned Outage

Generator Planned Outage shall mean the scheduled removal from service, in whole or in part, of a generating unit for inspection, maintenance or repair with the approval of the Office of the Interconnection in accordance with the PJM Manuals.

1.38 Good Utility Practice

Good Utility Practice shall mean any of the practices, methods and acts engaged in or approved by a significant portion of the electric utility industry during the relevant time period, or any of the practices, methods and acts which, in the exercise of reasonable judgment in light of the facts known at the time the decision was made, could have been expected to accomplish the desired result at a reasonable cost consistent with good business practices, reliability, safety and expedition. Good Utility Practice is not intended to be limited to the optimum practice, method, or act to the exclusion of all others, but rather is intended to include acceptable practices, methods, or acts generally accepted in the region.

1.39 ILR Provider

ILR Provider shall have the meaning specified in Attachment DD to the PJM Tariff.

1.40 Incremental Auction

Incremental Auction shall mean the First Incremental Auction, the Second Incremental Auction, the Third Incremental Auction, or the Conditional Incremental Auction, each as defined in Attachment DD to the PJM Tariff.

1.41 Interconnection Agreement

Interconnection Agreement shall have the same meaning as in the PJM Tariff.

1.42 Interruptible Load for Reliability, or ILR

Interruptible Load for Reliability, or ILR, shall mean a resource with a demonstrated capability to provide a reduction in demand or otherwise control load in accordance with the requirements of Schedule 6 that is certified by PJM no later than three months prior to a Delivery Year. At a minimum, ILR shall be available for interruption for at least 10 times during the summer period of June through September in the Delivery Year, and will be capable of maintaining each such interruption for at least a 6-hour duration. At a minimum, the ILR shall be available for such interruptions on weekdays, other than NERC holidays, from 12:00PM (noon) to 8:00PM Eastern Prevailing Time in the corresponding Delivery Year.

1.43 IOU

IOU shall mean an investor-owned utility with substantial business interest in owning and/or operating electric facilities in any two or more of the following three asset categories: generation, transmission, distribution.

1.43A Limited Demand Resource

Limited Demand Resource shall mean a resource that is placed under the direction of the Office of the Interconnection and that will, at a minimum, be available for interruption for at least 10 times during the summer period of June through September in the Delivery Year, and will be capable of maintaining each such interruption for at least a 6-hour duration. At a minimum, the Limited Demand Resource shall be available for such interruptions on weekdays, other than NERC holidays, from 12:00PM (noon) to 8:00PM Eastern Prevailing Time. The Limited Demand Resource must be available during the summer period of June through September in the corresponding Delivery Year to be offered for sale or Self-Supplied in an RPM Auction, or included as a Limited Demand Resource in an FRR Capacity Plan for the corresponding Delivery Year.

1.44 Load Serving Entity or LSE

Load Serving Entity or LSE shall mean any entity (or the duly designated agent of such an entity), including a load aggregator or power marketer, (i) serving end-users within the PJM Region, and (ii) that has been granted the authority or has an obligation pursuant to state or local law, regulation or franchise to sell electric energy to end-users located within the PJM Region. Load Serving Entity shall include any end-use customer that qualifies under state rules or a utility retail tariff to manage directly its own supply of electric power and energy and use of transmission and ancillary services.

1.45 Locational Reliability Charge

Locational Reliability Charge shall mean the charge determined pursuant to Schedule 8.

1.46 Markets and Reliability Committee

Markets and Reliability Committee shall mean the committee established pursuant to the Operating Agreement as a Standing Committee of the Members Committee.

1.47 Member

Member shall mean an entity that satisfies the requirements of Sections 1.24 and 11.6 of the PJM Operating Agreement. In accordance with Article 4 of this Agreement, each Party to this Agreement also is a Member.

1.48 Members Committee

Members Committee shall mean the committee specified in Section 8 of the PJM Operating Agreement composed of the representatives of all the Members.

1.49 NERC

NERC shall mean the North American Electric Reliability Council or any successor thereto.

1.50 Network Resources

Network Resources shall have the meaning set forth in the PJM Tariff.

1.51 Network Transmission Service

Network Transmission Service shall mean transmission service provided pursuant to the rates, terms and conditions set forth in Part III of the PJM Tariff or transmission service comparable to such service that is provided to a Load Serving Entity that is also a Transmission Owner (as that term is defined in the PJM Tariff).

1.52 Nominated Demand Resource Value

Nominated Demand Resource Value shall have the meaning specified in Attachment DD to the PJM Tariff.

1.53 Nominated ILR Value

Nominated ILR Value shall have the meaning specified in Attachment DD to the PJM Tariff.

1.54 Non-Retail Behind the Meter Generation

Non-Retail Behind the Meter Generation shall mean Behind the Meter Generation that is used by municipal electric systems, electric cooperatives, and electric distribution companies to serve load.

1.55 Obligation Peak Load

Obligation Peak Load shall have the meaning specified in Schedule 8 of this Agreement.

1.56 Office of the Interconnection

Office of the Interconnection shall mean the employees and agents of PJM Interconnection, L.L.C., subject to the supervision and oversight of the PJM Board, acting pursuant to the Operating Agreement.

1.57 Operating Agreement of PJM Interconnection, L.L.C. or Operating Agreement

Operating Agreement of PJM Interconnection, L.L.C. or Operating Agreement shall mean that certain agreement, dated April 1, 1997 and as amended and restated June 2, 1997 and as amended from time to time thereafter, among the members of the PJM Interconnection, L.L.C.

1.58 Operating Reserve

Operating Reserve shall mean the amount of generating capacity scheduled to be available for a specified period of an operating day to ensure the reliable operation of the PJM Region, as specified in the PJM Manuals.

