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PROJECT NO. 54445

CY 2023 REVIEW OF RULES ADOPTED BY THE INDEPENDENT ORGANIZATION	**§ § §**	**PUBLIC UTILITY COMMISSION OF TEXAS**

NOTICE OF RECOMMENDED APPROVAL OF REVISION REQUESTS BY ERCOT BOARD OF DIRECTORS

Effective June 8, 2021, rules adopted by Electric Reliability Council of Texas, Inc. (ERCOT) under delegated authority from the Public Utility Commission of Texas (Commission) are subject to Commission oversight and review and may not take effect before receiving Commission approval.

At its meeting on June 20, 2023, the ERCOT Board of Directors (Board) recommended Commission approval of the following proposed revisions to the ERCOT rules (Revision Requests) (Nodal Protocol Revision Requests (NPRRs) and Nodal Operating Guide Revision Request (NOGRR)):

- NPRR1167, Improvements to Firm Fuel Supply Service Based on Lessons Learned;
- NPRR1169, Expansion of Generation Resources Qualified to Provide Firm Fuel Supply Service in Phase 2 of the Service;
- NPRR1177, Enhance Exceptional Fuel Cost Process;
- NPRR1178, Expectations for Resources Providing ERCOT Contingency Reserve Service; and
- NOGRR253, Related to NPRR1178, Expectations for Resources Providing ERCOT Contingency Reserve Service.

Included for Commission review are the Board Reports—each of which includes an ERCOT Market Impact Statement—and ERCOT Impact Analyses for these Revision Requests.

Dated: June 20, 2023

Respectfully submitted,

/s/ Jonathan Levine

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ATTORNEYS FOR ELECTRIC RELIABILITY COUNCIL OF TEXAS, INC.

Board Report

NPRR Number	1167	NPRR Title	Improvements to Firm Fuel Supply Service Based on Lessons Learned
Date of Decision		June 20, 2023	
Action		Recommended Approval	
Timeline		Normal	
Proposed Effective Date		July 1, 2023	
Priority and Rank Assigned		Not applicable	
Nodal Protocol Sections Requiring Revision		2.1, Definitions 3.14.5, Firm Fuel Supply Service 6.6.14.1, Firm Fuel Supply Service Fuel Replacement Costs Recovery 6.6.14.2, Firm Fuel Supply Service Hourly Standby Fee Payment and Fuel Replacement Cost Recovery 8.1.1.2.1.6, Firm Fuel Supply Service Resource Qualification, Testing, and Decertification	
Related Documents Requiring Revision/Related Revision Requests		None	
Revision Description		This Nodal Protocol Revision Request (NPRR) implements several improvements to Firm Fuel Supply Service (FFSS). Specific changes include: • Amending the definition of an Availability Plan to include a requirement that, in cases where a Resource is required to have a submitted Availability Plan and has a change in availability, the Availability Plan must be updated within 60 minutes of that change in availability; • Adding more detailed direction to incorporate the concept of having an alternate Generation Resource that may be designated to become the FFSS Resource (FFSSR) in providing FFSS. • Adding a requirement for ERCOT to post a disclosure report of FFSS offers after each procurement period, in alignment with the expiration of confidentiality captured in the first FFSS Request for Proposal (RFP);	

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	• Clarifying language regarding procedures for communication between ERCOT and Qualified Scheduling Entities (QSEs) regarding restocking of fuel post deployment of FFSS; • Changing the directive for ERCOT to report to the Technical Advisory Committee (TAC) or its designated subcommittee within 30 days at the end of the obligation period (March 15) if deployment(s) occurred instead of within 45 days of each deployment; • Incorporating requirements for FFSS that were previously only captured in the FFSS RFP; • Enhancing language and processes around the qualification process, including moving the obligation to test prospective FFSSRs (both primary and alternate Generation Resources) to be prior to the FFSS procurement process. Results from this test will then be used to limit the MW quantity that the QSE can offer for that Resource into the FFSS procurement process; and • Introducing language and processes for disqualification and decertification of a generator in being an FFSSR, including a process for remediation and recertification.
Reason for Revision	[X] Addresses current operational issues. [ ] Meets Strategic goals (tied to the ERCOT Strategic Plan or directed by the ERCOT Board). [ ] Market efficiencies or enhancements [ ] Administrative [ ] Regulatory requirements [ ] Other: (explain) *(please select all that apply)*
Business Case	This NPRR is intended to improve several processes related to FFSS, including testing, qualification, procurement, communication during and following deployment, and reporting by ERCOT. These changes are intended to reflect aspects of the service that were previously captured solely in the RFP, provide clarity regarding existing Protocol provisions, and address areas for improvement that have been identified by stakeholders or ERCOT since the introduction of FFSS last year.
PRS Decision	On 4/13/23, PRS voted unanimously to recommend approval of NPRR1167 as amended by the 3/15/23 LCRA comments. All Market Segments participated in the vote.

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	On 5/10/23, PRS voted to endorse and forward to TAC the 4/13/23 PRS Report as amended by the 4/28/23 ERCOT comments as revised by PRS and 3/8/23 Impact Analysis for NPRR1167. There was one abstention from the Investor Owned Utility (IOU) (Lone Star Transmission) Market Segment. All Market Segments participated in the vote.
Summary of PRS Discussion	On 4/13/23, ERCOT Staff provided an overview of NPRR1167 and noted the WMS endorsement. On 5/10/23, participants reviewed the 4/28/23 ERCOT comments and proposed desktop edits to maintain the phrase "fuel-related issues" within the qualification and decertification provisions of Section 8.1.1.2.1.6.
TAC Decision	On 5/23/23, TAC voted to recommend approval of NPRR1167 as recommended by PRS in the 5/10/23 PRS Report. There was one abstention from the Independent Generator (Luminant) Market Segment. All Market Segments participated in the vote.
Summary of TAC Discussion	On 5/23/23, TAC reviewed the ERCOT Opinion, ERCOT Market Impact Statement, and Independent Market Monitor (IMM) Opinion for NPRR1167. ERCOT Staff presented the 5/16/23 ERCOT comments, advocating for removing "fuel-related issue" from Section 8.1.1.2.1.6 and arguing that FFSS, as a program, must balance issues of obtaining fuel with Resource performance. Participants debated the strength of existing clawback measures versus decertifying Resources from the program.
ERCOT Board Decision	On 6/20/23, the ERCOT Board voted unanimously to recommend approval of NPRR1167 as recommended by TAC in the 5/23/23 TAC Report.

Opinions	
Credit Review	ERCOT Credit Staff and the Credit Finance Sub Group (CFSG) have reviewed NPRR1167 and do not believe that it requires changes to credit monitoring activity or the calculation of liability.
Independent Market Monitor Opinion	IMM supports NPRR1167 as recommended for approval in the 5/10/23 PRS Report.
ERCOT Opinion	ERCOT supports approval of NPRR1167.
ERCOT Market Impact Statement	ERCOT Staff has reviewed NPRR1167 and believes the market impact for NPRR1167 improves several processes related to FFSS, including testing, qualification, procurement, communication during

	and following deployment, and reporting by ERCOT. Work with stakeholders should continue in an on-going effort to evaluate the processes for performance monitoring and disqualification of Resources to provide FFSS.

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Market Segment	Not applicable

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Comments Received	
Comment Author	**Comment Summary**
LCRA 031523	Proposed clarifying edits related to Settlement activities for primary and alternate Resources
WMS 040523	Endorsed NPRR1167 as amended by the 3/15/23 LCRA comments
ERCOT 042823	Proposed additional edits to refine three of the new provisions within Section 8.1.1.2.1.6
ERCOT 051623	Proposed additional revisions to remove the references to "a fuel-related issue," so that a Generation Resource would be disqualified or decertified for repeated instances of the specified performance failures regardless of the cause of the failures

Market Rules Notes

Administrative changes to the language were made and authored as "ERCOT Market Rules."

Board Report

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

- NPRR1169, Expansion of Generation Resources Qualified to Provide Firm Fuel Supply Service in Phase 2 of the Service
  - Section 3.14.5
  - Section 6.6.14.1
  - Section 8.1.1.2.1.6

Proposed Protocol Language Revision

2.1 DEFINITIONS

Availability Plan

An hourly representation of availability of Reliability Must-Run (RMR) Units or an hourly representation of the capability of Black Start Resources as submitted to ERCOT by 0600 in the Day-Ahead by Qualified Scheduling Entities (QSEs) representing RMR Units or Black Start Resources. An hourly representation of availability of Firm Fuel Supply Service Resources (FFSSRs) as submitted to ERCOT 14 days prior to the Operating Day by QSEs representing FFSSRs. QSEs must update the Availability Plan to reflect current operating conditions within 60 minutes after identifying the change in availability of the Resource.

[NPRR885: Replace the above definition "Availability Plan" with the following upon system implementation:]

Availability Plan

An hourly representation of availability of Reliability Must-Run (RMR) Units, Must-Run Alternatives (MRAs), or an hourly representation of the capability of Black Start Resources as submitted to ERCOT by 0600 in the Day-Ahead by Qualified Scheduling Entities (QSEs) representing RMR Units, MRAs, or Black Start Resources. An hourly representation of availability of Firm Fuel Supply Service Resources (FFSSRs) as submitted to ERCOT 14 days prior to the Operating Day by QSEs representing FFSSRs. QSEs must update the Availability Plan to reflect current operating conditions within 60 minutes after identifying the change in availability of the Resource.

Firm Fuel Supply Service Resource (FFSSR)

A Generation Resource that has an obligation to provide Firm Fuel Supply Service (FFSS). A primary Generation Resource that was awarded through the FFSS procurement process is the FFSSR unless the Qualified Scheduling Entity (QSE) representing the Generation Resource has met the requirements to change the FFSSR to an approved alternate Generation Resource to reflect the manner in which the FFSS obligation is being provided.

3.14.5 *Firm Fuel Supply Service*

Commented [CP1]: Please note NPRR1169 also proposes revisions to this section.

(1) Each Generation Resource providing or offering to provide Firm Fuel Supply Service (FFSS), including the primary and any alternate Generation Resources identified in the FFSS Offer Submission Form, must meet technical requirements specified in Section 8.1.1, QSE Ancillary Service Performance Standards, and Section 8.1.1.1, Ancillary Service Qualification and Testing.

(2) ERCOT shall issue an RFP by August 1 of each year soliciting ~~bids~~offers from QSEs for Generation Resources to provide FFSS. The RFP shall require ~~bids~~offers to be submitted on or before September 1 of each year.

(3) QSEs may submit ~~bids~~offers individually for one or more Generation Resources to provide FFSS using the FFSS Offer Submission Form~~a bid submission form~~ posted on the ERCOT website. A QSE may not submit an offer~~bid~~ for a given Generation Resource unless it is the QSE designated by the Resource Entity associated with that Generation Resource. ERCOT must evaluate ~~bids~~offers using criteria identified in an appendix to the RFP. ERCOT will issue FFSS awards ~~for each Generation Resource~~ by September 30 and will post the awards to the MIS Certified Area for each QSE that is awarded an FFSS obligation. The posting will include information such as, but not limited to, the identity of the primary Generation Resource and any alternate Generation Resource(s), the FFSS clearing price~~Standby Fee awarded~~, the amount of reserved fuel associated with the FFSS award, ~~and~~the MW amount awarded, and the Generation Resource's initial minimum LSL when providing FFSS. The RFP awards shall cover a period beginning November 15 of the year in which the RFP is issued and ending on March 15 of the second calendar year after the year in which the RFP is issued. A QSE may submit an offer ~~bid~~ for one or more Generation Resources to provide FFSS beginning in the same year the RFP is issued or ~~beginning in a subsequent year covered by~~as otherwise specified in the RFP. An FFSS Resource (FFSSR) shall be considered an FFSSR and is required to provide FFSS from November 15 through March 15 for each year of the awarded FFSS obligation period. ERCOT shall ensure FFSSRs are procured and deployed as necessary to maintain ERCOT System reliability during, or in preparation for, a natural gas curtailment or other fuel supply disruption.

(a) On the FFSS Offer~~bid~~ ~~s~~Submission ~~f~~Form, the QSE shall disclose information including, but not limited to, the Generation Resource and any alternate Generation Resource(s), the amount of reserved fuel offered, the MW available from the capacity offered, an estimate of the time to restock fuel reserves, and each limitation of the offered Generation Resource that could affect the Generation Resource's ability to provide FFSS.

(b) For a Generation Resource to be eligible to receive an FFSS award~~When a Resource is selected to provide FFSS~~, the primary Generation Resource and any alternate Generation Resource(s) identified in the FFSS Offer Submission Form shall complete all applicable testing requirements as specified in Section 8.1.1.2.1.6, Firm Fuel Supply Service Resource Qualification, Testing, ~~and~~ Decertification, and Recertification.

[NPRR1154: Replace paragraph (b) above with the following upon system implementation:]

(b) For a Generation Resource to be eligible to receive an FFSS award~~When a Resource is selected to provide FFSS~~, the primary Generation Resource and any alternate Generation Resource(s) identified in the FFSS Offer Submission Form shall complete all applicable testing requirements as specified in Section 8.1.1.2.1.6, Firm Fuel Supply Service Resource Qualification, Testing, ~~and~~ Decertification, and Recertification. A QSE representing a FFSSR is allowed to provide the FFSS with an alternate Resource previously approved by ERCOT to replace the FFSSR.

(c) An offer to provide FFSS is an offer to supply an awarded amount of capacity, maintain a sufficient~~n awarded~~ amount of reserved fuel to meet that award for the duration requirement specified in the RFP, and to designate a specific number of emissions hours that will be reserved for ~~which~~ the awarded FFSSR in meeting its obligation~~is obligated~~ to perform in the event that FFSS is deployed. Reserved fuel, emissions hours, and other attributes, in excess of what is needed to meet the FFSS obligation~~awards~~ can be used at the discretion of the QSE as long as ~~the awarded~~sufficient fuel reserves and emissions hours are maintained for the purposes of ERCOT deployment of FFSS.

(d) Within ten Business Days of issuing FFSS awards, ERCOT will post on the ERCOT website the identity of all Generation Resources that were offered as primary Generation Resources or alternate Generation Resources to provide FFSS for the most recent procurement period, including prices and quantities offered.

