|  |  |  |  |
| --- | --- | --- | --- |
| NPRR Number | [1091](http://www.ercot.com/mktrules/issues/nprr1091) | NPRR Title | Changes to Address Market Impacts of Additional Non-Spin Procurement |
| Date of Decision | | December 10, 2021 | |
| Action | | Recommended Approval | |
| Timeline | | Urgent – to ensure that the system changes necessary to implement Nodal Protocol Revision Request (NPRR) 1091 can be considered along with the system changes related to NPRR1093, Load Resource Participation in Non-Spinning Reserve, and NPRR1101, Create Non-Spin Deployment Groups made up of Generation Resources Providing Off-Line Non-Spinning Reserve and Load Resources that are Not Controllable Load Resources Providing Non-Spinning Reserve | |
| Proposed Effective Date | | Upon system implementation | |
| Priority and Rank Assigned | | Priority – 2022; Rank – 3195 | |
| Nodal Protocol Sections Requiring Revision | | 4.4.7.1, Self-Arranged Ancillary Service Quantities  6.4.4.1, Energy Offer Curve for On-Line Non-Spinning Reserve Capacity  6.5.7.3.1, Determination of Real-Time On-Line Reliability Deployment Price Adder  6.5.7.6.2.3, Non-Spinning Reserve Service Deployment | |
| Related Documents Requiring Revision/Related Revision Requests | | None | |
| Revision Description | | This NPRR makes two changes to address the energy price suppression and liquidity issues created by ERCOT’s urgent change to procure more Ancillary Service and deploying it early. Specifically, this NPRR:   * Extends the treatment of must-take energy from Reliability Unit Commitments (RUCs) in pricing run to Off-Line Non-Spinning Reserve (Non-Spin), when it is manually deployed, by setting the Low Sustained Limit (LSL), Low Ancillary Service Limit (LASL), and Low Dispatch Limit (LDL) of Off-Line Non-Spin Resources to zero in the pricing run; and * Increases the amount of Responsive Reserve (RRS) and Non-Spin that an Entity can self-arrange above its obligation. | |
| Reason for Revision | | Addresses current operational issues.  Meets Strategic goals (tied to the [ERCOT Strategic Plan](http://www.ercot.com/content/wcm/lists/144926/ERCOT_Strategic_Plan_2019-2023.pdf) or directed by the ERCOT Board).  Market efficiencies or enhancements  Administrative  Regulatory requirements  Other: (explain)  *(please select all that apply)* | |
| Business Case | | The recent urgent change in procuring additional Ancillary Services (sometimes up to three times current value) and Other Binding Document Revision Request (OBDRR) 031, Change Non-Spinning Reserve Service Deployment, change to deploy it early, could cause significant amount of price-taker energy to be pumped into the system which in turn could cause price reversal. To mitigate the price reversal impacts of this action needed to maintain reliability, the Off-Line Non-Spin should have an offer floor and the must-take 0-LDL energy from the out-of-market action should be allowed to set price in the pricing run when Off-Line Non-Spin is manually deployed.  Only Entities with Resources can offer Ancillary Services in the Day-Ahead Market (DAM). From bilateral trades done to hedge estimated obligation, Entities without Resources could have Ancillary Services in excess of their obligation because it is hard to exactly estimate the obligation. Since the amount of Non-Spin procured could change significantly between days now with the new change, increasing the flexibility to sell back extra hedges would increase liquidity in the market and help Entities procure/provide better hedges for these services without worrying about potential to forfeit additional quantities that they have procured. | |
| Credit Work Group Review | | ERCOT Credit Staff and the Credit Work Group (Credit WG) have reviewed NPRR1091 and do not believe that it requires changes to credit monitoring activity or the calculation of liability. | |
| PRS Decision | | On 9/16/21, PRS unanimously voted via roll call to table NPRR1091 and refer the issue to WMS. The Independent Retail Electric Provider (IREP) Market Segment did not participate in the vote.  On 11/10/21, PRS voted via roll call to grant NPRR1091 Urgent status; to recommend approval of NPRR1091 as amended by the 11/8/21 WMS comments; and to forward to TAC NPRR1091. There was one abstention from the Consumer (Occidental Chemical) Market Segment. All Market Segments participated in the vote. | |
| Summary of PRS Discussion | | On 9/16/21, the sponsor provided an overview of NPRR1091. Participants requested further discussion at WMS.  On 11/10/21, participants reviewed the 11/8/21 WMS comments and 11/9/21 Shell comments. | |
| TAC Decision | | On 11/29/21, TAC unanimously voted via roll call to recommend approval of NPRR1091 as recommended by PRS in the 11/10/21 PRS Report with a recommended priority of 2022 and rank of 3195. All Market Segments participated in the vote. | |
| Summary of TAC Discussion | | On 11/29/21, TAC reviewed the Business Case, ERCOT Opinion, and ERCOT Market Impact Statement for NPRR1091. | |
| ERCOT Opinion | | ERCOT supports approval of NPRR1091. | |
| ERCOT Market Impact Statement | | ERCOT Staff has reviewed NPRR1091 and believes the market impact for NPRR1091 addresses potential energy price suppression and liquidity issues related to recent changes in Non-Spin. | |
| ERCOT Board Decision | | On 12/10/21, the ERCOT Board recommended approval of NPRR1091 as recommended by TAC in the 11/29/21 TAC Report. | |

|  |  |
| --- | --- |
| Sponsor | |
| Name | Resmi Surendran |
| E-mail Address | [resmi.surendran@shell.com](mailto:resmi.surendran@shell.com) |
| Company | Shell Energy North America |
| Phone Number | 346-234-0691 |
| Cell Number | 512-289-7131 |
| Market Segment | Independent Power Marketer (IPM) |