1.59 Other Supplier

Other Supplier shall mean a Member that is (i) a seller, buyer or transmitter of electric capacity or energy in, from or through the PJM Region, and (ii) is not a Generation Owner, Electric Distributor, Transmission Owner or End-Use Customer.

1.60 Partial Requirements Service

Partial Requirements Service shall mean wholesale service to supply a specified portion, but not all, of the power needs of a Load Serving Entity to serve end-users within the PJM Region that are not satisfied by its own generating facilities.

1.61 Percentage Internal Resources Required

Percentage Internal Resources Required shall mean, for purposes of an FRR Capacity Plan, the percentage of the LDA Reliability Requirement for an LDA that must be satisfied with Capacity Resources located in such LDA.

1.62 Party

Party shall mean an entity bound by the terms of this Agreement.

1.63 PJM

PJM shall mean the PJM Board and the Office of the Interconnection.

1.64 PJM Board

PJM Board shall mean the Board of Managers of the PJM Interconnection, L.L.C., acting pursuant to the Operating Agreement.

1.65 PJM Manuals

PJM Manuals shall mean the instructions, rules, procedures and guidelines established by the Office of the Interconnection for the operation, planning and accounting requirements of the PJM Region.

1.66 PJM Open Access Transmission Tariff or PJM Tariff

PJM Open Access Transmission Tariff or PJM Tariff shall mean the tariff for transmission service within the PJM Region, as in effect from time to time, including any schedules, appendices, or exhibits attached thereto.

1.67 PJM Region

PJM Region shall have the same meaning as provided in the Operating Agreement.

1.68 PJM Region Installed Reserve Margin

PJM Region Installed Reserve Margin shall mean the percent installed reserve margin for the PJM Region required pursuant to this Agreement, as approved by the PJM Board pursuant to Schedule 4.1.

1.69 Planned Demand Resource

Planned Demand Resource shall mean a Demand Resource that does not currently have the capability to provide a reduction in demand or to otherwise control load, but that is scheduled to be capable of providing such reduction or control on or before the start of the Delivery Year for which such resource is to be committed, as determined in accordance with the requirements of Schedule 6.

1.69A Planned External Generation Capacity Resource

Planned External Generation Capacity Resource shall mean a proposed Generation Capacity Resource, or a proposed increase in the capability of a Generation Capacity Resource, that (a) is to be located outside the PJM Region, (b) participates in the generation interconnection process of a Control Area external to PJM, (c) is scheduled to be physically and electrically interconnected to the transmission facilities of such Control Area on or before the first day of the Delivery Year for which such resource is to be committed to satisfy the reliability requirements of the PJM Region, and (d) is in full commercial operation prior to the first day of such Delivery Year, such that it is sufficient to provide the Installed Capacity set forth in the Sell Offer forming the basis of such resource's commitment to the PJM Region. Prior to participation in any Reliability Pricing Model Auction for such Delivery Year, the Capacity Market Seller must demonstrate that it has executed an interconnection agreement (functionally equivalent to a System Impact Study Agreement under the PJM Tariff for Base Residual Auction and an Interconnection Service Agreement under the PJM Tariff for Incremental Auction) with the transmission owner to whose transmission facilities or distribution facilities the resource is being directly connected, and if applicable the transmission provider. A Planned External Generation Capacity Resource must provide evidence to PJM that it has been studied as a Network

Resource, or such other similar interconnection product in such external Control Area, must provide contractual evidence that it has applied for or purchased transmission service to be deliverable to the PJM border, and must provide contractual evidence that it has applied for transmission service to be deliverable to the bus at which energy is to delivered, the agreements for which must have been executed prior to participation in any Reliability Pricing Model Auction for such Delivery Year. An External Generation Capacity Resource shall cease to be considered a Planned External Generation Capacity Resource as of the *earlier of (i) the* date that interconnection service commences *as to such resource; or (ii) the resource has cleared an RPM Auction, in which case it shall become an Existing Generation Capacity Resource for purposes of the mitigation of offers for any RPM Auction for all subsequent Delivery Years.*

1.70 Planned Generation Capacity Resource

Planned Generation Capacity Resource shall mean a Generation Capacity Resource participating in the generation interconnection process under *P*art IV, *S*ubpart A of the PJM Tariff, for which*: (i)* Interconnection Service is scheduled to commence on or before the first day of the Delivery Year for which such resource is to be committed *to RPM or to an FRR Plan; (ii)* a System Impact Study Agreement has been executed prior to the Base Residual Auction for such Delivery Year*; (iii)* an Interconnection Service Agreement has been executed prior to any Incremental Auction for such Delivery Year *in which such resource plans to participate; and (iv) no megawatts of capacity have cleared an RPM Auction for any prior Delivery Year. For purposes of the must-offer requirement and mitigation of offers for any RPM Auction for a Delivery Year, a* Generation Capacity Resource shall cease to be considered a Planned Generation Capacity Resource as of the *earlier of the* date that Interconnection Service commences as to such resource*; or (ii) the resource has cleared an RPM Auction for any Delivery Year, in which case it shall become an Existing Generation Capacity Resource for any RPM Auction for all subsequent Delivery Years. Notwithstanding the foregoing, a Generation Capacity Resource for which construction has not commenced and which would otherwise have been treated as a Planned Generation Capacity Resource but for the fact that it was bid into RPM Auctions for at least two consecutive Delivery Years, and cleared the last such auction only because it was considered existing and its mitigated offer cap was accepted when its price offer would not have otherwise been accepted, shall be deemed to be a Planned Generation Capacity Resource*.

