1. Introduction:

This Attachment contains language related to measuring and verifying the amount of load reduction achieved through the deployment of a DRR, LMR, EDR, or DEAR in the Transmission Provider's markets.

2. Performance Assessment

Because it is impossible to directly measure the energy that a demand resource in a DRR, LMR, EDR, or DEAR would have consumed in the absence of the Setpoint Instruction, Scheduling Instruction, or EDR Dispatch Instruction to reduce load, Measurement and Verification criteria are used to determine the performance of DRRs, LMRs, EDRs or DEARs. Performance will be imputed through comparisons between the DRR's, LMR's, EDR's or DEAR's consumption baseline (as described below) and the DRR's, LMR's, EDR's or DEAR's actual Metered energy. Likewise, Contingency Reserves provided by a DRR or DEAR during a Contingency Reserve Deployment will be imputed through comparisons between Metered demand prior to the Contingency Reserve Deployment and Metered demand following the Contingency Reserve Deployment. A DRR's or DEAR's Metered demand prior to the Contingency Reserve Deployment will also be referred to as the consumption baseline, with the understanding that certain consumption baselines apply to energy reductions over the duration of the event and other consumption baselines apply to demand reductions for a Contingency Reserve Deployment.

3. Consumption Baselines

The selection, development and application of appropriate consumption baselines are part of the Measurement and Verification process. The consumption baseline that is adopted

depends, in part, on the specific product being delivered and the method of achieving the demand reduction:

(i) Consumption Baselines for Energy and Calculated Output

(a) Metered Generation Baseline

This type of consumption baseline only applies to behind-the-meter-generation and storage devices. All behind-the-meter-generation and storage devices must use this measurement and verification methodology. For a DRR, LMR, EDR or DEAR that combines behind-the-meter-generation, storage devices and demand response, this consumption baseline applies to the behind-the-meter-generation and storage components. Distributed Energy Resource Groups made up of Distributed Storage Resource(s) or Distributed Generation Resource(s) must use this approach.

- For a DRR behind-the-meter-generation resource, the consumption baseline is the resource's actual integrated Metered generation for the Hour that is two hours prior to the Hour in which the DRR is initially instructed to reduce load. The DRR's Calculated DRR-Type I Output or Calculated DRR–Type II Output in response to a Setpoint Instruction in any Hour is imputed as the difference between its Metered output and its consumption baseline.
- For Distributed Generation Resources and Distributed Storage Resources, resource output is measured by calculating net Metered

volume measured in MWh for each Dispatch Interval during which a DERA receives a Setpoint Instruction.

- For an LMR or EDR behind-the-meter-generation resource, the consumption baseline is set at 0 MW and the performance equals the behind-the-meter-generation's Metered output.

(b) Calculated Baseline

For a DRR, LMR, EDR not supported by behind-the-meter-generation or for Distributed Demand Response Resources in a Distributed Energy Resource Group, the consumption baseline is a profile of hourly demand based on an averaged sample of historical data, which may be adjusted for factors that reflect specific, on-the-day-dispatched conditions, such as weather. Unless the Market Participant registering the resource submits an alternative consumption baseline for the Transmission Provider's approval, the Calculated Baseline will be determined as follows:

- Separate hourly demand profiles will be determined for (1) non-holiday weekdays and (2) for weekends/holidays.
- The weekday hourly profile will be based on the average of the ten (10), but not less than five (5), most recent weekdays that are not holidays or other non-standard "event" days.

  The weekend/holiday hourly profile will be based on the average of the four (4), but not less than two (2), most recent weekend days or holidays that are not "event" days.

- An "event" day is one during which there was, for the Resource in question, a real-time energy or ancillary services dispatch, an emergency deployment, or a reported Outage.

  The maximum look-back window will be limited to 45 days.

- If the 45-day window contains insufficient days to meet the minimum number of days described above, the profiles will be constructed based on the available days within the 45-day window that qualify, supplemented by the largest (MW) matching "event" day(s) values for that resource within that same window, as necessary, to obtain the minimum number of values.

  The Market Participant sponsoring a DRR, LMR, EDR, or DEAR will have the option at registration to accept the unadjusted consumption baseline or to modify it by applying one of the following adjustment mechanisms:

- Symmetric Multiplicative Adjustment
  - Adjusts (increases or decreases) each unadjusted consumption baseline hourly value (MW) during the event by the ratio of (a) the sum of hourly demands for the three hours beginning four hours prior to the event and (b) the sum of those same three hourly unadjusted consumption baseline demands.
  - Each hourly adjustment is limited to a change of plus or

minus twenty percent (20%) of the unadjusted consumption baseline hourly value.