|  |  |
| --- | --- |
| **Market Rules Staff Contact** | |
| **Name** | Cory Phillips |
| **E-Mail Address** | [Cory.phillips@ercot.com](mailto:Cory.phillips@ercot.com) |
| **Phone Number** | 512-248-6464 |

|  |  |
| --- | --- |
| **Comments Received** | |
| Comment Author | **Comment Summary** |
| WMS 101221 | Requested PRS continue to table NPRR1091 for further review by the Wholesale Market Working Group (WMWG) |
| WMS 110821 | Proposed edits to Sections 6.4.4.1 and 6.5.7.6.2.3 to remove the proposed $75/MWh offer floor for Off-Line Non-Spin |
| Shell 110921 | Endorsed the 11/8/21 WMS comments and requested PRS grant NPRR1091 Urgent status |

|  |
| --- |
| **Market Rules Notes** |

Please note the baseline Protocol language in the following section(s) has been updated to reflect the incorporation of the following NPRR(s) into the Protocols:

* NPRR1093, Load Resource Participation in Non-Spinning Reserve (incorporated 11/1/21)
  + Section 6.5.7.3.1
  + Section 6.5.7.6.2.3

Please note that the following NPRR(s) also propose revisions to the following section(s):

* NPRR1101, Create Non-Spin Deployment Groups made up of Generation Resources Providing Off-Line Non-Spinning Reserve and Load Resources that are Not Controllable Load Resources Providing Non-Spinning Reserve
  + Section 6.5.7.6.2.3

|  |
| --- |
| Proposed Protocol Language Revision |

**4.4.7.1 Self-Arranged Ancillary Service Quantities**

(1) For each Ancillary Service, a QSE may self-arrange all or a portion of the Ancillary Service Obligation allocated to it by ERCOT. QSEs may not self-arrange Regulation Service amounts that include Fast Responding Regulation Up Service (FRRS-Up) or Fast Responding Regulation Down Service (FRRS-Down) quantities. In addition, a QSE may self-arrange up to 150 MW of Responsive Reserve (RRS), 25 MW of Regulation Up Service (Reg-Up), 25 MW of Regulation Down Service (Reg-Down), and 300 MW of Non-Spinning Reserve (Non-Spin) in excess of its corresponding Ancillary Service Obligation, provided that the amount self-arranged from the QSE’s Resources for a given Ancillary Service shall not exceed the amount of the QSE’s Ancillary Services Obligation for that Ancillary Service. If a QSE elects to self-arrange Ancillary Service capacity, then ERCOT shall not pay the QSE for the Self-Arranged Ancillary Service Quantities for the portion that meets its Ancillary Service Obligation. Any Self-Arranged Ancillary Service Quantities in excess of a QSE’s Ancillary Service Obligation will be considered to be offered in the DAM or Supplemental Ancillary Service Market (SASM), as applicable, for $0/MWh.

|  |
| --- |
| ***[NPRR863 and NPRR1008: Replace applicable portions of paragraph (1) above with the following upon system implementation or upon system implementation of the Real-Time Co-Optimization project, respectively:]***  (1) For each Ancillary Service, a QSE may self-arrange all or a portion of the advisory Ancillary Service Obligation allocated to it by ERCOT, subject to the QSE’s share of system-wide limits as established by Section 3.16, Standards for Determining Ancillary Service Quantities. If a QSE elects to self-arrange Ancillary Service capacity, then ERCOT shall not pay the QSE for the Self-Arranged Ancillary Service Quantities for the portion that meets its final Ancillary Service Obligation; ERCOT shall pay the QSE the respective Day-Ahead Ancillary Service price for any Self-Arranged Ancillary Service Quantities that exceed a QSE’s final Ancillary Service Obligation. |

(2) The QSE must indicate before 1000 in the Day-Ahead the Self-Arranged Ancillary Service Quantities, by service, so ERCOT can determine how much Ancillary Service capacity, by service, needs to be obtained through the DAM.

|  |
| --- |
| ***[NPRR1008: Replace paragraph (2) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]***  (2) The QSE must indicate before 1000 in the Day-Ahead the Self-Arranged Ancillary Service Quantities, by service, so ERCOT can determine how much Ancillary Service capacity, by service, remains to be obtained based on DAM offers and associated Ancillary Service Demand Curves (ASDCs). |

(3) At or after 1000 in the Day-Ahead, a QSE may not change its Self-Arranged Ancillary Service Quantities unless ERCOT opens a SASM.

|  |
| --- |
| ***[NPRR1008: Replace paragraph (3) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]***  (3) At or after 1000 in the Day-Ahead, a QSE may not change its Self-Arranged Ancillary Service Quantities. |

(4) Before 1430 in the Day-Ahead, all Self-Arranged Ancillary Service Quantities must be represented by physical capacity, either by Generation Resources or Load Resources, or backed by Ancillary Service Trades.

(5) The QSE may self-arrange Reg-Up, Reg-Down, RRS, and Non-Spin.

|  |
| --- |
| ***[NPRR863: Replace paragraph (5) above with the following upon system implementation:]***  (5) The QSE may self-arrange Reg-Up, Reg-Down, ECRS, RRS, and Non-Spin. |

(6) The QSE may self-arrange Ancillary Services from one or more Resources it represents and/or through an Ancillary Service Trade.