1.71 Planning Period

Planning Period shall mean the 12 months beginning June 1 and extending through May 31 of the following year, or such other period approved by the Members Committee.

1.72 Public Power Entity

Public Power Entity shall mean any agency, authority, or instrumentality of a state or of a political subdivision of a state, or any corporation wholly owned by any one or more of the foregoing, that is engaged in the generation, transmission, and/or distribution of electric energy.

1.73 Qualifying Transmission Upgrades

Qualifying Transmission Upgrades shall have the meaning specified in Attachment DD to the PJM Tariff.

1.74 Markets and Reliability Committee

Markets and Reliability Committee shall mean the committee established pursuant to the Operating Agreement as a Standing Committee of the Members Committee.

1.75 Reliability Principles and Standards

Reliability Principles and Standards shall mean the principles and standards established by NERC or an Applicable Regional Reliability Council to define, among other things, an acceptable probability of loss of load due to inadequate generation or transmission capability, as amended from time to time.

1.76 Required Approvals

Required Approvals shall mean all of the approvals required for this Agreement to be modified or to be terminated, in whole or in part, including the acceptance for filing by FERC and every other regulatory authority with jurisdiction over all or any part of this Agreement.

1.77 Self-Supply

Self Supply shall have the meaning provided in Attachment DD to the PJM Tariff.

1.78 Single-Customer LSE

Single-Customer LSE shall mean a Party that (a) serves only retail customers that are Affiliates of such Party; (b) owns or controls generation facilities located at one or more of the retail customer location(s) that in the aggregate satisfy at least 50% of such Party's Unforced Capacity obligations; and (c) serves retail customers having (i) an Obligation Peak Load at all locations of no less than 100 MW, where such peak load of each such location is no less than 10 MW; or (ii) an Obligation Peak Load at each location served of no less than 25 MW.

1.79 South RAA

South RAA shall mean that certain Reliability Assurance Agreement among Load-Serving Entities in the PJM South Region, on file with FERC as PJM Rate Schedule FERC No. 40.

1.80 State Consumer Advocate

State Consumer Advocate shall mean a legislatively created office from any State, all or any part of the territory of which is within the PJM Region, and the District of Columbia

established, inter alia, for the purpose of representing the interests of energy consumers before the utility regulatory commissions of such states and the District of Columbia and the FERC.

1.81 State Regulatory Structural Change

State Regulatory Structural Change shall mean as to any Party, a state law, rule, or order that, after September 30, 2006, initiates a program that allows retail electric consumers served by such Party to choose from among alternative suppliers on a competitive basis, terminates such a program, expands such a program to include classes of customers or localities served by such Party that were not previously permitted to participate in such a program, or that modifies retail electric market structure or market design rules in a manner that materially increases the likelihood that a substantial proportion of the customers of such Party that are eligible for retail choice under such a program (a) that have not exercised such choice will exercise such choice; or (b) that have exercised such choice will no longer exercise such choice, including for example, without limitation, mandating divestiture of utility-owned generation or structural changes to such Party's default service rules that materially affect whether retail choice is economically viable.

1.82 Threshold Quantity

Threshold Quantity shall mean, as to any FRR Entity for any Delivery Year, the sum of (a) the Unforced Capacity equivalent (determined using the Pool-Wide Average EFORD) of the Installed Reserve Margin for such Delivery Year multiplied by the Preliminary Forecast Peak Load for which such FRR Entity is responsible under its FRR Capacity Plan for such Delivery Year, plus (b) the lesser of (i) 3% of the Unforced Capacity amount determined in (a) above or (ii) 450 MW. If the FRR Entity is not responsible for all load within a Zone, the Preliminary Forecast Peak Load for such entity shall be the FRR Entity's Obligation Peak Load last determined prior to the Base Residual Auction for such Delivery Year, times the Base FRR Scaling Factor (as determined in accordance with Schedule 8.1).

1.83 Transmission Facilities

Transmission Facilities shall mean facilities that: (i) are within the PJM Region; (ii) meet the definition of transmission facilities pursuant to FERC's Uniform System of Accounts or have been classified as transmission facilities in a ruling by FERC addressing such facilities; and (iii) have been demonstrated to the satisfaction of the Office of the Interconnection to be integrated with the PJM Region transmission system and integrated into the planning and operation of the PJM Region to serve all of the power and transmission customers within the PJM Region.

1.84 Transmission Owner

Transmission Owner shall mean a Member that owns or leases with rights equivalent to ownership Transmission Facilities. Taking transmission service shall not be sufficient to qualify a Member as a Transmission Owner.

1.85 Transmission Owners Agreement

Transmission Owners Agreement shall mean that certain Consolidated Transmission Owners Agreement, dated as of December 15, 2005 and as amended from time to time, among transmission owners within the PJM Region.

1.86 Unforced Capacity

Unforced Capacity shall mean installed capacity rated at summer conditions that is not on average experiencing a forced outage or forced derating, calculated for each Capacity Resource on the 12-month period from October to September without regard to the ownership of or the contractual rights to the capacity of the unit.

1.87 West RAA

West RAA shall mean the "PJM West Reliability Assurance Agreement among the Load Serving Entities in the PJM West Region," on file with FERC as PJM Rate Schedule FERC No. 32.

1.88 Zonal Capacity Price

Zonal Capacity Price shall mean the price of Unforced Capacity in a Zone that an LSE that has not elected the FRR Alternative is obligated to pay for a Delivery Year as determined pursuant to Attachment DD to the PJM Tariff.

