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| --- | --- | --- | --- | --- |
| NPRR Number | 348 | NPRR Title | Generation Resource Start-Up and Shut-Down Process | |
| Timeline | Normal | Action | | Recommended Approval |
| Date of Decision | | May 19, 2011 | | |
| Proposed Effective Date | | To be determined. | | |
| Priority and Rank Assigned | | To be determined. | | |
| Nodal Protocol Sections Requiring Revision | | 3.9.1, Current Operating Plan (COP) Criteria  6.4.2.4, Output Schedule Validation  6.4.3, Energy Offer Curve  6.5.7.2, Resource Limit Calculator  6.5.7.8, Dispatch Procedures  6.6.5, Generation Resource Base Point Deviation Charge  8.1.1.4.1, Regulation Service and Generation Resource/Controllable Load Resource Energy Deployment Performance | | |
| Revision Description | | This Nodal Protocol Revision Request (NPRR) removes Protocol language concerning the use of the “ONTEST” Resource Status during start-up and shut-down. Language has been added to address the start-up and shut-down processes.  For start-up, language is added so that Resources are exempt from Base-Point Deviation Charges and Generation Resource Energy Deployment Performance (GREDP) metrics when the Resource’s average Base Point value is below the average telemetered Low Sustained Limit (LSL). The expectation is that when a Resource is receiving Base Points below its LSL, the Resource is starting up/shutting down and not necessarily responding to Security-Constrained Economic Dispatch (SCED) instructions.  For shut-down, a new Resource Status is created called “SHUTDOWN”. This Resource Status will be used by the Resource Limit Calculator to calculate dispatch limits for SCED, which ramp a Resource down to 0 MW according to the Resource’s provided ramp rate. Again, a Resource will be exempt from Base-Point Deviation Charges and GREDP metrics when the Resource’s average Base Point is below the average telemetered LSL. | | |
| Reason for Revision | | Under the current Protocols, a Resource Status of “ONTEST” is telemetered for Resources that are either starting up or shutting down. This potentially causes two problems for the ERCOT System and the ERCOT Operators.  The first problem can occur when a Qualified Scheduling Entity (QSE) telemeters a Resource Status of “ONTEST” and SCED sends a Base Point to that Resource equal to its current telemetered output. This results in ERCOT deploying Regulation Service to account for any movement by that Resource between SCED executions. There have been periods when a number of Resources have started up or shut down quickly and simultaneously. This can cause frequency issues and may result in ERCOT manually executing SCED and deploying additional Ancillary Services. These concerns will be greatly reduced if Resources are required to follow SCED instructions when they are receiving Base Points at or above their LSL. A new “SHUTDOWN” Resource Status will force SCED to Dispatch a Resource down to 0 MW according to its ramp rate. This will ensure that when a Resource is intending to shut down, SCED will only be ramping the Resource down and not changing ramp direction. This logic will provide ERCOT visibility to where the Resource is planned to go in the next five minutes and will provide a method for a Resource to come Off-Line as required even if it is operating above its LSL.  The second problem is that ERCOT Operators are not currently able to distinguish easily between periods when Generation Resources are performing testing and when they are starting up/shutting down. Discontinuing the use of “ONTEST” during start-up/shut-down will address this concern. | | |
| Overall Market Benefit | | This revision should improve ERCOT’s ability to control frequency during periods in which Generation Resources are starting up or shutting down.  Ending the use of the ONTEST Resource Status for start-up and shut-down will also allow operators to distinguish between these scenarios and actual periods of operations testing. | | |
| Overall Market Impact | | This revision will require a new Resource Status to be created and managed by ERCOT and QSE systems. | | |
| Consumer Impact | | Unknown. | | |
| Credit Impacts | | To be determined. | | |
| Procedural History | | * On 4/6/11, NPRR348, the associated Impact Analysis and Cost Benefit Analysis were posted. * On 4/21/11, PRS considered NPRR348. * On 5/12/11, WMS comments were posted. * On 5/19/11, PRS again considered NPRR348. | | |
| PRS Decision | | On 4/21/11, PRS unanimously voted to table NPRR348 for one month. All Market Segments were present for the vote.  On 5/19/11, PRS unanimously voted to recommend approval of NPRR348 as submitted. All Market Segments were present for the vote. | | |
| Summary of PRS Discussion | | On 4/21/11, it was explained that prior to Nodal Go-Live there were issues as to how Resources should start-up and shut-down; a temporary solution was implemented to make dual use of the ONTEST Resource Status, which is now causing frequency control issues; and that NPRR348 proposes to create a new Resource Status to remedy the issue. PRS requested that WMS discuss and provide input on the proposed changes introduced in NPRR348.  On 5/19/11, concerns were raised regarding the removal of the “ONTEST” Resource Status and how it would affect ramping of Resources. ERCOT Staff stated that the functionality provided by NPRR282, Dynamic Ramp Rate used in SCED, would allow QSEs to telemeter ramp rate. | | |

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| Quantitative Impacts and Benefits | | | | |
| Assumptions | | 1 | *System change for ERCOT and QSEs.* | |
| 2 | *QSEs will be able to update the ramp rate used by the Resource Limit Calculator to allow shut-down to occur at their desired rate.* | |
| 3 |  | |
| 4 |  | |
| Market Cost | |  | **Impact Area** | **Monetary Impact** |
| 1 | *Unknown.* | *Unknown.* |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| Market Benefit | |  | **Impact Area** | **Monetary Impact** |
| 1 | *Improved frequency control.* | *Unknown.* |
| 2 | *Ability for operators to distinguish between Resource testing and Resource start-up/shut-down.* | *Unknown.* |
| 3 |  |  |
| 4 |  |  |
| Additional Qualitative Information | | 1 |  | |
| 2 |  | |
| 3 |  | |
| 4 |  | |
| Other Comments | | 1 |  | |
| 2 |  | |
| 3 |  | |
| 4 |  | |

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| **Comments Received** | |
| Comment Author | **Comment Summary** |
| WMS 051211 | Endorsed NPRR348 as submitted. |

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| Comments |

Please also note that the following NPRRs also propose revisions to the following sections that are included within this NPRR:

* NPRR332, Revise QSGR Processes for COP Reporting of QSGR Assigned Off-Line Non-Spin and Application of Emergency Operations Settlement
  + Section 3.9.1
* NPRR190, Clarification of Resource Definitions and Resource Registration of Self-Serve Generators for Reliability Purposes
  + Section 6.5.7.8
* NPRR312, Clarification of QSE Requirements for Split Generation Resources
  + Section 6.5.7.8

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| Proposed Protocol Language Revision |

3.9.1 Current Operating Plan (COP) Criteria

(1) Each QSE that represents a Resource must submit a COP to ERCOT that reflects expected operating conditions for each Resource for each hour in the next seven Operating Days.