(7) The additional Self-Arranged Ancillary Service Quantity specified by the QSE in response to a SASM notice by ERCOT to obtain additional Ancillary Services in the Adjustment Period cannot be more than 100 MWs of RRS, 25 MWs of Reg-Up, 25 MWs of Reg-Down, and 100 MWs of Non-Spin greater than the additional Ancillary Service amount allocated by ERCOT to that QSE, as stated in the SASM notice, and cannot be changed once committed to ERCOT.

|  |
| --- |
| ***[NPRR863: Replace paragraph (7) above with the following upon system implementation:]***  (7) The additional Self-Arranged Ancillary Service Quantity specified by the QSE in response to a SASM notice by ERCOT to obtain additional Ancillary Services in the Adjustment Period cannot be more than 100 MW of ECRS, 100 MW of RRS, 25 MW of Reg-Up, 25 MW of Reg-Down, and 50 MW of Non-Spin greater than the additional Ancillary Service amount allocated by ERCOT to that QSE, as stated in the SASM notice, and cannot be changed once committed to ERCOT. |

(8) If a QSE does not self-arrange all of its Ancillary Service Obligation, ERCOT shall procure the remaining amount of that QSE’s Ancillary Service Obligation.

|  |
| --- |
| ***[NPRR1008: Replace paragraphs (7) and (8) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project and renumber accordingly:]***  (7) A QSE shall not submit Ancillary Services trades that result in the QSE’s purchased quantities of Ancillary Services exceeding the QSE’s Self-Arranged Ancillary Service Quantities.  (a) At 1430 in the Day-Ahead, ERCOT shall post a report on the MIS Certified Area to notify the QSE if there is an overage in the QSE’s purchased quantities of Ancillary Services in violation of the above limitation.  (b) If the QSE has such an overage as of the end of the Adjustment Period, that QSE will be charged for any quantity that exceeds their Self-Arranged Ancillary Service Quantities per Section 6.7.5.1, Real-Time Ancillary Service Imbalance Payment or Charge. |

(9) For self-arranged RRS Service, the QSE shall indicate the quantity of the service that is provided from:

(a) Generation Resources;

(b) Controllable Load Resources; and

(c) Fast Frequency Response (FFR) Resources and/or Load Resources controlled by high-set under-frequency relays.

|  |
| --- |
| ***[NPRR863 and NPRR1015: Replace applicable portions of paragraph (9) above with the following upon system implementation:]***  (9) For self-arranged RRS, the QSE shall indicate the quantity of the service that is provided from:  (a) Resources providing Primary Frequency Response;  (b) Load Resources controlled by high-set under-frequency relays; and  (c) Fast Frequency Response (FFR) Resources.  (10) For self-arranged ECRS, the QSE shall indicate the quantity of the service that is provided from Resources that are manually dispatched and those that are SCED-dispatchable. |

**6.4.4.1 Energy Offer Curve for On Line Non-Spinning Reserve Capacity**

(1) The following applies to Generation Resources that a QSE assigns Non-Spinning Reserve (Non-Spin) Ancillary Service Resource Responsibility in its COP to meet the QSE’s Ancillary Service Supply Responsibility for Non-Spin and applies to On Line Non-Spin assignments arising as the result of Day-Ahead Market (DAM) or Supplemental Ancillary Services Market (SASM) Ancillary Service awards, or Self-Arranged Ancillary Service Quantity.

(a) Prior to the end of the Adjustment Period for an Operating Hour during which a Generation Resource is assigned On Line Non-Spin Ancillary Service Resource Responsibility, the QSE shall ensure that a valid Output Schedule or Energy Offer Curve for the Operating Hour has been submitted and accepted by ERCOT. The Energy Offer Curves submitted by the QSE for the capacity assigned to Non-Spin may not be offered at less than $75 per MWh.

(b) If the QSE also assigns Responsive Reserve (RRS) and/or Regulation Up Service (Reg-Up) to a Generation Resource that has been assigned Non-Spin, the QSE shall ensure that a valid Output Schedule or Energy Offer Curve for the Operating Hour has been submitted and accepted by ERCOT. The Energy Offer Curves submitted by the QSE for the capacity assigned to the sum of the RRS, Reg-Up, and Non-Spin Ancillary Service Resource Responsibilities, as well as any Non-Frequency Responsive Capacity (NFRC) that is above the Resource’s High Ancillary Service Limit (HASL) and will not be utilized prior to deployment of a Resource’s On-Line Non-Spin, may not be offered at less than $75 per MWh.

|  |
| --- |
| ***[NPRR1010: Delete Section 6.4.4.1 above upon system implementation of the Real-Time Co-Optimization (RTC) project.]*** |

**6.5.7.3.1Determination of Real-Time On-Line Reliability Deployment Price Adder**

(1) The following categories of reliability deployments are considered in the determination of the Real-Time On-Line Reliability Deployment Price Adder:

(a) RUC-committed Resources, except for those whose QSEs have opted out of RUC Settlement in accordance with paragraph (12) of Section 5.5.2, Reliability Unit Commitment (RUC) Process;

(b) RMR Resources that are On-Line, including capacity secured to prevent an Emergency Condition pursuant to paragraph (2) of Section 6.5.1.1, ERCOT Control Area Authority;

(c) Deployed Load Resources other than Controllable Load Resources;

(d) Deployed Emergency Response Service (ERS);

(e) Real-Time DC Tie imports during an EEA where the total adjustment shall not exceed 1,250 MW in a single interval;

(f) Real-Time DC Tie exports to address emergency conditions in the receiving electric grid;

(g) Energy delivered to ERCOT through registered Block Load Transfers (BLTs) during an EEA;

(h) Energy delivered from ERCOT to another power pool through registered BLTs during emergency conditions in the receiving electric grid;

(i) ERCOT-directed firm Load shed during EEA Level 3, as described in paragraph (3) of Section 6.5.9.4.2, EEA Levels; and

(j) ERCOT-directed deployment of Off-Line Non-Spin.

