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December 19, 2014

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

Re: ***Southwest Power Pool, Inc.*, Docket No. ER15-____-000**
Submission of Tariff Revisions to Modify Mitigation Measures for Manual Resource Commitments

Dear Secretary Bose:

Pursuant to section 205 of the Federal Power Act ("FPA"), 16 U.S.C. § 824d, and Part 35 of the Regulations of the Federal Energy Regulatory Commission ("Commission"), 18 C.F.R. Part 35, Southwest Power Pool, Inc. ("SPP"), as authorized by its Board of Directors, submits revisions to its Open Access Transmission Tariff[1] to modify certain market power mitigation measures applicable to manual resource commitments. The proposed revisions are designed to address an unintended consequence of current Tariff language that subjects all manual commitments to stricter mitigation thresholds than the Commission required in its orders accepting SPP's Integrated Marketplace.[2] SPP requests an effective date of February 17, 2015 for the revisions proposed in this filing.

I. BACKGROUND

A. SPP

SPP is a Commission-approved regional transmission organization ("RTO"). It is an Arkansas non-profit corporation with its principal place of business in Little Rock, Arkansas. SPP currently has 80 members serving more than 6 million households in a 370,000 square-mile area. Its members include 14 investor-owned utilities, 11 municipal systems, 13 generation and transmission cooperatives, 7 state agencies, 12 independent power producers, 12 power marketers, and 11 independent transmission companies. As

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1 Southwest Power Pool Open Access Transmission Tariff, Sixth Revised Volume No. 1 ("Tariff"). References in this filing to "Tariff" refer to the version of SPP's Tariff currently in effect. "Proposed Tariff" refers to revisions proposed in this filing.

2 *See infra* notes 3-6.

an RTO, SPP administers open access transmission service over more than 48,000 miles of transmission lines covering portions of Arkansas, Kansas, Louisiana, Missouri, Nebraska, New Mexico, Oklahoma, and Texas.

B. Integrated Marketplace

On February 29, 2012, SPP submitted to the Commission proposed revisions to its Tariff to transition from its Real-Time Energy Imbalance Service Market to the SPP Integrated Marketplace, which includes (among other things): Day-Ahead and Real-Time Energy and Operating Reserve Markets; a Transmission Congestion Rights market; a consolidated SPP Balancing Authority Area; and a market power monitoring and mitigation plan based on conduct and impact thresholds. The Commission accepted the Integrated Marketplace proposal and subsequent compliance and amendatory filings in a series of orders issued October 18, 2012,[3] September 20, 2013,[4] January 29, 2014,[5] and June 19, 2014.[6] SPP commenced operation of the Integrated Marketplace on March 1, 2014.

C. Stakeholder Process

The revisions proposed in this filing were developed through the SPP stakeholder process. The Market Working Group unanimously approved the revisions proposed in this filing on August 6, 2014, the Operations Reliability Working Group approved the revisions (determining that there was no reliability impact) on August 7, 2014, and the Regional Tariff Working Group unanimously approved the revisions on August 28, 2014. SPP's Markets and Operations Policy Committee unanimously approved the revisions on October 14, 2014. On October 28, 2014, the SPP Members Committee voted unanimously to recommend approval of and the SPP Board of Directors approved the revisions proposed in this filing. SPP recognizes that stakeholder approval does not by itself cause a filing to be just and reasonable; however, SPP requests that the Commission

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3 *Sw. Power Pool, Inc.*, 141 FERC ¶ 61,048, at P 2 (2012) ("October 2012 Order"), *order on reh'g and clarification*, 142 FERC ¶ 61,205 (2013), *appeal dismissed sub nom. Neb. Pub. Power Dist. v. FERC*, No. 13-1181, 2014 U.S. App. LEXIS 10064 (D.C. Cir. Apr. 15, 2014).

4 *Sw. Power Pool, Inc.*, 144 FERC ¶ 61,224, at P 20 (2013) ("September 2013 Order"), *reh'g pending*.

5 *Sw. Power Pool, Inc.*, 146 FERC ¶ 61,050 (2014) ("January 2014 Order").

6 *Sw. Power Pool, Inc.*, 147 FERC ¶ 61,212 (2014).

extend appropriate deference to the wishes of its stakeholders regarding the revisions proposed in this filing, consistent with Commission precedent.[7]

II. DESCRIPTION OF AND JUSTIFICATION FOR PROPOSED TARIFF REVISIONS

A. Reasons and Justifications for Tariff Revisions

In the regulatory approval process for the Integrated Marketplace, one issue receiving significant attention was the issue of manual resource commitments to address voltage and local reliability issues and mitigation of such resources. Through several iterations of Tariff revisions and Commission orders, SPP adopted a definition of "Local Reliability Issue," established a local market power test, and implemented tighter conduct thresholds for resources that are committed by SPP or a local transmission operator to address Local Reliability Issues. However, in implementing these Tariff provisions in the Integrated Marketplace, SPP has determined that the Tariff, as currently worded, results in stricter mitigation of a broader range of resources than either the Commission or SPP intended.

In the Integrated Marketplace orders, the Commission expressed concern that resources committed to address Local Reliability Issues may exercise market power, and thus the Commission directed SPP to implement stricter mitigation measures for such resources. Specifically, in the October 2012 Order, the Commission found "that more stringent economic withholding thresholds are necessary to prevent market participants with resources that are committed *due to voltage and local reliability events* from exercising market power by submitting bid levels or bidding parameters substantially different from their reference levels."[8] Accordingly, the Commission "direct[ed] SPP to

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[7] The Commission previously has recognized that provisions approved through the stakeholder processes of RTOs are due deference. *See Sw. Power Pool, Inc.*, 127 FERC ¶ 61,283, at P 33 (2009) (noting that the Commission "accord[s] an appropriate degree of deference to RTO stakeholder processes"); *New England Power Pool*, 105 FERC ¶ 61,300, at P 34 (2003) (Commission approval of transmission cost allocation proposal based upon an extensive and thorough stakeholder process); *Policy Statement Regarding Regional Transmission Groups*, 1991-1996 FERC Stats. & Regs., Regs. Preambles ¶ 30,976, at 30,872 (1993) (the Commission will afford an appropriate degree of deference to the stakeholder approval process). The Commission's deference to RTO stakeholder processes has been upheld by the courts. *See Pub. Serv. Comm'n of Wis. v. FERC*, 545 F.3d 1058, 1062-63 (D.C. Cir. 2008) (noting that the Commission often gives weight to RTO proposals that reflect the position of the majority of the RTO's stakeholders) (citing *Am. Elec. Power Serv. Corp. v. Midwest Indep. Transmission Sys. Operator, Inc.*, 122 FERC ¶ 61,083, at P 172 (2008)).

[8] October 2012 Order at P 445 (emphasis added).

revise its thresholds for conduct and impact associated with *voltage and local reliability commitment events*."[9] The Commission also found SPP's provisions governing when mitigation will occur to be unclear and "require[d] SPP either to rewrite section 3.2 [of Attachment AF of the Tariff] to explicitly allow for the possibility of mitigation without a binding transmission constraint when there is a local reliability issue, or to put the mitigation associated with such local reliability constraints into a separate section of Attachment AF."[10] The Commission also ordered SPP to define "local reliability issue" in the Tariff and directed the SPP Market Monitor "to justify the thresholds it proposes for conduct and impact that would apply when there are local reliability issues."[11]

In response to these directives (and others), SPP proposed a "Local Market Power Test," which specifies that a resource is determined to have local market power if (among other things) the resource is manually committed by SPP or selected for commitment by a local transmission operator in the Day-Ahead Reliability Unit Commitment ("RUC") or Intra-Day RUC process to address reliability issues including issues arising in a local operator's operating area.[12] SPP also proposed a stringent 10% conduct threshold for such resources,[13] proposed to mitigate such resources if their energy offer curves exceed their mitigated energy offer curve by the conduct threshold,[14] and proposed a definition for "Local Reliability Issue."[15] The Commission conditionally accepted SPP's Local Market Power Test[16] and approved SPP's proposed conduct thresholds,[17] finding "that SPP has provided for more stringent mitigation in . . . areas associated with voltage and local reliability events, as required by the Commission."[18] The Commission ordered

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9 *Id.* (emphasis added).

10 *Id.* at P 405.

11 *Id.*

12 *See* Submission of Tariff Revisions to Implement SPP Integrated Marketplace, Docket No. ER12-1179-003, Revised Tariff, Attachment AF § 3.1(4) (Feb. 15, 2013) ("February 2013 Compliance Filing") (referencing Attachment AE §§ 5.2.2(3) (Day-Ahead RUC), 6.1.2(3) & 6.1.2(4) (Intra-Day RUC).

13 *Id.*, Revised Tariff, Attachment AF §§ 3.2.A(1), 3.3.A(1), 3.4.A(1).

14 *Id.*, Revised Tariff, Attachment AF §§ 3.2.B, 3.3.B, 3.4.B.

15 *Id.*, Revised Tariff, Attachment AE § 1.1 (Definitions L).

16 September 2013 Order at PP 258-59.

17 *Id.* at P 357.