(2) Each QSE that represents a Resource shall update its COP reflecting changes in availability of any Resource as soon as reasonably practicable, but in no event later than 60 minutes after the event that caused the change.

(3) The Resource capacity in a QSE’s COP must be sufficient to supply the Ancillary Service Supply Responsibility of that QSE.

(4) A COP must include the following for each Resource represented by the QSE:

(a) The name of the Resource;

(b) The expected Resource Status:

(i) Select one of the following for Generation Resources synchronized to the ERCOT System that best describes the Resource’s status. These Resource Statuses are to be used for COP and/or Real-Time telemetry purposes.

(A) ONRUC – On-Line and the hour is a RUC-Committed Hour;

(B) ONREG – On-Line Resource with Energy Offer Curve providing Regulation Service;

(C) ON – On-Line Resource with Energy Offer Curve or Off-Line Quick Start Generation Resource (QSGR) available for SCED Dispatch;

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| ***[NPRR272: Replace paragraph (4)(b)(i)(C) above with the following upon system implementation:]***  (C) ON – On-Line Resource with Energy Offer Curve; |

(D) ONDSR – On-Line Dynamically Scheduled Resource (DSR);

(E) ONOS – On-Line Resource with Output Schedule;

(F) ONOSREG – On-Line Resource with Output Schedule providing Regulation Service;

(G) ONDSRREG – On-Line DSR providing Regulation Service;

(H) ONTEST – On-Line blocked from Security-Constrained Economic Dispatch (SCED) for operations testing;

(I) ONEMR – On-Line EMR (available for commitment or dispatch only for ERCOT-declared Emergency Conditions; the QSE may appropriately set LSL and High Sustained Limit (HSL) to reflect operating limits); and

(J) ONRR – On-Line as a synchronous condenser (hydro) providing Responsive Reserve (RRS) but unavailable for Dispatch by SCED and available for commitment by RUC;

(K) SHUTDOWN – The Resource is On-Line and in a shut down sequence, and has no Ancillary Service Obligations. This Resource status is only to be used for Real-Time telemetry purposes;

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| ***[NPRR272: Insert paragraph (4)(b)(i)(L) upon system implementation:]***  (L) OFFQS – Off-Line but available for SCED deployment. Only qualified Quick Start Generation Resources (QSGRs) may utilize this status. |

(ii) Select one of the following for Off-Line Generation Resources not synchronized to the ERCOT System that best describes the Resource’s status. These Resource Statuses are to be used for COP and/or Real-Time telemetry purposes.

(A) OUT – Off-Line and unavailable;

(B) OFFNS – Off-Line but reserved for Non-Spinning Reserve (Non-Spin) or Off-Line QSGR available for SCED Dispatch;

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| ***[NPRR272: Replace paragraph (4)(b)(ii)(B) above with the following upon system implementation:]***  (B) OFFNS – Off-Line but reserved for Non-Spinning Reserve (Non-Spin); |

(C) OFF – Off-Line but available for commitment in the Day-Ahead Market (DAM) and RUC; and

(D) EMR – Available for commitment only for ERCOT-declared Emergency Condition events; the QSE may appropriately set LSL and HSL to reflect operating limits; and

(iii) Select one of the following for Load Resources. These Resource Statuses are to be used for COP and/or Real-Time telemetry purposes.

(A) ONRGL – Available for Dispatch of Regulation Service;

(B) ONRRCLR – Available for Dispatch of RRS Service as a Controllable Load Resource;

(C) ONRL – Available for Dispatch of RRS Service or Non-Spin, excluding Controllable Load Resources; and

(D) OUTL – Not available;

(c) The HSL;

(d) The LSL;

(e) The High Emergency Limit (HEL);

(f) The Low Emergency Limit (LEL); and

(g) Ancillary Service Resource Responsibility capacity in MW for:

(i) Regulation Up (Reg-Up);

(ii) Regulation Down (Reg-Down);

(iii) RRS Service; and

(iv) Non-Spin.

(5) For Combined Cycle Generation Resources, the above items are required for each operating configuration. In each hour only one Combined Cycle Generation Resource in a Combined Cycle Train may be assigned one of the On-Line Resource Status codes described above.

(a) During a RUC study period, if a QSE’s COP reports multiple Combined Cycle Generation Resources in a Combined Cycle Train to be On-Line for any hour, then until the QSE corrects its COP, the On-Line Combined Cycle Generation Resource with the largest HSL is considered to be On-Line and all other Combined Cycle Generation Resources in the Combined Cycle Train are considered to be Off-Line. Furthermore, until the QSE corrects its COP, the Off-Line Combined Cycle Generation Resources as designated through the application of this process are ineligible for RUC commitment or de-commitment Dispatch Instructions.

(b) For any hour in which QSE-submitted COP entries are used to determine the initial state of a Combined Cycle Generation Resource for a DAM or Day-Ahead Reliability Unit Commitment (DRUC) study and the COP shows multiple Combined-Cycle Generation Resources in a Combined Cycle Train to be in an On-line Resource Status, then until the QSE corrects its COP, the On-Line Combined Cycle Generation Resource that has been On-Line for the longest time from the last recorded start by ERCOT systems, regardless of the reason for the start, combined with the COP Resource Status for the remaining hours of the current Operating Day, is considered to be On-Line at the start of the DRUC study period and all other COP-designated Combined Cycle Generation Resources in the Combined Cycle Train are considered to be Off-Line.

(c) ERCOT systems shall allow only one Combined Cycle Generation Resource in a Combined Cycle Train to offer Off-Line Non-Spin in the DAM or Supplemental Ancillary Services Market (SASM).

(i) If there are multiple Non-Spin offers from different Combined Cycle Generation Resources in a Combined Cycle Train, then prior to execution of the DAM, ERCOT shall select the Non-Spin offer from the Combined Cycle Generation Resource with the highest HSL for consideration in the DAM and ignore the other offers.

(ii) Combined Cycle Generation Resources offering Off-Line Non-Spin must be able to transition from the shutdown state to the offered Combined Cycle Generation Resource On-Line state and be capable of ramping to the full amount of the Non-Spin offered.

(d) The DAM and RUC shall honor the registered hot, intermediate or cold Startup Costs for each Combined Cycle Generation Resource registered in a Combined Cycle Train when determining the transition costs for a Combined Cycle Generation Resource. In the DAM and RUC, the Startup Cost for a Combined Cycle Generation Resource shall be determined by the positive transition cost from the On-Line Combined Cycle Generation Resource within the Combine Cycle Train or from a shutdown condition, whichever ERCOT determines to be appropriate.