(2) The Real-Time On-Line Reliability Deployment Price Adder is an estimation of the impact to energy prices due to the above categories of reliability deployments. For intervals where there are reliability deployments as described in paragraph (1) above, after the two-step SCED process and also after the Real-Time On-Line Reserve Price Adder and Real-Time Off-Line Reserve Price Adder have been determined, the Real-Time On-Line Reliability Deployment Price Adder is determined as follows:

(a) For Off-Line Non-Spin Resources that are brought On-Line by ERCOT deployment instruction, RUC-committed Resources with a telemetered Resource Status of ONRUC and for RMR Resources that are On-Line, set the LSL, LASL, and LDL to zero.

(b) Notwithstanding item (a) above, for RUC-committed Combined Cycle Generation Resources with a telemetered Resource Status of ONRUC that were instructed by ERCOT to transition to a different configuration to provide additional capacity, set the LSL, LASL, and LDL equal to the minimum of their current value and the COP HSL of the QSE-committed configuration for the RUC hour at the snapshot time of the RUC instruction.

(c) For all other Generation Resources excluding ones with a telemetered status of ONRUC, ONTEST, STARTUP, SHUTDOWN, and also excluding RMR Resources that are On-Line and excluding Generation Resources with a telemetered output less than 95% of LSL:

(i) Set LDL to the greater of Aggregated Resource Output - (60 minutes \* SCED Down Ramp Rate), or LASL; and

(ii) Set HDL to the lesser of Aggregated Resource Output + (60 minutes\*SCED Up Ramp Rate), or HASL.

(d) For all Controllable Load Resources excluding ones with a telemetered status of OUTL:

(i) Set LDL to the greater of Aggregated Resource Output - (60 minutes \* SCED Up Ramp Rate), or LASL; and

(ii) Set HDL to the lesser of Aggregated Resource Output + (60 minutes\*SCED Down Ramp Rate), or HASL.

(e) Add the deployed MW from Load Resources other than Controllable Load Resources to GTBD linearly ramped over the ten-minute ramp period. The amount of deployed MW is calculated from the Resource telemetry and from applicable deployment instructions in Extensible Markup Language (XML) messages. ERCOT shall generate a linear bid curve defined by a price/quantity pair of $300/MWh for the first MW of Load Resources deployed and a price/quantity pair of $700/MWh for the last MW of Load Resources deployed in each SCED execution. After recall instruction, the amount of MW added to GTBD during the restoration period will be determined by validated telemetry. The TAC shall review the validity of the prices for the bid curve at least annually.

(f) Add the deployed MW from ERS to GTBD. The amount of deployed MW is determined from the XML messages and ERS contracted capacities for the ERS Time Periods when ERS is deployed. After recall, an approximation of the amount of un-restored ERS shall be used. After ERCOT recalls each group, GTBD shall be adjusted to reflect restoration on a linear curve over the assumed restoration period (“RHours”).

The above parameter is defined as follows:

| **Parameter** | **Unit** | **Current Value\*** |
| --- | --- | --- |
| RHours | Hours | 4.5 |
| \* Changes to the current value of the parameter(s) referenced in this table above may be recommended by TAC and approved by the ERCOT Board. ERCOT shall update parameter values on the first day of the month following ERCOT Board approval unless otherwise directed by the ERCOT Board. ERCOT shall provide a Market Notice prior to implementation of a revised parameter value. | | |

(g) Add the MW from Real-Time DC Tie imports during an EEA to GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the ERCOT Operator.

(h) Subtract the MW from Real-Time DC Tie exports to address emergency conditions in the receiving electric grid from GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the receiving grid operator.

(i) Add the MW from energy delivered to ERCOT through registered BLTs during an EEA to GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the ERCOT Operator.

(j) Subtract the MW from energy delivered from ERCOT to another power pool through registered BLTs during emergency conditions in the receiving electric grid from GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the receiving grid operator.

(k) Perform a SCED with changes to the inputs in items (a) through (j) above, considering only Competitive Constraints and the non-mitigated Energy Offer Curves.

(l) Perform mitigation on the submitted Energy Offer Curves using the LMPs from the previous step as the reference LMP.

(m) Perform a SCED with the changes to the inputs in items (a) through (j) above, considering both Competitive and Non-Competitive Constraints and the mitigated Energy offer Curves.

(n) Determine the positive difference between the System Lambda from item (m) above and the System Lambda of the second step in the two-step SCED process described in paragraph (10)(b) of Section 6.5.7.3, Security Constrained Economic Dispatch.

(o) Determine the amount given by the Value of Lost Load (VOLL) minus the sum of the System Lambda of the second step in the two step SCED process described in paragraph (10)(b) of Section 6.5.7.3 and the Real-Time On-Line Reserve Price Adder.