(4) The QSE for an FFSSR shall ensure that the Resource is prepared and able to come On-Line or remain On-Line in order to maintain Resource availability in the event of a natural gas curtailment or other fuel supply disruption.

(a) When ERCOT issues a Watch for winter weather, ERCOT will notify all Market Participants, including all QSEs representing FFSSRs, to begin preparation for potential FFSS deployment. Such preparation may include, but is not limited to, circulation of alternate fuel to its facilities, if applicable; heat fuel oil to appropriate temperatures, if applicable; call out additional personnel as necessary, and be ready to receive a Dispatch Instruction to provide FFSS. An FFSSR may begin consuming a minimum amount of alternate fuel to validate it is ready for an FFSS deployment.

(b) In anticipation of or in the event of a natural gas curtailment or other fuel supply disruption to an FFSSR, the QSE shall notify ERCOT as soon as practicable and may request approval to deploy FFSS to generate electricity. ERCOT shall evaluate system conditions and may approve the QSE's request. The QSE shall not deploy the FFSS unless approved by ERCOT. Upon approval to deploy FFSS, ERCOT shall issue an FFSS VDI to the QSE. ERCOT may issue separate VDIs for each Operating Day for each FFSSR that is deployed for FFSS.

(c) In conjunction with a QSE notification under paragraph (b) above, the QSE shall also report to ERCOT any environmental limitations that would impair the ability of the FFSSR to provide FFSS for the required duration of the FFSS award.

(d) ERCOT may issue an FFSS VDI without a request from the QSE, however ERCOT shall not issue an FFSS VDI without evidence of an impending or actual fuel supply disruption affecting the FFSSR.

(e) If the FFSSR is generating at a level above the FFSS MW awarded amount and that level of output cannot be sustained for the required duration of the FFSS award, ERCOT may use a manual High Dispatch Limit (HDL) override to ensure the FFSSR can continue to generate at the FFSS MW award level for the entire FFSS ~~award~~ duration requirement specified in the RFP.

(f) The FFSSR shall continuously deploy FFSS to generate electricity until the earlier of (i) the exhaustion of the fuel reserved to generate at the FFSS MW award level for the duration requirement specified in the RFP, including any fuel that was restocked following approval or instruction from ERCOT~~FFSS service duration as defined in the RFP~~, (ii) the fuel supply disruption no longer exists, or (iii) ERCOT determines the FFSS deployment is no longer needed. Upon satisfying one of these qualifications, ERCOT shall terminate the VDI and the FFSSR shall not be obligated to continue its FFSS deployment for the remainder of the Watch.

(g) The QSE for the FFSSR is responsible for communicating with the ERCOT Control Room the anticipated exhaustion of the reserved fuel at least six hours before that anticipated exhaustion and upon the exhaustion of that fuel.

(h~~g~~) A QSE shall notify the ERCOT c~~C~~ontrol r~~R~~oom of the anticipated exhaustion of emissions credits or permit allowances at least six hours before the exhaustion of those credits or allowances. Upon receiving such notification, ERCOT shall modify the VDI so the FFSS deployment is terminated upon exhaustion of those credits or allowances.

(i~~h~~) Upon deployment or recall of FFSS, ERCOT shall notify all Market Participants that such deployment or recall has been made, including the MW capacity of service deployed or recalled.

(5) ~~During or f~~Following the deployment of FFSS, the QSE for an FFSSR may request an approval from ERCOT to restock their fuel reserve to restore their ability to generate at the FFSS MW award level for the duration requirement specified in the RFP~~FFSS capability~~. Following approval from ERCOT, a QSE must~~may~~ restock their fuel reserve to restore their ability to generate at the FFSS MW award level for the specified duration requirement~~FFSS obligation~~. In the event ERCOT does not receive the request to restock from a QSE representing an FFSSR, but the QSE no longer has sufficient reserved fuel to generate at the FFSS MW award level for the specified duration requirement, the QSE shall communicate to the ERCOT Control Room this reduced capability and ERCOT may instruct the QSE to ~~start~~ restock~~ing~~ the fuel reserve ~~to restore its FFSS capability~~.

(6) For a Resource to be considered as an alternate for providing FFSS, the following requirements must be met. The alternate Resource must:

(a) Be able to provide net real power sufficient to generate at the same FFSS MW award level as the primary Resource for the duration requirement specified in the RFP;

(b) Be a single Generation Resource, as registered with ERCOT; and

(c) Use the same source of fuel reserve for providing FFSS as the primary Resource.

(7) An FFSS Offer Submission Form may have up to three alternate Generation Resources per primary Resource offering to provide FFSS.

(8) For FFSSRs with approved alternate Generation Resources if the FFSSR becomes unavailable, the QSE must

(a) As soon as practicable, call the ERCOT Control Room and inform an Operator that the FFSSR will be replaced by one of the alternate Generation Resource, specify which alternate Generation Resource (if multiple alternate Generation Resources have been designated), and provide an estimate of how long the replacement will be in effect;

(b) Update the Availability Plans for these Generation Resources to reflect current operating conditions within 60 minutes after identifying the change in availability of the FFSSR; and

(c) Update the Current Operating Plans (COPs) for these Generation Resources within 60 minutes after identifying the change in availability of the FFSSR.

(9~~6~~) An FFSSR~~s~~ providing BSS must have sufficient fuel reserved to generate at the FFSS MW award level for the duration requirement specified in the RFP~~FFSS capability~~ in addition to any fuel required for the Generation Resource to meet the contracted BSS obligation. Any remaining fuel reserve in addition to that required for meeting FFSS and BSS obligations can be used at the QSE's discretion.

(10~~7~~) If ERCOT issues an FFSS VDI to an FFSSR for the same Operating Hour where a RUC instruction was issued, then for Settlement purposes~~,~~ ERCOT will consider the RUC instruction as cancelled.

(11~~8~~) If FFSS is deployed, then ERCOT will provide a report to the TAC or its designated subcommittee within ~~45~~30 days of ~~of~~ the end of the FFSS obligation period~~any FFSS deployments.~~. The report must includ~~e~~~~ing~~ the Resources deployed and the reason for any~~the~~ deployments.

(12~~9~~) Any QSE that submits an offer ~~bid~~ or receives an award for a SWGR to provide FFSS, and the Resource Entity that owns or controls that SWGR, shall:

(a) Not nominate the SWGR to satisfy supply adequacy or capacity planning requirements in any Control Area other than the ERCOT Region during the period of the FFSS obligation; and

(b) Take any further action requested by ERCOT to ensure that ERCOT will be classified as the "Primary Party" for the SWGR under any agreement between ERCOT and another Control Area Operator during the period of the FFSS obligation.

(13~~0~~) On an annual basis after the FFSS season, ERCOT will provide a report separately for the total amounts from Section 6.6.14.1, Firm Fuel Supply Service Fuel Replacement Costs Recovery, and Section 6.6.14.2, Firm Fuel Supply Service Hourly Standby Fee Payment and Fuel Replacement Cost Recovery, to the TAC or its designated subcommittee.

6.6.14.1 Firm Fuel Supply Service Fuel Replacement Costs Recovery

Commented [CP2]: Please note NPRR1169 also proposes revisions to this section.

(1) If ERCOT approves a Firm Fuel Supply Service Resource (FFSSR) to switch to consume the reserved fuel, ERCOT shall pay the QSE representing the FFSSR for the replacement of burned fuel, if the QSE has:

(a) Complied with the Firm Fuel Supply Service (FFSS) instruction to switch to the reserved fuel;

(b) Submitted a Settlement and billing dispute consistent with the dispute process described in Section 9.14, Settlement and Billing Dispute Process;

(c) Submitted the following within 90 days of the issuance of a Real-Time Market (RTM) Initial Statement for the Operating Day on which the FFSS instruction was issued:

(i) An attestation signed by an officer or executive with authority to bind the QSE stating that the information contained in the dispute is accurate;

(ii) For each deployment of FFSS, the quantity of total fuel consumed for the hours in each instance when FFSS was deployed;

(iii) For thermal units, the input-output equation or other documentation that allows for verification of fuel consumption for the hours when FFSS was deployed;

(iv) The heat content of the fuel, in terms of MMBtu/gal or similar units of measurement;

(~~i~~v) The dollar amount and quantity of fuel purchased to replace the consumed fuel;

(v~~i~~) Sufficient documentation to support the QSE's determination of the amount and cost of replaced fuel; and

(vii) Any other technical documentation within the possession of the QSE or Resource Entity which ERCOT finds reasonably necessary to verify paragraphs (i) through (vi) above. Any additional request from ERCOT for documentation or clarification of previously submitted documentation must be honored within 15 Business Days.

(2) The Firm Fuel Supply Service Fuel Replacement Cost shall only represent the replacement fuel costs not recovered during the FFSS deployment period through Day-Ahead energy sales and Real-Time energy imbalance settlement revenues related to the Resource with the FFSS award.

(3) ERCOT shall allocate any approved fuel replacement costs to the hours of the corresponding FFSS deployment period when the fuel was consumed following ERCOT's approval to switch to utilize the awarded FFSS.

6.6.14.2 Firm Fuel Supply Service Hourly Standby Fee Payment and Fuel Replacement Cost Recovery

(1) ERCOT shall pay ~~an~~the Firm Fuel Supply Service (FFSS) Hourly Standby Fee to the~~a~~ QSE representing the primary Generation Resource~~an FFSSR~~. This standby fee is determined through a competitive bidding process, with an adjustment for reliability based on an Hourly Rolling Equivalent Availability Factor, as well as adjustments for capacity and deployment ~~greater than or equal to 90% of the awarded FFSS capability~~.

[NPRR1154: Replace paragraph (1) above with the following upon system implementation:]

(1) ERCOT shall pay ~~an~~the Firm Fuel Supply Service (FFSS) Hourly Standby Fee to the~~a~~ QSE representing the primary Generation Resource~~an FFSSR~~. This standby fee is determined through a competitive bidding process, with an adjustment for reliability based on an Hourly Rolling Equivalent Availability Factor ~~greater than or equal to 90% of the awarded FFSS capability~~, as well as ~~with~~ adjustments for capacity and deployment.

(2) The FFSSR will be considered available when calculating the Firm Fuel Supply Service Hourly Rolling Equivalent Availability Factor:

(a) During each non-FFSS deployment hour for which the FFSSR shows available in its Availability Plan;

(b) ~~d~~During any successful FFSS deployment of the FFSSR in which the FFSSR shows available in its Availability Plan; and

(c) If the reserved fuel was exhausted during an FFSS deployment, during the period when reserved fuel for FFSS is being restocked~~during the period defined in the~~

~~FFSS request for proposal (RFP) to restore FFSS capability~~ following an~~the~~ instruction or approval from ERCOT to do so.

(d) Additionally, ~~I~~in the event the FFSSR has consumed all the fuel reserved to provide FFSS and ERCOT does not issue an instruction or approval to restore FFSS capability, the FFSSR shall be considered to be available for Settlement purposes for the remainder of the FFSS obligation period in progress.

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[NPRR1154: Replace paragraph (2) above with the following upon system implementation:]

(2) The Firm Fuel Supply Service Resource will be considered available when calculating the Firm Fuel Supply Service Hourly Rolling Equivalent Availability Factor:

(a) ~~d~~During each non-FFSS deployment hour for which the FFSSR shows available in its Availability Plan;~~,~~

(b) ~~d~~During any successful FFSS deployment of the FFSSR in which the FFSSR shows available in its Availability Plan;~~,~~ and

(c) If the reserved fuel was exhausted during an FFSS deployment, during the period when reserved fuel for FFSS is being restocked ~~during the period defined in the FFSS request for proposal (RFP) to restore FFSS capability~~ following ~~the~~an instruction or approval from ERCOT to do so.

(d) Additionally, ~~I~~in the event the FFSSR has consumed all the fuel reserved to provide FFSS and ERCOT does not issue an instruction or approval to restore FFSS capability, the FFSSR shall be considered to be available for Settlement purposes for the remainder of the FFSS obligation period in progress.

(3) The FFSS Hourly Standby Fee is subject to reduction and claw-back provisions as described in Section 8.1.1.2.1.6, Firm Fuel Supply Service Resource Qualification, Testing, ~~and~~ Decertification, and Recertification.

(4) ERCOT shall pay an FFSS payment to each QSE for each FFSSR. The FFSS payment for each hour of November 15~~,~~ through March 15, i.e., during the FFSS obligation period, is calculated as follows:

$$\mathbf{FFSSAMT}_{q,r} = \mathbf{(-1) * (FFSSSBF}_{q,r} + \mathbf{FFSSFRC}_{q,r})$$

Where:

$$FFSSSBF_{q,r} = FFSSPR_{q,r} * FFSSCRF_{q,r} * FFSSARF_{q,r} * (1 - FFSSDRP)$$

And:

FFSS Capacity Reduction Factor

If ($FFSSTCAP_{q,r} \geq FFSSACAP_{q,r}$)

Then: $FFSSCRF_{q,r} = 1$

Otherwise: $FFSSCRF_{q,r} = Max(0, 1 - 2 * (FFSSACAP_{q,r} - FFSSTCAP_{q,r}) / FFSSACAP_{q,r})$

FFSS Availability Reduction Factor

If ($FFSSHREAF_{q,r} \geq 0.90$)

Then: $FFSSARF_{q,r} = 1$

Otherwise: $FFSSARF_{q,r} = Max(0, 1 - (0.90 - FFSSHREAF_{q,r}) * 2)$

FFSS Hourly Rolling Equivalent Availability Factor

If the FFSSR is a Combined Cycle Resource:

Then: $FFSSHREAF_{q,train} = [\sum_{hr=h-1451}^{h} \max_{train,hr}(\max(FFSEDFLAG_{q,train,hr}, FFSSAFLAG_{q,ccgr,hr}) * (\min(HSL_{q,ccgr,hr}, FFSSACAP_{q,train})))] / \sum_{hr=h-1451}^{h}(FFSSACAP_{q,train})$

Otherwise:

$FFSSHREAF_{q,r} = \sum_{hr=h-1451}^{h}(\max(FFSEDFLAG_{q,r,hr}, FFSSAFLAG_{q,r,hr}) * (\min(HSL_{q,r,hr}, FFSSACAP_{q,r}))) / \sum_{hr=h-1451}^{h}(FFSSACAP_{q,r})$

Availability for a Combined Cycle Train will be determined pursuant to terms set forth in the RFP but no more than once per hour.