- If multiple events occur during the same day, the Symmetric Multiplicative Adjustment is calculated only for the first event, but is applied to all Events that day.

- Weather Sensitive Adjustment
  - Adjusts each unadjusted consumption baseline hourly value (MW) up or down by a Weather Adjustment Factor.
  - The Weather Adjustment Factor is determined by a mathematical relationship derived through a statistical regression analysis that considers the resource's load, historical hourly temperature data, and any other important factors determining the resource's load.

Calculated Baselines will not be adjusted for events beginning prior to 6:00 am Eastern Standard Time.

If the Market Participant that registers a DRR, LMR, EDR, or DEAR wishes to select either of the Adjustments described above, the Market Participant must submit appropriate documentation to the Transmission Provider for approval. For Weather Sensitive Adjustments, documentation must include: (1) a description of the DRR, LMR, EDR, or DEAR, (2) results of the statistical regression analysis describing the relationship between temperature and load (expressed in kW per degree);

and (3) up to five unique data pairs, each consisting of (i) a temperature set point (Fahrenheit in integer degree format) and (ii) a "factor" (kW-per-degree) expressing the impact of temperature variations up to this temperature. Temperatures below the first set point (lowest temperature) will be adjusted using the first "factor", and temperatures above the last set point (highest temperature) will not be adjusted.

For each hour during the event, the following procedures apply:

1. Determine the unadjusted consumption baseline (kW).
2. Determine the average temperature for that same hour from each day used in the calculation of the unadjusted baseline.
3. Compare the temperature for each hour during the event with the average temperature determined in Step 2.
4. Determine from the statistical regression results the change in the unadjusted consumption baseline (kW) related to the temperature differential.
5. Add this result (positive or negative) to the unadjusted consumption baseline to determine the weather adjusted consumption baseline value (kW).

The difference between the weather adjusted consumption baseline and the load during that same event hour is the demand reduction.

The Transmission Provider may request additional information from the Market Participant and/or request appropriate revisions to the proposed

Measurement and Verification criteria. Submitted documentation will be shared with the applicable LSE upon approval.

A DRR's Calculated DRR-Type I Output or Calculated DRR-Type II Output or a DEAR's Actual Energy Injection in response to a Setpoint Instruction in any Hour, an LMR's performance in response to a Scheduling Instruction, or an EDR's performance in response to an EDR Dispatch Instruction is the difference between the consumption baseline for Energy and its actual Metered withdrawal.

(c) Direct Load Control Baseline

This type of consumption baseline only applies to direct load control programs consisting of many small, distributed assets that are not interval metered; consequently, such programs can only participate as DRR-Type I Resources, LMRs, EDRs, or Distributed Demand Response Resources in a Distributed Energy Resource Group. A Direct Load Control ("DLC") consumption baseline will be statistically estimated from hourly Metered demand data. The Transmission Provider must approve documentation including the specific statistical methodology to be employed before the Market Participant can utilize a DLC consumption baseline. For Direct Load Control, documentation must include: (1) a description of the DRR, LMR, EDR, or DEAR, including communication technology, type of Load(s) which are controlled, proposed control scheme (e.g. cycling or complete Load shed), number of participants, geographic location of

participants and other relevant information; (2) description of Load research data that is used in the analysis; (3) a description of the formulae used to produce the estimate, including all assumptions; and (4) a description of all source information for variables used in the analysis, such as a schedule of Demand reductions according to the time of day and weather conditions (e.g., temperature and humidity index). The Transmission Provider may request additional information from such Market Participant and/or request appropriate revisions to the proposed Measurement and Verification criteria. The input provided by the Market Participant for the DLC consumption baseline becomes the performance (Calculated DRR–Type I Output) for that DRR–Type I Resource, LMR, EDR or DEAR during an event.

(d) Custom Baseline

The Market Participant sponsoring a DRR, LMR, EDR, or Distributed Demand Resources in a Distributed Energy Resource Group may develop a custom consumption baseline if none of the other generic baselines described above would produce reasonable estimates of the resource's demand reductions. The Transmission Provider must approve documentation including the specific methodology to be employed before the Market Participant can utilize such a baseline. For custom baselines, documentation must include: (1) a description of the DRR, LMR, EDR, or DEAR, (2) the proposed methodology for calculation of the custom

consumption baseline; and (3) a description explaining why the proposed custom baseline is more accurate than the existing available consumption baselines. The Transmission Provider may request additional information from such Market Participant and/or request appropriate revisions to the proposed Measurement and Verification criteria. For Custom Baselines, the input provided by the Market Participant becomes the consumption baseline from which Metered amounts will be subtracted to determine performance. The Transmission Provider shall post on OASIS any accepted methodologies for determining Custom Baselines after replacing any proprietary information with hypothetical data.