(p) The Real-Time On-Line Reliability Deployment Price Adder is the minimum of items (n) and (o) above except when ERCOT is directing firm Load shed during EEA Level 3. When ERCOT is directing firm Load shed during EEA Level 3 to either maintain sufficient PRC or stabilize grid frequency, as described in paragraph (3) of Section 6.5.9.4.2, the Real-Time On-Line Reliability Deployment Price Adder is the VOLL minus the sum of the System Lambda of the second step in the two-step SCED process described in paragraph (10)(b) of Section 6.5.7.3 and the Real-Time On-Line Reserve Price Adder. Once ERCOT is no longer directing firm Load shed, as described above, the Real-Time On-Line Reliability Deployment Price Adder will again be set as the minimum of items (n) and (o) above.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| ***[NPRR904, NPRR1006, NPRR1010, NPRR1014, and NPRR1093: Replace applicable portions of Section 6.5.7.3.1 above with the following upon system implementation for NPRR904, NPRR1006, NPRR1014, or NPRR1093; or upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1010:]***  **6.5.7.3.1Determination of Real-Time Reliability Deployment Price Adder**  (1) The following categories of reliability deployments are considered in the determination of the Real-Time Reliability Deployment Price Adder for Energy, and the Real-Time Reliability Deployment Price Adders for Ancillary Services:  (a) RUC-committed Resources, except for those whose QSEs have opted out of RUC Settlement in accordance with paragraph (12) of Section 5.5.2, Reliability Unit Commitment (RUC) Process;  (b) RMR Resources that are On-Line, including capacity secured to prevent an Emergency Condition pursuant to paragraph (2) of Section 6.5.1.1, ERCOT Control Area Authority;  (c) Deployed Load Resources other than Controllable Load Resources;  (d) Deployed Emergency Response Service (ERS);  (e) ERCOT-directed DC Tie imports during an EEA or transmission emergency where the total adjustment shall not exceed 1,250 MW in a single interval;  (f) ERCOT-directed curtailment of DC Tie imports below the higher of DC Tie advisory import limit as of 0600 in the Day-Ahead or subsequent advisory import limit to address local transmission system limitations where the total adjustment shall not exceed 1,250 MW in a single interval;  (g) ERCOT-directed curtailment of DC Tie imports below the higher of DC Tie advisory import limit as of 0600 in the Day-Ahead or subsequent advisory import limit due to an emergency action by a neighboring system operator during an emergency that is accommodated by ERCOT where the total adjustment shall not exceed 1,250 MW in a single interval;  (h) ERCOT-directed DC Tie exports to address emergency conditions in the receiving electric grid where the total adjustment shall not exceed 1,250 MW in a single interval;  (i) ERCOT-directed curtailment of DC Tie exports below the DC Tie advisory export limit as of 0600 in the Day-Ahead or subsequent advisory export limit during EEA, a transmission emergency, or to address local transmission system limitations where the total adjustment shall not exceed 1,250 MW in a single interval;  (j) Energy delivered to ERCOT through registered Block Load Transfers (BLTs) during an EEA;  (k) Energy delivered from ERCOT to another power pool through registered BLTs during emergency conditions in the receiving electric grid;  (l) ERCOT-directed deployment of Transmission and/or Distribution Service Provider (TDSP) standard offer Load management programs; and  (m) ERCOT-directed deployment of Off-Line Non-Spin.  (2) The Real-Time Reliability Deployment Price Adder for Energy, and Real-Time Reliability Deployment Price Adders for Ancillary Services are estimations of the impact to energy prices and Real-Time MCPCs due to the above categories of reliability deployments. For intervals where there are reliability deployments as described in paragraph (1) above, the Real-Time Reliability Deployment Price Adder for Energy and Real-Time Reliability Deployment Price Adders for Ancillary Services are determined as follows:  (a) For Off-Line Non-Spin Resources that are brought On-Line by ERCOT deployment instruction, RUC-committed Resources with a telemetered Resource Status of ONRUC and for RMR Resources that are On-Line:  (i) Set the LSL and LDL to zero;  (ii) Remove all Ancillary Service Offers; and  (iii) For the first step of SCED, administratively set the Energy Offer Curve for the Resource at a value equal to the power balance penalty price for all capacity between 0 MW and the HSL of the Resource.  (b) Notwithstanding item (a) above, for RUC-committed Combined Cycle Generation Resources with a telemetered Resource Status of ONRUC that were instructed by ERCOT to transition to a different configuration to provide additional capacity:  (i) Set the LSL and LDL equal to the minimum of their current value and the COP HSL of the QSE-committed configuration for the RUC hour at the snapshot time of the RUC instruction;  (ii) Set the maximum Ancillary Service capabilities of the Resource equal to the minimum of their current value and COP Ancillary Service capabilities of the QSE-committed configuration for the RUC hour at the snapshot time of the RUC instruction; and  (iii) For the first step of SCED, administratively set the Energy Offer Curve for the Resource at a value equal to the power balance penalty price for the additional capacity of the Resource, defined as the positive difference between the Resource’s current telemetered HSL and the COP HSL of the QSE-committed configuration for the RUC hour at the snapshot time of the RUC instruction.  (c) For all other Generation Resources excluding ones with a telemetered status of ONRUC, ONTEST, STARTUP, SHUTDOWN, and also excluding RMR Resources that are On-Line and excluding Generation Resources with a telemetered output less than 95% of LSL:  (i) If the Generation Resource SCED Base Point is not at LDL, set LDL to the greater of Aggregated Resource Output - (60 minutes \* Normal Ramp Rate down), or LSL; and  (ii) If the Generation Resource SCED Base Point is not at HDL, set HDL to the lesser of Aggregated Resource Output + (60 minutes \* Normal Ramp Rate up), or HSL.  (d) For all On-Line ESRs:  (i) If the ESR SCED Base Point is not at LDL, set LDL to the greater of Aggregated Resource Output - (60 minutes \* Normal Ramp Rate down), or LSL; and  (ii) If the ESR SCED Base Point is not at HDL, set HDL to the lesser of Aggregated Resource Output + (60 minutes \* Normal Ramp Rate up), or HSL.  (e) For all Controllable Load Resources excluding ones with a telemetered status of OUTL:  (i) If the Controllable Load Resource SCED Base Point is not at LDL, set LDL to the greater of Aggregated Resource Output - (60 minutes \* Normal Ramp Rate down), or LSL; and  (ii) If the Controllable Load Resource SCED Base Point is not at HDL, set HDL to the lesser of Aggregated Resource Output + (60 minutes \* Normal Ramp Rate up), or HSL.  (f) Add the deployed MW from Load Resources that are not Controllable Load Resources and that are providing RRS to GTBD linearly ramped over the ten-minute ramp period and add the deployed MW from Load Resources that are not Controllable Load Resources providing Non-Spin to GTBD linearly ramped over the 30-minute ramp period. The amount of deployed MW is calculated from the Resource telemetry and from applicable deployment instructions in Extensible Markup Language (XML) messages. ERCOT shall generate a linear bid curve defined by a price/quantity pair of $300/MWh for the first MW of Load Resources deployed and a price/quantity pair of $700/MWh for the last MW of Load Resources deployed in each SCED execution. After recall instruction, the restoration period length and amount of MW added to GTBD during the restoration period will be determined by validated telemetry and the type of Ancillary Service deployed from the Resource. The TAC shall review the validity of the prices for the bid curve at least annually.  (g) Add the deployed MW from ERS to GTBD. The amount of deployed MW is determined from the XML messages and ERS contracted capacities for the ERS Time Periods when ERS is deployed. After recall, an approximation of the amount of un-restored ERS shall be used. After ERCOT recalls each group, GTBD shall be adjusted to reflect restoration on a linear curve over the assumed restoration period (“RHours”).  The above parameter is defined as follows:   | **Parameter** | **Unit** | **Current Value\*** | | --- | --- | --- | | RHours | Hours | 4.5 | | \* Changes to the current value of the parameter(s) referenced in this table above may be recommended by TAC and approved by the ERCOT Board. ERCOT shall update parameter values on the first day of the month following ERCOT Board approval unless otherwise directed by the ERCOT Board. ERCOT shall provide a Market Notice prior to implementation of a revised parameter value. | | |   (h) Add the MW from DC Tie imports during an EEA or transmission emergency, to address local transmission system limitations, or due to an emergency action by a neighboring system operator during an emergency that is accommodated by ERCOT to GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the ERCOT Operator.  (i) Add the MW from DC Tie export curtailments during an EEA or transmission emergency, to address local transmission system limitations, or due to an emergency action by a neighboring system operator during an emergency that is accommodated by ERCOT to GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the ERCOT Operator. The MW added to GTBD associated with any individual DC Tie shall not exceed the higher of DC Tie advisory limit for exports on that tie as of 0600 in the Day-Ahead or subsequent advisory export limit minus the aggregate export on the DC Tie that remained scheduled following the Dispatch Instruction from the ERCOT Operator.  (j) Subtract the MW from DC Tie exports to address emergency conditions in the receiving electric grid from GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the receiving grid operator.  (k) Subtract the MW from DC Tie import curtailments to address local transmission system limitations or emergency conditions in the receiving electric grid from GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the receiving grid operator. The MW subtracted from GTBD associated with any individual DC Tie shall not exceed the higher of DC Tie advisory limit for imports on that tie as of 0600 in the Day-Ahead or subsequent advisory import limit minus the aggregate import on the DC Tie that remained scheduled following the Dispatch Instruction from the ERCOT Operator.  (l) Add the MW from energy delivered to ERCOT through registered BLTs during an EEA to GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the ERCOT Operator.  (m) Subtract the MW from energy delivered from ERCOT to another power pool through registered BLTs during emergency conditions in the receiving electric grid from GTBD. The amount of MW is determined from the Dispatch Instruction and should continue over the duration of time specified by the receiving grid operator.  (n) Add the deployed MWs from TDSP standard offer Load management programs to GTBD, if ERCOT instructs TDSPs to deploy their standard offer Load management programs. The amount of deployed MW is the value ERCOT provided for all TDSP standard offer Load management programs in the most current May Report on Capacity, Demand and Reserves in the ERCOT Region, unless modified as specified in this paragraph. If ERCOT is informed that all or a portion of a TDSP’s standard offer Load management program has been fully exhausted, or has been expanded as the result of a Public Utility Commission of Texas (PUCT) proceeding, ERCOT will remove the associated MW value of any exhausted capacity from the amount of deployed MW or, in the case of an expansion, ERCOT will request an updated MW value from the relevant TDSPs to use in place of the May Report on Capacity, Demand and Reserves in the ERCOT Region value for that year. The initial value ERCOT will use for deployed MW under this paragraph for each calendar year, as well as any subsequent changes to this value, will be communicated to Market Participants in a Market Notice. After recall, an approximation of the amount of un-restored TDSP standard offer Load management programs shall be used. GTBD shall be adjusted to reflect restoration on a linear curve over the assumed restoration period (“RHours”) defined by item (g) above.  (o) Perform a SCED with changes to the inputs in items (a) through (m) above, considering only Competitive Constraints and the non-mitigated Energy Offer Curves.  (p) Perform mitigation on the submitted Energy Offer Curves using the LMPs from the previous step as the reference LMP.  (q) Perform a SCED with the changes to the inputs in items (a) through (m) above, considering both Competitive and Non-Competitive Constraints and the mitigated Energy offer Curves.  (r) The Real-Time Reliability Deployment Price Adder for Energy is equal to the positive difference between the System Lambda from item (q) above and the System Lambda of the second step in the two-step SCED process described in paragraph (10)(b) of Section 6.5.7.3, Security Constrained Economic Dispatch.  (s) For each individual Ancillary Service, the Real-Time Reliability Deployment Price Adder for Ancillary Service is equal to the positive difference between the MCPC for that Ancillary Service from item (q) above and the MCPC for that Ancillary Service. |