The above variables are defined as follows:

Variable	Unit	Definition
$FFSSAMT_{q,r}$	$	*Firm Fuel Supply Service Amount per QSE per Resource by hour*—The payment to QSE *q* for the FFSS ~~for~~assigned to the primary Generation Resource~~provided by Resource~~ *r*, for the hour, calculated each hour of November 15 through March 15 during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
$FFSSPR_{q,r}$	$ per hour	*Firm Fuel Supply Service Price per QSE per Resource*—The standby price of the primary Generation Resource~~FFSSR~~ *r* represented by QSE *q*, as specified in the FFSS award. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.

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Variable	Unit	Definition
FFSSCRF $_{q, r}$	none	*Firm Fuel Supply Service Capacity Reduction Factor per QSE per Resource by hour*—The capacity reduction factor ~~for~~assigned to the primary Generation Resource~~FFSSR~~ *r*, represented by QSE *q*, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
HSL $_{q, r, hi}$	MW	*High Sustained Limit*—The HSL of ~~a~~the primary Generation Resource or the alternate Generation Resource *r* represented by QSE *q* as submitted in the COP, for the hour *h*. Where for a combined cycle Resource *r* is a Combined Cycle Generation Resource.
FFSSFRC $_{q, r}$	$ per hour	*Firm Fuel Supply Service Fuel Replacement Cost*—The fuel costs and fees to replace the burned fuel by the FFSSR, not recovered during the FFSS deployment period, paid to the primary Generation Resource~~for FFSSR~~ *r* represented by QSE *q* for each FFSS instructed hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSDRP $_{q, r, h}$	none	*Firm Fuel Supply Service Deployment Reduction Percentage*—The percentage of the Firm Fuel Supply Service Standby Fee subject to clawback per paragraphs (7~~5~~) through (14~~2~~) of Section 8.1.1.2.1.6 for the QSE *q*, ~~for~~assigned to the primary Generation Resource *r*, for the hour *h*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSSBF $_{q, r}$	$	*Firm Fuel Supply Service Standby Fee per QSE per Resource by hour*—The standby fee to QSE *q* ~~for~~assigned to the ~~FFSS provided by~~ primary Generation Resource~~FFSSR~~ *r*, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSTCAP $_{q, r}$	MW	*Firm Fuel Supply Service Testing Capacity per QSE per Resource*—The tested capacity of the primary Generation Resource~~FFSSR~~ *r*, represented by QSE *q*, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSACAP $_{q, r}$	MW	*Firm Fuel Supply Service Awarded Capacity per QSE per Resource*—The awarded FFSS capacity of the primary Generation Resource~~FFSSR~~ *r*, represented by QSE *q* as specified in the FFSS award, applicable to each hour of November 15 through March 15 during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSARF $_{q, r}$	none	*Firm Fuel Supply Service Availability Reduction Factor per QSE per Resource by hour*—The availability reduction factor ~~of~~assigned to the primary Generation Resource~~FFSSR~~ *r* represented by QSE *q* for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSHREAF $_{q, r}$	none	*Firm Fuel Supply Service Hourly Rolling Equivalent Availability Factor per QSE per Resource by hour*—The equivalent availability factor ~~of~~assigned to the primary Generation Resource~~FFSSR~~ *r* represented by QSE *q* over 1,452 hours, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSAFLAG $_{q, r, hr}$	none	*Firm Fuel Supply Service Availability Flag per QSE per Resource by hour*—The flag of the availability ~~of~~assigned to the primary Generation Resource or the alternate Generation Resource~~FFSSR~~ *r* represented by QSE *q*, 1 for available and 0 for unavailable, for the hour. The availability flag shall be determined based on FFSSR availability for the current operating hour and the previous 1,451 hours of November 15 through March 15 during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train.

Variable	Unit	Definition
FFSEDFLAG $_{q, r, hr}$	none	*Firm Fuel Supply Event Deployment Flag per QSE per Resource by hour*—The flag of successful FFSS deployment ~~of~~assigned to the primary Generation Resource~~FFSSR~~ *r* ~~including~~for the approved hours to restock reserved fuel for providing FFSS ~~hours in the period defined in the RFP~~ following the instruction or approval from ERCOT, or in the event the FFSSR has consumed all the fuel reserved to provide FFSS and ERCOT does not issue an instruction or approval to restock reserved fuel, ~~to restore FFSS capability~~ represented by QSE *q*, 1 for available and 0 for unavailable, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
q	none	A QSE.
r	none	A~~n~~ primary or alternate Generation Resource approved by ERCOT to provide FFSS~~R~~.
hr	none	The index of a given hour and the previous 1,451 hours counted only during each hour of November 15 through March 15 during the awarded FFSS obligation period~~, or during the period as defined in the FFSS RFP~~.
h	none	The Operating Hour.
train	none	A Combined Cycle Train.
ccgr	none	A Combined Cycle Generation Resource within the Combined Cycle Train.

[NPRR1154: Replace paragraph (4) above with the following upon system implementation:]

(4) ERCOT shall pay an FFSS payment to each QSE for each FFSSR. The FFSS payment for each hour of November 15~~,~~ through March 15, i.e., during the FFSS obligation period, is calculated as follows:

FFSSAMT $_{q, r, h}$ = **(-1) * (FFSSSBF** $_{q, r, h}$ + **FFSSFRC** $_{q, r, h}$**)**

Where:

FFSSSBF $_{q, r, h}$ = FFSSAWARD $_{q, r, h}$ * FFSSCRF $_{q, r, h}$ * FFSSARF $_{q, r, h}$ * (1 - FFSSDRP $_{q, r, h}$)

FFSSAWARD $_{q, r, h}$ = FFSSPR $_{q, r, h}$ * FFSSACAP $_{q, r, h}$

And:

FFSS Capacity Reduction Factor

If (FFSSTCAP $_{q, r, h}$ ≥ FFSSACAP $_{q, r, h}$)

Then: FFSSCRF $_{q, r, h}$ = 1

Otherwise: FFSSCRF $_{q, r, h}$ = Max (0, 1 – 2 * (FFSSACAP $_{q, r, h}$ – FFSSTCAP $_{q, r, h}$) / FFSSACAP $_{q, r, h}$)

FFSS Availability Reduction Factor

If (FFSSHREAF $_{q, r, h} \geq 0.90$)

Then: FFSSARF $_{q, r, h}$ = 1

Otherwise: FFSSARF $_{q, r, h}$ = Max (0, 1 - (0.90 - FFSSHREAF $_{q, r, h}$) * 2)

FFSS Hourly Rolling Equivalent Availability Factor

$$FFSSHREAF_{q, r, h} = \sum_{hr=h-1451}^{h}(\max(AVCAP_{q, r, hr})) / \sum_{hr=h-1451}^{h}(FFSSACAP_{q, r, hr})$$

Where,

If the Resource is a Combined Cycle Train:

$$AVCAP_{q, r, hr} = \max_{train,hr}(\max(FFSEDFLAG_{q, train, hr}, FFSSAFLAG_{q, ccgr, hr}) * \min(HSL_{q, ccgr, hr}, FFSSACAP_{q, train, hr}))$$

Otherwise:

$$AVCAP_{q, r, hr} = \max(FFSEDFLAG_{q, r, hr}, FFSSAFLAG_{q, r, hr}) * \min(HSL_{q, r, hr}, FFSSACAP_{q, r, hr})$$

Availability for a Combined Cycle Train will be determined pursuant to terms set forth in the RFP but no more than once per hour.

The above variables are defined as follows:

Variable	Unit	Definition
FFSSAMT $_{q, r, h}$	$	*Firm Fuel Supply Service Amount per QSE per Resource by hour*—The payment to QSE *q* ~~for~~assigned to the FFSS ~~provided by FFSSR~~for the primary Generation Resource *r*, for the hour, calculated each hour of November 15 through March 15 during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSAWARD $_{q, r, h}$	$	*Firm Fuel Supply Service Award Amount per QSE by hour*—The payment to the QSE *q* for the FFSS awarded to the primary Generation Resource~~FFSSR~~ *r* for each hour *h*, during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSPR $_{q, r, h}$	$/MW per hour	*Firm Fuel Supply Service Price per QSE per Resource by hour*—The standby price of the primary Generation Resource~~FFSSR~~ *r* represented by QSE *q*, as specified in the FFSS award. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
FFSSCRF $_{q, r, h}$	none	*Firm Fuel Supply Service Capacity Reduction Factor per QSE per Resource by hour*—The capacity reduction factor ~~for~~assigned to the primary Generation Resource~~FFSSR~~ *r*, represented by QSE *q*, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.

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HSL $_{q, r, hr}$	MW	*High Sustained Limit*—The HSL of ~~a~~the primary Generation Resource or the alternate Generation Resource r represented by QSE q as submitted in the COP, for the hour h. Where for a combined cycle Resource r is a Combined Cycle Generation Resource.
FFSSFRC $_{q, r, h}$	$ per hour	*Firm Fuel Supply Service Fuel Replacement Cost*—The fuel costs and fees to replace the burned fuel by the FFSSR, not recovered during the FFSS deployment period, paid to the primary Generation Resource~~for FFSSR~~ r represented by QSE q for each FFSS instructed hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train.
FFSSDRP $_{q, r, h}$	none	*Firm Fuel Supply Service Deployment Reduction Percentage*—The percentage of the Firm Fuel Supply Service Standby Fee subject to clawback per paragraphs (~~7~~5) through (1~~4~~2) of Section 8.1.1.2.1.~~6~~7, Firm Fuel Supply Service Resource Qualification, Testing, ~~and~~ Decertification, and Recertification for the QSE q, ~~for~~assigned to the primary Generation Resource~~FFSSR~~ r, for the hour h. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train.
FFSSSBF $_{q, r, h}$	$	*Firm Fuel Supply Service Standby Fee per QSE per Resource by hour*—The standby fee to QSE q for the FFSS ~~for~~assigned to the primary Generation Resource~~provided by FFSSR~~ r, for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train.
FFSSTCAP $_{q, r, h}$	MW	*Firm Fuel Supply Service Testing Capacity per QSE per Resource*—The tested capacity of the primary Generation Resource~~FFSSR~~ r, represented by QSE q, for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train.
FFSSACAP $_{q, r, hr}$	MW	*Firm Fuel Supply Service Awarded Capacity per QSE per Resource*—The awarded FFSS capacity of the primary Generation Resource~~FFSSR~~ r, represented by QSE q as specified in the FFSS award, applicable to each hour of November 15 through March 15 during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train.
FFSSARF $_{q, r, h}$	none	*Firm Fuel Supply Service Availability Reduction Factor per QSE per Resource by hour*—The availability reduction factor ~~of~~assigned to the primary Generation Resource~~FFSSR~~ r represented by QSE q for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train.
FFSSHREAF $_{q, r, h}$	none	*Firm Fuel Supply Service Hourly Rolling Equivalent Availability Factor per QSE per Resource by hour*—The equivalent availability factor ~~of~~assigned to the primary Generation Resource ~~FFSSR~~ r represented by QSE q over 1,452 hours, for the hour. Where for a Combined Cycle Train, the Resource r is the Combined Cycle Train.

FFSSAFLAG $_{q, r, hr}$	none	*Firm Fuel Supply Service Availability Flag per QSE per Resource by hour*—The flag of the availability ~~of~~assigned to the primary Generation Resource or the alternate Generation Resource *r* represented by QSE *q*, 1 for available and 0 for unavailable, for the hour. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train.
FFSEDFLAG $_{q, r, hr}$	none	*Firm Fuel Supply Event Deployment Flag per QSE per Resource by hour*—The flag of successful FFSS deployment ~~of~~assigned to the primary Generation Resource *r* for the approved hours to restock reserved fuel for providing FFSS~~hours in the period defined in the RFP~~ following the instruction or approval from ERCOT, or in the event the FFSSR has consumed all the fuel reserved to provide FFSS and ERCOT does not issue an instruction or approval to restock reserved fuel, ~~to restore FFSS capability~~ represented by QSE *q*, 1 for successful and 0 for unsuccessful, for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
AVCAP $_{q, r, hr}$	MW	*Available Capacity per Resource by hour*—The available capacity ~~of~~assigned to the primary Generation Resource *r* represented by QSE *q* as calculated for the hour. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.
q	none	A QSE.
r	none	A~~n~~ primary or alternate Generation Resource approved by ERCOT to provide FFSS~~R or an alternate Resource approved by ERCOT~~.
hr	none	The index of a given hour and the previous 1,451 hours counted only during each hour of November 15 through March 15 during the awarded FFSS obligation period~~, or during the period as defined in the FFSS RFP~~.
h	none	The Operating Hour.
train	none	A Combined Cycle Train or an alternate Combined Cycle Train approved by ERCOT.
ccgr	none	A Combined Cycle Generation Resource within the Combined Cycle Train.

(5) The total of the payments to each QSE for all FFSSRs represented by this QSE for a given hour is calculated as follows:

$$\mathbf{FFSSAMTQSETOT}_{q} = \sum_{r} \mathbf{FFSSAMT}_{q, r}$$

The above variables are defined as follows:

Variable	Unit	Definition
FFSSAMTQSETOT $_{q}$	$	*Firm Fuel Supply Service Amount QSE Total per QSE*—The total of the payments to QSE *q* for FFSS provided by all the FFSS Resources represented by this QSE for the hour.
FFSSAMT $_{q, r}$	$	*Firm Fuel Supply Service Amount per QSE per Resource*—The payment to QSE *q* for the FFSS ~~for~~assigned to the primary Generation Resource~~provided by Resource~~ *r*, for the hour, calculated each hour of November 15 through March 15 during the awarded FFSS obligation period. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train.

Variable	Unit	Definition
q	none	A QSE.
r	none	A~~n~~ primary or alternate Generation Resource approved by ERCOT to provide FFSS~~R~~.