(6) ERCOT may accept COPs only from QSEs.

(7) For the first 48 hours of the COP, a QSE representing a Wind-powered Generation Resource (WGR) must enter an HSL value that is less than or equal to the amount for that Resource from the most recent Short-Term Wind Power Forecast (STWPF) provided by ERCOT.

(8) For hours 49 to 168 of the COP, a QSE representing a WGR shall enter an HSL value equal to their best estimate, which may be based on the wind power profile as published on the ERCOT website.

(9) A QSE representing a Generation Resource that is not actively providing Ancillary Services may only use a Resource Status of SHUTDOWN to indicate to ERCOT in the COP and through telemetry that the Resource is operating in a shut-down sequence and is being manually dispatched by the QSE or a Resource Status of ONTEST to indicate the Generation Resource is performing a test of its operations either manually dispatched by the QSE or by ERCOT as part of the test.

(10) If a QSE has not submitted a valid COP for any Generation Resource for any hour in the DAM or RUC Study Period, then the Generation Resource is considered to have a Resource Status as OUT thus not available for DAM awards or RUC commitments for those hours.

(11) If a COP is not available for any Resource for any hour from the current hour to the start of the DAM period or RUC study, then the Resource Status for those hours are considered equal to the last known Resource Status from a previous hour’s COP or from telemetry as appropriate for that Resource.

6.4.2.4 Output Schedule Validation

(1) A validated Output Schedule is a schedule that ERCOT has determined meets the criteria listed in Section 6.4.2.3, Output Schedule Criteria.

(2) ERCOT shall notify the QSE submitting an Output Schedule by the Messaging System if the schedule was rejected or was considered invalid for any reason. The QSE may then resubmit the schedule within the appropriate market timeline.

(3) ERCOT shall continuously validate Output Schedules and continuously display on the Market Information System (MIS) Certified Area information that allows any QSE to view its valid Output Schedule.

(4) If a valid Output Schedule does not exist for a Resource that has a status of On-Line DSR at the time of SCED execution, then ERCOT shall notify the QSE and set the Output Schedule equal to the telemetered output of the Resource until a revised Output Schedule is validated.

(5) For Generation Resources with a Resource Status other than ONTEST or SHUTDOWN, if a valid Energy Offer Curve or an Output Schedule does not exist for a non-Dynamically Scheduled Resource that has a status of On-Line at the end of the Adjustment Period, then ERCOT shall notify the QSE and set the Output Schedule equal to the then current telemetered output of the Resource until an Output Schedule or Energy Offer Curve is submitted in a subsequent Adjustment Period.

6.4.3 Energy Offer Curve

(1) A detailed description of Energy Offer Curve and validations performed by ERCOT is in Section 4.4.9, Energy Offers and Bids.

(2) For an On-Line RMR Unit, ERCOT, in its sole discretion, shall submit either an Output Schedule or an Energy Offer Curve considering contractual constraints on the Resource and any other adverse effects on, or implications arising from, the RMR Agreement, that may occur as the result of the Dispatch of the RMR Unit. If ERCOT chooses to submit an Energy Offer Curve instead of an Output Schedule, the Energy Offer Curve must be based on the RMR Agreement input/output curve and the fuel budget for the RMR Unit.

(3) For Generation Resources with a Resource Status other than ONTEST or SHUTDOWN, if a valid Energy Offer Curve or an Output Schedule does not exist for a Resource that has a status of On-Line at the end of the Adjustment Period, then ERCOT shall notify the QSE. Except for IRRs, QF Resources, and DSRs, ERCOT shall create an Output Schedule equal to the then-current telemetered output of the Resource until an Output Schedule or Energy Offer Curve is submitted in a subsequent Adjustment Period.

6.5.7.2 Resource Limit Calculator

(1) ERCOT shall calculate the HASL, LASL, SURAMP, SDRAMP, HDL and LDL within four seconds after a change of the Resource-specific attributes provided as part of the QSE’s SCADA telemetry under Section 6.5.5.2, Operational Data Requirements. The formulas described below define which Resource-specific attributes must be used to calculate each Resource limit. The Resource limits are used as inputs into both the SCED process and the Ancillary Service Capacity Monitor as described in Section 6.5.7.6, Load Frequency Control. These Resource limits help ensure that the deployments produced by the SCED and Load Frequency Control (LFC) processes will respect the commitment of a Resource to provide Ancillary Services as well as individual Resource physical limitations.

(2) The figures below illustrate how the Resource Limit Calculator determines the Resource limits for Generation and Load Resources:

Generation Resources:

LSL

HSL

Time

LSL

-

LASL

-

HASL

-

Generation

Increase

Generation

Decrease

Services

Provided: Reg

Down

Provided: Reg Up,

Responsive, Non-Spin

Current

Telemetry

HDL

LDL

Ramp

Rate

5 Minutes

**Generation**

Quantity

Offer Curve Generation

LSL

HSL

-

-

-

Generation

Increase

Generation

Decrease

Ramp

Rate

5 Minutes

-

0

-

-

Generation

Increase

Generation

Decrease

Ramp

Rate

5 Minutes

Ancillary

Load Resources:

**Load**

HSL= MPC

0

LASL

HASL

Current load

Telemetry

Ancillary Services

Provided: Reg-Up,

Responsive Reserve (RRS), Non-Spin

Ancillary Services

Provided: Reg-Down

Minutes

Normal Load

fluctuation

5

-

30

LSL= LPC

Increasing Consumption

Decreasing

Consumption

(3) For Generation Resources, HASL is calculated as follows:

HASL = Max (LASL, (HSLTELEM – (RRSTELEM + RUSTELEM + NSRSTELEM)))

|  |  |
| --- | --- |
| Variable | Description |
| HASL | High Ancillary Service Limit |
| HSLTELEM | High Sustained Limit provided via telemetry – per Section 6.5.5.2 |
| LASL | Low Ancillary Service Limit |
| RRSTELEM | Responsive Reserve Ancillary Service Schedule provided by telemetry |
| RUSTELEM | Reg-Up Ancillary Service Resource Responsibility designation provided by telemetry |
| NSRSTELEM | Non-Spin Ancillary Service Schedule provided via telemetry |

(4) For Generation Resources, LASL is calculated as follows:

LASL = LSLTELEM + RDSTELEM

|  |  |
| --- | --- |
| Variable | Description |
| LASL | Low Ancillary Service Limit |
| LSLTELEM | Low Sustained Limit provided via telemetry |
| RDSTELEM | Reg-Down Ancillary Service Resource Responsibility designation provided by telemetry |

(5) For each Generation Resource, the SURAMP is calculated as follows:

SURAMP = RAMPRATE – (RUSTELEM \* REGP / 5)

|  |  |
| --- | --- |
| Variable | Description |
| SURAMP | SCED up ramp rate |
| RAMPRATE | Normal Ramp Rate when RRS is not deployed or when the subject Resource is not providing RRS.  Emergency Ramp Rate for Resources deploying RRS |
| RUSTELEM | Reg-Up Ancillary Service Resource Responsibility designation provided by telemetry |
| REGP | Percentage of Regulation Service for which ramp rate will be reserved in Real-Time. The value will be between one and zero. Market Participants will be notified of the change in this value. |

(6) For each Generation Resource, the SDRAMP is calculated as follows:

SDRAMP = NORMRAMP – (RDSTELEM \* REGP / 5)

| Variable | Description |
| --- | --- |
| SDRAMP | SCED down ramp rate |
| NORMRAMP | Normal Ramp Rate |
| RDSTELEM | Reg-Down Ancillary Service Resource Responsibility designation by Resource provided via telemetry |
| REGP | Percentage of Regulation Service for which ramp rate will be reserved in Real-Time. The value will be between one and zero. Market Participants will be notified of the change in this value. |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| [NPRR282: Replace paragraphs (5) and (6) above with the following upon system implementation:]  (5) For each Generation Resource, the SURAMP is calculated as follows:  SURAMP = RAMPRATE – (RUSTELEM \* REGP / 5)   |  |  | | --- | --- | | Variable | Description | | SURAMP | SCED up ramp rate | | RAMPRATE | Normal Ramp Rate, as telemetered by the QSE, when RRS is not deployed or when the subject Resource is not providing RRS.  Emergency Ramp Rate, as telemetered by the QSE, for Resources deploying RRS | | RUSTELEM | Reg-Up Ancillary Service Resource Responsibility designation provided by telemetry | | REGP | Percentage of Regulation Service for which ramp rate will be reserved in Real-Time. The value will be between one and zero. Market Participants will be notified of the change in this value. |   (6) For each Generation Resource, the SDRAMP is calculated as follows:  SDRAMP = NORMRAMP – (RDSTELEM \* REGP / 5)   | Variable | Description | | --- | --- | | SDRAMP | SCED down ramp rate | | NORMRAMP | Normal Ramp Rate, as telemetered by the QSE | | RDSTELEM | Reg-Down Ancillary Service Resource Responsibility designation by Resource provided via telemetry | | REGP | Percentage of Regulation Service for which ramp rate will be reserved in Real-Time. The value will be between one and zero. Market Participants will be notified of the change in this value. | |

(7) For Generation Resources, HDL is calculated as follows:

1. If the telemetered Resource Status is SHUTDOWN, then

HDL = POWERTELEM – (SDRAMP\*5)

1. If the telmetered Resource Status is any status code specified in Protocol 3.9.1 (4)(b)(i) other than SHUTDOWN, then

HDL = Min (POWERTELEM + (SURAMP \* 5), HASL)

|  |  |
| --- | --- |
| Variable | Description |
| HDL | High Dispatch Limit |
| POWERTELEM | Gross or net real power provided via telemetry |
| SURAMP | SCED up ramp rate |
| SDRAMP | SCED down ramp rate |
| HASL | High Ancillary Service Limit – definition provided in Section 2, Definitions and Acronyms. |

(8) For Generation Resources, LDL is calculated as follows:

LDL = Max (POWERTELEM - (SDRAMP \* 5), LASL)

|  |  |
| --- | --- |
| Variable | Description |
| LDL | Low Dispatch Limit |
| POWERTELEM | Gross or net real power provided via telemetry |
| SDRAMP | SCED down ramp rate |
| LASL | Low Ancillary Service Limit – definition provided in Section 2. |

(9) For Load Resources, HASL is calculated as follows:

HASL = Max (LPCTELEM, (MPCTELEM – RDSTELEM))

|  |  |
| --- | --- |
| Variable | Description |
| HASL | High Ancillary Service Limit |
| LPCTELEM | Low Power Consumption provided via telemetry |
| MPCTELEM | Maximal Power Consumption provided via telemetry |
| RDSTELEM | Reg-Down Ancillary Service Resource Responsibility designation provided by telemetry |

(10) For Load Resources, LASL is calculated as follows:

LASL = Min (HASL, (LPCTELEM + (RRSTELEM + RUSTELEM + NSRSTELEM)))

|  |  |
| --- | --- |
| Variable | Description |
| LASL | Low Ancillary Service Limit |
| HASL | High Ancillary Service Limit |
| LPCTELEM | Low Power Consumption provided via telemetry |
| RRSTELEM | Responsive Reserve Ancillary Service Schedule provided by telemetry |
| RUSTELEM | Reg-Up Ancillary Service Resource Responsibility designation provided by telemetry |
| NSRSTELEM | Non-Spin Ancillary Service Schedule provided via telemetry |

6.5.7.8 Dispatch Procedures

(1) ERCOT shall issue all Resource Dispatch Instructions to the QSE that represents the affected Resource. A QSE may provide a Resource Status of ONTEST for a Generation Resource not providing Ancillary Services to indicate that the Resource is currently undergoing unit testing and is blocked from SCED Dispatch. Generation Resources with a Resource Status of ONTEST will be provided a Base Point equal to the net real power telemetry at the time of the SCED execution. ERCOT may not issue Dispatch Instructions to the QSE for Generation Resources with a Resource Status of ONTEST except:

(a) For Dispatch Instructions that are a part of testing; or

(b) During conditions when the Resource is the only alternative for solving a transmission constraint; or

(c) During Force Majeure Events that threaten the reliability of the ERCOT System.

(2) Each QSE shall immediately forward any valid Dispatch Instruction to the appropriate Resource or group of Resources or identify a reason for non-compliance with the Dispatch Instruction to ERCOT in accordance with Section 6.5.7.9, Compliance with Dispatch Instructions.

(3) If ERCOT believes that a Resource has inadequately responded to a Dispatch Instruction, ERCOT shall notify the QSE representing the Resource as soon as practicable.

(4) The recipient of a Verbal Dispatch Instruction (VDI) shall confirm the Dispatch Instruction by providing the receiving operator’s identification and by repeating the VDI to ERCOT orally.