18 *Id.* at P 359.

further changes to SPP's definition of Local Reliability Issue and provisions governing the processes of committing resources to address Local Reliability Issues.[19] In the subsequent January 2014 Order, the Commission ordered SPP to revise further the definition of Local Reliability Issue, to adopt a definition for "Local Reliability Issue Commitment,"[20] and to provide further edits to the Local Market Power Test to clarify that resources committed in SPP's Multi-Day Reliability Assessment Process and Day-Ahead Market may also be considered to have local market power.[21]

The Commission's clear concern, as expressed in the Integrated Marketplace orders, was that resources that are committed by SPP or a local operator to address local reliability issues could exercise market power, and therefore should be subject to more stringent mitigation. SPP's conduct thresholds and mitigation provisions, in concert with its Local Market Power Test, were designed to address this concern by defining such resources as possessing local market power, subjecting such resources to the tighter 10% mitigation threshold, and imposing mitigation measures on such resources when their submitted offers exceeded the threshold.

However, while both SPP and the Commission intended that heightened mitigation would apply to resources committed to address local reliability issues, as drafted, SPP's current Tariff language subjects *all* manually committed resources – not just resources manually committed to address local reliability issues – to more stringent mitigation measures. Because the Local Market Power Test currently refers to processes within the Day Ahead Market, RUC, Multi-Day Reliability Assessment and other processes that permit manual commitment for reasons other than local reliability issues, the language is overly broad because such resources automatically fail the Local Market Power Test (and are thus subjected to the more stringent 10% conduct threshold),[22] even though in the Integrated Marketplace orders, the Commission's concern was limited to resources committed to address voltage and local reliability issues. The Commission did not order stricter mitigation for resources committed manually for other reasons.

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19 *Id.* at PP 108-14.

20 January 2014 Order at P 65.

21 *Id.* at P 132.

22 For example, the Local Market Power Test in Section 3.1 of Attachment AF references Attachment AE Section 5.2.2(3) of the Day-Ahead RUC, which provides for manual commitment in the event of constraints that are not a Local Reliability Issue. The same is true for the Intra-Day RUC outlined in Attachment AE Section 6.1.2(3) (which specifically addresses constraints that are not Local Reliability Issues), and the Multi-Day Reliability Assessment outlined in Attachment AE Sections 4.5.2 and 4.5.3 (which may involve either a Local Reliability Issue or another issue).

In this filing, SPP proposes to remedy this unintended consequence by clarifying, through Tariff revisions, that the Local Market Power Test and strict 10% conduct threshold shall apply to those resources that are committed to address Local Reliability Issues, and not necessarily to all manual commitments. The changes proposed in this filing are consistent with the original intent of the Commission and avoid unnecessary over-mitigation of resources that the Commission did not determine require more stringent mitigation, and therefore are just and reasonable and should be accepted.

B. Description of Tariff Revisions

SPP proposes several revisions to Attachment AF of the Tariff to clarify that more stringent mitigation applies to resources that are committed to address Local Reliability Issues and to remove the automatic Local Market Power Test failure and more stringent mitigation for resources that were manually committed for reasons other than a Local Reliability Issue.

First, SPP proposes to revise Section 3.1 of Attachment AF, which sets forth the Local Market Power Test, to specify that a resource is presumed to have local market power if the resource is committed to address a Local Reliability Issue.[23] This change removes references to Tariff sections governing manual commitments for reasons other than Local Reliability Issues and ensures that such resources do not automatically fail the Local Market Power Test.

Second, SPP proposes to revise the Mitigation Measures for Energy Offer Curves in Section 3.2.A of Attachment AF to specify that the Energy Offer Curve conduct threshold of 10% applies to "Resources committed to address a Local Reliability Issue."[24] SPP proposes conforming changes to the Mitigation Measures for Start-Up Offers and No-Load Offers[25] and for Operating Reserve Offers.[26] These changes ensure that the 10% conduct threshold will apply more narrowly to resources committed to address Local Reliability Issues (as opposed to all manual commitments), consistent with the Commission's directive to SPP "to revise its thresholds for conduct and impact associated with *voltage and local reliability commitment events*"[27] due to the Commission's finding "that more stringent economic withholding thresholds are necessary to prevent market participants with resources that are committed *due to voltage and local reliability events*

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23 Proposed Tariff, Attachment AF § 3.1(3).

24 *Id.*, Attachment AF § 3.2.A(1).

25 *Id.*, Attachment AF § 3.3.A(1).

26 *Id.*, Attachment AF § 3.4.A(1).

27 October 2012 Order at P 445 (emphasis added).

from exercising market power by submitting bid levels or bidding parameters substantially different from their reference levels."[28]

Finally, SPP proposes to revise Attachment AF Sections 3.2.B(3)(b), 3.3.B(3)(b), and 3.4.B(3)(b) to clarify that the mitigation measures will apply, assuming that the resource has local market power and exceeds the conduct threshold, if it either fails the market impact test or was manually committed. This revision is necessary because the market impact test, by design, does not pick up manually committed resources. The market impact test set forth in Section 3.7 of Attachment AF compares the results of the market clearing engine solutions with and without mitigation. However, because manual commitments are not recognized by the market clearing engine, no such price comparison can occur.

III. ADDITIONAL INFORMATION

A. Information Required by the Commission's Regulations

(1) Documents submitted with this filing:

In addition to this transmittal letter, SPP includes in this filing clean and redlined versions of the proposed revisions to the Tariff in electronic format.

(2) Effective date:

SPP requests that the Commission accept the proposed revisions to the Tariff effective February 17, 2015.

(3) Service:

SPP has served a copy of this filing on all SPP members and customers and all affected state commissions in the SPP Region. A complete copy of this filing will be posted on the SPP web site, www.spp.org.

(4) Requisite agreements:

There are none.

(5) Estimate of transactions and revenues:

Not applicable.

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[28] *Id.* (emphasis added).

(6) Basis of rates:

The basis for the proposed revisions is explained above.

(7) Comparison to rates for similar services:

Not applicable.

(8) Specifically assignable facilities installed or modified:

There are none.

B. Communications

Correspondence and communications with respect to this filing should be sent to, and SPP requests that the Commission include on the official service list for this proceeding, the following individuals:

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IV. CONCLUSION

For all of the foregoing reasons, SPP respectfully requests that the Commission accept the Tariff revisions proposed in this filing as just and reasonable, effective as discussed above.

Respectfully submitted,

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3. Mitigation Measures for Economic Withholding – Market Power in Energy and Operating Reserve

This section sets forth the market power mitigation measures that are applied in the Day-Ahead Market, Reliability Unit Commitment processes and the Real-Time Balancing Energy Markets, collectively referred to as the Energy and Operating Reserve Markets.

3.1 Local Market Power Test

A Resource satisfying at least one of the following conditions is determined to have local market power:

(1) The Resource is located in a Frequently Constrained Area, as described in Section 3.1.1, and one or more of the transmission constraints that define the Frequently Constrained Area is binding or the Reserve Zone that defines the area is binding;

(2) The Resource is not in a Frequently Constrained Area and

(a) has a Resource-to-Load-Distribution factor less than or equal to negative five percent (-5%) relative to a binding transmission constraint; or

(b) is located in a binding Reserve Zone;

(3) The Resource is committed to address a Local Reliability Issue.

3.1.1 Frequently Constrained Areas

A Frequently Constrained Area is an electrical area identified by the Market Monitor that is defined by one or more binding transmission constraints or binding Reserve Zone constraints that are expected to be binding for at least five-hundred (500) hours during a given twelve (12)-month period and within which one (1) or more suppliers are pivotal. All Frequently Constrained Areas shall be listed in Addendum 1 of this Attachment AF. Any new or modifications to existing Frequently Constrained Areas are subject to prior Commission approval.

3.1.1.1 Pivotal Supplier Test

A supplier is pivotal when the energy output or provision of operating reserves by any or some of its Resources jointly must be increased or decreased to resolve the binding transmission constraint or binding Reserve Zone constraint during some or all hours. This will be determined utilizing transmission load flow cases or RTBM market cases reflecting a variety of market conditions.

These load flow or market cases will be used to estimate: (i) the generation shift factors for all relevant Resources and relevant resources outside the SPP Balancing Authority Area relative to each potentially constrained flowgate; (ii) the capability of all Resources to meet the requirements of each binding Reserve Zone constraint; (iii) the base loadings of Resources; (iv) the base allocation of Operating Reserves on Resources; and (v) the base flows on each flowgate. A supplier is pivotal when a binding transmission constraint or a binding Reserve Zone constraint cannot be relieved by changing the base loadings for other suppliers' Resources.

3.1.1.2 Initial Designation of Frequently Constrained Areas

The Market Monitor will define and recommend the Frequently Constrained Areas to the SPP Board of Directors prior to the start of the Integrated Marketplace.

3.1.1.3 Changes to Frequently Constrained Area Designation

The Market Monitor shall reevaluate the Frequently Constrained Areas at least annually or more frequently as the Market Monitor deems necessary. The Transmission Provider may propose an area be designated or undesignated as a Frequently Constrained Area if the Transmission Provider believes that conditions have changed with respect to the binding transmission constraint or binding Reserve Zone constraints that define the Frequently Constrained Area. The Market Monitor shall evaluate any proposed change and seek comments from the Market Participants before recommending to designate, modify, or undesignate a Frequently Constrained Area. Subject to any applicable confidentiality requirements, the Market Monitor will provide any interested Market Participants with a description of its supporting analysis to allow comment on the proposed designation changes. The Market Monitor will recommend any changes to the Frequently Constrained Areas to the SPP Board of Directors for approval.