8.1.1.2.1.6 Firm Fuel Supply Service Resource Qualification, Testing, ~~and~~ Decertification, and Recertification

Commented [CP3]: Please note NPRR1169 also proposes revisions to this section.

(1) Generation Resources that meet the following requirements are eligible~~will be considered qualified~~ to provide Firm Fuel Supply Service (FFSS) and may be selected in the procurement~~bidding~~ process for FFSS. Both the primary Generation Resource and any alternate Generation Resources, as specified in the FFSS Offer Submission Form, must meet the following requirements prior to submitting an FFSS Offer Submission Form:

(a) Successfully demonstrates dual fuel capability, the ability to establish and burn an alternative onsite stored fuel, and has onsite fuel storage capability in an amount that satisfies the minimum FFSS capability requirements, as described in paragraph (2) below; ~~set forth in the FFSS request for proposal (RFP). This minimum alternative fuel storage capability must be demonstrated such that the Firm Fuel Supply Service Resource (FFSSR) has the capability to operate at the awarded MW value for a period defined in the FFSS RFP. A QSE demonstrates this capability by confirming the following in its bid submission form:~~

~~(i) The onsite fuel storage for the FFSSR is sufficient to satisfy the requirements established in the Protocols and the FFSS RFP;~~

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~~(ii) The FFSSR is capable of being dispatched by SCED but does not have to be qualified for any specific Ancillary Service; and~~

~~(iii) The FFSSR is able to begin operation using onsite stored alternative fuel within the period defined in the RFP; or~~

(b) Has an onsite natural gas storage capability in an amount that satisfies the minimum FFSS capability requirements, as defined in paragraph (2) below ~~set forth in the FFSS RFP. This minimum alternative onsite storage capability must be demonstrated such that the FFSSR has the capability to operate at the awarded MW value for a period defined in the FFSS RFP. A QSE demonstrates this capability by confirming the following in its bid submission form:~~

~~(i) The onsite natural gas fuel storage for the FFSSR is sufficient to satisfy the requirements established in the Protocols and the FFSS RFP;~~

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~~(ii) The FFSSR is capable of being dispatched by SCED but does not have to be qualified for any specific Ancillary Service; and~~

~~(iii) The FFSSR is able to begin operation using onsite stored natural gas fuel within the period defined in the RFP~~; or

(c) Successfully demonstrates the ability to provide FFSS in order to maintain Resource availability in the event of a natural gas curtailment or other fuel supply disruption consistent with qualifying technologies identified by the Public Utility Commission of Texas (PUCT).

(2) The minimum FFSS capability requirement is the volume of fuel necessary to operate the Generation Resource at the FFSS MW award level for the duration requirement specified in the RFP. This MW value must be greater than or equal to the Generation Resource's Low Sustained Limit (LSL) and is a limit on the MW quantity of FFSS that can be offered for the Generation Resource in the FFSS Offer Submission Form.

(3) A Generation Resource will not be considered qualified to provide FFSS if, in a prior obligation period, the Generation Resource was an FFSSR during a Watch for winter weather and the Generation Resource:

(a) Failed to come On-Line or stay On-Line during an FFSS deployment due to a fuel-related issue ~~due to a fuel-related issue~~ for two or more deployments ~~in an awarded FFSS obligation period~~;

(b) Came On-Line or continued to generate using reserved fuel during an FFSS deployment, but failed to generate on average at the minimum of either 95% of the MW level instructed by ERCOT or 95% of the awarded FFSS MW value due to a fuel-related issue ~~due to a fuel-related issue~~ for two or more deployments ~~in an awarded FFSS obligation period~~; or

(c) Failed to maintain an Hourly Rolling Equivalent Availability Factor greater than or equal to 50%.

(d) However, such Generation Resource may nevertheless be considered qualified to provide FFSS if the Generation Resource:

(i) Has subsequently been recertified, as provided in paragraph (21) below; or

(ii) The QSE representing the Generation Resource submits a corrective action plan to ERCOT and has agreement with ERCOT on that plan.

(~~4~~2) A QSE representing a~~n FFSSR~~Generation Resource that will be offered to provide FFSS as a primary Generation Resource or an alternate Generation Resource must annually demonstrate ~~the~~ each offered Generation Resource~~FFSSR~~'s capability to use ~~an onsite stored alternative fuel or~~ reserved fuel sources identified in paragraphs (1)(a~~b~~) through~~and~~ (1)(c) above and sustain its output for 60 minutes at the MW value equal to the QSE's desired level of FFSS qualification for the Resource~~maximum awarded MW amount~~. The maximum MW of FFSS that can be offered for the designated Resource by the QSE must be limited to the average Real-Time net real power (in MW) telemetered for the Resource during the demonstration period. Each QSE representing an FFSSR or prospective FFSSR must annually complete the test or successfully deploy at the maximum awarded MW amount for at least the demonstration period~~60 minutes~~ and

inform ERCOT by ~~November 1~~August 15 of each year. In order to complete this annual process, the QSE representing the Generation Resource(s) shall:

(a) ~~The QSE representing the FFSSR shall~~If qualifying by a self test, coordinate the test with the ERCOT Control Room and show the Resource as having a Resource Status of "ONTEST" in its COP and through its Real-Time telemetry for the duration of the demonstration; and~~.~~

(b) Submit a Resource FFSS qualification form with the date and time of the self test or the successful deployment that the QSE would like considered for qualification.

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(5~~3~~) A QSE representing an FFSSR must ensure the full awarded FFSS capability is available by November 15 of each year awarded in the RFP.

(6~~4~~) A QSE representing an FFSSR shall update ~~its~~the Availability Plan for a~~n~~ Generation Resource~~FFSSR~~ to show ~~the FFSSR~~it is unavailable to provide~~if the~~ FFSS~~R~~ if it is not available to come On-Line or generate using reserved fuel. ~~The FFSSR shall continue to be shown as unavailable until it can successfully come On-Line using reserved fuel or completes a successful test as described in paragraph (2) above.~~ The QSE representing an FFSSR must also submit an Availability Plan for any alternate Generation Resources that were designated in the FFSS Offer Submission Form. The QSE shall continue to show the Generation Resource is unavailable to provide FFSS in the Availability Plan until it can successfully come On-Line or generate using the reserved fuel.

[NPRR1154: Replace paragraph (64) above with the following upon system implementation:]

(64) A QSE representing an FFSSR shall update ~~its~~the Availability Plan for a~~n~~ ~~FFSSR~~Generation Resource to show ~~the FFSSR~~it is unavailable to provide~~if the~~ FFSS~~R~~ if it is not available to come On-Line or generate using reserved fuel. The QSE representing an FFSSR must~~may~~ submit an Availability Plan for any alternate Generation Resource that were designated in the FFSS Offer Submission Form~~previously approved by ERCOT to replace the FFSSR~~. ~~The FFSSR shall continue to be shown as unavailable until it can successfully come On-Line using reserved fuel or completes a successful test as described in paragraph (2) above.~~The QSE shall continue to show the Generation Resource is unavailable to provide FFSS in the Availability Plan until it can successfully come On-Line or generate using the reserved fuel.

(7) An FFSSR that is not available to come On-Line shall inform the ERCOT ~~C~~control ~~R~~room as soon as practicable and update the FFSSR Availability Plan within 60 minutes of identifying the unavailability.

(8~~5~~) If the FFSSR ~~does~~is not ~~reflect that it is~~ available~~, through its Availability Plan,~~ for the hours for which ERCOT has issued a Watch for winter weather, ERCOT shall claw back and/or withhold the FFSS Hourly Standby Fee for 90 days, unless the FFSSR

successfully deployed for its entire FFSS award obligation or~~and~~ exhausted emission hours allocated for the FFSSR, as specified in the FFSS Offer Submission Form~~RFP for the FFSSR~~. Evidence of an FFSSR not being available includes, but is not limited to, an Availability Plan submission of unavailable or other communications to the ERCOT ~~C~~control ~~R~~room indicating the FFSSR is not available during the Watch.

(9~~6~~) If the FFSSR fails to come On-Line or stay On-Line during an FFSS deployment due to a fuel-related issue, ERCOT shall claw back and/or withhold the FFSS Hourly Standby Fee for 90 days. A QSE representing an FFSSR may coordinate with ERCOT and seek approval to take the FFSSR Off-Line for no more than four hours to perform critical maintenance associated with consuming the reserved fuel. If the QSE coordinates with ERCOT and receives approval to take the FFSSR unit Off-Line and brings the FFSSR back On-Line within four hours or less, this shall not count as failure to stay On-Line for the purpose of this paragraph.

(10~~7~~) If the FFSSR comes On-Line or continues generating using reserved fuel during an FFSS deployment, but fails to telemeter on average an HSL equal to or greater than 95% of the awarded FFSS MW value due to a fuel-related issue, ERCOT shall claw back and/or withhold the FFSS Hourly Standby Fee for 90 days, in proportion to the difference between the awarded MW value and the average telemetered HSL over the FFSS deployment period.

(11~~8~~) If the FFSSR comes On-Line or continues generating using reserved fuel during an FFSS deployment but fails to generate on average at the minimum of either 95% of the MW level instructed by ERCOT or 95% of the awarded FFSS MW value due to a fuel-related issue, ERCOT shall claw back and/or withhold the FFSS Hourly Standby Fee for 90 days, in proportion to the difference between the average MW level instructed by ERCOT over the FFSS deployment period and the corresponding average generation of the FFSSR.

(12~~9~~) If the FFSSR fails to come On-Line or stay On-Line during an FFSS deployment due to a non-fuel related issue, ERCOT shall claw back and/or withhold the FFSS Hourly Standby Fee for 15 days.

(13~~0~~) If the FFSSR comes On-Line or continues generating using reserved fuel during an FFSS deployment but fails to telemeter on average an HSL equal to or greater than 95% of the awarded FFSS MW value due to a non-fuel related issue, ERCOT shall claw back and/or withhold the FFSS Hourly Standby Fee for 15 days, in proportion to the difference between the average MW level instructed by ERCOT over the FFSS deployment period.

(14~~1~~) If the FFSSR comes On-Line or continues generating using reserved fuel during an FFSS deployment but fails to generate on average at the minimum of either 95% of the MW level instructed by ERCOT or 95% of the awarded FFSS MW value due to a non-fuel related issue, ERCOT shall claw back and/or withhold the FFSS Hourly Standby Fee for 15 days, in proportion to the difference between the average MW level instructed by

ERCOT over the FFSS deployment period and the corresponding average generation of the FFSSR.

(15~~2~~) Notwithstanding paragraphs (~~8~~5) through (14~~1~~) above, if the FFSSR is otherwise available but fails to come On-Line or is forced Off-Line due to a transmission system outage or transmission system limitation that would prevent the unit from being deployed to LSL, ERCOT shall not claw back the ~~hourly~~ FFSS Hourly Standby Fee.

(16) If conditions described in paragraphs (10~~7~~) and (11~~8~~) occur for the same deployment period, ERCOT shall only claw back the larger amount calculated in paragraph (10~~7~~) or (11~~8~~). If conditions described in paragraphs (13~~0~~) and (14~~1~~) occur for the same deployment period, ERCOT shall only claw back the larger amount calculated in paragraph (13~~0~~) or (14~~1~~).

(17) ERCOT shall decertify a primary Generation Resource or any alternate Generation Resource that was an FFSSR during a Watch for winter weather for any of the following:

(a) Failure to come On-Line or stay On-Line during an FFSS deployment due to a fuel-related issue ~~due to a fuel-related issue~~ for two or more deployments ~~in an awarded FFSS obligation period~~;

(b) If the FFSSR comes On-Line or continues generating using reserved fuel during an FFSS deployment, failure to generate on average at the minimum of either 95% of the MW level instructed by ERCOT or 95% of the awarded FFSS MW value due to a fuel-related issue ~~due to a fuel-related issue~~ for two or more deployments ~~in an awarded FFSS obligation period~~; or

(c) Failure to maintain an Hourly Rolling Equivalent Availability Factor greater than or equal to 50%.

(18) If ERCOT decertifies a primary Generation Resource, the QSE shall designate an alternate Generation Resource that was awarded through the FFSS procurement process to replace the decertified Generation Resource and continue to provide FFSS. The designated alternate Generation Resource shall satisfy all of the requirements in paragraph (8) of Section 3.14.5, Firm Fuel Supply Service. The designated alternate Generation Resource may no longer be an alternate for another primary Generation Resource.

(19) If ERCOT decertifies an FFSSR that does not have any alternate Generation Resources that were awarded through the FFSS procurement process, ERCOT will cease payments to the QSE under Section 6.6.14.2, Firm Fuel Supply Service Hourly Standby Fee Payment and Fuel Replacement Cost Recovery, until the FFSSR is recertified by ERCOT. ERCOT may issue one or more RFPs to replace the decertified FFSSR's capacity for the remainder of the FFSS obligation period.

(20) If ERCOT has not replaced a decertified Generation Resource's FFSSR capacity, the QSE of a decertified Generation Resource may request to reestablish its FFSSR certification by submitting a corrective action plan to ERCOT that identifies actions taken

to correct performance deficiencies and by successfully passing a new test, as described in paragraph (4) above. ERCOT shall, in its sole discretion, determine whether a Generation ~~Generation~~ Resource shall be recertified.

(21) A decertified Generation Resource that has not been recertified by ERCOT must submit a corrective action plan to ERCOT and have agreement with ERCOT on that plan in order to be considered qualified to provide FFSS and be selected in the procurement process for any future FFSS obligation period.

ERCOT Impact Analysis Report

NPRR Number	1167	NPRR Title	Improvements to Firm Fuel Supply Service Based on Lessons Learned
Impact Analysis Date		March 8, 2023	
Estimated Cost/Budgetary Impact		None.	
Estimated Time Requirements		No project required. This Nodal Protocol Revision Request (NPRR) can take effect following Public Utility Commission of Texas (PUCT) approval.	
ERCOT Staffing Impacts (across all areas)		Ongoing Requirements: No impacts to ERCOT staffing.	
ERCOT Computer System Impacts		No impacts to ERCOT computer systems.	
ERCOT Business Function Impacts		ERCOT will update its business processes to implement this NPRR.	
Grid Operations & Practices Impacts		No impacts to ERCOT grid operations and practices.	