(5) The recipient of an electronic Dispatch Instruction shall acknowledge receipt of the Dispatch Instruction to ERCOT electronically, within one minute. The electronic acknowledgement must include the receiving operator’s identification.

(6) The recipient of any Dispatch Instruction shall immediately request clarification of the Dispatch Instruction if the recipient fails to understand its responsibility under the Dispatch Instruction.

(7) ERCOT shall record all voice conversations that occur in the communication of Dispatch Instructions.

(8) ERCOT shall record and file all electronic Dispatch Instructions and acknowledgements as soon as practicable after the issuance of the Dispatch Instruction.

(9) By mutual agreement of the TSP and ERCOT, Dispatch Instructions to the TSP may be provided to the TSP’s designated agent. In that case, issuance of the Dispatch Instruction to the designated agent is considered issuance to the TSP, and the TSP must comply with the Dispatch Instruction exactly as if it had been issued directly to the TSP, whether or not the designated agent accurately conveys the Dispatch Instruction to the TSP.

6.6.5 Generation Resource Base Point Deviation Charge

A QSE for a Generation Resource shall pay a Base Point Deviation Charge if the Resource did not follow Dispatch Instructions and Ancillary Services deployments within defined tolerances, except when the Dispatch Instructions and Ancillary Services deployments violate the Resource Parameters. The Base Point Deviation Charge does not apply to Generation Resources when AABP is less than the Resource’s average telemetered LSL or any time during the Settlement Interval when the telemetered Resource Status is set to “ONTEST.” The desired output from a Generation Resource during a 15-minute Settlement Interval is calculated as follows:

AABP = ((BP *y* + BP *y-1*)/2\* TLMP *y*) / (TLMP *y*) + TWAR

Where:

TWAR = ((ARI *y* \* TLMP *y*) / (TLMP *y*)

The above variables are defined as follows:

| Variable | Unit | Definition |
| --- | --- | --- |
| AABP | MW | *Adjusted Aggregated Base Point*—The Generation Resource’s aggregated Base Point adjusted for Ancillary Service deployments, for the 15-minute Settlement Interval. Where for a Combined Cycle Train, AABP is calculated for the Combined Cycle Train considering all SCED Dispatch Instructions to any Combined Cycle Generation Resources within the Combined Cycle Train. |
| BP *y* | MW | *Base Point by interval*—The Base Point for the Generation Resource at the Resource Node, for the SCED interval *y*. |
| TLMP *y* | second | *Duration of SCED interval per interval*—The duration of the portion of the SCED interval *y* within the 15-minute Settlement Interval. |
| TWAR | MW | *Time-Weighted Average Regulation*—The amount of regulation that the Generation Resource should have produced based on the deployment signals as calculated by the Load Frequency Control (LFC) within the 15-minute Settlement Interval. |
| ARI *y* | MW | *Average Regulation Instruction*—The amount of regulation that the Generation Resource should have produced based on the deployment signals as calculated by the LFC within the SCED interval. |
| *y* | none | A SCED interval in the Settlement Interval. The summation is over the total number of SCED runs that cover the 15-minute Settlement Interval. |

8.1.1.4.1 Regulation Service and Generation Resource/Controllable Load Resource Energy Deployment Performance

(1) ERCOT shall limit the deployment of Regulation Service of each QSE for each LFC cycle equal to 125% of the total amount of Regulation Service in the ERCOT System divided by the number of control cycles in five minutes.

(2) For those Resources that do not have a Resource Status of ONDSR or ONDSRREG, ERCOT shall compute the GREDP for each Generation Resource that is On-Line and released to Security-Constrained Economic Dispatch (SCED) Base Point Dispatch Instructions. The GREDP is calculated for each five-minute clock interval as a percentage and in MWs for those Resources with a Resource Status that is not ONDSR or ONDSRREG as follows:

**GREDP (%) = ABS[((ATG – AEPFR)/(ABP + ARI)) – 1.0]\*100**

**GREDP(MW) = ABS(ATG – AEPFR – ABP - ARI)**

Where:

ATG = Average Telemetered Generation = the average telemetered generation of the Generation Resource for the five-minute clock interval

ARI = Average Regulation Instruction = the amount of regulation that the Generation Resource should have produced based on the LFC deployment signals, calculated by LFC, during each five-minute clock interval

EPFR = Estimated Primary Frequency Response = if (│∆frequency│≥ frequency deviation deadband, (frequency bias \* ∆frequency)\*10,0)

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| [NPRR258: Replace the above paragraph with the following upon system implementation:]  ∆frequency is actual frequency minus 60 Hz  EPFR = Estimated Primary Frequency Response (MW) = if │∆frequency│≤ Governor Dead-Band then EPFR = zero, if not then if ∆frequency > zero, EPFR = (∆frequency - Governor Dead-Band)/((droop value \* 60) – Governor Dead-Band) \* HSL \* -1, if not then if ∆frequency < zero, EPFR = (∆frequency + Governor Dead-Band)/((droop value \* 60) – Governor Dead-Band) \* HSL \* -1 |

AEPFR = Average Estimated Primary Frequency Response = an Estimated Primary Frequency Response will be calculated every four seconds using a Resource specific frequency bias (MW/0.1 Hz) and Governor Dead-Band (Hz), both provided by the Resource Entity, and the frequency deviation (Hz) and averaged for the five-minute clock interval

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| [NPRR258: Replace the above paragraph with the following upon system implementation:]  AEPFR = Average Estimated Primary Frequency Response= The Estimated Primary Frequency Response (MW) will be calculated every four seconds using a Resource specific droop value where 5% droop = 0.05 the Governor Dead-Band (Hz) and Resource HSL (MW) provided by the Resource Entity, and the frequency deviation (Hz) from 60 Hz and averaged for the five-minute clock interval |

ABP = Average Base Point = the time-weighted average of a linearly ramped Base Point for the five-minute clock interval. The linearly ramped Base Point is calculated every four seconds such that it ramps from its initial value to the SCED Base Point over a five-minute period. The initial value of the linearly ramped Base Point will be the four second value of the previous linearly ramped Base Point at the time the new SCED Base Point is received into the ERCOT Energy Management System (EMS). In the event that the SCED Base Point is received after the five minute ramp period, the linearly ramped Base Point will continue at a constant value equal to the ending four second value of the five-minute ramp.