3.2 Mitigation Measures for Energy Offer Curves

Mitigated Energy Offer Curves shall be submitted on a daily basis by the Market Participant in accordance with the mitigated offer development guidelines in the Market Protocols. The mitigated Energy Offer Curve may be updated up to 1100 hours on the day before the Operating Day for use in the Day-Ahead Market. In the case a Resource is not committed by the Day-Ahead Market, the mitigated Energy Offer Curve may be updated until the Day-Ahead RUC begins. For Resources committed by the Day-Ahead Market, the mitigated Energy Offer Curve submitted as of 1100 hours on the day before the Operating Day will apply to the Day-Ahead Market on the day before the Operating Day and the RTBM on the Operating Day; for all other Resources the mitigated Energy Offer Curve submitted at the time the Day-Ahead RUC begins will apply to the Day-Ahead RUC on the day before the Operating Day, and the Intra-Day RUC processes and the RTBM on the Operating Day.

A. The Energy Offer Curve conduct thresholds are as follows:

(1) For Resources committed to address a Local Reliability Issue, the conduct threshold is a 10% increase above the mitigated Energy Offer Curve;

(2) For Resources located in a Frequently Constrained Area and not subject to Section 3.2(A)(1), the conduct threshold is a 17.5% increase above the mitigated Energy Offer Curve;

(3) For all other Resources the conduct threshold is a 25% increase above the mitigated Energy Offer Curve.

B. The Transmission Provider shall apply mitigation measures by replacing the Energy Offer Curve with the mitigated Energy Offer Curve if:

(1) The Resource's Energy Offer Curve exceeds the mitigated Energy Offer Curve by the applicable conduct threshold; and

(2) The Resource has local market power as determined in Section 3.1; and

(3) The Resource either:

(a) Fails the Market Impact Test as described in Section 3.7, or

(b) Is manually committed by the Transmission Provider or by a local transmission operator.

An Energy Offer below $25/MWh will not be subject to mitigation measures for economic withholding.

C. The mitigated energy offer shall be the Resource's short-run marginal cost of producing energy as determined by the unit's heat rate; fuel costs and the costs related to fuel usage, such as transportation and emissions costs ("total fuel related costs"); and Energy Offer Curve ("EOC") variable operations and maintenance costs ("VOM") as detailed in the Market Protocols.

D. Opportunity cost shall be an estimate of the Energy and Operating Reserve Markets revenues net of short run marginal costs for the marginal forgone run time during the timeframe when the Resource experiences the run-time restrictions as detailed in the Market Protocols. The run-time restrictions shall be updated as specified in the Market Protocols, with more frequent updating to occur the fewer hours that remain available, consistent with the Market Protocols. The Market Participant may include in the calculation of its mitigated Energy Offer Curve an amount reflecting the resource-specific opportunity costs expected to be incurred under the following circumstances:

(1) Externally imposed environmental run-hour restrictions; or

(2) Physical equipment limitations on the number of starts or run-hours, as verified by the Market Monitoring Unit and determined by reference to the manufacturer's recommendation or bulletin, or

a documented restriction imposed by the applicable insurance carrier; or

(3) Fuel Supply Limitations.

Resource specific opportunity costs are calculated by forecasting Locational Marginal Prices based on futures contract prices for natural gas and the historical relationship between the SPP system marginal Energy component of LMP and the price of natural gas, as determined by the SPP Market Monitoring Unit. The formulas and instructions in the price forecast model shall be determined by the SPP Market Monitoring Unit and published in the Market Protocols as part of the Mitigated Offer Development Guidelines, updated, as needed, by the SPP Market Monitoring Unit. Such forecasts of LMPs shall take into account historical variability, and basis differentials affecting the Settlement Location at which the Resource is located for the three-year period immediately preceding the period of time in which the Resource is bound by the referenced restrictions, and shall subtract therefrom the forecasted costs to generate energy at the Settlement Location at which the Resource is located, as specified in more detail in Appendix G of the Market Protocols. If the difference between the forecasted Locational Marginal Prices and forecasted costs to generate energy is negative, the resulting opportunity cost shall be zero. The Market Monitoring Unit will verify all Market Participants' opportunity cost calculations for consistency and accuracy. When the Market Monitoring Unit determines that the market price for any period was not competitive, it will adjust the LMP forecasting process used in the opportunity cost calculations to ensure that forecasted LMPs do not reflect non-competitive market conditions.

The following formula shall apply to all mitigated Energy Offer Curves:

Mitigated Energy Offer ($/MWh) = HeatRate (mmBtu/MWh) * Performance Factor * Total Fuel Related Costs ($/mmBtu) + EOC VOM ($/MWh) + Opportunity Costs ($/MWh)

The Market Participant shall submit heat rate curves, descriptions of how spot fuel prices and/or contract prices are used to calculate fuel costs, variable fuel transportation and handling costs, emissions costs, and VOM to the Market Monitoring Unit. All cost data and cost calculation descriptions are subject to the review and approval of the SPP Market Monitoring Unit to ensure reasonableness and consistency across Market Participants. The information will be sufficient for replication of the mitigated Energy Offer Curve and shall include, among other data, the following information:

(1) For fuel costs, Market Participants shall provide the Market Monitoring Unit with an explanation of the Market Participants' fuel cost policy, indicating whether fuel purchases are subject to a fixed contract price and/or spot pricing and specifying the contract price and/or referenced spot market prices. Any included fuel transportation and handling costs must be short-run marginal costs only, exclusive of fixed costs.

(2) For emissions costs, Market Participants shall report the emissions rate of each of their units and indicate the applicable emissions allowance cost.

(3) For VOM costs, Market Participants shall submit VOM costs, calculated in adherence with the Appendix G of the Market Protocols, reflecting short-run marginal costs, exclusive of fixed costs.

Further details associated with the development, validation, and updating of these costs are included in Appendix G of the Market Protocols.

For Demand Response Resources utilizing Behind-The-Meter Generation, the mitigated Energy Offer Curve shall be developed in the same manner as any other generating Resource as described above. For Demand Response Resources utilizing load reduction, the mitigated Energy Offer Curve shall reflect the quantifiable opportunity costs associated with the reduction, net of related offsetting increases in usage.

For Dispatchable Variable Energy Resources, the mitigated Energy Offer Curve may include, but shall not exceed, any quantifiable costs that vary by MWh output, including short-run incremental VOM. Mitigation will not apply to Non-Dispatchable Variable Energy Resources in the Real-Time Balancing Market; monitoring of Energy Offers for Non-Dispatchable Variable Energy Resources will occur.

E. In the event that the Transmission Provider requests that a Resource remain online past their commitment period by the Day-Ahead Market or a RUC process, the Market Participant may submit an updated mitigated energy offer curve that reflects the procurement of higher cost fuel. Intra-day changes to the mitigated energy offer curve must follow the mitigated offer development guidelines in the Market Protocols and will be validated by the Market Monitor.

F. In all cases under this Section 3.2, cost data submitted for the development of mitigated offers, including opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff.

3.3 Mitigation Measures for Start-Up Offers and No-Load Offers

A mitigated Start-Up Offer and a mitigated No-Load Offer shall be submitted daily by the Market Participant in accordance with the mitigated offer development guidelines in the Market Protocols. The mitigated Start-Up and No-Load Offers may be updated up to 1100 hours on the day before the Operating Day for use in the Day-Ahead Market. In the case a Resource is not committed by the Day-Ahead Market, the Start-Up and No-Load Offers may be updated until the Day-Ahead RUC begins. The mitigated Start-Up and No-Load Offers submitted at the time the Day-Ahead RUC begins will apply to the Day-Ahead RUC on the day before the Operating Day and the Intra-Day RUC on the Operating Day.

A. The Start-Up and No-Load Offer conduct thresholds are as follows:

(1) For Resources committed to address a Local Reliability Issue, the conduct threshold is a 10% increase above the mitigated Start-Up or mitigated No-Load Offer, as applicable;

(2) For all other Resources the conduct threshold is a 25% increase above the mitigated Start-Up or mitigated No-Load Offer, as applicable.

B. The Transmission Provider shall apply mitigation measures by replacing the Start-Up or No-Load Offer with the applicable mitigated Start-Up or No-Load Offer if:

(1) The Resource's Start-Up or No-Load Offer exceeds the mitigated Start-Up or mitigated No-Load Offer, as applicable, by the applicable conduct threshold; and

(2) The Resource has local market power as determined in Section 3.1; and

(3) The Resource either:

(a) Fails the Market Impact Test as described in Section 3.7, or

(b) Is manually committed by the Transmission Provider or by a local transmission operator.

