|  |  |  |  |
| --- | --- | --- | --- |
| NPRR Number | [1100](http://www.ercot.com/mktrules/issues/NPRR1100) | NPRR Title | Emergency Switching Solutions for Energy Storage Resources  |
| Date of Decision | November 10, 2021 |
| Action | Tabled |
| Timeline  | Normal |
| Proposed Effective Date | To be determined |
| Priority and Rank Assigned | To be determined |
| Nodal Protocol Sections Requiring Revision  | 3.11.7, Emergency Switching Solution for an Energy Storage Resource (new)6.4.7, QSE-Requested Decommitment of Resources and Changes to Ancillary Service Resource Responsibility of Resources10.3.2.3, Generation Netting for ERCOT-Polled Settlement Meters  |
| Related Documents Requiring Revision/Related Revision Requests | None |
| Revision Description | This Nodal Protocol Revision Request (NPRR) allows an Energy Storage Resource (ESR) to provide its full capability to ERCOT for energy and Ancillary Services and still provide emergency backup power to a co-located facility. The ESR must have an emergency switching solution approved by the Transmission Service Provider (TSP), Distribution Service Provider (DSP), and ERCOT. If ERCOT orders Load Shed, then the ESR may decommit itself from the ERCOT bulk power grid to create a resilient microgrid with the co-located facility.This is not a Private Use Network, and the Load and ESR will not net during normal circumstances. During these emergency operations, the ESR will not qualify for Wholesale Storage Load (WSL) treatment for the entire Operating Day, the prior Operating Day, and the next Operating Day, because there is not an associated wholesale sale and there may have been non-wholesale charging during the emergency from Generation Resources that were previously netting with the Load. |
| 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 | This NPRR allows an ESR to provide its full capacity to the ERCOT grid while providing additional resiliency benefits to a geographically close Load. |
| Credit Work Group Review | To be determined |
| PRS Decision | On 11/10/21, PRS voted via roll call to table NPRR1100 and refer the issue to ROS and WMS. There was one abstention from the Consumer (Occidental Chemical) Market Segment. All Market Segments participated in the vote. |
| Summary of PRS Discussion | On 11/10/21, there was no discussion. |

|  |
| --- |
| Sponsor |
| Name | Arushi Sharma Frank |
| E-mail Address | asharmafrank@tesla.com |
| Company | Tesla Energy Operations Inc. d/b/a Tesla |
| Phone Number | 571-572-9037 |
| Cell Number |  |
| Market Segment | Independent Generator |

|  |
| --- |
| **Market Rules Staff Contact** |
| **Name** | Cory Phillips |
| **E-Mail Address** | Cory.phillips@ercot.com |
| **Phone Number** | 512-248-6464 |

|  |
| --- |
| **Comments Received** |
| Comment Author | **Comment Summary** |
| Tesla 110321 | Proposed edits to expand the proposed emergency switching solution to all Resources along with other revisions to clarify the application of the switching solution, appropriate Resource Status, WSL treatment, and metering expectations |

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

None

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

3.11.7 Emergency Switching Solution for an Energy Storage Resource

(1) An ESR with a co-located Load may request an emergency switching solution by which it may choose to decommit itself when ERCOT is directing firm Load shed during EEA Level 3.

(2) Such an emergency switching solution for an ESR requires approval by the TSP, DSP, and ERCOT.

(3) An ESR’s requirements to comply with Section 3.11.6, Generation Interconnection Process, are not altered by requesting an emergency switching solution described in this Section.

6.4.7 QSE-Requested Decommitment of Resources and Changes to Ancillary Service Resource Responsibility of Resources

(1) A Resource must remain committed during any Reliability Unit Commitment (RUC)-Committed Interval or RUC Buy-Back Hour unless the Resource has a Forced Outage.

(2) In the Operating Period, a QSE may request to decommit a Resource other than a Quick Start Generation Resource (QSGR) for any interval that is not a RUC-Committed Interval or RUC Buy-Back Hour by verbally requesting ERCOT to consider its request.

(3) In the Operating Period, a QSE may decommit a QSGR without any request for any interval that is neither a RUC-Committed Interval, a RUC Buy-Back Hour, nor an interval in which a manual override by the ERCOT Operator has been given.

(4) In the Adjustment Period, a QSE may request to decommit a Resource for any interval that is not a RUC-Committed Interval or RUC Buy-Back Hour by indicating a change in unit status in the QSE’s COP, unless the Resource received a Weekly Reliability Unit Commitment (WRUC) instruction for the hour. A QSE may request to decommit a Resource for any interval that is a WRUC-instructed Interval and that is not a RUC-Committed Interval or RUC Buy-Back Hour by verbally requesting ERCOT to consider its request.