1.89 Zone

Zone shall mean an area within the PJM Region, as set forth in Schedule 15, or as such areas may be (i) combined as a result of mergers or acquisitions or (ii) added as a result of the expansion of the boundaries of the PJM Region. A Zone shall include any Non-Zone Network Load (as defined in the PJM Tariff) located outside the PJM Region that is served from such Zone under Schedule H-A of the PJM Tariff.

SCHEDULE 6

PROCEDURES FOR DEMAND RESOURCES, ILR, AND ENERGY EFFICIENCY

A. Parties can partially or wholly offset the amounts payable for the Locational Reliability Charge with Demand Resources or ILR that are operated under the direction of the Office of the Interconnection. FRR Entities may reduce their capacity obligations with Demand Resources that are operated under the direction of the Office of the Interconnection and detailed in such entity's FRR Capacity Plan. Demand Resources qualifying under the criteria set forth below may be offered for sale or designated as Self-Supply in the Base Residual Auction, included in an FRR Capacity Plan, or offered for sale in any Incremental Auction, for any Delivery Year for which such resource qualifies. In addition, for Delivery Years through May 31, 2012, resources qualifying under the criteria set forth below may be certified as ILR on behalf of a Party that has not elected the FRR Alternative for a Delivery Year no later than three months prior to the first day of such Delivery Year; provided, however, that for the 2011-2012 Delivery Year only, the ILR certification deadline shall be no later than two months prior to the first day of such Delivery Year. Qualified Demand Resources and ILR generally fall in one of three categories, i.e., Guaranteed Load Drop, Firm Service Level, or Direct Load Control, as further specified in section H and the PJM Manuals. Qualified Demand Resources and ILR may be provided by a Demand Resource Provider or ILR Provider (hereinafter, "Provider"), notwithstanding that such Provider is not a Party to this Agreement. Such Providers must satisfy the requirements in section I and the PJM Manuals.

1. A Party must formally notify, in accordance with the requirements of the PJM Manuals and paragraph G of this schedule as applicable, the Office of the Interconnection of the Demand Resource or ILR that it is placing under the direction of the Office of the Interconnection. A Party must further notify the Office of the Interconnection whether the resource is an ILR resource, a Limited Demand Resource, an Extended Summer Demand Resource or an Annual Demand Resource.

2. A period of no more than 2 hours prior notification must apply to interruptible customers.

3. The initiation of load interruption, upon the request of the Office of the Interconnection, must be within the authority of the dispatchers of the Party. No additional approvals should be required.

4. The initiation of load reduction upon the request of the Office of the Interconnection is considered an emergency action and must be implementable prior to a voltage reduction.

5. An entity offering for sale, designating for self-supply, or including in any FRR Capacity Plan any Planned Demand Resource must demonstrate, in accordance with standards and procedures set forth in the PJM Manuals, that such resource shall have the capability to provide a reduction in demand, or otherwise control load, on or before the start of the Delivery Year for which such resource is committed. Providers of Planned Demand Resources must provide a timeline including the milestones, which demonstrates to PJM's satisfaction that the Planned Demand Resources will be available for the start of the Delivery Year, 15 business days prior to a Base Residual Auction or Incremental Auction. PJM may verify the Provider's adherence to the timetable at any time.

6. Selection of a Demand Resource in an RPM Auction results in commitment of capacity to the PJM Region. Demand Resources that are so committed must be registered to participate in the Full Program Option or as a Capacity Only resource of the Emergency Load Response program and thus available for dispatch during PJM-declared emergency events.

B. The Unforced Capacity value of a Demand Resource and ILR will be determined as:

the product of the Nominated Value of the Demand Resource, or the Nominated Value of the ILR, times the DR Factor, times the Forecast Pool Requirement. Nominated Values shall be determined and reviewed in accordance with sections J and K, respectively, and the PJM Manuals. The DR Factor is a factor established by the PJM Board with the advice of the Members Committee to reflect the increase in the peak load carrying capability in the PJM Region due to Demand Resources and ILR. Peak load carrying capability is defined to be the peak load that the PJM Region is able to serve at the loss of load expectation defined in the Reliability Principles and Standards. The DR Factor is the increase in the peak load carrying capability in the PJM Region due to Demand Resources and ILR, divided by the total Nominated Value of Demand Resources and ILR in the PJM Region. The DR Factor will be determined using an analytical program that uses a probabilistic approach to determine reliability. The determination of the DR Factor will consider the reliability of Demand Resources and ILR, the number of interruptions, and the total amount of load reduction.

C. Demand Resources offered and cleared in a Base Residual or Incremental Auction shall receive the corresponding Capacity Resource Clearing Price as determined in such auction, in accordance with Attachment DD of the PJM Tariff. For Delivery Years beginning with the Delivery Year that commences on June 1, 2013, any Demand Resources located in a Zone with multiple LDAs shall receive the Capacity Resource Clearing Price applicable to the location of such resource within such Zone, as identified in such resource's offer. Further, the Demand Resource Provider shall register its resource in the same location within the Zone as specified in its cleared sell offer, and shall be subject to deficiency charges under Attachment DD of this Tariff to the extent it fails to provide the resource in such location consistent with its cleared offer. For either of the Delivery Year commencing on June 1, 2010 or commencing on June 1, 2012, if the

location of a Demand Resource is not specified by a Seller in the Sell Offer on an individual LDA basis in a Zone with multiple LDAs, then Demand Resources cleared by such Seller will be paid a DR Weighted Zonal Resource Clearing Price, determined as follows: (i) for a Zone that includes non-overlapping LDAs, calculated as the weighted average of the Resource Clearing Prices for such LDAs, weighted by the cleared Demand Resources registered by such Seller in each such LDA; or (ii) for a Zone that contains a smaller LDA within a larger LDA, calculated treating the smaller LDA and the remaining portion of the larger LDA as if they were separate LDAs, and weight-averaging in the same manner as (i) above.