Evaluation of Interim Solutions or Alternatives for a More Efficient Implementation
None offered.

Comments
None.

Board Report

NPRR Number	1169	NPRR Title	Expansion of Generation Resources Qualified to Provide Firm Fuel Supply Service in Phase 2 of the Service
Date of Decision		June 20, 2023	
Action		Recommended Approval	
Timeline		Urgent – to ensure ERCOT can expand Generation Resources that may qualify to provide Firm Fuel Supply Service (FFSS), consistent with Public Utility Commission of Texas (PUCT) guidance, for next winter.	
Proposed Effective Date		July 1, 2023	
Priority and Rank Assigned		Not applicable	
Nodal Protocol Sections Requiring Revision		1.3.1.1, Items Considered Protected Information 2.1, Definitions 3.14.5, Firm Fuel Supply Service 6.6.14.1, Firm Fuel Supply Service Fuel Replacement Costs Recovery 8.1.1.2.1.6, Firm Fuel Supply Service Resource Qualification, Testing, and Decertification	
Related Documents Requiring Revision/Related Revision Requests		None	
Revision Description		This Nodal Protocol Revision Request (NPRR) expands the qualifications by which a Generation Resource may provide the reliability service, FFSS. FFSS was developed in 2022 consistent with directives from the Legislature (provided in Section 18 of Senate Bill 3, 87(R) that are now found in PURA 39.159(c)(2), requiring ancillary or reliability services to address reliability during extreme cold-weather conditions) and the PUCT (*see e.g.* PUCT Project No. 52373, *Approval of Blueprint for Wholesale Electric Market Design and Directives to ERCOT* (Jan. 13, 2022)), ordering ERCOT to develop a firm-fuel product that provides additional grid reliability and resiliency during extreme cold weather and compensates generation resources that meet a higher resiliency standard. As part of the PUCT's directives in the development of FFSS, ERCOT was instructed to investigate – in a second phase – what	

	qualification requirements could be developed to expand the pool of Generation Resources qualified to provide FFSS to include natural gas-fired Generation Resources with owned natural gas that is stored offsite and accompanied by firm transportation and storage agreements while maintaining a high level of reliability for the product. This NPRR is the result of ERCOT's efforts to fulfill that directive. Those efforts included several discussions with stakeholders and natural-gas industry representatives, a workshop on a proposed framework, and receipt of guidance from the PUCT during open meetings held in the first quarter of this year. In summary, under this NPRR, the qualifications by which a Generation Resource may be an FFSS Resource (FFSSR) or an alternate are expanded to include those which meet characteristics that include the following: • The Generation Entity that owns the Generation Resource (or an Affiliate) must own and have good title to sufficient natural gas in the offsite storage facility for the offered Generation Resource to deliver the offered MW for at least the duration specified in the Request for Proposal (RFP) and must commit to maintain such quantity of gas in storage at all times during the obligation period; • The Generation Entity (or an Affiliate) must either own, or have a Firm Gas Storage Agreement for, sufficient natural gas storage capacity for the offered Generation Resource to deliver the offered MW for at least the duration specified in the RFP; • The Generation Entity for the Generation Resource (or an Affiliate) must have entered into a Firm Transportation Agreement on an FFSS Qualifying Pipeline; and • A number of ongoing compliance obligations must be satisfied, including a requirement that the Generation Entity for the FFSSR must provide a report to ERCOT with certain information and data if the FFSSR fails to deploy due to a Force Majeure Event. Revisions in this NPRR also include categorizing certain information provided to ERCOT as Protected Information; adding definitions; and addressing requirements for recovery of replacement-fuel costs if ERCOT approves restocking of fuel after deployment of an FFSSR.
Reason for Revision	[X] Addresses current operational issues. [ ] Meets Strategic goals (tied to the ERCOT Strategic Plan or directed by the ERCOT Board). [ ] Market efficiencies or enhancements

Board Report

	☐ Administrative ☐ Regulatory requirements ☐ Other: (explain) *(please select all that apply)*
Business Case	FFSS is a product designed to assist in Generation Resource reliability in the event of a natural gas curtailment or other fuel-supply disruption. The expansion of the pool of Generation Resource that qualify to provide the service that is proposed in this NPRR balances the interests of: • Fostering more competition in offers and increasing the amount of capacity that can be procured; and • Maintaining requirements designed to mitigate failure risks and result in a high level of reliability.
PRS Decision	On 4/13/23, PRS voted unanimously to grant NPRR1169 Urgent status and to table NPRR1169. All Market Segments participated in the vote. On 5/10/23, PRS voted to recommend approval of NPRR1169 as amended by the 5/9/23 ERCOT comments as revised by PRS and to forward to TAC NPRR1169 and the 3/29/23 Impact Analysis. There was one abstention from the Investor Owned Utility (IOU) (Lone Star Transmission) Market Segment. All Market Segments participated in the vote.
Summary of PRS Discussion	On 4/13/23, ERCOT Staff provided an overview of NPRR1169 and the request for Urgent status in hopes of NPRR1169 approval in advance of the next FFSS period, and participants reviewed the 4/7/23 HEN comments, the 4/12/23 Calpine comments, and the 4/12/23 LCRA comments. Participants were generally supportive of NPRR1169 and the formal comments, but requested tabling for a month to allow ERCOT Staff to confer with PUCT Staff on the revised definition proposed in the 4/12/23 Calpine comments. On 5/10/23, participants reviewed the 5/8/23 TIEC comments, the 5/9/23 Calpine comments, and the 5/9/23 ERCOT comments. Participants proposed desktop edits to incorporate the Calpine revisions to the definitions of FFSS Qualifying Pipeline and Firm Transportation Agreement into the 5/9/23 ERCOT comments, and requested ERCOT Staff look into the use of the phrase Force Majeure Event to determine if other terminology would be more appropriate.

Board Report

TAC Decision	On 5/23/23, TAC voted to recommend approval of NPRR1169 as recommended by PRS in the 5/10/23 PRS Report as amended by the 5/22/23 Calpine comments as revised by TAC. There was one abstention from the Independent Generator (Luminant) Market Segment. All Market Segments participated in the vote.
Summary of TAC Discussion	On 5/23/23, TAC reviewed the ERCOT Opinion, ERCOT Market Impact Statement, and Independent Market Monitor (IMM) Opinion for NPRR1169. TAC also reviewed the 5/22/23 Calpine comments and the 5/22/23 ERCOT comments, debated the appropriate definition of FFSS Qualifying Pipeline, and proposed desktop edits to merge the ERCOT-proposed clarifications to Section 8.1.1.2.1.6 into the revisions proposed by the 5/22/23 Calpine comments.
ERCOT Board Decision	On 6/20/23, the ERCOT Board voted unanimously to recommend approval of NPRR1169 as recommended by TAC in the 5/23/23 TAC Report as amended by the 6/12/23 ERCOT comments.

Opinions	
Credit Review	ERCOT Credit Staff and the Credit Finance Sub Group (CFSG) have reviewed NPRR1169 and do not believe that it requires changes to credit monitoring activity or the calculation of liability.
Independent Market Monitor Opinion	IMM supports NPRR1169.
ERCOT Opinion	ERCOT supports approval of NPRR1169 as reflected in the 6/12/23 ERCOT comments.
ERCOT Market Impact Statement	ERCOT Staff has reviewed NPRR1169 and believes the market impact for NPRR1169 expands the pool of Generation Resource that qualify to provide FFSS while balancing the interests of fostering more competition in offers and increasing the amount of capacity that can be procured; and maintaining requirements designed to mitigate failure risks and result in a high level of reliability.

Sponsor	
Name	Davida Dwyer
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Company	ERCOT
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Cell Number	
Market Segment	Not applicable

Market Rules Staff Contact	
Name	Cory Phillips
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Comments Received	
Comment Author	**Comment Summary**
HEN 040723	Proposed edits to include fuel oil as an acceptable onsite storage fuel within Section 8.1.1.2.1.6
Calpine 041223	Proposed additional edits to the 4/7/23 HEN comments to revise the definition of FFSS Qualifying Pipeline
LCRA 041223	Proposed additional edits to the 4/7/23 HEN comments to maintain the status quo regarding Generation Resources with off-site natural gas storage and ownership or control of the natural gas storage and pipeline continuing to qualify to provide FFSS
TIEC 050823	Proposed edits to Section 8.1.1.2.1.6 clarifying that a Force Majeure Event is treated the same way as any cause for unavailability for the purposes of the FFSS Standby Fee
Calpine 050923	Proposed additional edits to the 4/12/23 LCRA comments to revise the definition of FFSS Qualifying Pipeline
ERCOT 050923	Proposed additional clarifying edits to the 4/12/23 LCRA comments incorporating stakeholder feedback that was inadvertently omitted by ERCOT when submitting the NPRR and including the clarification proposed in the 5/8/23 TIEC comments
Calpine 052223	Proposed additional edits to further refine the definition of FFSS Qualifying Pipeline
ERCOT 052223	Proposed additional edits to revert the definition of FFSS Qualifying Pipeline to the version proposed in the 5/9/23 ERCOT comments and to clarifying Force Majeure Event language within Section 8.1.1.2.1.6

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ERCOT 061223	Proposed additional redlines reverting the definitions of FFSS Qualifying Pipeline and Firm Transportation Agreement to the versions proposed in the 5/9/23 ERCOT comments
Calpine 061323	Proposed additional edits to the 6/12/23 comments to expand the definitions of FFSS Qualifying Pipeline and Firm Transportation Agreement
ERCOT 061423	Responded to the 6/13/23 Calpine comments and restated support for the 6/12/23 ERCOT comments

Market Rules Notes

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

- NPRR1166, Protected Information Status of DC Tie Schedule Information
  - Section 1.3.1.1
- NPRR1167, Improvements to Firm Fuel Supply Service Based on Lessons Learned
  - Section 3.14.5
  - Section 6.6.14.1
  - Section 8.1.1.2.1.6
- NPRR1170, Capturing Natural Gas Delivery Information for Natural Gas Generation Resources
  - Section 1.3.1.1
- NPRR1175, Revisions to Market Entry Financial Qualifications and Continued Participation Requirements
  - Section 1.3.1.1
- NPRR1181, Submission of Seasonal Coal and Lignite Inventory Declaration
  - Section 1.3.1.1

Proposed Protocol Language Revision

1.3.1.1 Items Considered Protected Information

Commented [CP1]: Please note NPRRs 1166, 1170, 1175, and 1181 also propose revisions to this section.

(1) Subject to the exclusions set out in Section 1.3.1.2, Items Not Considered Protected Information, and in Section 3.2.5, Publication of Resource and Load Information, "Protected Information" is information containing or revealing any of the following:

(a) Base Points, as calculated by ERCOT. The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

(b) Bids, offers, or pricing information identifiable to a specific Qualified Scheduling Entity (QSE) or Resource. The Protected Information status of part of this information shall expire 60 days after the applicable Operating Day, as follows:

(i) Ancillary Service Offers by Operating Hour for each Resource for all Ancillary Services submitted for the Day-Ahead Market (DAM) or any Supplemental Ancillary Services Market (SASM);

(ii) The quantity of Ancillary Service offered by Operating Hour for each Resource for all Ancillary Service submitted for the DAM or any SASM; and

(iii) Energy Offer Curve prices and quantities for each Settlement Interval by Resource. The Protected Information status of this information shall expire within seven days after the applicable Operating Day if required to be posted as part of paragraph (5) of Section 3.2.5 and within two days after the applicable Operating Day if required to be posted as part of paragraph (7) of Section 3.2.5;

[NPRR1013: Replace paragraph (b) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

(b) Bids, offers, or pricing information identifiable to a specific Qualified Scheduling Entity (QSE) or Resource. The Protected Information status of part of this information shall expire 60 days after the applicable Operating Day, as follows:

(i) Ancillary Service Offers by Operating Hour or Security-Constrained Economic Dispatch (SCED) interval for each Resource for all Ancillary Services submitted for the Day-Ahead Market (DAM) or Real-Time Market (RTM);

(ii) The quantity of Ancillary Service offered by Operating Hour or SCED interval for each Resource for all Ancillary Service submitted for the DAM or RTM; and

(iii) A Resource's Energy Offer Curve prices and quantities by Operating Hour or SCED interval. The Protected Information status of this information shall expire within seven days after the applicable Operating Day if required to be posted as part of paragraph (5) of Section 3.2.5 and within two days after the applicable Operating Day if required to be posted as part of paragraph (7) of Section 3.2.5;

(c) Status of Resources, including Outages, limitations, or scheduled or metered Resource data. The Protected Information status of this information shall expire as follows:

(i) For each Forced Outage, Maintenance Outage, or Forced Derate of a Generation Resource or Energy Storage Resource (ESR) that occurs during or extends into an Operating Day, the Protected Information status of the following information shall expire three days after the applicable Operating Day:

(A) The name and unit code of the Resource affected;

(B) The Resource's fuel type;

(C) The type of Outage or derate;

(D) The start date/time and the planned and actual end date/time;

(E) The Resource's applicable Seasonal net maximum sustainable rating;

(F) The available and outaged MW during the Outage or derate; and

(G) The entry in the "nature of work" field in the Outage Scheduler and any other information concerning the cause of the Outage or derate;

(ii) For each Resource Outage or Forced Derate that occurs during, or that extends into, any time period in which ERCOT has declared an Energy Emergency Alert (EEA), ERCOT may immediately disclose the information identified in paragraph (i) above to a state Governmental Authority, the office of the Governor of Texas, the office of the Lieutenant Governor of Texas, or any member of the Texas Legislature, if requested; and

(iii) For all other information, the Protected Information status shall expire 60 days after the applicable Operating Day;

(d) Current Operating Plans (COPs). The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

(e) Ancillary Service Trades, Energy Trades, and Capacity Trades identifiable to a specific QSE or Resource. The Protected Information status of this information shall expire 180 days after the applicable Operating Day;

(f) Ancillary Service Schedules identifiable to a specific QSE or Resource. The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

[NPRR1013: Replace paragraph (f) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

(f) Ancillary Service awards identifiable to a specific QSE or Resource. The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

(g) Dispatch Instructions identifiable to a specific QSE or Resource, except for Reliability Unit Commitment (RUC) commitments and decommitments as provided in Section 5.5.3, Communication of RUC Commitments and Decommitments. The Protected Information status of this information shall expire 180 days after the applicable Operating Day;

(h) Raw and Adjusted Metered Load (AML) data (demand and energy) identifiable to:

(i) A specific QSE or Load Serving Entity (LSE). The Protected Information status of this information shall expire 180 days after the applicable Operating Day; or

(ii) A specific Customer or Electric Service Identifier (ESI ID);

(i) Wholesale Storage Load (WSL) data identifiable to a specific QSE. The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

(j) Settlement Statements and Invoices identifiable to a specific QSE. The Protected Information status of this information shall expire 180 days after the applicable Operating Day;

(k) Number of ESI IDs identifiable to a specific LSE. The Protected Information status of this information shall expire 365 days after the applicable Operating Day;

(l) Information related to generation interconnection requests, to the extent such information is not otherwise publicly available. The Protected Information status of certain generation interconnection request information expires as provided in Section 1.3.1.4, Expiration of Protected Information Status;

(m) Resource-specific costs, design and engineering data, including such data submitted in connection with a verifiable cost appeal;

(n) Congestion Revenue Right (CRR) credit limits, the identity of bidders in a CRR Auction, or other bidding information identifiable to a specific CRR Account Holder. The Protected Information status of this information shall expire as follows:

(i) The Protected Information status of the identities of CRR bidders that become CRR Owners and the number and type of CRRs that they each

own shall expire at the end of the CRR Auction in which the CRRs were first sold; and

(ii) The Protected Information status of all other CRR information identified above in item (n) shall expire six months after the end of the year in which the CRR was effective.