(ii) Consumption Baselines for DRRs and DEARs Providing Operating Reserve Service

(a) DRR-Type II and DEARs that are Regulation Qualified Resources that Provide Operating Reserve Service

Provision of Contingency Reserve Service: The consumption baseline that must be used by a DRR-Type II and DEAR Regulation Qualified Resource that provides Contingency Reserve service is the "Meter Before" baseline method. The "Meter Before" measurement shall be the ICCP-telemetered actual output value in the 10-second interval just prior to the event; the "Meter After" measurement shall be its ICCP-telemetered actual output value in the 10-second interval occurring exactly 10 minutes after the start of the event. The amount of Contingency Reserve provided

by the Resource is measured by the difference between its "Meter Before" value and its "Meter After" value, as described above.

Provision of Regulating Reserve Service: The consumption baseline that must be used by a DRR-Type II or DEAR Regulation Qualified Resource that provides Regulating Reserve service is based on the same "Meter Before" measurement used for Contingency Reserve service based on the ICCP-telemetered actual output value in the 10-second interval at the start of the Dispatch Interval. The measured amount of Regulating Reserve provided by the Resource uses the same method of calculation as for other Regulation Qualified Resources.

(b) DRR-Type I, DRR-Type II, or DEARs that are Not Regulation Qualified Resources that Provide Operating Reserve Service

A Market Participant must submit to the Transmission Provider 5-minute interval data for the Resource within five days of the contingency event. Such data must span the period starting from 5 minutes prior to when the contingency event occurred and ending at least 60 minutes later. The DRR or DEAR consumption baseline is its Metered output for the 5-minute interval immediately preceding the start of the contingency event. The amount of Contingency Reserve deployed is then measured by the difference between its consumption baseline value and its Metered demand for the 5-minute interval ending 10 minutes after the start of the contingency event. For Resources using demand response, the amount of

Contingency Reserve provided by the Resource is measured as the difference between its consumption baseline value and its Metered demand value. For Resources using generation or storage devices, the amount of Contingency Reserve provided by the Resource is measured as the difference between its Metered demand value and its consumption baseline value. To the extent that a contingency event starts or ends within a 5-minute interval reading, the Transmission Provider requires that the Market Participant sponsoring the Resource provides the actual Load values for a DRR (a) at the start of the contingency event, (b) at 5 minutes into the contingency event, and (c) at 10 minutes into the contingency event, and should be prepared to provide supporting calculations based on the interval meter readings.

4. Event

An event occurs for a DRR or DEAR when the DRR or DEAR receives a Real-Time Energy or Ancillary Services dispatch, an Emergency deployment, or such DRR or DEAR reports an Outage. An event occurs for an LMR when the LMR is deployed in accordance with MISO-issued Scheduling Instructions. An event occurs for an EDR when the EDR is deployed in accordance with MISO-issued EDR Dispatch Instructions.

Event Timeline:

1. The time limits for a Market Participant that registers the DRR, LMR, or DEAR to submit meter data for load curtailment activities are as follows:

a. Dispatched Energy: Up to 103 Calendar Days from the event date. An alert will be generated after 93 Calendar Days.

b. Ancillary Services: Up to five (5) Calendar Days from the event date.

2. EDR Participants must provide the meter data and/or the results of the direct Load control Measurement and Verification procedures to the Transmission Provider within fifty-three (53) Calendar Days after the Demand reduction, in order to be eligible to receive compensation.

3. The Market Participant that owns the Load Zone CPNode associated with the DRR, LMR, EDR, or DEAR may review the settlement within ten (10) Business Days, after which it will be auto-confirmed. An alert will be generated after 8 Business Days.

4. If a settlement is denied by the Market Participant that owns the Load Zone CPNode associated with the DRR, LMR, EDR, or DEAR or denied by the Transmission Provider, the Market Participant that registers the DRR, LMR, EDR, or DEAR can edit and resubmit the existing settlement within ten (10) Business Days after which the settlement will be auto-denied. The Market Participant that owns the Load Zone CPNode associated with the DRR, LMR, EDR, or DEAR has five (5) Business Days to review an existing settlement that has been resubmitted, after which it will be auto-confirmed. There is no limit on the number of times a settlement can be denied and resubmitted within the respective time limit. Following each denial, the Market Participant that registers the DRR, LMR, EDR, or DEAR has the option of disputing the denial.

5. If a settlement is disputed by the Market Participant that registers the DRR, LMR, EDR, or DEAR, the Market Participant that registers the DRR, LMR, EDR, or DEAR must submit a market dispute via the Market Portal.

   Settlements will not be generated until after the Operating Day.