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| NPRR Number | [1128](https://www.ercot.com/mktrules/issues/NPRR1128) | NPRR Title | Allow FFR Procurement up to FFR Limit Without Proration |
| Date Posted | March 25, 2022 |
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| Requested Resolution  | Normal |
| Nodal Protocol Sections Requiring Revision  | 4.4.7.2.1, Ancillary Service Offer Criteria4.4.7.2.3, Ancillary Service Only Offer Criteria |
| Related Documents Requiring Revision/Related Revision Requests | None |
| Revision Description | This Nodal Protocol Revision Request (NPRR) sets a -$0.01 per MW lower Ancillary Service Offer floor for Fast Frequency Response (FFR) Responsive Reserve (RRS) rather than for other RRS categories, thereby allowing, depending on relative Ancillary Service Offers, FFR procurement up to the current FFR limit without proration with other RRS categories in the Ancillary Service procurement process. |
| 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 Public Utility Commission of Texas (PUCT) has prioritized FFR advancement in their Phase I implementation. Additionally, ERCOT in their “Feb 2021 Winter Event” presentation to PDCWG on August 11, 2021, state the benefit of FFR-RRS over other categories of FFR as follows: 1. Early response from FFR aids in preserving Load Resource providing RRS for more severe events;
2. Short restoration time for resources providing FFR will limit ERCOT’s exposure (i.e. inability to respond) to next event of similar magnitude; and
3. FFR can help mitigate critical inertia and facilitate further increased penetration levels of Inverter-Based Resources (IBRs) in ERCOT.

ERCOT has advocated for FFR since 2015 as part of the Future Ancillary Service (FAS) design for the reliability benefits described above.ERCOT inertia analysis presented to PDCWG on March 16, 2022, concludes that:* All other factors being constant, inertia would decline in proportion to installed capacity of inverter-based generation;
* In 2021, a variety of factors may have affected thermal unit availability; there was an overall decline in inertia from combined cycle units and relatively lower inertia compared to past years.

Given the significant amount of wind and solar under development and thermal Resource response potentially being too slow to timely arrest frequency under lower inertia conditions, the critical importance of FFR for system reliability is obvious.However, due to the current implementation of the Ancillary Service procurement process for various categories of RRS, Energy Storage Resources (ESRs) are economically disincented to provide FFR-RRS instead of Primary Frequency Response-RRS. The changes in this NPRR allow, depending on relative Ancillary Service Offers, FFR procurement up to the current FFR limit without proration with other RRS categories in the Ancillary Service procurement process. |

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| Proposed Protocol Language Revision |

4.4.7.2.1 Ancillary Service Offer Criteria

(1) Each Ancillary Service Offer must be submitted by a QSE and must include the following information:

(a) The selling QSE;

(b) The Resource represented by the QSE from which the offer would be supplied;

(c) The quantity in MW and Ancillary Service type from that Resource for this specific offer and the specific quantity in MW and Ancillary Service type of any other Ancillary Service offered from this same capacity;

(d) An Ancillary Service Offer linked to a Three-Part Supply Offer from a Resource designated to be Off-Line for the offer period in its COP may only be struck if the Three-Part Supply Offer is struck. The total capacity struck must be within limits as defined in item (4)(c)(iii) of Section 4.5.1, DAM Clearing Process;

(e) An Ancillary Service Offer linked to other Ancillary Service Offers or an Energy Offer Curve from a Resource designated to be On-Line for the offer period in its COP may only be struck if the total capacity struck is within limits as defined in item (4)(c)(iii) of Section 4.5.1;

(f) The first and last hour of the offer;

(g) A fixed quantity block, or variable quantity block indicator for the offer:

(i) If a fixed quantity block, not to exceed 150 MW, which may only be offered by a Load Resource controlled by high-set under-frequency relay providing RRS, and which may clear at a Market Clearing Price for Capacity (MCPC) below the Ancillary Service Offer price for that block, the single price (in $/MW) and single quantity (in MW) for all hours offered in that block; or

(ii) If a variable quantity block, which may be offered by a Generation Resource or a Load Resource, the single price (in $/MW) and single “up to” quantity (in MW) contingent on the purchase of all hours offered in that block; and

(h) The expiration time and date of the offer.

(2) A valid Ancillary Service Offer in the DAM must be received before 1000 for the effective DAM. A valid Ancillary Service Offer in an SASM must be received before the applicable deadline for that SASM.

(3) No Ancillary Service Offer price may exceed the System-Wide Offer Cap (SWCAP) (in $/MW). Fast Frequency Response (FFR) Ancillary Service Offer price may not be less than -$0.01 per MW and no other Ancillary Service Offer price may be less than $0 per MW.

(4) The minimum amount per Resource for each Ancillary Service product that may be offered is one-tenth (0.1) MW.

(5) A Resource may offer more than one Ancillary Service.

(6) Offers for Load Resources may be adjusted to reflect Distribution Losses in accordance with Section 8.1.1.2, General Capacity Testing Requirements.