C. The mitigated Start-Up Offer shall represent the cost per start as determined from start fuel usage and the costs related to that fuel usage, Performance Factor cost of electricity for station use to start ("Station Service"), maintenance costs attributed to starts, and additional labor costs, if required above normal station staffing levels. The following formula shall apply to all mitigated Start-Up Offers:

Mitigated Start-Up Offer ($/Start) = [Start Fuel (mmBtu/Start) * Total Fuel Related Costs ($/mmBtu) * Performance Factor] + [Station Service (MWh/Start) * Station Service Rate ($/MWh)] + Start VOM ($/Start) + Start Additional Labor Cost ($/Start)

The mitigated Start-Up Offer for Demand Response resources shall be the cost to shut down or curtail load for a given period, which varies with the number of deployments rather than the amount of response, and/or the start cost of Behind-The-Meter Generation utilizing the mitigated Start-Up Offer calculation applicable to other generation Resources as defined above.

The mitigated Start-Up Offer for Variable Energy Resources shall be zero.

D. The mitigated No-Load Offer shall be the hourly fixed cost required to create a monotonically increasing mitigated Energy Offer Curve. It shall be calculated according to either of two methods:

(1) No-Load Fuel Approach

Mitigated No-Load Offer ($/hour) = No Load Fuel (mmBtu/hour) * Performance Factor * (No-Load VOM ($/mmBtu) + Total Fuel Related Cost ($/mmBtu)

(2) No-Load Cost Approach

Mitigated No-Load Offer ($/hour) =

(Heat Input at Minimum Economic Capacity Operating Limit (mmBtu) * Performance Factor *

(Total Fuel Related Cost ($/mmBtu) + No Load VOM ($/mmBtu))) –

(Incremental Cost up to Minimum Economic Capacity Operating Limit ($/MWh) * Minimum Economic Capacity Operating Limit (MW))

The mitigated No-Load Offer for Demand Response Resources utilizing Behind-The-Meter Generation shall adhere to the same definition above as a generating Resource. For Demand Response Resources utilizing load reduction, the mitigated No-Load Offer shall not exceed the quantifiable ongoing hourly costs associated with load reduction.

The mitigated No-Load Offer for Variable Energy Resources shall be zero.

E. The Market Participant shall submit all inputs used in calculating mitigated Start-Up and mitigated No-Load Offers to permit the Market

Monitor to verify submitted offers. Required information includes: heat rate curves, descriptions of how spot fuel prices and/or contract prices are used to calculate fuel costs, variable fuel transportation and handling costs, emissions costs, and VOM. All cost data and cost calculation descriptions are subject to the review and approval of the SPP Market Monitoring Unit to ensure reasonableness and consistency across Market Participants. Information to be provided by the Market Participant shall include the following:

(1) For fuel costs, Market Participants shall provide the Market Monitoring Unit with an explanation of the Market Participants' fuel cost policy, indicating whether fuel purchases are subject to a fixed contract price and/or spot pricing and specifying the contract price and/or referenced spot market prices. Any included fuel transportation and handling costs must be short-run marginal costs only, exclusive of fixed costs.

(2) For emissions costs, Market Participants shall report the emissions rate of each of their units and indicate the applicable emissions allowance cost.

(3) For VOM costs, Market Participants shall submit VOM costs reflecting short-run marginal costs, exclusive of fixed costs.

Further details associated with the development, validation and updating of these costs are included in Appendix G of the Market Protocols.

F. In all cases under this Section 3.3, cost data submitted for the development of mitigated offers, including opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff.

3.4 Mitigation Measures for Operating Reserve Offers

A mitigated offer for each Operating Reserve product shall be submitted daily by the Market Participant in accordance with the mitigated offer development guidelines in the Market Protocols. The mitigated Operating Reserve Offers may be updated up to 1100 hours on the day before the Operating Day for use in the

Day-Ahead Market. In the case a Resource is not committed by the Day-Ahead Market, the mitigated Operating Reserve Offers may be updated until the Day-Ahead RUC begins. For Resources committed by the Day-Ahead Market, the mitigated Operating Reserve Offers submitted as of 1100 hours on the day before the Operating Day will apply to the Day-Ahead Market on the day before the Operating Day and the RTBM on the Operating Day; for all other Resources, the mitigated Operating Reserve Offers submitted at the time the Day-Ahead RUC begins will apply to the RTBM on the Operating Day.

A. The offer conduct thresholds for each of the Operating Reserve products are as follows:

   (1) For Resources committed to address a Local Reliability Issue, the conduct threshold is a 10% increase above the mitigated offer for the applicable Operating Reserve Offer;

   (2) For all other Resources, the conduct threshold is a 25% increase above the mitigated offer for the applicable Operating Reserve Offer.

B. Any Operating Reserve Offer exceeding the applicable threshold, except offers below $10/MWh, will be deemed excessive. The Transmission Provider shall apply mitigation measures by replacing the Operating Reserve Offer with the applicable mitigated Operating Reserve Offer if:

   (1) The Resource's Operating Reserve Offer exceeds the applicable mitigated offer by the conduct threshold; and

   (2) The Resource has local market power as determined in Section 3.1; and

   (3) The Resource either:

      (a) Fails the Market Impact Test as described in Section 3.7, or

      (b) Is manually committed by the Transmission Provider or by a local transmission operator.

C. The mitigated Spinning Reserve Offer shall be equal to zero for Resources other than combustion turbines, reciprocating engines and hydro Resources operating as a synchronous condenser. No known incremental costs are incurred for providing Spinning Reserves from other resource types.

Total mitigated Spinning Reserve Offer for combustion turbines, reciprocating engines and hydro Resources operating as a synchronous condenser shall not exceed any additional fuel related costs, maintenance costs and power consumption costs necessary for the Resource to be prepared for deployment of Spinning Reserve:

Mitigated Spinning Reserve Offer ($/MW) ≤
(Additional Fuel Cost($/Hr) + Additional Maintenance Cost ($/Hr) + Condensing Power Cost ($/Hr)) /
Spinning Reserve MW

The mitigated Supplemental Reserve Offer shall not exceed labor costs necessary for the Resource to be prepared for deployment of Supplemental Reserve:

Mitigated Supplemental Reserve Offer ($/MW) ≤
Additional Labor Cost($) / Average Supplemental Reserve MW

D. The mitigated Regulation-Up Offer shall not exceed the sum of the cost increase due to:

(1) the heat rate increase during non-steady state operation,

(2) increase in VOM due to non-steady state operation,

(3) uncompensated costs, as described in the Market Protocols:

Mitigated Regulation-Up Offer ($/MW) <
Cost Increase due to Heat Rate Increase during non-steady state operation ($/MW) +
Cost Increase in VOM ($/MW) + Uncompensated Cost ($/MW)

E. The mitigated Regulation-Down Offer shall not exceed the sum of the cost increase due to:

(1) the heat rate increase during non-steady state operation,

(2) increase in VOM due to non-steady state operation,

(3) uncompensated costs, as described in the Market Protocols:

Mitigated Regulation-Down Offer ($/MW) <

Cost Increase due to Heat Rate Increase during non-steady state operation ($/MW) +

Cost Increase in VOM ($/MW) + Uncompensated Cost ($/MW)

Further details associated with the development of the exact costs in the formulas above are included in the Market Protocols.

F. The Market Participant may include in the calculation of its mitigated Operating Reserve Offer an amount reflecting the Resource-specific opportunity costs if the Market Participant is able to demonstrate to the satisfaction of the SPP Market Monitoring Unit that such costs are legitimate and verifiable and not otherwise included in market outcomes. To the extent such costs include run-time restrictions, such run-time restrictions shall be updated as specified in the Market Protocols, with more frequent updating to occur the fewer hours that remain available, consistent with the Market Protocols. The formulas and instructions in the price forecast model for any such opportunity costs shall be determined by the SPP Market Monitoring Unit and published in the Market Protocols as part of the Mitigated Offer Development Guidelines, updated, as needed, by the SPP Market Monitoring Unit. Opportunity costs for mitigated Operating Reserve Offers shall not include Energy and Operating Reserve Markets revenues associated with forgone Energy or other types of Operating Reserve production to the extent that such costs are included in market outcomes.

G. All cost data and cost calculation descriptions are subject to the review and approval of the SPP Market Monitoring Unit to ensure reasonableness and consistency across Market Participants. The information will be sufficient for replication of the mitigated Operating Reserve Offers and shall include, among other data, the following information:

(1) For fuel costs, Market Participants shall provide the Market Monitoring Unit with an explanation of the Market Participants' fuel cost policy, indicating whether fuel purchases are subject to a fixed contract price and/or spot pricing and specifying the contract price

and/or referenced spot market prices. Any included fuel transportation and handling costs must be short-run marginal costs only, exclusive of fixed costs.

(2) For emissions costs, Market Participants shall report the emissions rate of each of their units and indicate the applicable emissions allowance cost.

(3) For VOM costs, Market Participants shall submit VOM costs, calculated in adherence with the Appendix G of the Market Protocols, reflecting short-run marginal costs, exclusive of fixed costs.

H. In all cases under this Section 3.4, cost data submitted for the development of mitigated offers, including opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff.