(o) Renewable Energy Credit (REC) account balances. The Protected Information status of this information shall expire three years after the REC Settlement period ends;

(p) Credit limits identifiable to a specific QSE;

(q) Any information that is designated as Protected Information in writing by Disclosing Party at the time the information is provided to Receiving Party except for information that is expressly designated not to be Protected Information by Section 1.3.1.2 or that, pursuant to Section 1.3.1.4, is no longer confidential;

(r) Any information compiled by a Market Participant on a Customer that in the normal course of a Market Participant's business that makes possible the identification of any individual Customer by matching such information with the Customer's name, address, account number, type of classification service, historical electricity usage, expected patterns of use, types of facilities used in providing service, individual contract terms and conditions, price, current charges, billing record, or any other information that a Customer has expressly requested not be disclosed ("Proprietary Customer Information") unless the Customer has authorized the release for public disclosure of that information in a manner approved by the Public Utility Commission of Texas (PUCT). Information that is redacted or organized in such a way as to make it impossible to identify the Customer to whom the information relates does not constitute Proprietary Customer Information;

(s) Any software, products of software, or other vendor information that ERCOT is required to keep confidential under its agreements;

(t) QSE, Transmission Service Provider (TSP), and Distribution Service Provider (DSP) backup plans collected by ERCOT under the Protocols or Other Binding Documents;

[NPRR857: Replace item (t) above with the following upon system implementation and satisfying the following conditions: (1) Southern Cross provides ERCOT with funds to cover the entire estimated cost of the project; and (2) Southern Cross has signed an interconnection agreement with a TSP and the TSP gives ERCOT written notice that Southern Cross has provided it with: (a) Notice to proceed with the construction of the interconnection; and (b) The financial security required to fund the interconnection facilities:]

(t) QSE, Transmission Service Provider (TSP), Direct Current Tie Operator (DCTO), and Distribution Service Provider (DSP) backup plans collected by ERCOT under the Protocols or Other Binding Documents;

(u) Direct Current Tie (DC Tie) Schedule information. The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

(v) Any Texas Standard Electronic Transaction (TX SET) transaction submitted by an LSE to ERCOT or received by an LSE from ERCOT. This paragraph does not apply to ERCOT's compliance with:

(i) PUCT Substantive Rules on performance measure reporting;

(ii) These Protocols or Other Binding Documents; or

(iii) Any Technical Advisory Committee (TAC)-approved reporting requirements;

(w) Information concerning a Mothballed Generation Resource's probability of return to service and expected lead time for returning to service submitted pursuant to Section 3.14.1.9, Generation Resource Status Updates;

(x) Information provided by Entities under Section 10.3.2.4, Reporting of Net Generation Capacity;

(y) Alternative fuel reserve capability and firm gas availability information submitted pursuant to Section 6.5.9.3.1, Operating Condition Notice, Section 6.5.9.3.2, Advisory, and Section 6.5.9.3.3, Watch, and as defined by the Operating Guides;

(z) Non-public financial information provided by a Counter-Party to ERCOT pursuant to meeting its credit qualification requirements as well as the QSE's form of credit support;

(aa) ESI ID, identity of Retail Electric Provider (REP), and MWh consumption associated with transmission-level Customers that wish to have their Load excluded from the Renewable Portfolio Standard (RPS) calculation consistent with Section 14.5.3, End-Use Customers, and subsection (j) of P.U.C. Subst. R. 25.173, Goal for Renewable Energy;

(bb) Emergency operations plans submitted pursuant to P.U.C. Subst. R. 25.53, Electric Service Emergency Operations Plans;

(cc) Information provided by a Counter-Party under Section 16.16.3, Verification of Risk Management Framework;

(dd) Any data related to Load response capabilities that are self-arranged by the LSE or pursuant to a bilateral agreement between a specific LSE and its Customers,

other than data either related to any service procured by ERCOT or non-LSE-specific aggregated data. Such data includes pricing, dispatch instructions, and other proprietary information of the Load response product;

(ee) Status of Settlement Only Generators (SOGs), including Outages, limitations, or scheduled or metered output data, except that ERCOT may disclose output data from an SOG as part of an extract or forwarded TX SET transaction provided to the LSE associated with the ESI ID of the Premise where the SOG is located. The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

[NPRR829 and NPRR995: Replace applicable portions of paragraph (ee) above with the following upon system implementation:]

(ee) Status of Settlement Only Generators (SOGs) and Settlement Only Energy Storage System (SOESS), including Outages, limitations, schedules, metered output and withdrawal data, or data telemetered for use in the calculation of Real-Time Liability (RTL) as described in Section 16.11.4.3.2, Real-Time Liability Estimate, except that ERCOT may disclose metered output and withdrawal data from an SOG or SOESS as part of an extract or forwarded TX SET transaction provided to the LSE associated with the ESI ID of the Premise where the SOG is located. The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

(ff) Any documents or data submitted to ERCOT in connection with an Alternative Dispute Resolution (ADR) proceeding. The Protected Information status of this information shall expire upon ERCOT's issuance of a Market Notice indicating the disposition of the ADR proceeding pursuant to paragraph (1) of Section 20.9, Resolution of Alternative Dispute Resolution Proceedings and Notification to Market Participants, except to the extent the information continues to qualify as Protected Information pursuant to another paragraph of this Section 1.3.1.1;

(gg) Reasons for and future expectations of overrides to a specific Resource's High Dispatch Limit (HDL) or Low Dispatch Limit (LDL). The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

(hh) Information provided to ERCOT under Section 16.18, Cybersecurity Incident Notification, except that ERCOT may disclose general information concerning a Cybersecurity Incident in a Market Notice in accordance with paragraph (5) of Section 16.18 to assist Market Participants in mitigating risk associated with a Cybersecurity Incident;

(ii) Information disclosed in response to paragraphs (1)-(4) of the Natural Gas Pipeline Coordination section of Section 22, Attachment K, Declaration of Natural Gas Pipeline Coordination, submitted to ERCOT in accordance with Section 3.21, Submission of Declarations of Natural Gas Pipeline Coordination.

The Protected Information status of Resource Outage information shall expire as provided in paragraph (1)(c) of Section 1.3.1.1; and

(jj) Information concerning weatherization activities submitted to, obtained by, or generated by ERCOT in connection with P.U.C. Subst. R. 25.55, Weather Emergency Preparedness, if such information allows the identification of any Resource or Resource Entity.

(kk) Information provided to ERCOT:

(i) By a QSE under paragraph (3) of Section 3.14.5, Firm Fuel Supply Service, as part of an offer to provide Firm Fuel Supply Service (FFSS), except that within ten Business Days of issuing FFSS awards, ERCOT may disclose the identity of all Generation Resources that were offered as primary Generation Resources or alternate Generation Resources to provide FFSS for the most recent procurement period, including prices and quantities offered;

(ii) By a Resource Entity under paragraph (2) of Section 8.1.1.2.1.6, Firm Fuel Supply Service Resource Qualification, Testing, and Decertification, as part of the voluntary process for ERCOT certification of a FFSS Qualified Contract; or

(iii) By a Resource Entity in a Force Majeure Event report required under paragraph (14) of Section 8.1.1.2.16.

2.1 DEFINITIONS

Firm Fuel Supply Service (FFSS) Qualified Contract

A form of Firm Gas Storage Agreement or Firm Transportation Agreement that has been submitted to ERCOT by a Generation Entity for certification that such agreement contains a Qualifying Force Majeure Provision, and otherwise meets the requirements as a Firm Gas Storage Agreement or Firm Transportation Agreement, as applicable, which agreement has in turn been so certified in writing by ERCOT pursuant to the ERCOT Protocols.

Firm Fuel Supply Service (FFSS) Qualifying Pipeline

A pipeline that is ~~a critical natural gas facility, as defined in subsection (c)(2) of P.U.C. SUBST. R. 25.52, Reliability and Continuity of Service, and~~:

(a) A natural gas pipeline subject to the jurisdiction of the Federal Energy Regulatory Commission (FERC) under the Natural Gas Act (15 U.S.C. Section 717 *et seq.*)~~;~~. ~

(b) ~~a~~An intrastate natural gas pipeline that is not operated by ~~operated by~~ a "gas utility" under Title 3 of the Texas Utilities Code~~;~~., or

~~(c) a~~Aan intrastate pipeline that is owned or operated by a "gas utility" under Title 3 of the Texas Utilities Code that has certified to the Generation Entity that it does not have any contracts for firm service on such pipeline with human needs customers or local distribution systems that serve human needs customers~~:~~

~~(i) pProvides only transmission service, in accordance with its gas utility tariff;, and~~

~~(ii) has certified~~Certifies to the Generation Entity that ~~if~~ it reduces firm deliveries to ~~customers pursuant to 16 TEX. ADMIN. CODE 7.455(a)(3), Curtailment Standards, it will have sufficient operational capacity, including sufficient pipeline pressure, to provide Firm Service for the volume of gas required by the Generation Resource's Firm Transportation Agreement sufficient capacity is available on the transportation path between the storage facility and a Generation Resource to provide continuous service in the event of a curtailmenthas certified to the Generation Entity that it does not have any contracts for firm service on such pipeline with human needs customers or local distribution systems that serve human needs customers~~; and

~~(iii) Has not curtailed deliveries of gas, pursuant to 16 TEX. ADMIN. CODE 7.455 or any applicable predecessor rule or order, to a Generation Resource that was subject to a firm transportation agreement during a curtailment event that occurred at any time since January 1, 2021~~

~~(b) A critical natural gas facility, as defined in subsection (c)(2) of P.U.C. SUBST. R. 25.52, Reliability and Continuity of Service.~~

(b) A critical natural gas facility, as defined in subsection (c)(2) of P.U.C. SUBST. R. 25.52, Reliability and Continuity of Service.

A pipeline operated by an Entity that participates in ERCOT's Load Resource program, Emergency Response Service (ERS) program, or any Demand response programs with respect to any equipment that supports that pipeline will not be eligible to be an FFSS Qualifying Pipeline.

Firm Gas Storage Agreement

An executed and enforceable contract (together with any associated statement of operating conditions) for Firm Service at a natural gas storage facility that:

(a) Contains a Qualifying Force Majeure Provision;

(b) Provides the right to monitor daily balances of storage capacity; and

(c) Requires the storage provider to make available a detailed accounting indicating a reasonable estimate of daily and month-to-date receipts and deliveries of natural gas.

Firm Service

Natural gas transportation or storage service that is:

(a) Described as firm under a contract, tariff, or statement of operating conditions;

(b) The highest priority of service available; and

(c) Available on demand and up to the contracted quantities.

Firm Transportation Agreement

An executed and enforceable contract (together with any associated statement of operating conditions) for Firm Service on a Firm Fuel Supply Service (FFSS) Qualifying Pipeline that:

(a) Contains a Qualifying Force Majeure Provision;

(b) Provides the right to monitor daily balances of flowing natural gas; ~~and~~ and

(c) Requires the pipeline to make available a detailed accounting indicating a reasonable estimate of daily and month-to-date receipts and deliveries of natural gas; ~~and~~

~~(d) In the case of a contract for Firm Service on a FFSS Qualifying Pipeline that is owned or operated by a "gas utility" under Title 3 of the Texas Utilities Code, contains a representation and warranty that the owner or operator of the FFSS Qualifying Pipeline that if it reduces firm deliveries to customers pursuant to 16 TEX. ADMIN. CODE 7.455(a)(3), Curtailment Standards, it will have sufficient operational capacity, including sufficient pipeline pressure, to provide Firm Service for the volume of gas required by the Generation Resource's Firm Transportation Agreement on the transportation path between the storage facility and the Generation Resourcehas sufficient capacity to serve all Generation Resources that have contracted for Firm Service without curtailment during a curtailment event (as such term is defined in Title 16 of the Texas Administrative Code).~~

Qualifying Force Majeure Provision

A force majeure provision that provides that:

(a) Before the pipeline or storage provider may suspend its performance due to force majeure, the pipeline or storage provider must exercise due diligence and incur reasonable cost to prevent or overcome the event of force majeure;

(b) The pipeline or storage provider will not be entitled to the benefit of force majeure to the extent its performance is affected solely by: its own negligence or willful misconduct; economic hardship (including the pipeline or storage provider's ability to sell natural gas, natural gas transportation service, or natural gas storage service at a higher or more advantageous fee than the fee provided in the contract); breakdown, failure, freezing or breakage of, or the necessity for

making repairs or alterations to, any facilities or equipment caused by a failure to properly maintain such facilities or equipment that is reasonably foreseeable; or a failure to satisfy weatherization requirements under applicable law;

(c) Upon declaring force majeure, the pipeline or storage provider must provide notice and reasonably full details describing such force majeure in writing to the Generation Entity; and

(d) Within ten days of a notice by a party of an event or occurrence of force majeure, the unaffected party shall have the right, at its own expense and upon reasonable notice to the other party, to audit and examine copies of the relevant portion of the records and recordings of the other party to the extent reasonably necessary to verify the full details of the event or occurrence of force majeure as described in the notice.