D. Certified ILR resources shall receive the Final Zonal ILR Price.

E. The Party, Electric Distributor, Demand Resource Provider, or ILR Provider that establishes a contractual relationship (by contract or tariff rate) with a customer for load reductions is entitled to receive the compensation specified in sections C and D for a committed Demand Resource or certified ILR, notwithstanding that such provider is not the customer's energy supplier.

F. Any Party hereto shall demonstrate that its Demand Resources or ILR performed during periods when load management procedures were invoked by the Office of the Interconnection. The Office of the Interconnection shall adopt and maintain rules and procedures for verifying the performance of such resources, as set forth in section L and the PJM Manuals. In addition, committed Demand Resources and certified ILR that do not comply with the directions of the Office of the Interconnection to reduce load during an emergency shall be subject to the penalty charge set forth in Attachment DD to the PJM Tariff.

G. Parties may elect to place Demand Resources associated with Behind The Meter Generation under the direction of the Office of the Interconnection for a Delivery Year by submitting a Sell Offer for such resource (as Self Supply, or with an offer price) in the Base Residual Auction for such Delivery Year. This election shall remain in effect for the entirety of such Delivery Year. In the event such an election is made, such Behind The Meter Generation will not be netted from load for the purposes of calculating the Daily Unforced Capacity Obligations under this Agreement.

H. PJM recognizes three types of Demand Resource and ILR:

Direct Load Control (DLC) – Load management that is initiated directly by the Provider's market operations center or its agent, employing a communication signal to cycle equipment (typically water heaters or central air conditioners). DLC programs are qualified based on load research and customer subscription data. Providers may rely on the results of load research studies identified in the PJM Manuals to set the per-participant load reduction for DLC programs. Each Provider relying on DLC load management must periodically update its DLC switch operability rates, in accordance with the PJM Manuals.

Firm Service Level (FSL) – Load management achieved by a customer reducing its load to a pre-determined level (the Firm Service Level), upon notification from the Provider's market operations center or its agent.

Guaranteed Load Drop (GLD) – Load management achieved by a customer reducing its load by a pre-determined amount (the Guaranteed Load Drop), upon notification from the Provider's market operations center or its agent. Typically, the load reduction is achieved through running customer-owned backup generators, or by shutting down process equipment.

For each type of Demand Resource and ILR above, there can be two notification periods:

Step 1 (Short Lead Time) – Demand Resource or ILR which must be fully implemented in one hour or less from the time the PJM dispatcher notifies the market operations center of a curtailment event.

Step 2 (Long Lead Time) – Demand Resource or ILR which requires more than one hour but no more than two hours, from the time the PJM dispatcher notifies the market operations center of a curtailment event, to be fully implemented.

I. Each Provider must satisfy (or contract with another LSE, Provider, or EDC to provide) the following requirements:

- A point of contact with appropriate backup to ensure single call notification from PJM and timely execution of the notification process;
- supplemental status reports, detailing Demand Resources and ILR available, as requested by PJM;
- Entry of customer-specific Demand Resource and ILR credit information, for planning and verification purposes, into the designated PJM electronic system.
- Customer-specific compliance and verification information for each PJM-initiated Demand Resource or ILR event, as well as aggregated Provider load drop data for Provider-initiated events, in accordance with established reporting guidelines.
- Load drop estimates for all Demand Resource or ILR events, prepared in accordance with the PJM Manuals.

J. The Nominated Value of each Demand Resource or ILR shall be determined consistent with the process for determination of the capacity obligation for the customer.

The Nominated Value for a Firm Service Level customer will be based on the peak load contribution for the customer, as determined by the 5CP methodology utilized to determine other ICAP obligation values. The maximum Demand Resource or ILR load

reduction value for a Firm Service Level customer will be equal to Peak Load Contribution – Firm Contract Level adjusted for system losses.

The Nominated Value for a Guaranteed Load Drop customer will be the guaranteed load drop amount, adjusted for system losses, as established by the customer's contract with the Provider. The maximum credit nominated shall not exceed the customer's Peak Load Contribution.

The Nominated Value for a Direct Load Control program will be based on load research and customer subscription. The maximum value of the program is equal to the approved per-participant load reduction multiplied by the number of active participants, adjusted for system losses. The per-participant impact is to be estimated at long-term average local weather conditions at the time of the summer peak.

Customer-specific Demand Resource or ILR information (EDC account number, peak load, notification period, etc.) will be entered into the designated PJM electronic system to establish credit values. Additional data may be required, as defined in sections K and L.

K. Nominated Values shall be reviewed based on documentation of customer-specific data and Demand Resource or ILR information, to verify the amount of load management available, and to set a maximum allowable Nominated Value. Data is provided by both the zone EDC and the Provider on templates supplied by PJM, and must include the EDC meter number or other unique customer identifier, Peak Load Contribution (5CP), contract firm service level or guaranteed load drop values, applicable loss factor, zone/area location of the load drop, LSE contact information, number of active participants, etc. Such data must be uploaded and approved prior to the first day of the Delivery Year for such resource as a Demand Resource, or certification of such resource as ILR. Providers must provide this information concurrently to host EDCs.

For Firm Service Level and Guaranteed Load Drop customers, the 5CP values, for the zone and affected customers, will be adjusted to reflect an "unrestricted" peak for a zone, based on information provided by the Provider. Load drop levels shall be estimated in accordance with guidelines in the PJM Manuals.