3.5 Validation of Mitigated Resource Offer Parameters

The Market Monitor shall review the costs included in each mitigated Resource Offer in order to ensure that the Market Participant has correctly applied the formulas and definitions in Sections 3.2, 3.3, 3.4 and the Market Protocols and that the level of the mitigated offer is otherwise acceptable. If the mitigated offer determined by the Market Monitor and the Market Participant differ, the mitigated offer calculated by the Market Monitor shall be used. If a Market Participant submits a dispute over its mitigated offer, the previously approved mitigated offer shall be used from the time the dispute is submitted until the dispute is resolved. The procedures for submitting and processing disputes related to mitigated offers shall be those specified in the Market Protocols. The Transmission Provider shall remedy mitigated offer disputes resolved in favor of the Market Participant by providing make whole payments, as necessary, to the Market Participant whose mitigated offer was improperly determined by the Market Monitor.

Each Market Participant is obligated to provide to the Market Monitor any cost data necessary to allow the Market Monitor to validate its mitigated Resource Offer.

The Market Monitor shall keep such data confidential, and all cost data submitted under this Section 3.5, including any opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff. The Market Monitor shall develop and maintain on the Transmission Provider's website the mechanism and procedures to allow Market Participants to submit such cost data.

3.6 Additional Mitigation Measures for Resource Offer Parameters

The mitigation measures in this section apply to all Resource Offer parameters expressed in units other than dollars and will only apply in the presence of local market power as described in Section 3.1 of this Attachment AF. A reference level for each applicable Resource Offer parameter that reflects the physical capability of the Resource shall be determined prior to the start of the Energy and Operating Reserve Markets by one or both of the following methods: (i) the reference levels will be determined through consultation between the Market Participant and the Market Monitor; and/or (ii) the reference levels will be based on averages of Resource Offer parameters from similar Resources. This methodology for setting reference levels for Offer parameters shall apply to all Resources at the start of the Energy and Operating Reserve Markets and to all Resources that register subsequent to the start of the Energy and Operating Reserve Markets. The Transmission Provider's output forecast for a wind-powered Variable Energy Resource shall be used as the reference maximum output limit for the wind-powered Variable Energy Resource.

The following thresholds shall be used by the Transmission Provider to identify Resource Offers that may warrant mitigation and shall be determined with respect to the corresponding reference level:

Time-based Resource Offer parameters: An increase of three (3) hours, or an increase of six (6) hours in total for multiple time-based Resource Offer parameters.

Resource Offer parameters expressed in units other than time or dollars: One hundred percent (100%) increase for Resource Offer parameters that are minimum values, or a fifty percent (50%) decrease for Resource Offer parameters that are maximum values.

Minimum Economic Capacity Operating Limit threshold for Resources committed to address a Local Reliability Issue: twenty-five percent (25%) increase.

In the case that a Resource Offer fails the thresholds described above, the Market Monitor shall determine the impact on prices or make whole payments. If an impact exceeds the LMP, MCP or make whole payment thresholds in Section 3.7, the Market Monitor will initiate a discussion with the Market Participant concerning an explanation of the parameter changes. The Market Monitor will inform the Transmission Provider of any potential issue. If the Transmission Provider, in consultation with the Market Monitor, concludes that the Market Participant has demonstrated the validity of the submitted Resource Offer parameter, no further action will be taken. If not, the Transmission Provider shall replace the Resource Offer parameter with the corresponding reference level. Mitigation measures will remain in place until such time that the Market Participant demonstrates the validity of the Resource Offer parameter or the Market Participant notifies the Market Monitor that the Resource Offer parameter has been changed to a value that is within the tolerance range as described above, and the Market Monitor has verified that this change has occurred. In the event that the Market Participant submits a dispute, the mitigation measure will remain in place until the resolution of the dispute.

In all cases under this Section 3.6, cost data submitted for the development of mitigated offers, including opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff.

3.7 Market Impact Test

The Transmission Provider will apply the following market impact test in the Day-Ahead Market, Day-Ahead RUC, Intra-Day RUC and Real-Time Balancing Market in the event the conditions described in Section 3.1 are satisfied:

After an initial market solution is computed with no mitigation measures in place, a second market solution, called the mitigated market solution, will be computed with the appropriate mitigation measures applied. If an LMP or MCP at a Settlement Location from the initial market solution exceeds the corresponding price from the mitigated market solution by the applicable impact test threshold, or a make whole payment for any Resource from the initial market solution exceeds the corresponding make whole payment from the mitigated market solution by make whole payment impact test threshold, then the mitigated market solution will be used for dispatch, commitment, and settlement purposes.

The impact test thresholds are as follows: At market start, the LMP impact threshold is five dollars ($5) per megawatt hour, the MCP impact threshold is five dollars ($5) per megawatt hour, and the make whole payment impact threshold is five dollars ($5) per megawatt hour. At the beginning of each six (6) month period after the market start, the LMP and MCP impact thresholds will be increased ten dollars ($10) per megawatt hour and the make whole payment impact threshold will be increased by ten dollars ($10) per megawatt hour unless the Market Monitor finds market behavior that warrants keeping the threshold constant for the next six (6) months. The periodic increases will continue until the LMP impact threshold is twenty-five dollars ($25) per megawatt hour, the MCP impact threshold is twenty-five dollars ($25) per megawatt hour, and the make whole payment impact threshold is twenty-five dollars ($25) per megawatt hour.

3.8 Mitigation Exceptions

A. The Market Monitor shall, as soon as practicable and if warranted in light of the information available to the Market Monitor, contact a Market Participant to request an explanation of its actions in cases when an impact threshold in Section 3.7 of this Attachment AF is exceeded and the Market Participant's offer exceeded the mitigated offer by more than the relevant conduct threshold, as specified in Section 3.2, 3.3, or 3.4 of this Attachment AF.

B. If a Market Participant anticipates submitting an offer that will exceed the mitigated offer by more than the relevant conduct threshold, it may contact the Market Monitor to provide an explanation of the changes in its offer. If the Market Participant's pre-offer explanation indicates to the Market Monitor that the questioned behavior is consistent with competitive behavior, the Transmission Provider will not impose mitigation with respect to that offer unless and until circumstances are deemed to warrant it, and the Transmission Provider or the Market Monitor so notifies the

Market Participant. In circumstances where, following a Market Participant's pre-offer explanation, both the conduct and impact thresholds are violated but no mitigation is imposed, the Market Monitor will record such instances and will report such instances to the Commission's Office of Enforcement, or its successor organization, every three months during the first year of Integrated Marketplace operations, and yearly thereafter. To the extent that the report contains sensitive data, the Market Monitor should include any such data in a non-public version of the report.

3.9 Sanctions for Noncompliance with the Day-Ahead Market Must Offer Requirement

A. In the case that a Market Participant is found to be noncompliant for an Asset Owner as determined by the conditions set forth in Section 2.11.1 of Attachment AE, the Market Participant shall be assessed a penalty for that Asset Owner by the Transmission Provider for each megawatt of withheld capacity below the 10% tolerance band. The penalty amount shall be equal to the Day-Ahead Market LMP associated with the withheld capacity.

B. The Market Monitor will monitor for, and report to the Commission's Office of Enforcement, or its successor organization, manipulative behavior associated with Day-Ahead Offers, including (but not limited to) monitoring load-serving Market Participants who do not offer enough net resource capacity to meet their maximum hourly Reported Load. The Market Monitor will also report to the Commission's Office of Enforcement or its successor organization any locational problems, such as deliverability issues, associated with load-serving Market Participants' offers in the Day-Ahead Market, any identified efforts by Market Participants to raise prices in the RTBM by limiting Day-Ahead Offers, and the effects of any such efforts upon make whole payments.

3. Mitigation Measures for Economic Withholding – Market Power in Energy and Operating Reserve

This section sets forth the market power mitigation measures that are applied in the Day-Ahead Market, Reliability Unit Commitment processes and the Real-Time Balancing Energy Markets, collectively referred to as the Energy and Operating Reserve Markets.

3.1 Local Market Power Test

A Resource satisfying at least one of the following conditions is determined to have local market power:

(1) The Resource is located in a Frequently Constrained Area, as described in Section 3.1.1, and one or more of the transmission constraints that define the Frequently Constrained Area is binding or the Reserve Zone that defines the area is binding;

(2) The Resource is not in a Frequently Constrained Area and

(a) has a Resource-to-Load-Distribution factor less than or equal to negative five percent (-5%) relative to a binding transmission constraint; or

(b) is located in a binding Reserve Zone;

(3) The Resource is ~~manually~~ committed to address a Local Reliability Issue. ~~by the Transmission Provider or selected for commitment by a local transmission operator as described in Attachment AE, Sections 4.5.2, 4.5.3, 5.1.2, 5.2.2(3), 5.2.2(4), 6.1.2(3), and 6.1.2(4).~~

3.1.1 Frequently Constrained Areas

A Frequently Constrained Area is an electrical area identified by the Market Monitor that is defined by one or more binding transmission constraints or binding Reserve Zone constraints that are expected to be binding for at least five-hundred (500) hours during a given twelve (12)-month period and within which one (1) or more suppliers are pivotal. All Frequently Constrained Areas shall be listed in Addendum 1 of this Attachment AF. Any new or modifications to existing Frequently Constrained Areas are subject to prior Commission approval.

3.1.1.1 Pivotal Supplier Test

A supplier is pivotal when the energy output or provision of operating reserves by any or some of its Resources jointly must be increased or decreased to resolve the binding transmission constraint or binding Reserve Zone constraint during some or all hours. This will be determined utilizing transmission load flow cases or RTBM market cases reflecting a variety of market conditions.