(3) For all of a QSE’s Resources that have a Resource Status of ONDSR or ONDSRREG (“DSR Portfolio”), ERCOT shall calculate an aggregate GREDP as a percentage and in MWs for those Resources as follows:

**GREDP (%) = ABS[(∑*DSR* ATG – ∑*DSR*DBPOS + Intra-QSE Purchase – Intra-QSE Sale – ARRDDSRLR – ANSDDSRLR – ∑*DSR* AEPFR) / (ATDSRL + ∑*DSR* ARI) – 1.0] \* 100**

**GREDP (MW) = ABS(∑*DSR*ATG – ∑*DSR* DBPOS – ATDSRL– ARRDDSRLR – ANSDDSRLR + Intra-QSE Purchase - Intra-QSE Sale – ∑*DSR* AEPFR - ∑*DSR*ARI)**

Where:

∑*DSR* ATG = Sum of Average Telemetered Generation for all Resources with a Resource Status of ONDSR or ONDSRREG of the QSE for the five-minute clock interval

∑*DSR*ARI = Sum of Average Regulation Instruction for all Resources with a Resource Status of ONDSR or ONDSRREG of the QSE for the five-minute clock interval

ATDSRL = Average Telemetered Dynamically Scheduled Resource (DSR) Load = the average telemetered DSR Load for the QSE for the five-minute clock interval

Intra-QSE Purchase = Energy Trade where the QSE is both the buyer and seller with the flag set to “Purchase”

Intra-QSE Sale = Energy Trade where the QSE is both the buyer and seller with the flag set to “Sale”

∑*DSR*AEPFR = Sum of Average Estimated Primary Frequency Response for all Resources with a Resource Status of ONDSR or ONDSRREG of the QSE for the five-minute clock interval

∑*DSR*DBPOS = Sum of the difference between a linearly ramped Base Point minus Output Schedule for all Resources with a Resource Status of ONDSR or ONDSRREG of the QSE for the five-minute clock interval. The linearly ramped Base Point is calculated every four seconds such that it ramps from its initial value to the SCED Base point over a five minute period

ARRDDSRLR = Average Responsive Reserve Deployment DSR Load Resource = the average RRS energy deployment for the five-minute clock interval from Load Resources that are part of the DSR Load

ANSDDSRLR = Average Non-Spin Deployment DSR Load Resource = the average Non-Spin energy deployment for the five-minute clock interval from Load Resources that are part of the DSR Load

(4) For Controllable Load Resources that have a Resource Status of ONRGL or ONRRCLR, ERCOT shall compute the CLREDP. The CLREDP will be calculated both as a percentage and in MWs as follows:

**CLREDP (%) = ABS[((ATPC + AEPFR)/(ASPC – ANSD – ARRD – ARI)) – 1.0]\*100**

**CLREDP (MW) = ABS(ATPC – (ASPC – AEPFR – ANSD – ARRD – ARI))**

Where:

ATPC = Average Telemetered Power Consumption = the average telemetered power consumption of the Controllable Load Resource for the five-minute clock interval

ARI = Average Regulation Instruction = the amount of regulation that the Controllable Load Resource should have produced based on the LFC deployment signals, calculated by LFC, during each five-minute clock interval. Reg-Up is considered a positive value for this calculation

AEPFR = Average Estimated Primary Frequency Response = an estimated Primary Frequency Response (MW) will be calculated every four seconds using a Resource specific frequency bias (MW/0.1 Hz) and Governor Dead-Band (Hz), both provided by the Resource Entity, and the frequency deviation (Hz) and averaged for the five-minute clock interval

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| [NPRR258: Replace the above paragraph with the following upon system implementation:]  AEPFR = Average Estimated Primary Frequency Response= The Estimated Primary Frequency Response (MW) will be calculated every four seconds using a Resource specific droop value where 5% droop = 0.05, the Governor Dead-Band (Hz) and Resource HSL (MW) provided by the Resource Entity, and the frequency deviation (Hz) from 60 Hz and averaged for the five-minute clock interval |

ASPC = Average Scheduled Power Consumption = the Scheduled Power Consumption that represents zero Ancillary Service deployments averaged for the five-minute clock interval

ANSD = Average Non-Spin Deployed = the average Non-Spin service deployment for the Controllable Load Resource averaged for the five-minute clock interval. The Non-Spin service deployment is calculated by subtracting the telemetered Resource Non-Spin schedule from the telemetered Resource Non-Spin responsibility

ARRD = Average Responsive Reserve Deployed = the average RRS deployment for the Controllable Load Resource averaged for the five-minute clock interval. The RRS deployment is calculated by subtracting the telemetered Resource RRS schedule from the telemetered Resource RRS responsibility

(5) ERCOT shall post to the MIS Certified Area for each QSE and for all Generation Resources that are not part of a DSR Portfolio, for the DSR Portfolios, and for all Controllable Load Resources:

(a) The percentage of the monthly five-minute clock intervals during which the Generation Resource was On-Line and released to SCED Base Point Dispatch Instructions;

(b) The percentage of the monthly five-minute clock intervals during which the Controllable Load Resource had a Resource Status of either ONRGL or ONRRCLR;

(c) The percentage of the monthly five-minute clock intervals during which the Generation Resource or Controllable Load Resource was providing Regulation Service;

(d) The percentage of the monthly five-minute clock intervals during which the Resource or the DSR Portfolio was released to SCED that the GREDP was less than 2.5% and the percentage of the monthly five-minute clock intervals during which the Resource or the DSR Portfolio was released to SCED that the GREDP was less than 2.5 MW;

(e) The percentage of the monthly five-minute clock intervals during which the Controllable Load Resource had a Resource Status of either ONRGL or ONRRCLR that the CLREDP was less than 2.5% and the percentage of the monthly five-minute clock intervals during which the Controllable Load Resource had a Resource Status of either ONRGL or ONRRCLR that the CLREDP was less than 2.5 MW;

(f) The percentage of the monthly five-minute clock intervals during which the Resource or the DSR Portfolio was released to SCED that the GREDP was equal to or greater than 2.5% and equal to or less than 5.0% and the percentage of the monthly five-minute clock intervals during which the Resource or the DSR Portfolio was released to SCED that the GREDP was equal to or greater than 2.5 MW and equal to or less than 5.0 MW;

(g) The percentage of the monthly five-minute clock intervals during which the Controllable Load Resource had a Resource Status of either ONRGL or ONRRCLR that the CLREDP was equal to or greater than 2.5% and equal to or less than 5.0% and the percentage of the monthly five-minute clock intervals during which the Controllable Load Resource had a Resource Status of either ONRGL or ONRRCLR that the CLREDP was equal to or greater than 2.5 MW and equal to or less than 5.0 MW;

(h) The percentage of the monthly five-minute clock intervals during which the Resource or the DSR Portfolio was released to SCED that the GREDP was greater than 5.0% and the percentage of the monthly five-minute clock intervals during which the Resource or the DSR Portfolio was released to SCED that the GREDP was greater than 5.0 MW;