For Direct Load Control programs, the Provider must provide information detailing the number of active participants in each program. Other information on approved DLC programs will be provided by PJM.

L. Compliance is the process utilized to review Provider performance during PJM-initiated Demand Resource and ILR events. The process establishes potential under/over compliance values for the Provider. Compliance will be established for each Provider on an event specific basis for the Provider's Demand Resources or ILR dispatched by the Office of the Interconnection during such event.

PJM will establish and communicate reasonable deadlines for the timely submittal of event data to expedite compliance reviews. Compliance reviews will be completed as soon after the event as possible, with the expectation that reviews of a single event will be completed within two months of the end of the month in which the event took place. Providers are responsible for the submittal of compliance information to PJM for each PJM-initiated event during the compliance period. Compliance for Direct Load Control programs will consider only the transmission of the control signal. Providers are required to report the time period (during the Demand Resource and ILR event) that the control signal was actually sent. Compliance is checked on an individual customer basis for FSL, by comparing actual load during the event to the firm service level. Providers must submit actual customer load levels (for the event period) for the compliance report. Compliance is checked on an individual customer basis for GLD, by comparing actual load dropped during the event to the nominated amount of load drop. Providers must submit actual loads and comparison loads for the compliance hours. Comparison loads must be developed from the guidelines in the PJM Manuals, and note which method was employed.

Compliance is averaged over the full hours of a load management event, for each customer or DLC program dispatched by the Office of the Interconnection. Demand Resource or ILR resources may not reduce their load below zero (i.e., export energy into the system). No compliance credit will be given for an incremental load drop below zero. Compliance will be totaled over all FSL and GLD customers and DLC programs to determine a net compliance position for the event for each Provider by Zone, for all Demand Resources committed and ILR Certified by such Provider and dispatched by the Office of the Interconnection in the zone. Deficiencies shall be as further determined in accordance with section 11 of Schedule DD to the PJM Tariff.

M. Energy Efficiency Resources

1. An Energy Efficiency Resource is a project, including installation of more efficient devices or equipment or implementation of more efficient processes or systems, exceeding then-current building codes, appliance standards, or other relevant standards, designed to achieve a continuous (during peak periods as described herein) reduction in electric energy consumption that is not reflected in the peak load forecast prepared for the Delivery Year for which the Energy Efficiency Resource is proposed, and that is fully implemented at all times during such Delivery Year, without any requirement of notice, dispatch, or operator intervention.

2. An Energy Efficiency Resource may be offered as a Capacity Resource in the Base Residual or Incremental Auctions for any Delivery Year beginning on or after June 1, 2011. No later than 30 days prior to the auction in which the resource is to be offered, the Capacity Market Seller shall submit to the Office of the Interconnection a notice of intent to offer the resource into such auction and a measurement and verification plan. The notice of intent shall include all pertinent project design data, including but not limited to the peak-load contribution of

affected customers, a full description of the equipment, device, system or process intended to achieve the load reduction, the load reduction pattern, the project location, the project development timeline, and any other relevant data. Such notice also shall state the seller's proposed Nominated Energy Efficiency Value, which shall be the expected average load reduction between the hour ending 15:00 EPT and the hour ending 18:00 EPT during all days from June 1 through August 31, inclusive, of such Delivery Year that is not a weekend or federal holiday. The measurement and verification plan shall describe the methods and procedures, consistent with the PJM Manuals, for determining the amount of the load reduction and confirming that such reduction is achieved. The Office of the Interconnection shall determine, upon review of such notice, the Nominated Energy Efficiency Value that may be offered in the Reliability Pricing Model Auction.

3. An Energy Efficiency Resource may be offered with a price offer or as Self-Supply. If an Energy Efficiency Resource clears the auction, it shall receive the applicable Capacity Resource Clearing Price, subject to section 5 below. A Capacity Market Seller offering an Energy Efficiency Resource must comply with all applicable credit requirements as set forth in Attachment Q to the PJM Tariff. The Unforced Capacity value of an Energy Efficiency Resource offered into an RPM Auction shall be the Nominated Energy Efficiency value times the DR Factor and the Forecast Pool Requirement.

4. An Energy Efficiency Resource that clears an auction for a Delivery Year may be offered in auctions for up to three additional consecutive Delivery Years, but shall not be assured of clearing in any such auction; provided, however, an Energy Efficiency Resource may not be offered for any Delivery Year in which any part of the peak season is beyond the expected life of the equipment, device, system, or process providing the expected load reduction; and provided further that a Capacity Market Seller that offers and clears an Energy Efficiency Resource in a BRA may elect a New Entry Price Adjustment on the same terms as set forth in section 5.14(c) of this Attachment DD.

5. For every Energy Efficiency Resource clearing an RPM Auction for a Delivery Year, the Capacity Market Seller shall submit to the Office of the Interconnection, by no later than 30 days prior to each Auction an updated project status and measurement and verification plan subject to the criteria set forth in the PJM Manuals.

6. For every Energy Efficiency Resource clearing an RPM Auction for a Delivery Year, the Capacity Market Seller shall submit to the Office of the Interconnection, by no later than the start of such Delivery Year, an updated project status and detailed measurement and verification data meeting the standards for precision and accuracy set forth in the PJM Manuals. The final value of the Energy Efficiency Resource during such Delivery Year shall be as determined by the Office of the Interconnection based on the submitted data.

7. The Office of the Interconnection may audit, at the Capacity Market Seller's expense, any Energy Efficiency Resource committed to the PJM Region. The audit may be conducted any time including the Performance Hours of the Delivery Year.