These load flow or market cases will be used to estimate: (i) the generation shift factors for all relevant Resources and relevant resources outside the SPP Balancing Authority Area relative to each potentially constrained flowgate; (ii) the capability of all Resources to meet the requirements of each binding Reserve Zone constraint; (iii) the base loadings of Resources; (iv) the base allocation of Operating Reserves on Resources; and (v) the base flows on each flowgate. A supplier is pivotal when a binding transmission constraint or a binding Reserve Zone constraint cannot be relieved by changing the base loadings for other suppliers' Resources.

3.1.1.2 Initial Designation of Frequently Constrained Areas

The Market Monitor will define and recommend the Frequently Constrained Areas to the SPP Board of Directors prior to the start of the Integrated Marketplace.

3.1.1.3 Changes to Frequently Constrained Area Designation

The Market Monitor shall reevaluate the Frequently Constrained Areas at least annually or more frequently as the Market Monitor deems necessary. The Transmission Provider may propose an area be designated or undesignated as a Frequently Constrained Area if the Transmission Provider believes that conditions have changed with respect to the binding transmission constraint or binding Reserve Zone constraints that define the Frequently Constrained Area. The Market Monitor shall evaluate any proposed change and seek comments from the Market Participants before recommending to designate, modify, or undesignate a Frequently Constrained Area. Subject to any applicable confidentiality requirements, the Market Monitor will provide any interested Market Participants with a description of its supporting analysis to allow comment on the proposed designation changes. The Market Monitor will recommend any changes to the Frequently Constrained Areas to the SPP Board of Directors for approval.

3.2 Mitigation Measures for Energy Offer Curves

Mitigated Energy Offer Curves shall be submitted on a daily basis by the Market Participant in accordance with the mitigated offer development guidelines in the Market Protocols. The mitigated Energy Offer Curve may be updated up to 1100 hours on the day before the Operating Day for use in the Day-Ahead Market. In the case a Resource is not committed by the Day-Ahead Market, the mitigated Energy Offer Curve may be updated until the Day-Ahead RUC begins. For Resources committed by the Day-Ahead Market, the mitigated Energy Offer Curve submitted as of 1100 hours on the day before the Operating Day will apply to the Day-Ahead Market on the day before the Operating Day and the RTBM on the Operating Day; for all other Resources the mitigated Energy Offer Curve submitted at the time the Day-Ahead RUC begins will apply to the Day-Ahead RUC on the day before the Operating Day, and the Intra-Day RUC processes and the RTBM on the Operating Day.

A. The Energy Offer Curve conduct thresholds are as follows:

(1) For Resources ~~with~~ committed to address a L~~l~~ocal ~~market power as described in Section 3.1(3)~~Reliability Issue, the conduct threshold is a 10% increase above the mitigated Energy Offer Curve;

(2) For Resources located in a Frequently Constrained Area and not subject to Section 3.2(A)(1), the conduct threshold is a 17.5% increase above the mitigated Energy Offer Curve;

(3) For all other Resources the conduct threshold is a 25% increase above the mitigated Energy Offer Curve.

B. The Transmission Provider shall apply mitigation measures by replacing the Energy Offer Curve with the mitigated Energy Offer Curve if:

(1) The Resource's Energy Offer Curve exceeds the mitigated Energy Offer Curve by the applicable conduct threshold; and

(2) The Resource has local market power as determined in Section 3.1; and

(3) The Resource either:

(a) Fails the Market Impact Test as described in Section 3.7, or

(b) ~~Has local market power as described in Section 3.1(3)~~Is manually committed by the Transmission Provider or by a local transmission operator.

An Energy Offer below $25/MWh will not be subject to mitigation measures for economic withholding.

C. The mitigated energy offer shall be the Resource's short-run marginal cost of producing energy as determined by the unit's heat rate; fuel costs and the costs related to fuel usage, such as transportation and emissions costs ("total fuel related costs"); and Energy Offer Curve ("EOC") variable operations and maintenance costs ("VOM") as detailed in the Market Protocols.

D. Opportunity cost shall be an estimate of the Energy and Operating Reserve Markets revenues net of short run marginal costs for the marginal forgone run time during the timeframe when the Resource experiences the run-time restrictions as detailed in the Market Protocols. The run-time restrictions shall be updated as specified in the Market Protocols, with more frequent updating to occur the fewer hours that remain available, consistent with the Market Protocols. The Market Participant may include in the calculation of its mitigated Energy Offer Curve an amount reflecting the resource-specific opportunity costs expected to be incurred under the following circumstances:

(1) Externally imposed environmental run-hour restrictions; or

(2) Physical equipment limitations on the number of starts or run-hours, as verified by the Market Monitoring Unit and determined by reference to the manufacturer's recommendation or bulletin, or a documented restriction imposed by the applicable insurance carrier; or

(3) Fuel Supply Limitations.

Resource specific opportunity costs are calculated by forecasting Locational Marginal Prices based on futures contract prices for natural gas and the historical relationship between the SPP system marginal Energy component of LMP and the price of natural gas, as determined by the SPP Market Monitoring Unit. The formulas and instructions in the price forecast model shall be determined by the SPP Market Monitoring Unit and published in the Market Protocols as part of the Mitigated Offer Development Guidelines, updated, as needed, by the SPP Market Monitoring Unit. Such forecasts of LMPs shall take into account historical variability, and basis differentials affecting the Settlement Location at which the Resource is located for the three-year period immediately preceding the period of time in which the Resource is bound by the referenced restrictions, and shall subtract therefrom the forecasted costs to generate energy at the Settlement Location at which the Resource is located, as specified in more detail in Appendix G of the Market Protocols. If the difference between the forecasted Locational Marginal Prices and forecasted costs to generate energy is negative, the resulting opportunity cost shall be zero. The Market Monitoring Unit will verify all Market Participants' opportunity cost calculations for consistency and accuracy. When the Market Monitoring Unit determines that the market price for any period was not competitive, it will adjust the LMP forecasting process used in the opportunity cost calculations to ensure that forecasted LMPs do not reflect non-competitive market conditions.

The following formula shall apply to all mitigated Energy Offer Curves:

Mitigated Energy Offer ($/MWh) = HeatRate (mmBtu/MWh) *

Performance Factor * Total Fuel Related Costs ($/mmBtu) + EOC VOM ($/MWh) + Opportunity Costs ($/MWh)

The Market Participant shall submit heat rate curves, descriptions of how spot fuel prices and/or contract prices are used to calculate fuel costs, variable fuel transportation and handling costs, emissions costs, and VOM to the Market Monitoring Unit. All cost data and cost calculation descriptions are subject to the review and approval of the SPP Market Monitoring Unit to ensure reasonableness and consistency across Market Participants. The information will be sufficient for replication of the mitigated Energy Offer Curve and shall include, among other data, the following information:

(1) For fuel costs, Market Participants shall provide the Market Monitoring Unit with an explanation of the Market Participants' fuel cost policy, indicating whether fuel purchases are subject to a fixed contract price and/or spot pricing and specifying the contract price and/or referenced spot market prices. Any included fuel transportation and handling costs must be short-run marginal costs only, exclusive of fixed costs.

(2) For emissions costs, Market Participants shall report the emissions rate of each of their units and indicate the applicable emissions allowance cost.

(3) For VOM costs, Market Participants shall submit VOM costs, calculated in adherence with the Appendix G of the Market Protocols, reflecting short-run marginal costs, exclusive of fixed costs.

Further details associated with the development, validation, and updating of these costs are included in Appendix G of the Market Protocols.

For Demand Response Resources utilizing Behind-The-Meter Generation, the mitigated Energy Offer Curve shall be developed in the same manner as any other generating Resource as described above. For Demand

Response Resources utilizing load reduction, the mitigated Energy Offer Curve shall reflect the quantifiable opportunity costs associated with the reduction, net of related offsetting increases in usage.

For Dispatchable Variable Energy Resources, the mitigated Energy Offer Curve may include, but shall not exceed, any quantifiable costs that vary by MWh output, including short-run incremental VOM. Mitigation will not apply to Non-Dispatchable Variable Energy Resources in the Real-Time Balancing Market; monitoring of Energy Offers for Non-Dispatchable Variable Energy Resources will occur.

E. In the event that the Transmission Provider requests that a Resource remain online past their commitment period by the Day-Ahead Market or a RUC process, the Market Participant may submit an updated mitigated energy offer curve that reflects the procurement of higher cost fuel. Intra-day changes to the mitigated energy offer curve must follow the mitigated offer development guidelines in the Market Protocols and will be validated by the Market Monitor.

F. In all cases under this Section 3.2, cost data submitted for the development of mitigated offers, including opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff.

3.3 Mitigation Measures for Start-Up Offers and No-Load Offers

A mitigated Start-Up Offer and a mitigated No-Load Offer shall be submitted daily by the Market Participant in accordance with the mitigated offer development guidelines in the Market Protocols. The mitigated Start-Up and No-Load Offers may be updated up to 1100 hours on the day before the Operating Day for use in the Day-Ahead Market. In the case a Resource is not committed by the Day-Ahead Market, the Start-Up and No-Load Offers may be updated until the Day-Ahead RUC begins. The mitigated Start-Up and No-Load Offers submitted at the time the Day-Ahead RUC begins will apply to the Day-Ahead RUC on the day before the Operating Day and the Intra-Day RUC on the Operating Day.