3.14.5 Firm Fuel Supply Service

Commented [CP2]: Please note NPRR1167 also proposes revisions to this section.

(1) Each Generation Resource providing Firm Fuel Supply Service (FFSS) must meet technical requirements specified in Section 8.1.1, QSE Ancillary Service Performance Standards, and Section 8.1.1.1, Ancillary Service Qualification and Testing.

(2) ERCOT shall issue an RFP by August 1 of each year soliciting bids from QSEs for Generation Resources to provide FFSS. The RFP shall require bids to be submitted on or before September 1 of each year.

(3) QSEs may submit bids individually for one or more Generation Resources to provide FFSS using a bid submission form posted on the ERCOT website. A QSE may not submit a bid for a given Generation Resource unless it is the QSE designated by the Resource Entity associated with that Generation Resource. ERCOT must evaluate bids using criteria identified in an appendix to the RFP. ERCOT will issue FFSS awards for each Generation Resource by September 30 and will post the awards to the MIS Certified Area for each QSE that is awarded an FFSS obligation. The posting will include information such as, but not limited to, the identity of the Resource, the FFSS Standby Fee awarded, the amount of reserved fuel associated with the FFSS award, and MW amount awarded, and the Generation Resource's initial minimum LSL when providing FFSS. The RFP awards shall cover a period beginning November 15 of the year in which the RFP is issued and ending on March 15 of the second calendar year after the year in which the RFP is issued. A QSE may submit a bid for one or more Generation Resources to provide FFSS beginning in the same year the RFP is issued or beginning in a subsequent year covered by the RFP. An FFSS Resource (FFSSR) shall be considered an FFSSR and is required to provide FFSS from November 15 through March 15 for each year of the awarded FFSS obligation period. ERCOT shall ensure FFSSRs are procured and deployed as necessary to maintain ERCOT System reliability during, or in preparation for, a natural gas curtailment or other fuel supply disruption.

(a) On the bid submission form, the QSE shall disclose information including, but not limited to, the amount of reserved fuel offered, the MW available from the

capacity offered, and each limitation of the offered Resource that could affect the Resource's ability to provide FFSS.

(b) If the QSE offers a Generation Resource as meeting the qualification requirements in paragraph (1)(c) of Section 8.1.1.2.1.6, Firm Fuel Supply Service Resource Qualification, Testing, and Decertification, the QSE must submit as part of its offer a certification for the offered Generation Resource. The certification must include:

(i) Certification that the Generation Entity for the Generation Resource (or an Affiliate) has a Firm Transportation Agreement, firm natural gas supply, and contracted or owned storage capacity meeting the qualification requirements in paragraph (1)(c) of Section 8.1.1.2.1.6;

(ii) The following information regarding the Firm Transportation Agreement:

(A) FFSS Qualifying Pipeline name;

(B) Term;

(C) Primary points of receipt and delivery;

(D) Maximum daily contract quantity (in MMBtu);

(E) Shipper of record; and

(F) Whether the Firm Transportation Agreement provides for ratable receipts and deliveries; and

(iii) The following information regarding the storage arrangements:

(A) Storage facility name;

(B) Term of the Firm Gas Storage Agreement (if applicable);

(C) Maximum storage quantity owned or contracted under the Firm Gas Storage Agreement (in MMBtu); and

(D) Maximum daily withdrawal quantity (in MMBtu).

(c~~b~~) When a Resource is selected to provide FFSS, the Resource shall complete all applicable testing requirements as specified in Section 8.1.1.2.1.6, Firm Fuel Supply Service Resource Qualification, Testing, and Decertification.

[NPRR1154: Replace paragraph (c~~b~~) above with the following upon system implementation:]

(c~~b~~) When a Resource is selected to provide FFSS, the Resource shall complete all applicable testing requirements as specified in Section 8.1.1.2.1.6, Firm Fuel Supply Service Resource Qualification, Testing, and Decertification. A QSE representing a FFSSR is allowed to provide the FFSS with an alternate Resource previously approved by ERCOT to replace the FFSSR.

(d~~e~~) An offer to provide FFSS is an offer to supply an awarded amount of capacity, maintain an awarded amount of fuel, and to designate a specific number of emissions hours for which the awarded FFSSR is obligated to perform in the event that FFSS is deployed. Reserved fuel, emissions hours, and other attributes, in excess of the FFSS awards can be used at the discretion of the QSE as long as the awarded fuel reserves and emissions hours are maintained for the purposes of ERCOT deployment of FFSS.

(4) The QSE for an FFSSR shall ensure that the Resource is prepared and able to come On-Line or remain On-Line in order to maintain Resource availability in the event of a natural gas curtailment or other fuel supply disruption.

(a) When ERCOT issues a Watch for winter weather, ERCOT will notify all Market Participants, including all QSEs representing FFSSRs to begin preparation for potential FFSS deployment. Such preparation may include, but is not limited to, circulation of alternate fuel to its facilities, if applicable; heat fuel oil to appropriate temperatures, if applicable; call out additional personnel as necessary, and be ready to receive a Dispatch Instruction to provide FFSS. An FFSSR may begin consuming a minimum amount of alternate fuel to validate it is ready for an FFSS deployment.

(b) In anticipation of or in the event of a natural gas curtailment or other fuel supply disruption to an FFSSR, the QSE shall notify ERCOT as soon as practicable and may request approval to deploy FFSS to generate electricity. ERCOT shall evaluate system conditions and may approve the QSE's request. The QSE shall not deploy the FFSS unless approved by ERCOT. Upon approval to deploy FFSS, ERCOT shall issue an FFSS VDI to the QSE.

(c) In conjunction with a QSE notification under paragraph (b) above, the QSE shall also report to ERCOT any environmental limitations that would impair the ability of the FFSSR to provide FFSS for the required duration of the FFSS award.

(d) ERCOT may issue an FFSS VDI without a request from the QSE, however ERCOT shall not issue an FFSS VDI without evidence of an impending or actual fuel supply disruption affecting the FFSSR.

(e) If the FFSSR is generating at a level above the FFSS MW awarded amount and that level of output cannot be sustained for the required duration of the FFSS award, ERCOT may use a manual High Dispatch Limit (HDL) override to ensure

the FFSSR can continue to generate at the FFSS MW award level for the entire FFSS award duration.

(f) The FFSSR shall continuously deploy FFSS to generate electricity until the earlier of (i) the exhaustion of the FFSS service duration as defined in the RFP, (ii) the fuel supply disruption no longer exists, or (iii) ERCOT determines the FFSS deployment is no longer needed. Upon satisfying one of these qualifications, ERCOT shall terminate the VDI and the FFSSR shall not be obligated to continue its FFSS deployment for the remainder of the Watch.

(g) A QSE shall notify ERCOT of the anticipated exhaustion of emissions credits or permit allowances at least six hours before the exhaustion of those credits or allowances. Upon receiving such notification, ERCOT shall modify the VDI so the FFSS deployment is terminated upon exhaustion of those credits or allowances.

(h) Upon deployment or recall of FFSS, ERCOT shall notify all Market Participants that such deployment or recall has been made, including the MW capacity of service deployed or recalled.

(5) During or following the deployment of FFSS, the QSE for an FFSSR may request an approval from ERCOT to restock their fuel reserve to restore their FFSS capability. Following approval from ERCOT, a QSE may restock their FFSS obligation. In the event ERCOT does not receive the request to restock from a QSE representing an FFSSR, ERCOT may instruct QSE to start restocking fuel reserve to restore its FFSS capability.

(6) FFSSRs providing BSS must reserve FFSS capability in addition to the contracted BSS obligation. Any remaining fuel reserve in addition to that required for meeting FFSS and BSS obligations can be used at the QSE's discretion.

(7) If ERCOT issues an FFSS VDI to an FFSSR for the same Operating Hour where a RUC instruction was issued, for Settlement, ERCOT will consider the RUC instruction as cancelled.

(8) ERCOT will provide a report to the TAC or its designated subcommittee within 45 days of any FFSS deployments, including the Resources deployed and the reason for the deployments.

(9) Any QSE that submits a bid or receives an award for a SWGR to provide FFSS, and the Resource Entity that owns or controls that SWGR, shall:

(a) Not nominate the SWGR to satisfy supply adequacy or capacity planning requirements in any Control Area other than the ERCOT Region during the period of the FFSS obligation; and

(b) Take any further action requested by ERCOT to ensure that ERCOT will be classified as the "Primary Party" for the SWGR under any agreement between

ERCOT and another Control Area Operator during the period of the FFSS obligation.

(10) On an annual basis after the FFSS season, ERCOT will provide a report separately for the total amounts from Section 6.6.14.1, Firm Fuel Supply Service Fuel Replacement Costs Recovery, and Section 6.6.14.2, Firm Fuel Supply Service Hourly Standby Fee Payment and Fuel Replacement Cost Recovery, to the TAC or its designated subcommittee.

6.6.14.1 Firm Fuel Supply Service Fuel Replacement Costs Recovery

Commented [CP3]: Please note NPRR1167 also proposes revisions to this section.

(1) If ERCOT approves a Firm Fuel Supply Service Resource (FFSSR) to switch to consume the reserved fuel and directs or approves a restocking pursuant to paragraph (5) of Section 3.14.5, Firm Fuel Supply Service, ERCOT shall pay the QSE representing the FFSSR for the replacement of burned fuel, if the QSE has:

(a) Complied with the Firm Fuel Supply Service (FFSS) instruction to switch to the reserved fuel;

(b) Submitted a Settlement and billing dispute consistent with the dispute process described in Section 9.14, Settlement and Billing Dispute Process;

(c) Submitted the following within 90 days of the issuance of a Real-Time Market (RTM) Initial Statement for the Operating Day on which the FFSS instruction was issued:

(i) An attestation signed by an officer or executive with authority to bind the QSE stating that the information contained in the dispute is accurate;

(ii) For each deployment of FFSS, the quantity of total fuel consumed for the hours in each instance when FFSS was deployed;

(iii) For thermal units, the input-output equation or other documentation that allows for verification of fuel consumption for the hours when FFSS was deployed;

(iv) The dollar amount and quantity of fuel purchased to replace the consumed fuel;

(v) Sufficient documentation to support the QSE's determination of the amount and cost of replaced fuel; and

(vi) Any other technical documentation within the possession of the QSE or Resource Entity which ERCOT finds reasonably necessary to verify paragraphs (i) through (v) above. Any additional request from ERCOT for documentation or clarification of previously submitted documentation must be honored within 15 Business Days.

(2) In addition to the requirements under paragraph (1)(c) above, for a Generation Resource that was awarded FFSS using reserved fuel based on a Firm Gas Storage Agreement and is requesting compensation for the cost of the replaced fuel, the QSE or Resource Entity representing the FFSSR must show proof that it purchased and nominated fuel in sufficient quantities (in MMBtu) that was consumed during the FFSS deployment and that its actual receipts and deliveries of such replacement fuel conformed with its nominated quantities.

(32) The Firm Fuel Supply Service Fuel Replacement Cost shall only represent the replacement fuel costs not recovered during the FFSS deployment period through Day-Ahead energy sales and Real-Time energy imbalance settlement revenues related to the Resource with the FFSS award. In addition, the Firm Fuel Supply Service Fuel Replacement Cost shall only include commodity and variable transportation costs directly attributable to the replenishment of fuel for the FFSSR.

(43) ERCOT shall allocate any approved fuel replacement costs to the hours of the corresponding FFSS deployment period when the fuel was consumed following ERCOT's approval to switch to utilize the awarded FFSS.

8.1.1.2.1.6 Firm Fuel Supply Service Resource Qualification, Testing, and Decertification

Commented [CP4]: Please note NPRR1167 also proposes revisions to this section.