D. FRR Capacity Plans

1. Each FRR Entity shall submit its initial FRR Capacity Plan as required by subsection C.1 of this Schedule, and shall annually extend and update such plan by no later than one month prior to the Base Residual Auction for each succeeding Delivery Year in such plan. Each FRR Capacity Plan shall indicate the nature and current status of each resource, including the status of each Planned Generation Capacity Resource or Planned Demand Resource, the planned deactivation or retirement of any Generation Capacity Resource or Demand Resource, and the status of commitments for each sale or purchase of capacity included in such plan.

2. The FRR Capacity Plan of each FRR Entity that commits that it will not sell surplus Capacity Resources as a Capacity Market Seller in any auction conducted under Attachment DD of the PJM Tariff, or to any direct or indirect purchaser that uses such resource as the basis of any Sell Offer in such auction, shall designate Capacity Resources in a megawatt quantity no less than the Forecast Pool Requirement for each applicable Delivery Year times the FRR Entity's allocated share of the Preliminary Zonal Peak Load Forecast for such Delivery Year, as determined in accordance with procedures set forth in the PJM Manuals. The set of Capacity Resources designated in the FRR Capacity Plan must meet the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement associated with the FRR Entity's capacity obligation. If the FRR Entity is not responsible for all load within a Zone, the Preliminary Forecast Peak Load for such entity shall be the FRR Entity's Obligation Peak Load last determined prior to the Base Residual Auction for such Delivery Year, times the Base Zonal FRR Scaling Factor. The FRR Capacity Plan of each FRR Entity that does not commit that it will not sell surplus Capacity Resources as set forth above shall designate Capacity Resources at least equal to the Threshold Quantity. To the extent the FRR Entity's allocated share of the Final Zonal Peak Load Forecast exceeds the FRR Entity's allocated share of the Preliminary Zonal Peak Load Forecast, such FRR Entity's FRR Capacity Plan shall be updated to designate additional Capacity Resources in an amount no less than the Forecast Pool Requirement times such increase; provided, however, any excess megawatts of Capacity Resources included in such FRR Entity's previously designated Threshold Quantity, if any, may be used to satisfy the capacity obligation for such increased load. To the extent the FRR Entity's allocated share of the Final Zonal Peak Load Forecast is less than the FRR Entity's allocated share of the Preliminary Zonal Peak Load Forecast, such FRR Entity's FRR Capacity Plan may be updated to release previously designated Capacity Resources in an amount no greater than the Forecast Pool Requirement times such decrease.

3. As to any FRR Entity, the Base Zonal FRR Scaling Factor for each Zone in which it serves load for a Delivery Year shall equal ZPLDY/ZWNSP, where:

ZPLDY = Preliminary Zonal Peak Load Forecast for such Zone for such Delivery Year; and

ZWNSP = Zonal Weather-Normalized Summer Peak Load for such Zone for the summer concluding four years prior to the commencement of such Delivery Year.

4. Capacity Resources identified and committed in an FRR Capacity Plan shall meet all requirements under this Agreement and the PJM Operating Agreement applicable to Capacity

Resources, including, as applicable, requirements and milestones for Planned Generation Capacity Resources and Planned Demand Resources. A Capacity Resource submitted in an FRR Capacity Plan must be on a unit-specific basis, and may not include "slice of system" or similar agreements that are not unit specific. An FRR Capacity Plan may include bilateral transactions that commit capacity for less than a full Delivery Year only if the resources included in such plan in the aggregate satisfy all obligations for all Delivery Years. All demand response, load management, energy efficiency, or similar programs on which such FRR Entity intends to rely for a Delivery Year must be included in the FRR Capacity Plan submitted three years in advance of such Delivery Year and must satisfy all requirements applicable to Demand Resources or Energy Efficiency Resources, as applicable, including, without limitation, those set forth in Schedule 6 to this Agreement and the PJM Manuals; provided, however, that previously uncommitted Unforced Capacity from such programs may be used to satisfy any increased capacity obligation for such FRR Entity resulting from a Final Zonal Peak Load Forecast applicable to such FRR Entity.

5. For each LDA for which the Office of the Interconnection has established a separate Variable Resource Requirement Curve for any Delivery Year addressed by such FRR Capacity Plan, the plan must include a minimum percentage of Capacity Resources for such Delivery Year located within such LDA. Such minimum percentage ("Percentage Internal Resources Required") will be calculated as the LDA Reliability Requirement less the CETL for the Delivery Year, as determined by the RTEP process as set forth in the PJM Manuals. Such requirement shall be expressed as a percentage of the Unforced Capacity Obligation based on the Preliminary Zonal Peak Load Forecast multiplied by the Forecast Pool Requirement.

6. An FRR Entity may reduce such minimum percentage as to any LDA to the extent the FRR Entity commits to a transmission upgrade that increases the capacity emergency transfer limit for such LDA. Any such transmission upgrade shall adhere to all requirements for a Qualified Transmission Upgrade as set forth in Attachment DD to the PJM Tariff. The increase in CETL used in the FRR Capacity Plan shall be that approved by PJM prior to inclusion of any such upgrade in an FRR Capacity Plan. The FRR Entity shall designate specific additional Capacity Resources located in the LDA from which the CETL was increased, to the extent of such increase.