(5) In the Adjustment Period, a QSE may request ERCOT approval for moving an Ancillary Service Resource Responsibility from one Resource to another like Resource by changing its COP. A QSE may transfer Ancillary Service Resource Responsibility for any Ancillary Service to any like Generation Resource telemetering an ONOPTOUT Resource Status. ERCOT shall use the Hourly Reliability Unit Commitment (HRUC) and other processes to study the move and if Ancillary Services become infeasible as a result of the proposed move, ERCOT shall follow the provisions of Section 6.4.9.1.2, Replacement of Infeasible Ancillary Service Due to Transmission Constraints. The phrase “like Resource” means that Ancillary Service Resource Responsibility moves may only be from a Generation Resource to a Generation Resource, from a Load Resource to a Load Resource, or from a Load Resource to a Generation Resource.

(6) In the Operating Period, a QSE shall only provide an Ancillary Service from a Resource which was reported to ERCOT in the COP to be providing that Ancillary Service for the effective Operating Hour unless modified pursuant to paragraph (7) below.

(7) A QSE may vary the quantity of the Ancillary Service Resource Responsibility on Resources without obtaining prior ERCOT approval during the time window beginning 30 seconds prior to a five-minute clock interval and ending ten seconds prior to that five-minute clock interval, provided that the QSE complies with its total Ancillary Service Supply Responsibility.

(8) If an ESR has an emergency switching solution pursuant to Section 3.11.7, Emergency Switching Solution for an Energy Storage Resource, then the QSE representing the ESR may decommit the ESR in the Operating Period during an EEA Level 3 when ERCOT is directing firm Load shed. The QSE may recommit the ESR after the EEA has concluded. During this period, the ESR’s COP status shall be OUT.

|  |
| --- |
| [NPRR1010: Replace Section 6.4.7 above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]***6.4.7 QSE-Requested Decommitment of Resources*** (1) A Resource must remain committed during any Reliability Unit Commitment (RUC)-Committed Interval or RUC Buy-Back Hour unless the Resource has a Forced Outage.(2) In the Operating Period, a QSE may request to decommit a Resource other than a Quick Start Generation Resource (QSGR) for any interval that is not a RUC-Committed Interval or RUC Buy-Back Hour by verbally requesting ERCOT to consider its request.(3) In the Operating Period, a QSE may decommit a QSGR without any request for any interval that is neither a RUC-Committed Interval, a RUC Buy-Back Hour, nor an interval in which a manual override by the ERCOT Operator has been given. (4) In the Adjustment Period, a QSE may request to decommit a Resource for any interval that is not a RUC-Committed Interval or RUC Buy-Back Hour by indicating a change in unit status in the QSE’s COP, unless the Resource received a Weekly Reliability Unit Commitment (WRUC) instruction for the hour. A QSE may request to decommit a Resource for any interval that is a WRUC-instructed Interval and that is not a RUC-Committed Interval or RUC Buy-Back Hour by verbally requesting ERCOT to consider its request.(5) If an ESR has an emergency switching solution pursuant to Section 3.11.7, Emergency Switching Solution for an Energy Storage Resource, then the QSE representing the ESR may decommit the ESR in the Operating Period during an EEA Level 3 when ERCOT is directing firm Load shed. The QSE may recommit the ESR after the EEA has concluded. During this period, the ESR’s COP status shall be OUT. |

10.3.2.3 Generation Netting for ERCOT-Polled Settlement Meters

(1) Generation Resources and netted Loads, including construction and maintenance Load that is netted with existing generation auxiliaries, must be metered at their POIs to the ERCOT Transmission Grid. Interval Data Recorders (IDRs) must be used to determine generator output or Load usage. In the intervals where the generation output exceeds the Load, the net must be settled as generation. In the intervals where the Load exceeds the generation output, the net must be settled as Load, and carry any applicable Load shared charges and credits.

|  |
| --- |
| ***[NPRR917: Replace paragraph (1) above with the following upon system implementation:]***(1) Generation Resources or Settlement Only Generators (SOGs) and netted Loads, including construction and maintenance Load that is netted with existing generation auxiliaries, must be metered at their POIs to the ERCOT Transmission Grid or Service Delivery Point. Interval Data Recorders (IDRs) must be used to determine net generator output or Load usage. In the intervals where the generation output exceeds the Load, the net must be settled as generation. In the intervals where the Load exceeds the generation output, the net must be settled as Load and carry any applicable Load shared charges and credits. |