A. The Start-Up and No-Load Offer conduct thresholds are as follows:

(1) For Resources ~~with local market power as described in Section 3.1(3)~~committed to address a Local Reliability Issue, the conduct threshold is a 10% increase above the mitigated Start-Up or mitigated No-Load Offer, as applicable;

(2) For all other Resources the conduct threshold is a 25% increase above the mitigated Start-Up or mitigated No-Load Offer, as applicable.

B. The Transmission Provider shall apply mitigation measures by replacing the Start-Up or No-Load Offer with the applicable mitigated Start-Up or No-Load Offer if:

(1) The Resource's Start-Up or No-Load Offer exceeds the mitigated Start-Up or mitigated No-Load Offer, as applicable, by the applicable conduct threshold; and

(2) The Resource has local market power as determined in Section 3.1; and

(3) The Resource either:

(a) Fails the Market Impact Test as described in Section 3.7, or

(b) ~~Has local market power as described in Section 3.1(3)~~Is manually committed by the Transmission Provider or by a local transmission operator.

C. The mitigated Start-Up Offer shall represent the cost per start as determined from start fuel usage and the costs related to that fuel usage, Performance Factor cost of electricity for station use to start ("Station Service"), maintenance costs attributed to starts, and additional labor costs, if required above normal station staffing levels. The following formula shall apply to all mitigated Start-Up Offers:

Mitigated Start-Up Offer ($/Start) = [Start Fuel (mmBtu/Start) * Total Fuel Related Costs ($/mmBtu) * Performance Factor] + [Station Service (MWh/Start) *

Station Service Rate ($/MWh)] + Start VOM ($/Start) + Start Additional Labor Cost ($/Start)

The mitigated Start-Up Offer for Demand Response resources shall be the cost to shut down or curtail load for a given period, which varies with the number of deployments rather than the amount of response, and/or the start cost of Behind-The-Meter Generation utilizing the mitigated Start-Up Offer calculation applicable to other generation Resources as defined above.

The mitigated Start-Up Offer for Variable Energy Resources shall be zero.

D. The mitigated No-Load Offer shall be the hourly fixed cost required to create a monotonically increasing mitigated Energy Offer Curve. It shall be calculated according to either of two methods:

(1) No-Load Fuel Approach

Mitigated No-Load Offer ($/hour) = No Load Fuel (mmBtu/hour) * Performance Factor * (No-Load VOM ($/mmBtu) + Total Fuel Related Cost ($/mmBtu)

(2) No-Load Cost Approach

Mitigated No-Load Offer ($/hour) =

(Heat Input at Minimum Economic Capacity Operating Limit (mmBtu) * Performance Factor *

(Total Fuel Related Cost ($/mmBtu) + No Load VOM ($/mmBtu))) –

(Incremental Cost up to Minimum Economic Capacity Operating Limit ($/MWh) * Minimum Economic Capacity Operating Limit (MW))

The mitigated No-Load Offer for Demand Response Resources utilizing Behind-The-Meter Generation shall adhere to the same definition above as a generating Resource. For Demand Response Resources utilizing load reduction, the mitigated No-Load Offer shall not exceed the quantifiable ongoing hourly costs associated with load reduction.

The mitigated No-Load Offer for Variable Energy Resources shall be zero.

E. The Market Participant shall submit all inputs used in calculating mitigated Start-Up and mitigated No-Load Offers to permit the Market Monitor to verify submitted offers. Required information includes: heat rate curves, descriptions of how spot fuel prices and/or contract prices are used to calculate fuel costs, variable fuel transportation and handling costs, emissions costs, and VOM. All cost data and cost calculation descriptions are subject to the review and approval of the SPP Market Monitoring Unit to ensure reasonableness and consistency across Market Participants. Information to be provided by the Market Participant shall include the following:

(1) For fuel costs, Market Participants shall provide the Market Monitoring Unit with an explanation of the Market Participants' fuel cost policy, indicating whether fuel purchases are subject to a fixed contract price and/or spot pricing and specifying the contract price and/or referenced spot market prices. Any included fuel transportation and handling costs must be short-run marginal costs only, exclusive of fixed costs.

(2) For emissions costs, Market Participants shall report the emissions rate of each of their units and indicate the applicable emissions allowance cost.

(3) For VOM costs, Market Participants shall submit VOM costs reflecting short-run marginal costs, exclusive of fixed costs.

Further details associated with the development, validation and updating of these costs are included in Appendix G of the Market Protocols.

F. In all cases under this Section 3.3, cost data submitted for the development of mitigated offers, including opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff.

3.4 Mitigation Measures for Operating Reserve Offers

A mitigated offer for each Operating Reserve product shall be submitted daily by the Market Participant in accordance with the mitigated offer development guidelines in the Market Protocols. The mitigated Operating Reserve Offers may be updated up to 1100 hours on the day before the Operating Day for use in the Day-Ahead Market. In the case a Resource is not committed by the Day-Ahead Market, the mitigated Operating Reserve Offers may be updated until the Day-Ahead RUC begins. For Resources committed by the Day-Ahead Market, the mitigated Operating Reserve Offers submitted as of 1100 hours on the day before the Operating Day will apply to the Day-Ahead Market on the day before the Operating Day and the RTBM on the Operating Day; for all other Resources, the mitigated Operating Reserve Offers submitted at the time the Day-Ahead RUC begins will apply to the RTBM on the Operating Day.

A. The offer conduct thresholds for each of the Operating Reserve products are as follows:

(1) For Resources ~~with local market power as described in Section 3.1(3)~~committed to address a Local Reliability Issue, the conduct threshold is a 10% increase above the mitigated offer for the applicable Operating Reserve Offer;

(2) For all other Resources, the conduct threshold is a 25% increase above the mitigated offer for the applicable Operating Reserve Offer.

B. Any Operating Reserve Offer exceeding the applicable threshold, except offers below $10/MWh, will be deemed excessive. The Transmission Provider shall apply mitigation measures by replacing the Operating Reserve Offer with the applicable mitigated Operating Reserve Offer if:

(1) The Resource's Operating Reserve Offer exceeds the applicable mitigated offer by the conduct threshold; and

(2) The Resource has local market power as determined in Section 3.1; and

(3) The Resource either:

(a) Fails the Market Impact Test as described in Section 3.7, or

(b) ~~Has local market power as described in Section 3.1(3)~~Is manually committed by the Transmission Provider or by a local transmission operator.

C. The mitigated Spinning Reserve Offer shall be equal to zero for Resources other than combustion turbines, reciprocating engines and hydro Resources operating as a synchronous condenser. No known incremental costs are incurred for providing Spinning Reserves from other resource types.

Total mitigated Spinning Reserve Offer for combustion turbines, reciprocating engines and hydro Resources operating as a synchronous condenser shall not exceed any additional fuel related costs, maintenance costs and power consumption costs necessary for the Resource to be prepared for deployment of Spinning Reserve:

Mitigated Spinning Reserve Offer ($/MW) ≤
(Additional Fuel Cost($/Hr) + Additional Maintenance Cost ($/Hr) + Condensing Power Cost ($/Hr)) /
Spinning Reserve MW

The mitigated Supplemental Reserve Offer shall not exceed labor costs necessary for the Resource to be prepared for deployment of Supplemental Reserve:

Mitigated Supplemental Reserve Offer ($/MW) ≤
Additional Labor Cost($) / Average Supplemental Reserve MW

D. The mitigated Regulation-Up Offer shall not exceed the sum of the cost increase due to:

(1) the heat rate increase during non-steady state operation,

(2) increase in VOM due to non-steady state operation,

(3) uncompensated costs, as described in the Market Protocols:

Mitigated Regulation-Up Offer ($/MW) <
Cost Increase due to Heat Rate Increase during non-steady state operation ($/MW) +
Cost Increase in VOM ($/MW) + Uncompensated Cost ($/MW)

E. The mitigated Regulation-Down Offer shall not exceed the sum of the cost increase due to:

(1) the heat rate increase during non-steady state operation,

(2) increase in VOM due to non-steady state operation,

(3) uncompensated costs, as described in the Market Protocols:

Mitigated Regulation-Down Offer ($/MW) <

Cost Increase due to Heat Rate Increase during non-steady state operation ($/MW) +

Cost Increase in VOM ($/MW) + Uncompensated Cost ($/MW)

Further details associated with the development of the exact costs in the formulas above are included in the Market Protocols.

F. The Market Participant may include in the calculation of its mitigated Operating Reserve Offer an amount reflecting the Resource-specific opportunity costs if the Market Participant is able to demonstrate to the satisfaction of the SPP Market Monitoring Unit that such costs are legitimate and verifiable and not otherwise included in market outcomes. To the extent such costs include run-time restrictions, such run-time restrictions shall be updated as specified in the Market Protocols, with more frequent updating to occur the fewer hours that remain available, consistent with the Market Protocols. The formulas and instructions in the price forecast model for any such opportunity costs shall be determined by the SPP Market Monitoring Unit and published in the Market Protocols as part of the Mitigated Offer Development Guidelines, updated, as needed, by the SPP Market Monitoring Unit. Opportunity costs for mitigated Operating Reserve Offers shall not include Energy and Operating Reserve Markets revenues associated with forgone Energy or other types of Operating Reserve production to the extent that such costs are included in market outcomes.