**6.5.7.6.2.3 Non-Spinning Reserve Service Deployment**

(1) ERCOT shall deploy Non-Spin Service by operator Dispatch Instruction for the portion of On-Line Generation Resources that is only available through power augmentation and participating as Off-Line Non-Spin, Off-Line Generation Resources and Load Resources. ERCOT shall develop a procedure approved by TAC to deploy Resources providing Non-Spin Service. ERCOT Operators shall implement the deployment procedure when a specified threshold(s) in MW of capability available to SCED to increase generation is reached. ERCOT Operators may implement the deployment procedure to recover deployed RRS or when other Emergency Conditions exist. The deployment of Non-Spin must always be 100% of that scheduled on an individual Resource.

(2) Once Non-Spin capacity from Off-Line Generation Resources providing Non-Spin is deployed and the Generation Resources are On-Line, ERCOT shall use SCED to determine the amount of energy to be dispatched from those Resources.

(3) Off-Line Generation Resources providing Non-Spin (OFFNS Resource Status) are required to provide an Energy Offer Curve for use by SCED.

(4) Controllable Load Resources providing Non-Spin shall have an RTM Energy Bid for SCED and shall be capable of being Dispatched to its Non-Spin Ancillary Service Resource Responsibility within 30 minutes of a deployment instruction for capacity, using the Resource’s Normal Ramp Rate curve. An Aggregate Load Resource must comply with all requirements in the document titled “Requirements for Aggregate Load Resource Participation in the ERCOT Markets.”

|  |
| --- |
| ***[NPRR1093: Replace paragraph (4) above with the following upon system implementation:]***  (4) Non-Spin can be provided by Controllable Load Resources that are SCED qualified or by Load Resources that are not Controllable Load Resources but do not have an under-frequency relay or the under-frequency relay is not armed.  (a) Controllable Load Resources providing Non-Spin shall have an RTM Energy Bid for SCED and shall be capable of being Dispatched to its Non-Spin Ancillary Service Resource Responsibility within 30 minutes of a deployment instruction for capacity, using the Resource’s Normal Ramp Rate curve. An Aggregate Load Resource must comply with all requirements in the document titled “Requirements for Aggregate Load Resource Participation in the ERCOT Markets.”  (b) Load Resources that are not Controllable Load Resources shall be capable of being Dispatched to its Non-Spin Ancillary Service Resource Responsibility within 30 minutes of a deployment instruction for capacity. Following a deployment instruction, the QSE shall reduce the Non-Spin Ancillary Service Schedule by the amount of the deployment.  (c) ERCOT shall post a list of Load Resources that are not Controllable Load Resources on the MIS Certified Area immediately following the DRUC for each QSE with a Load Resource Non-Spin award. The list will be broken into groups of approximately 500 MW increments. ERCOT shall develop a process for determining which individual Load Resource to place in each group based on a random sampling of individual Load Resources. At ERCOT’s discretion, ERCOT may deploy all groups of Load Resources that are not Controllable Load Resources providing Non-Spin as specified in the Other Binding Document titled “Non-Spinning Reserve Deployment and Recall Procedure.” |

(5) Subject to the exceptions described in paragraphs (a) and (b) below, On-Line Generation Resources that are assigned Non-Spin Ancillary Service Resource Responsibility during an Operating Hour shall always be deployed in that Operating Hour. This deployment shall be considered as a standing Protocol-directed Non-Spin deployment Dispatch Instruction. Within the 30-second window prior to the top-of-hour clock interval described in paragraph (2) of Section 6.3.2, Activities for Real-Time Operations, the QSE shall respond to the standing Non-Spin deployment Dispatch Instruction for those Generation Resources assigned Non-Spin Ancillary Service Resource Responsibility effective at the top-of-hour by adjusting the Non-Spin Ancillary Service Schedule telemetry. The QSE shall set the Non-Spin Ancillary Service Schedule telemetry equal to the portion of Non-Spin being provided from power augmentation if the portion being provided from power augmentation is participating as Off-Line Non-Spin, otherwise it shall be set to 0. As described in Section 6.5.7.2, Resource Limit Calculator, ERCOT shall adjust the HASL and LASL based on the QSE’s telemetered Non-Spin Ancillary Service Schedule to account for such deployment and to make the energy from the full amount of the Non-Spin Ancillary Service Resource Responsibility available to SCED. A Non-Spin deployment Dispatch Instruction from ERCOT is not required and these Generation Resources must be able to Dispatch their Non-Spin Ancillary Service Resource Responsibility in response to a SCED Base Point deployment instruction. The provisions of this paragraph (5) do not apply to:

(a) QSGRs assigned Off-Line Non-Spin Ancillary Service Resource Responsibility and provided to SCED for deployment, which must follow the provisions of Section 3.8.3, Quick Start Generation Resources; or

(b) The portion of On-Line Generation Resources that is only available through power augmentation if participating as Off-Line Non-Spin.

(6) Off-Line Generation Resources providing Non-Spin, while Off-Line and before the receipt of any deployment instruction, shall be capable of being dispatched to their Non-Spin Resource Responsibility within 30 minutes of a deployment instruction. Following a deployment instruction, the QSE shall reduce the Non-Spin Ancillary Service Schedule by the amount of the deployment. An Off-Line Generation Resource providing Non-Spin must also be brought On-Line with an Energy Offer Curve at an output level greater than or equal to P1 multiplied by LSL where P1 is defined in the “ERCOT and QSE Operations Business Practices During the Operating Hour.” These actions must be done within a time frame that would allow SCED to fully dispatch the Resource’s Non-Spin Resource Responsibility within the 30 minute period using the Resource’s Normal Ramp Rate curve. The Resource Status indicating that a Generation Resource has come On-Line with an Energy Offer Curve is ON as described in paragraph (5)(b)(i) of Section 3.9.1, Current Operating Plan (COP) Criteria.