(i) The percentage of the monthly five-minute clock intervals during which the Controllable Load Resource had a Resource Status of either ONRGL or ONRRCLR that the CLREDP was greater than 5.0% and the percentage of the monthly five-minute clock intervals during which the Controllable Load Resource had a Resource Status of either ONRGL or ONRRCLR that the CLREDP was greater than 5.0 MW;

(j) The percentage of the monthly five-minute clock intervals during which the Generation Resource or the DSR Portfolio was providing Regulation Service that the GREDP was less than 2.5% and the percentage of the monthly five-minute clock intervals during which the Generation Resource or the DSR Portfolio was providing Regulation Service that the GREDP was less than 2.5 MW;

(k) The percentage of the monthly five-minute clock intervals during which the Controllable Load Resource was providing Regulation Service that the CLREDP was less than 2.5% and the percentage of the monthly five-minute clock intervals during which the Controllable Load Resource was providing Regulation Service that the CLREDP was less than 2.5 MW;

(l) The percentage of the monthly five-minute clock intervals during which the Generation Resource or the DSR Portfolio was providing Regulation Service that the GREDP was equal to or greater than 2.5% and equal to or less than 5.0% and the percentage of the monthly five-minute clock intervals during which the Generation Resource or the DSR Portfolio was providing Regulation Service that the GREDP was equal to or greater than 2.5 MW and equal to or less than 5.0 MW;

(m) The percentage of the monthly five-minute clock intervals during which the Controllable Load Resource was providing Regulation Service that the CLREDP was equal to or greater than 2.5% and equal to or less than 5.0% and the percentage of the monthly five-minute clock intervals during which the Controllable Load Resource was providing Regulation Service that the CLREDP was equal to or greater than 2.5 MW and equal to or less than 5.0 MW;

(n) The percent of the monthly five-minute clock intervals during which the Generation Resource or the DSR Portfolio was providing Regulation Service that the GREDP was greater than 5.0% and the percentage of the monthly five-minute clock intervals during which the Generation Resource or the DSR Portfolio was providing Regulation Service that the GREDP was greater than 5.0 MW; and

(o) The percentage of the monthly five-minute clock intervals during which the Controllable Load Resource was providing Regulation Service that the CLREDP was greater than 5.0% and the percentage of the monthly five-minute clock intervals during which the Controllable Load Resource was providing Regulation Service that the CLREDP was greater than 5.0 MW.

(6) ERCOT shall calculate the GREDP/CLREDP under normal operating conditions. ERCOT shall not consider five-minute clock intervals during which any of the following events has occurred:

(a) The five-minute intervals within the 20-minute period following an event in which ERCOT has experienced a Forced Outage causing an ERCOT frequency deviation of greater than 0.05 Hz;

(b) Five-minute clock intervals in which ERCOT has issued Emergency Base Points to the QSE;

(c) The five-minute clock interval following the Forced Outage of any Resource within the QSE’s DSR Portfolio that has a Resource Status of ONDSR or ONDSRREG;

(d) The five-minute clock intervals following a documented Forced Derate or Startup Loading Failure of a Generation Resource. Upon request of the reliability monitor, the QSE shall provide the following documentation regarding each Forced Derate or Startup Loading Failure:

(i) Its generation log documenting the Forced Outage, Forced Derate or Startup Loading Failure;

(ii) QSE (COP) for the intervals prior to, and after the event; and

(iii) Equipment failure documentation which may include, but not be limited to, Generation Availability Data System (GADS) reports, plant operator logs, work orders, or other applicable information;

(e) The five-minute clock intervals where the telemetered Resouce Status is set to ONTEST such as intervals during Ancillary Service Qualification and Testing as outlined in Section 8.1.1.1, Ancillary Service Qualification and Testing, or the five-minute clock intervals during General Capacity Testing Requirements as outlined in Section 8.1.1.2, General Capacity Testing Requirements;

(f) The five-minute clock intervals where a Generation Resource’s ABP is below the average telemetered LSL; and

(g) Certain other periods of abnormal operations as determined by ERCOT in its sole discretion.

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| [NPRR256: Replace paragraph (6) above with the following upon system implementation:]  (6) ERCOT shall calculate the GREDP/CLREDP under normal operating conditions. ERCOT shall not consider five-minute clock intervals during which any of the following events has occurred:  (a) The five-minute intervals within the 20-minute period following an event in which ERCOT has experienced a Forced Outage causing an ERCOT frequency deviation of greater than 0.05 Hz;  (b) Five-minute clock intervals in which ERCOT has issued Emergency Base Points to the QSE;  (c) The five-minute clock intervals following the Forced Outage of any Resource within the QSE’s DSR Portfolio that has a Resource Status of ONDSR or ONDSRREG continuing until the start of the next Operating Hour for which the QSE is able to adjust. If the Forced Outage of the Resource occurs within ten minutes of the start of the next Operating Hour, then ERCOT shall not consider any of the five-minute intervals between the time of the Forced Outage and continuing until the start of the second Operating Hour for which the QSE is able to adjust;  (d) The five-minute clock intervals following a documented Forced Derate or Startup Loading Failure of a Generation Resource. Upon request of the reliability monitor, the QSE shall provide the following documentation regarding each Forced Derate or Startup Loading Failure:  (i) Its generation log documenting the Forced Outage, Forced Derate or Startup Loading Failure;  (ii) QSE (COP) for the intervals prior to, and after the event; and  (iii) Equipment failure documentation which may include, but not be limited to, Generation Availability Data System (GADS) reports, plant operator logs, work orders, or other applicable information;  (e) The five-minute clock intervals where the telemetered Resource Status is set to ONTEST such as intervals during Ancillary Service Qualification and Testing as outlined in Section 8.1.1.1, Ancillary Service Qualification and Testing, or the five-minute clock intervals during General Capacity Testing Requirements as outlined in Section 8.1.1.2, General Capacity Testing Requirements;  (f) The five-minute clock intervals where a Generation Resource’s ABP is below the average telemetered LSL; the telemetered Resource Status is set to “ONTEST”; and  (g) Certain other periods of abnormal operations as determined by ERCOT in its sole discretion. |

(7) All Generation Resources that are not part of a DSR Portfolio, excluding Intermittent Renewable Resources (IRRs), and all DSR Portfolios shall meet the following GREDP criteria for each month. ERCOT will report non-compliance of the following performance criteria to the reliability monitor:

A Generation Resource or DSR Portfolio, excluding an IRR, must have a GREDP less than the greater of X% or Y MW for 85% of the five-minute clock intervals in the month during which GREDP was calculated.