(7) A Load Resource that is qualified to perform as a Controllable Load Resource may not offer to provide Ancillary Services as a Controllable Load Resource and a Load Resource controlled by high-set under-frequency relay simultaneously behind a common breaker.

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| ***[NPRR863, NPRR1008, NPRR1014, and NPRR1093: Replace applicable portions of Section 4.4.7.2.1 above with the following upon system implementation for NPRR863, NPRR1014, or NPRR1093; or upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1008:]***4.4.7.2.1 Resource-Specific Ancillary Service Offer Criteria(1) Each Resource-Specific Ancillary Service Offer must be submitted by a QSE and must include the following information:(a) The selling QSE;(b) The Resource represented by the QSE from which the offer would be supplied;(c) The quantity in MW and Ancillary Service type from that Resource for this specific offer and the specific quantity in MW and Ancillary Service type of any other Ancillary Service offered from this same capacity; (d) A Resource-Specific Ancillary Service Offer linked to a Three-Part Supply Offer from a Resource designated to be Off-Line for the offer period in its COP may only be struck if the Three-Part Supply Offer is struck. The total capacity struck must be within limits as defined in item (4)(c)(iii) of Section 4.5.1, DAM Clearing Process; (e) A Resource-Specific Ancillary Service Offer linked to other Resource-Specific Ancillary Service Offers or an Energy Offer Curve or Energy Bid/Offer Curve from a Resource designated to be On-Line for the offer period in its COP may only be struck if the total capacity struck is within limits as defined in item (4)(c)(iii) of Section 4.5.1;(f) The first and last hour of the offer; (g) A fixed quantity block or variable quantity block indicator for the offer:(i) If a fixed quantity block, not to exceed 150 MW, which may only be offered by a Load Resource that is not a Controllable Load Resource and that is offering to provide RRS, ECRS, or Non-Spin, and which may clear at a Market Clearing Price for Capacity (MCPC) below the Resource-Specific Ancillary Service Offer price for that block, the single price (in $/MW) and single quantity (in MW) for all hours offered in that block. This fixed quantity block indicator will only be considered in the DAM and will be ignored for awarding of Ancillary Services in the Real-Time Market (RTM); or (ii) If a variable quantity block, which may be offered by a Generation Resource, an ESR, or a Load Resource, the single price (in $/MW) and single “up to” quantity (in MW) contingent on the purchase of all hours offered in that block. This variable quantity block indicator will only be considered in the DAM and will be ignored for awarding of Ancillary Services in the RTM; and(h) The expiration time and date of the offer.(2) A valid Resource-Specific Ancillary Service Offer in the DAM must be received before 1000 for the effective DAM. (3) No Resource-Specific Ancillary Service Offer received before 1000 in the Day-Ahead may contain a price exceeding the Day-Ahead System-Wide Offer Cap (DASWCAP) (in $/MW). No Resource-Specific Ancillary Service Offer received after 1430 in the Day-Ahead may contain a price exceeding the Real-Time System-Wide Offer Cap (RTSWCAP) (in $/MW). Fast Frequency Response (FFR) Ancillary Service Offer price may not be less than -$0.01 per MW and no other Ancillary Service Offer price may be less than $0 per MW.(4) The minimum amount per Resource for each Ancillary Service product that may be offered is one-tenth (0.1) MW.(5) A Resource may offer more than one Ancillary Service. (6) A Load Resource, that is not a Controllable Load Resource, may simultaneously offer RRS, ECRS, and Non-Spin in a DAM and be awarded RRS, ECRS, and Non-Spin for the same Operating Hour in the DAM, but will not be awarded Non-Spin and RRS on the same Load Resource simultaneously in Real-Time.(7) Offers for Load Resources may be adjusted to reflect Distribution Losses in accordance with Section 8.1.1.2, General Capacity Testing Requirements.(8) A Load Resource that is qualified to perform as a Controllable Load Resource may not offer to provide Ancillary Services as a Controllable Load Resource and a Load Resource controlled by high-set under-frequency relay simultaneously behind a common breaker. |

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| ***[NPRR1008: Insert Section 4.4.7.2.3 below upon system implementation of the Real-Time Co-Optimization (RTC) project:]******4.4.7.2.3*** ***Ancillary Service Only Offer Criteria***(1) Each Ancillary Service Only Offer must be submitted by a QSE and must include the following information:(a) The selling QSE;(b) The quantity in MW and Ancillary Service type; (c) The first and last Operating Hour of the offer; (2) A valid Ancillary Service Only Offer in the DAM must be received before 1000 in the Day-Ahead. (3) No Ancillary Service Only Offer price may exceed the DASWCAP (in $/MW). FFR Ancillary Service Offer price may not be less than -$0.01 per MW and no other Ancillary Service Only Offer price may be less than $0 per MW.(4) The minimum amount that may be offered is one-tenth (0.1) MW. |