7. The Office of the Interconnection will review the adequacy of all submittals hereunder both as to timing and content. A Party that seeks to elect the FRR Alternative that submits an FRR Capacity Plan which, upon review by the Office of the Interconnection, is determined not to satisfy such Party's capacity obligations hereunder, shall not be permitted to elect the FRR Alternative. If a previously approved FRR Entity submits an FRR Capacity Plan that, upon review by the Office of the Interconnection, is determined not to satisfy such Party's capacity obligations hereunder, the Office of the Interconnection shall notify the FRR Entity, in writing, of the insufficiency within five (5) business days of the submittal of the FRR Capacity Plan. If the FRR Entity does not cure such insufficiency within five (5) business days after receiving such notice of insufficiency, then such FRR Entity shall be assessed an FRR Commitment Insufficiency Charge, in an amount equal to two times the Cost of New Entry for the relevant location, in $/MW-day, times the shortfall of Capacity Resources below the FRR Entity's

capacity obligation (including any Threshold Quantity requirement) in such FRR Capacity Plan, for the remaining term of such plan.

8. In a state regulatory jurisdiction that has implemented retail choice, the FRR Entity must include in its FRR Capacity Plan all load, including expected load growth, in the FRR Service Area, notwithstanding the loss of any such load to or among alternative retail LSEs. In the case of load reflected in the FRR Capacity Plan that switches to an alternative retail LSE, where the state regulatory jurisdiction requires switching customers or the LSE to compensate the FRR Entity for its FRR capacity obligations, such state compensation mechanism will prevail. In the absence of a state compensation mechanism, the applicable alternative retail LSE shall compensate the FRR Entity at the capacity price in the unconstrained portions of the PJM Region, as determined in accordance with Attachment DD to the PJM Tariff, provided that the FRR Entity may, at any time, make a filing with FERC under Sections 205 of the Federal Power Act proposing to change the basis for compensation to a method based on the FRR Entity's cost or such other basis shown to be just and reasonable, and a retail LSE may at any time exercise its rights under Section 206 of the FPA.

9. Notwithstanding the foregoing, in lieu of providing the compensation described above, such alternative retail LSE may, for any Delivery Year subsequent to those addressed in the FRR Entity's then-current FRR Capacity Plan, provide to the FRR Entity Capacity Resources sufficient to meet the capacity obligation described in paragraph D.2 for the switched load. Such Capacity Resources shall meet all requirements applicable to Capacity Resources pursuant to this Agreement and the PJM Operating Agreement, all requirements applicable to resources committed to an FRR Capacity Plan under this Agreement, and shall be committed to service to the switched load under the FRR Capacity Plan of such FRR Entity. The alternative retail LSE shall provide the FRR Entity all information needed to fulfill these requirements and permit the resource to be included in the FRR Capacity Plan. The alternative retail LSE, rather than the FRR Entity, shall be responsible for any performance charges or compliance penalties related to the performance of the resources committed by such LSE to the switched load. For any Delivery Year, or portion thereof, the foregoing obligations apply to the alternative retail LSE serving the load during such time period. PJM shall manage the transfer accounting associated with such compensation and shall administer the collection and payment of amounts pursuant to the compensation mechanism.

Such load shall remain under the FRR Capacity Plan until the effective date of any termination of the FRR Alternative and, for such period, shall not be subject to Locational Reliability Charges under Section 7.2 of this Agreement.

F. FRR Daily Unforced Capacity Obligations and Deficiency Charges

1. For each billing month during a Delivery Year, the Daily Unforced Capacity Obligation of an FRR Entity shall be determined on a daily basis for each Zone as follows:

Daily Unforced Capacity Obligation = OPL * Final Zonal FRR Scaling Factor * FPR

where:

OPL =Obligation Peak Load, defined as the daily summation of the weather-adjusted coincident summer peak, last preceding the Delivery Year, of the end-users in such Zone (net of operating Behind The Meter Generation, but not to be less than zero) for which such Party was responsible on that billing day, as determined in accordance with the procedures set forth in the PJM Manuals

Final Zonal FRR Scaling Factor = FZPLDY/FZWNSP;

FZPLDY = Final Zonal Peak Load Forecast for such Delivery Year; and

FZWNSP = Zonal Weather-Normalized Peak Load for the summer concluding prior to the commencement of such Delivery Year.

2. An FRR Entity shall be assessed an FRR Capacity Deficiency Charge in each Zone addressed in such entity's FRR Capacity Plan for each day during a Delivery Year that it fails to satisfy its Daily Unforced Capacity Obligation in each Zone. Such FRR Capacity Deficiency Charge shall be in an amount equal to the deficiency below such FRR Entity's Daily Unforced Capacity Obligation for such Zone times (1.20 times the Capacity Resource Clearing Price resulting from all RPM Auctions for such Delivery Year for the LDA encompassing such Zone, weight-averaged for the Delivery Year based on the prices established and quantities cleared in such auctions).

3. If an FRR Entity acquires load that is not included in the Preliminary Zonal Peak Load Forecast such acquired load shall be treated in the same manner as provided in Sections H.1 and H.2 of this Schedule.

4. The shortages in meeting the minimum requirement within the constrained zones and the shortage in meeting the total obligation are first calculated. The shortage in the unconstrained area is calculated as the total shortage less shortages in constrained zones and excesses in constrained zones (the shortage is zero if this is a negative number). The Capacity Deficiency Charge is charged to the shortage in each zone and in the unconstrained area separately. This procedure is used to allow the use of capacity excesses from constrained zones to reduce shortage in the unconstrained area and to disallow the use of capacity excess from unconstrained area to reduce shortage in constrained zones.

5. The shortages in meeting the Minimum Annual Resource Requirement and the Minimum Extended Summer Resource Requirement associated with the FRR Entity's capacity obligation

are calculated separately. The applicable penalty rate is calculated for Annual Resources, Extended Summer Demand Resources, and Limited Resources as (1.20 times the Capacity Resource Clearing Price resulting from all RPM Auctions for such Delivery Year for the LDA encompassing such Zone, weight-averaged for the Delivery Year based on the prices established and quantities cleared in such auctions).