If at the end of the month during which GREDP was calculated a DSR Portfolio has a GREDP less than X% or Y MW for 85% of the five-minute clock intervals, the reliability monitor shall, at the request of the QSE with the DSR Portfolio, recalculate GREDP excluding the five-minute clock intervals following the Forced Outage of any Resource within the QSE’s DSR Portfolio that has a Resource Status of ONDSR or ONDSRREG continuing until the start of the next Operating Hour for which the QSE is able to adjust. If the Forced Outage of the Resource occurs within ten minutes of the start of the next Operating Hour, then the reliability monitor shall not consider any of the five-minute intervals between the time of the Forced Outage and continuing until the start of the second Operating Hour for which the QSE is able to adjust. The requesting QSE shall provide to the reliability monitor information validating the Forced Outage including the time of the occurrence of the Forced Outage and documentation of the last submitted COP status prior to the Forced Outage of the Resource for the intervals in dispute.

Additionally, all Generation Resource that are not part of a DSR Portfolio, excluding IRRs, and all DSR Portfolios will also be measured for performance specifically during intervals in which ERCOT has declared EEA Level 1 or greater. These Resources must meet the following GREDP criteria for the time window that includes all five-minute clock intervals during which EEA was declared. ERCOT will report non-compliance of the following Performance criteria to the reliability monitor:

A Generation Resource or DSR Portfolio, excluding an IRR, must have a GREDP less than the greater of X% or Y MW. A Generation Resource or DSR Portfolio cannot fail this criteria more than three five-minute clock intervals during which EEA was declared and GREDP was calculated. The performance will be measured separately for each instance in which ERCOT has declared EEA.

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| [NPRR256: Replace paragraph (7) above with the following upon system implementation:]  (7) All Generation Resources that are not part of a DSR Portfolio, excluding Intermittent Renewable Resources (IRRs), and all DSR Portfolios shall meet the following GREDP criteria for each month. ERCOT will report non-compliance of the following performance criteria to the reliability monitor:  A Generation Resource or DSR Portfolio, excluding an IRR, must have a GREDP less than the greater of X% or Y MW for 85% of the five-minute clock intervals in the month during which GREDP was calculated.  Additionally, all Generation Resource that are not part of a DSR Portfolio, excluding IRRs, and all DSR Portfolios will also be measured for performance specifically during intervals in which ERCOT has declared EEA Level 1 or greater. These Resources must meet the following GREDP criteria for the time window that includes all five-minute clock intervals during which EEA was declared. ERCOT will report non-compliance of the following Performance criteria to the reliability monitor:  A Generation Resource or DSR Portfolio, excluding an IRR, must have a GREDP less than the greater of X% or Y MW. A Generation Resource or DSR Portfolio cannot fail this criteria more than three five-minute clock intervals during which EEA was declared and GREDP was calculated. The performance will be measured separately for each instance in which ERCOT has declared EEA. |

(8) All IRRs shall meet the following GREDP criteria for each month. ERCOT will report non-compliance of the following performance criteria to the reliability monitor:

An IRR must have a GREDP less than Z% or the ATG must be less than the expected MW output for 95% of the five-minute clock intervals in the month when the Resource received a Base Point Dispatch Instruction in which the Base Point was two MW or more below the IRR’s HSL used by SCED. The expected MW output includes the Resource’s Base Point, Regulation Service instructions, and any expected Primary Frequency Response.

Additionally, all IRRs will also be measured for performance specifically during intervals in which ERCOT has declared EEA Level 1 or greater. These Resources must meet the following GREDP criteria for the time window that includes all five-minute clock intervals during which EEA was declared. ERCOT will report non-compliance of the following Performance criteria to the reliability monitor:

An IRR must have a GREDP less than Z% or the ATG must be less than the expected MW output. An IRR cannot fail this criteria more than three five-minute clock intervals during which EEA was declared and the Resource received a Base Point Dispatch Instruction in which the Base Point was two MW or more below the IRR’s HSL used by SCED. The performance will be measured separately for each instance in which ERCOT has declared EEA.

(9) All Controllable Load Resources shall meet the following CLREDP criteria each month. ERCOT will report non-compliance of the following performance criteria to the reliability monitor:

A Controllable Load Resource must have a CLREDP less than the greater of X% or Y MW for 85% of the five-minute clock intervals in the month during which CLREDP was calculated.

Additionally, all Controllable Load Resources will also be measured for performance specifically during intervals in which ERCOT has declared EEA Level 1 or greater. These Resources must meet the following CLREDP criteria for the time window that includes all five-minute clock intervals during which EEA was declared. ERCOT will report non-compliance of the following Performance criteria to the reliability monitor:

A Controllable Load Resource must have a CLREDP less than the greater of X% or Y MW. A Controllable Load Resource cannot fail this criteria more than three five-minute clock intervals during which EEA was declared and CLREDP was calculated. The performance will be measured separately for each instance in which ERCOT has declared EEA.

For Controllable Load Resources which are providing RRS or Non-Spin, the following intervals will be excluded from these calculations:

(a) Five-minute clock intervals which begin ten minutes or less after a deployment of RRS was deployed to the Resource;

(b) Five-minute clock intervals which begin ten minutes or less after a recall of RRS when the Resource was deployed for RRS;

(c) Five-minute clock intervals which begin 30 minutes or less after a deployment of Non-Spin was deployed to the Resource; and

(d) Five-minute clock intervals which begin 30 minutes or less after a recall of Non-Spin when the Resource was deployed for Non-Spin.

(10) The GREDP/CLREDP performance criteria in paragraphs (7) through (9) above shall be reviewed and set by the TAC two months before the Texas Nodal Market Implementation Date. The performance criteria will be subject to review by TAC beginning two months after the Texas Nodal Market Implementation Date and as deemed necessary. The GREDP/CLREDP performance criteria variables X, Y, and Z shall be posted to the MIS Public Area no later than three Business Days after TAC approval.

(11) If at the end of the month during which GREDP was calculated, a non-DSR Resource or a QSE with DSR Resources, has a GREDP less than X% or Y MW for 85% of the five-minute clock intervals, the reliability monitor shall, at the request of the QSE, recalculate GREDP excluding the five-minute clock intervals when a Resource is deployed above the unit’s ramp rate due to ramp rate sharing between energy and Regulation Service, as described in Section 6.5.7.2, Resource Limit Calculator. The requesting QSE shall provide to the reliability monitor information validating the ramp rate violation for the intervals in dispute.