(2) For Settlement purposes, netting is not allowed except under the configurations described in paragraphs (2)(a) through (2)(d) below, and only if the service arrangement is otherwise lawful. ERCOT has no obligation to independently determine whether a site configuration that includes both Loads and Generation Resource(s) or SOGs complies with Public Utility Regulatory Act (PURA) or the Public Utility Commission of Texas (PUCT) Substantive Rules, and ERCOT’s approval of a metering proposal for such a site is not a verification of the legality of that arrangement:

(a) Single POI or Service Delivery Point with delivered and received metering data channels;

(b) Multiple POIs where the Loads and generator output are electrically connected to a common switchyard, as defined in paragraph (6) below. In addition, there must be sufficient generator capacity to serve all plant Loads for netting to occur;

(c) A Qualifying Facility (QF) with POIs, where the QF is selling energy to a thermal host, may net the Load meters of the thermal host with the QF’s generation meters when the Load and generation are electrically connected to a common switchyard. In instances in which Load is served by new on-site generation through a common switchyard, the TSP or DSP may install monitoring equipment necessary for measuring Load to determine stranded cost charges, if any are applicable, as determined under the PURA and applicable PUCT rules. For purposes of this Section, new on-site generation has the meaning as contained in Public Utility Regulatory Act, Tex. Util. Code Ann. §§ 39.252 and 39.262(k) (Vernon 1998 & Supp. 2007) (PURA); or

(d) For Generation Resources and/or Load with flow-through on a private, contiguous transmission system (not included in a TSP or DSP rate base) and in a configuration existing as of October 1, 2000, the meters at the interconnections with the ERCOT Transmission Grid may be netted for the purpose of determining Generation Resources or Load. For Settlement purposes, when the net is a Load, the metered interconnection points must be assigned to the same Load Zone and Unaccounted for Energy (UFE) zone.

(3) For Energy Storage Resource (ESR) sites, Wholesale Storage Load (WSL) must be separately metered from all other Loads and generation, and must be metered using EPS Metering Facilities.

(a) For configurations where the Resource Entity telemeters an auxiliary Load value to the EPS Meter:

(i) The total energy into the ESR must be separately metered from all other Loads and generation, and must be metered using EPS Metering Facilities and

(ii) The auxiliary Load energy shall be stored in the EPS Meter’s IDR, per channel assignments defined in the SMOG.

(b) For configurations where the WSL is not at the POI, it must be metered behind a single POI metering point, per the requirements in paragraph (3) or (3)(a) above; and

(c) WSL for a compressed air energy storage Load Resource is exempt from the requirement to be electrically connected to a common switchyard, as defined in paragraph (6) below.

(4) ERCOT shall maintain descriptions of the Metering Facilities of all common switchyards that contain multiple POIs of Loads (ESI IDs) and generation meters (EPS). The description is limited to identifying the Entities within a common switchyard and a simplified diagram showing the metering configuration of all Supervisory Control and Data Acquisition (SCADA) and Settlement Metering points.

(5) All Load(s) included in the netting arrangement for an EPS Metering Facility shall only be electrically connected to the ERCOT Transmission Grid through the EPS metering point(s) for such Facility.  Such Loads shall not be electrically connected to the ERCOT Transmission Grid through electrical connections that are not metered by the EPS metering point(s) for the Facility.

(6) For purposes of this Section, a common switchyard is defined as an electric substation Facility where the POI for Load and Generation Resources are located at the same Facility but where the interconnection points are physically not greater than 400 yards apart. The physical connections of the Load to its POI and the Generation Resource to its POI cannot be Facilities that have been placed in a TSP’s or DSP’s rate base.

(7) An ESR with an emergency switching solution pursuant to Section 3.11.7, Emergency Switching Solution for an Energy Storage Resource, must have EPS Meters sufficient to record all inflows and outflows during the two operational modes, including any meters that are required for Settlement required by the DSP.

|  |
| --- |
|  ***[NPRR945: Insert paragraph (7) below upon system implementation:]***(7) ERCOT shall post on the ERCOT website a report listing all Generation Resources or Settlement Only Generators (SOGs) that have achieved commercial operations, excluding Decommissioned Generation Resources, Mothballed Generation Resources, and decommissioned SOGs, whose Resource Registration data indicates that the Generation Resource or SOG is part of a Private Use Network. The report must identify the name of the Generation Resource or SOG site, its nameplate capacity, and the date the Generation Resource or SOG was added to the report. The report shall not identify any confidential, customer-specific information regarding netted loads. ERCOT shall update the list at least monthly. |