(7) For DSRs providing Non-Spin, on deployment of Non-Spin, the DSR’s QSE shall adjust its Resource Output Schedule to reflect the amount of deployment. For non-DSRs with Output Schedules providing Non-Spin, on deployment of Non-Spin, ERCOT shall adjust the Resource Output Schedule for the remainder of the Operating Period to reflect the amount of deployment. ERCOT shall notify the QSEs representing the non-DSR of the adjustment through the MIS Certified Area.

(8) For On-Line Generation Resources providing Non-Spin, Base Points include Non-Spin energy as well as any other energy dispatched as a result of SCED. These Resources’ Non-Spin Ancillary Service Resource Responsibility and Normal Ramp Rate curve should allow SCED to fully Dispatch the Resource’s Non-Spin Resource Responsibility within the 30-minute time frame according to the Resources’ Normal Ramp Rate curve. For the portion of the Non-Spin Ancillary Service Resource Responsibility provided from power augmentation participating as Off-Line, SCED should be able to be dispatch it within 30 minutes of the Non-Spin deployment instruction.

(9) Each QSE providing Non-Spin from a Resource shall inform ERCOT of the Non-Spin Resource availability using the Resource Status and Non-Spin Ancillary Service Resource Responsibility indications for the Operating Hour using telemetry and shall use the COP to inform ERCOT of Non-Spin Resource Status and Non-Spin Ancillary Service Resource Responsibility for hours in the Adjustment Period through the end of the Operating Day.

(10) ERCOT may deploy Non-Spin at any time in a Settlement Interval.

(11) ERCOT’s Non-Spin deployment Dispatch Instructions must include:

(a) The Resource name;

(b) A MW level of capacity deployment for Generation Resources with Energy Offer Curve, a MW level of energy for Generation Resources with Output Schedules, and a Dispatch Instruction for Load Resources equal to their awarded Non-Spin Ancillary Service Resource Responsibility; and

(c) The anticipated duration of deployment.

(12) ERCOT shall provide a signal via ICCP to the QSE of a deployed Generation or Load Resource indicating that its Non-Spin capacity has been deployed.

(13) ERCOT shall, as part of its TAC-approved Non-Spin deployment procedure, provide for the recall of Non-Spin energy including descriptions of changes to Output Schedules and release of energy obligations from On-Line Resources with Output Schedules and from On-Line Resources that were previously Off-Line Resources providing Non-Spin capacity.

(14) ERCOT shall provide a notification to all QSEs via the ERCOT website when any Non-Spin capacity is deployed on the ERCOT System showing the time, MW quantity and the anticipated duration of the deployment.

|  |
| --- |
| ***[NPRR863, NPRR1000, and NPRR1010: Replace applicable portions of Section 6.5.7.6.2.3 above with the following upon system implementation for NPRR863 or NPRR1000; or upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1010:]***  **6.5.7.6.2.3 Non-Spinning Reserve Service Deployment**  (1) ERCOT shall deploy Non-Spin Service by operator Dispatch Instruction for the portion of On-Line Generation Resources that is only available through power augmentation and participating as Off-Line Non-Spin and Off-Line Generation Resources. ERCOT shall develop a procedure approved by TAC to deploy Resources providing Non-Spin Service. ERCOT Operators shall implement the deployment procedure when a specified threshold(s) in MW of capability available to SCED to increase generation is reached. ERCOT Operators may implement the deployment procedure to recover deployed RRS, ECRS, or when other Emergency Conditions exist. The deployment of Non-Spin must always be 100% of that awarded on an individual Resource.  (2) Once Non-Spin capacity from Off-Line Generation Resources awarded Non-Spin is deployed and the Generation Resources are On-Line, ERCOT shall use SCED to determine the amount of energy to be dispatched from those Resources.  (3) Off-Line Generation Resources offering to provide Non-Spin must provide an Energy Offer Curve for use by SCED.  (4) Controllable Load Resources awarded Non-Spin shall have an RTM Energy Bid for SCED and shall be capable of being Dispatched to its Non-Spin Ancillary Service award within 30 minutes, using the Resource’s Normal Ramp Rate curve. An Aggregate Load Resource must comply with all requirements in the document titled “Requirements for Aggregate Load Resource Participation in the ERCOT Markets.”  (5) Off-Line Generation Resources awarded Non-Spin, while Off-Line and before the receipt of any deployment instruction, shall be capable of being dispatched to their Non-Spin award within 30 minutes of a Dispatch Instruction. On-Line Generation Resources awarded Non-Spin on the power augmentation capacity shall be capable of being dispatched to their Non-Spin award within 30 minutes of a Dispatch Instruction.  (6) ERCOT may deploy Non-Spin at any time in a Settlement Interval.  (7) ERCOT’s Non-Spin deployment Dispatch Instructions must include:  (a) The Resource name;  (b) A MW level of capacity deployment for Generation Resources with Energy Offer Curve, a MW level of energy for Generation Resources with Output Schedules, and a Dispatch Instruction for Load Resources equal to their awarded Non-Spin Ancillary Service amount; and  (c) The anticipated duration of deployment.  (8) ERCOT shall provide a signal via ICCP to the QSE of a deployed Generation or Load Resource indicating that its Non-Spin capacity has been deployed.  (9) ERCOT shall, as part of its TAC-approved Non-Spin deployment procedure, provide for the recall of Non-Spin from On-Line Resources that were previously Off-Line Resources providing Non-Spin capacity and from On-Line Resources providing Non-Spin through power augmentation.  (10) ERCOT shall provide a notification to all QSEs via the ERCOT website when any Non-Spin capacity is deployed on the ERCOT System showing the time, MW quantity and the anticipated duration of the deployment. |