G. All cost data and cost calculation descriptions are subject to the review and approval of the SPP Market Monitoring Unit to ensure reasonableness and consistency across Market Participants. The information will be sufficient for replication of the mitigated Operating Reserve Offers and shall include, among other data, the following information:

(1) For fuel costs, Market Participants shall provide the Market Monitoring Unit with an explanation of the Market Participants' fuel cost policy, indicating whether fuel purchases are subject to a fixed contract price and/or spot pricing and specifying the contract price and/or referenced spot market prices. Any included fuel transportation and handling costs must be short-run marginal costs only, exclusive of fixed costs.

(2) For emissions costs, Market Participants shall report the emissions rate of each of their units and indicate the applicable emissions allowance cost.

(3) For VOM costs, Market Participants shall submit VOM costs, calculated in adherence with the Appendix G of the Market Protocols, reflecting short-run marginal costs, exclusive of fixed costs.

H. In all cases under this Section 3.4, cost data submitted for the development of mitigated offers, including opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff.

3.5 Validation of Mitigated Resource Offer Parameters

The Market Monitor shall review the costs included in each mitigated Resource Offer in order to ensure that the Market Participant has correctly applied the formulas and definitions in Sections 3.2, 3.3, 3.4 and the Market Protocols and that the level of the mitigated offer is otherwise acceptable. If the mitigated offer determined by the Market Monitor and the Market Participant differ, the mitigated offer calculated by the Market Monitor shall be used. If a Market Participant submits a dispute over its mitigated offer, the previously approved mitigated offer shall be used from the time the dispute is submitted until the dispute is resolved. The procedures for submitting and processing disputes related to mitigated offers shall be those specified in the Market Protocols. The Transmission Provider shall remedy mitigated offer disputes resolved in favor of the

Market Participant by providing make whole payments, as necessary, to the Market Participant whose mitigated offer was improperly determined by the Market Monitor.

Each Market Participant is obligated to provide to the Market Monitor any cost data necessary to allow the Market Monitor to validate its mitigated Resource Offer.

The Market Monitor shall keep such data confidential, and all cost data submitted under this Section 3.5, including any opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff. The Market Monitor shall develop and maintain on the Transmission Provider's website the mechanism and procedures to allow Market Participants to submit such cost data.

3.6 Additional Mitigation Measures for Resource Offer Parameters

The mitigation measures in this section apply to all Resource Offer parameters expressed in units other than dollars and will only apply in the presence of local market power as described in Section 3.1 of this Attachment AF. A reference level for each applicable Resource Offer parameter that reflects the physical capability of the Resource shall be determined prior to the start of the Energy and Operating Reserve Markets by one or both of the following methods: (i) the reference levels will be determined through consultation between the Market Participant and the Market Monitor; and/or (ii) the reference levels will be based on averages of Resource Offer parameters from similar Resources. This methodology for setting reference levels for Offer parameters shall apply to all Resources at the start of the Energy and Operating Reserve Markets and to all Resources that register subsequent to the start of the Energy and Operating Reserve Markets. The Transmission Provider's output forecast for a wind-powered Variable Energy Resource shall be used as the reference maximum output limit for the wind-powered Variable Energy Resource.

The following thresholds shall be used by the Transmission Provider to identify Resource Offers that may warrant mitigation and shall be determined with respect to the corresponding reference level:

Time-based Resource Offer parameters: An increase of three (3) hours, or an increase of six (6) hours in total for multiple time-based Resource Offer parameters.

Resource Offer parameters expressed in units other than time or dollars: One hundred percent (100%) increase for Resource Offer parameters that are minimum values, or a fifty percent (50%) decrease for Resource Offer parameters that are maximum values.

Minimum Economic Capacity Operating Limit threshold for Resources ~~manually committed in accordance with Attachment AE, Sections 5.2.2(3), 6.1.2(3), and 6.1.2(4) of this Tariff~~committed to address a Local Reliability Issue: twenty-five percent (25%) increase.

In the case that a Resource Offer fails the thresholds described above, the Market Monitor shall determine the impact on prices or make whole payments. If an impact exceeds the LMP, MCP or make whole payment thresholds in Section 3.7, the Market Monitor will initiate a discussion with the Market Participant concerning an explanation of the parameter changes. The Market Monitor will inform the Transmission Provider of any potential issue. If the Transmission Provider, in consultation with the Market Monitor, concludes that the Market Participant has demonstrated the validity of the submitted Resource Offer parameter, no further action will be taken. If not, the Transmission Provider shall replace the Resource Offer parameter with the corresponding reference level. Mitigation measures will remain in place until such time that the Market Participant demonstrates the validity of the Resource Offer parameter or the Market Participant notifies the Market Monitor that the Resource Offer parameter has been changed to a value that is within the tolerance range as described above, and the Market Monitor has verified that this change has occurred. In the event that the Market Participant submits a dispute, the mitigation measure will remain in place until the resolution of the dispute.

In all cases under this Section 3.6, cost data submitted for the development of mitigated offers, including opportunity cost data, shall be subject to the confidentiality provisions set forth in Section 11 of Attachment AE of this Tariff.

3.7 Market Impact Test

The Transmission Provider will apply the following market impact test in the Day-Ahead Market, Day-Ahead RUC, Intra-Day RUC and Real-Time Balancing Market in the event the conditions described in Section 3.1 are satisfied:

After an initial market solution is computed with no mitigation measures in place, a second market solution, called the mitigated market solution, will be computed with the appropriate mitigation measures applied. If an LMP or MCP at a Settlement Location from the initial market solution exceeds the corresponding price from the mitigated market solution by the applicable impact test threshold, or a make whole payment for any Resource from the initial market solution exceeds the corresponding make whole payment from the mitigated market solution by make whole payment impact test threshold, then the mitigated market solution will be used for dispatch, commitment, and settlement purposes.

The impact test thresholds are as follows: At market start, the LMP impact threshold is five dollars ($5) per megawatt hour, the MCP impact threshold is five dollars ($5) per megawatt hour, and the make whole payment impact threshold is five dollars ($5) per megawatt hour. At the beginning of each six (6) month period after the market start, the LMP and MCP impact thresholds will be increased ten dollars ($10) per megawatt hour and the make whole payment impact threshold will be increased by ten dollars ($10) per megawatt hour unless the Market Monitor finds market behavior that warrants keeping the threshold constant for the next six (6) months. The periodic increases will continue until the LMP impact threshold is twenty-five dollars ($25) per megawatt hour, the MCP impact threshold is twenty-five dollars ($25) per megawatt hour, and the make whole payment impact threshold is twenty-five dollars ($25) per megawatt hour.

3.8 Mitigation Exceptions

A. The Market Monitor shall, as soon as practicable and if warranted in light of the information available to the Market Monitor, contact a Market Participant to request an explanation of its actions in cases when an impact threshold in Section 3.7 of this Attachment AF is exceeded and the Market Participant’s offer exceeded the mitigated offer by more than the relevant conduct threshold, as specified in Section 3.2, 3.3, or 3.4 of this Attachment AF.

B. If a Market Participant anticipates submitting an offer that will exceed the mitigated offer by more than the relevant conduct threshold, it may contact the Market Monitor to provide an explanation of the changes in its offer. If the Market Participant's pre-offer explanation indicates to the Market Monitor that the questioned behavior is consistent with competitive behavior, the Transmission Provider will not impose mitigation with respect to that offer unless and until circumstances are deemed to warrant it, and the Transmission Provider or the Market Monitor so notifies the Market Participant. In circumstances where, following a Market Participant's pre-offer explanation, both the conduct and impact thresholds are violated but no mitigation is imposed, the Market Monitor will record such instances and will report such instances to the Commission's Office of Enforcement, or its successor organization, every three months during the first year of Integrated Marketplace operations, and yearly thereafter. To the extent that the report contains sensitive data, the Market Monitor should include any such data in a non-public version of the report.

3.9 Sanctions for Noncompliance with the Day-Ahead Market Must Offer Requirement

A. In the case that a Market Participant is found to be noncompliant for an Asset Owner as determined by the conditions set forth in Section 2.11.1 of Attachment AE, the Market Participant shall be assessed a penalty for that Asset Owner by the Transmission Provider for each megawatt of withheld capacity below the 10% tolerance band. The penalty amount shall be equal to the Day-Ahead Market LMP associated with the withheld capacity.

B. The Market Monitor will monitor for, and report to the Commission's Office of Enforcement, or its successor organization, manipulative behavior associated with Day-Ahead Offers, including (but not limited to) monitoring load-serving Market Participants who do not offer enough net resource capacity to meet their maximum hourly Reported Load. The Market Monitor will also report to the Commission's Office of Enforcement or its successor organization any locational problems, such as deliverability issues, associated with load-serving Market Participants' offers in the Day-Ahead Market, any identified efforts by Market Participants to raise prices in the RTBM by limiting Day-Ahead Offers, and the effects of any such efforts upon make whole payments.