(1) Generation Resources that meet the following requirements will be considered qualified to provide Firm Fuel Supply Service (FFSS) and may be selected in the bidding process for FFSS:

(a) Successfully demonstrates dual fuel capability, the ability to establish and burn an alternative onsite stored fuel, and has onsite fuel storage capability in an amount that satisfies the minimum FFSS capability requirements set forth in the FFSS request for proposal (RFP). This minimum alternative fuel storage capability must be demonstrated such that the Firm Fuel Supply Service Resource (FFSSR) has the capability to operate at the awarded MW value for a period defined in the FFSS RFP. A QSE demonstrates this capability by confirming the following in its bid submission form:

(i) The onsite fuel storage for the FFSSR is sufficient to satisfy the requirements established in the Protocols and the FFSS RFP;

(ii) The FFSSR is capable of being dispatched by SCED but does not have to be qualified for any specific Ancillary Service; and

(iii) The FFSSR is able to begin operation using onsite stored alternative fuel within the period defined in the RFP; or

(b) Has an onsite natural gas or fuel oil storage capability or off-site natural gas storage where the Resource Entity and/or QSE owns and controls the natural gas storage and pipeline to deliver the required amount of reserve natural gas to the

Generation Resource from the storage facility in an amount that satisfies the minimum FFSS capability requirements set forth in the FFSS RFP. This minimum alternative ~~onsite~~ storage capability must be demonstrated such that the FFSSR has the capability to operate at the awarded MW value for a period defined in the FFSS RFP. A QSE demonstrates this capability by confirming the following in its bid submission form:

(i) The onsite natural gas or fuel oil or qualifying off-site natural gas fuel storage for the FFSSR is sufficient to satisfy the requirements established in the Protocols and the FFSS RFP;

(ii) The FFSSR is capable of being dispatched by SCED but does not have to be qualified for any specific Ancillary Service; and

(iii) The FFSSR is able to begin operation using onsite stored natural gas or fuel oil or off-site stored natural gas fuel within the period defined in the RFP; or

(c) Meets the following requirements:

(i) The Generation Entity for the Generation Resource (or an Affiliate of such Generation Entity) either owns a storage facility with, or has a Firm Gas Storage Agreement for, sufficient natural gas storage capacity for the offered Generation Resource to deliver the offered MW for the duration requirement specified in the RFP;

(ii) The Generation Entity for the Generation Resource (or an Affiliate of such Generation Entity) must own and have good title to sufficient natural gas in the storage facility for the offered Generation Resource to deliver the offered MW for at least the duration requirement specified in the RFP, and must commit to maintain such quantity of natural gas in storage at all times during the obligation period; and

(iii) The Generation Entity for the Generation Resource (or an Affiliate of such Generation Entity) must have entered into a Firm Transportation Agreement on an FFSS Qualifying Pipeline, or multiple Firm Transportation Agreements on multiple Qualifying Pipelines, and ~~with~~:

(A) Each Firm Transportation Agreement must have a ~~A~~ maximum daily contract quantity sufficient to transport the quantity of natural gas described above from the storage facility to the Generation Resource in a quantity that is sufficient to allow generation of the offered FFSS MW for at least the duration requirement specified in the RFP;

(B) At least one of the Firm Transportation Agreements must contain a ~~A~~ primary receipt point that is the point of withdrawal for the storage facility used to comply with paragraph (i) above;

(C) At least one of the Firm Transportation Agreements must contain a~~A~~ primary delivery point that permits delivery of the natural gas directly to the Generation Resource (including through a plant line or other dedicated lateral); ~~and~~

(D) Each Firm Transportation Agreement must have a~~A~~ term that includes each hour of November 15 through March 15, *i.e.*, during the FFSS obligation period; and

(E) If multiple Firm Transportation Agreements will be used, the point of delivery for each Firm Transportation Agreement, other than the Firm Transportation Agreement that satisfies the requirements set forth in paragraph (C) above, must be a primary receipt point under another Firm Transportation Agreement such that there is a complete path for firm transportation service from the storage facility to the Generation Facility.

(iv) If the Generation Entity will utilize a contractual right to firm gas storage capacity on a third-party system under a Firm Gas Storage Agreement to comply with paragraph (i) above rather than a self-owned physical gas storage facility to qualify, then the Firm Gas Storage Agreement must have:

(A) A term that includes each hour of November 15 through March 15, *i.e.*, during the FFSS obligation period;

(B) A maximum storage quantity not less than the amount of natural gas needed to allow the Generation Resource to deliver the offered MW for the duration requirement specified in the RFP;

(C) A maximum daily withdrawal quantity that permits the Generation Entity (or an Affiliate) to withdraw from storage a daily quantity of natural gas sufficient to allow the Generation Resource to deliver the offered MW for the duration requirement specified in the RFP; and

(D) A point of withdrawal that is a primary receipt point under its Firm Transportation Agreement.

(v) If the Generation Entity will utilize storage owned by it or an Affiliate to comply with paragraph (i) above, then the Generation Entity must certify that for the entire obligation period it or its Affiliate, as applicable, retains the rights to:

(A) Sufficient storage capacity in its facility to store not less than the amount of natural gas needed to allow the Generation Resource to deliver the offered MW for the duration requirement specified in the RFP;

(B) Withdraw from its storage a daily quantity of natural gas sufficient to allow the Generation Resource to deliver the offered MW for the duration requirement specified in the RFP; and

(C) Withdraw from its storage facility at a point of withdrawal that is a primary receipt point under its Firm Transportation Agreement.

(vi) The MW offered by the QSE for the Generation Resource may not be less than the Generation Resource's Low Sustained Limit.

(vii) The Generation Entity for the Generation Resource may satisfy the requirements set forth in paragraphs (i) through (v) above through use of a single, bundled agreement providing for gas supply, storage, and transportation service, as long as the bundled agreement satisfies the requirements of the definitions of Firm Transportation Agreement and Firm Gas Storage Agreement, the requirements in paragraphs (ii), (iii)(A), (iii)(D), (iv)(A), (iv)(B), and (iv)(C) above, and has a primary delivery point that permits delivery of the gas directly to the Generation Resource (including through a plant line or other dedicated lateral).

(d) A Generation Resource may participate as an FFSSR under only one of paragraphs (a), (b), or (c) above.

(~~ee~~) Successfully demonstrates the ability to provide FFSS in order to maintain Resource availability in the event of a natural gas curtailment or other fuel supply disruption consistent with qualifying technologies identified by the Public Utility Commission of Texas (PUCT).

(2) A Generation Entity may, but is not required to, submit in writing a proposed form of Firm Gas Storage Agreement or Firm Transportation Agreement (whether to be entered into by the Generation Entity or an Affiliate thereof) to ERCOT for review to be certified as an FFSS Qualified Contract in accordance with such policies and procedures as ERCOT may develop or require from time to time consistent with the requirements of the ERCOT Protocols.

(a) ERCOT may, but is not obligated to, undertake a review of such agreement and, if acceptable, certify in writing such agreement as an FFSS Qualified Contract. The decision whether to certify such agreement as an FFSS Qualified Contract shall be in ERCOT's sole discretion.

(b) To the extent that any such agreement is so certified by ERCOT, it shall constitute an FFSS Qualified Contract, and a Generation Entity may rely upon such certification for purposes of qualifying as an FFSSR under paragraph (1)(c) above. Any material change to the ERCOT certified form of an existing FFSS Qualified Contract that affects the requirements of a firm natural gas FFSSR shall require a re-certification by ERCOT. For the avoidance of doubt, a Firm Gas Storage Agreement or Firm Transportation Agreement meeting the requirements

of the natural gas FFSSR is not required to be certified as an FFSS Qualified Contract.

(3~~2~~) A QSE representing an FFSSR must annually demonstrate the FFSSR's capability to use an onsite stored alternative fuel or reserved fuel sources identified in paragraphs (1)(b) and (1)(c) above and sustain its output for 60 minutes at the maximum awarded MW amount. Each QSE representing an FFSSR must annually complete the test or successfully deploy at the maximum awarded MW amount for at least 60 minutes and inform ERCOT by November 1 of each year. The QSE representing the FFSSR shall show the Resource as "ONTEST" in its COP and through its Real-Time telemetry for the duration of the demonstration.

(4~~3~~) A QSE representing an FFSSR must ensure the full awarded FFSS capability is available by November 15 of each year awarded in the RFP.

(5~~4~~) A QSE representing an FFSSR shall update its Availability Plan for an FFSSR to show the FFSSR is unavailable if the FFSSR is not available to come On-Line or generate using reserved fuel. The FFSSR shall continue to be shown as unavailable until it can successfully come On-Line using reserved fuel or completes a successful test as described in paragraph (3~~2~~) above.

[NPRR1154: Replace paragraph (5~~4~~) above with the following upon system implementation:]

(5~~4~~) A QSE representing an FFSSR shall update its Availability Plan for an FFSSR to show the FFSSR is unavailable if the FFSSR is not available to come On-Line or generate using reserved fuel. The QSE representing an FFSSR may submit an Availability Plan for an alternate Resource previously approved by ERCOT to replace the FFSSR. The FFSSR shall continue to be shown as unavailable until it can successfully come On-Line using reserved fuel or completes a successful test as described in paragraph (3~~2~~) above.

(6~~5~~) If the FFSSR does not reflect that it is available, through its Availability Plan, for the hours for which ERCOT has issued a Watch for winter weather, ERCOT shall claw back and/or withhold the FFSS Standby Fee for 90 days, unless the FFSSR successfully deployed for its entire FFSS award obligation and exhausted emission hours allocated in the RFP for the FFSSR.

(7~~6~~) If the FFSSR fails to come On-Line or stay On-Line during an FFSS deployment due to a fuel-related issue, ERCOT shall claw back and/or withhold the FFSS Standby Fee for 90 days. A QSE representing an FFSSR may coordinate with ERCOT and seek approval to take the FFSSR Off-Line for no more than four hours to perform critical maintenance associated with consuming the reserved fuel. If the QSE coordinates with ERCOT and receives approval to take the FFSSR unit Off-Line and brings the FFSSR back On-Line within four hours or less, this shall not count as failure to stay On-Line for the purpose of this paragraph.

(87) If the FFSSR comes On-Line or continues generating using reserved fuel during an FFSS deployment, but fails to telemeter on average an HSL equal to or greater than 95% of the awarded FFSS MW value due to a fuel-related issue, ERCOT shall claw back and/or withhold the FFSS Standby Fee for 90 days, in proportion to the difference between the awarded MW value and the average telemetered HSL over the FFSS deployment period.

(98) If the FFSSR comes On-Line or continues generating using reserved fuel during an FFSS deployment but fails to generate on average at the minimum of either 95% of the MW level instructed by ERCOT or 95% of the awarded FFSS MW value due to a fuel-related issue, ERCOT shall claw back and/or withhold the FFSS Standby Fee for 90 days, in proportion to the difference between the average MW level instructed by ERCOT over the FFSS deployment period and the corresponding average generation of the FFSSR.

(109) If the FFSSR fails to come On-Line or stay On-Line during an FFSS deployment due to a non-fuel related issue, ERCOT shall claw back and/or withhold the FFSS Standby Fee for 15 days.

(110) If the FFSSR comes On-Line or continues generating using reserved fuel during an FFSS deployment but fails to telemeter on average an HSL equal to or greater than 95% of the awarded FFSS MW value due to a non-fuel related issue, ERCOT shall claw back and/or withhold the FFSS Standby Fee for 15 days, in proportion to the difference between the awarded MW value and the average telemetered HSL over the FFSS deployment period.

(121) If the FFSSR comes On-Line or continues generating using reserved fuel during an FFSS deployment but fails to generate on average at the minimum of either 95% of the MW level instructed by ERCOT or 95% of the awarded FFSS MW value due to a non-fuel related issue, ERCOT shall claw back and/or withhold the FFSS Standby Fee for 15 days, in proportion to the difference between the average MW level instructed by ERCOT over the FFSS deployment period and the corresponding average generation of the FFSSR.

(132) Notwithstanding paragraphs (65) through (121) above, if the FFSSR is otherwise available but fails to come On-Line or is forced Off-Line due to a transmission system outage or transmission system limitation that would prevent the unit from being deployed to LSL, ERCOT shall not claw back the hourly FFSS Standby Fee. If conditions described in paragraphs (87) and (98) occur for the same deployment period, ERCOT shall only claw back the larger amount calculated in paragraph (87) or (98). If conditions described in paragraphs (110) and (121) occur for the same deployment period, ERCOT shall only claw back the larger amount calculated in paragraph (110) or (121).

(14) If an FFSSR is unavailable or fails to continuously deploy due to a Force Majeure Event, the Generation Entity for such Generation Resource must provide a report to ERCOT containing certain additional information, including:

(a) If the basis of the non-performance is a Force Majeure Event affecting the FFSSR, a description of the Force Majeure Event giving rise to the non-performance, with reasonably full details of such Force Majeure Event;

(b) If the basis of the non-performance is the unavailability of the FFSSR's FFSS Qualifying Pipeline or natural gas storage facility:

(i) a copy of the relevant Firm Transportation Agreement and/or Firm Gas Storage Agreement;

(ii) a copy of the nominations submitted or a detailed accounting of no notices volumes delivered for the gas day prior to the Force Majeure Event until the gas day after the Force Majeure Event;

(iii) the applicable storage inventory level for the gas day prior to the Force Majeure Event until the gas day after the Force Majeure Event;

(iv) a copy of the force majeure notice from the FFSS Qualifying Pipeline operator or storage provider; and

(v) the capacity and flow data from the FFSS Qualifying Pipeline or storage facility for the gas day prior to the Force Majeure Event until the gas day after the Force Majeure Event;

(c) To the best of its knowledge, how, why, and to what extent the Force Majeure Event actually and directly affected the FFSSR's ability to perform;

(d) The FFSSR's heat rate;

(e) The applicable nominations, and if applicable, no-notice delivered, on the FFSS Qualifying Pipeline from the gas day prior to the Force Majeure Event until the day after the Force Majeure Event; and

(f) ERCOT will have the right to request that the Generation Entity provide, or cause to be provided, any additional information ERCOT deems necessary, and the Generation Entity must provide such requested information to the extent reasonably within its possession or control. If the information is not in the possession of the Generation Entity (or its Affiliate) but may be in the possession of the FFSS Qualifying Pipeline operator or storage provider, the Generation Entity will exercise any contractual rights it has to request such information from the FFSS Qualifying Pipeline operator or storage provider, as applicable.

(15) Unless the agreement is a Certified Contract, if the relevant Firm Transportation Agreement and/or Firm Gas Storage Agreement does not ensure firmness in the manner required by the ERCOT Protocols, ERCOT shall revoke the award and claw back and/or withhold all of the FFSS Hourly Standby Fees for all of the days of the obligation period.

(16) For an FFSSR, a Force Majeure Event will be treated the same as any other cause for unavailability for the purposes of calculating the FFSSR's Firm Fuel Supply Service Hourly Rolling Equivalent Availability Factor and for paragraphs (6) through (12) above.

(17) It will constitute a material change under the ERCOT Protocols if a primary Generation Resource or any alternate Generation Resource that qualified to provide FFSS under paragraph (1)(c) above ceases to satisfy any of the requirements to qualify as an FFSSR under paragraph (1)(c) above (for example, but not limited to, if the Firm Transportation Agreement is terminated or if the FFSS Qualifying Pipeline no longer qualifies as an FFSS Qualifying Pipeline).

(a) The QSE of such Generation Resource will be required to notify ERCOT within two business days of such a material change.

(b) ERCOT may decertify a primary Generation Resource or alternate Generation Resource if such material change is, in ERCOT's sole opinion, an adverse change (for example, but not limited to, if a Firm Transportation Agreement is terminated and not replaced with a comparable, qualifying Firm Transportation Agreement).

ERCOT Impact Analysis Report

NPRR Number	1169	NPRR Title	Expansion of Generation Resources Qualified to Provide Firm Fuel Supply Service in Phase 2 of the Service
Impact Analysis Date		March 29, 2023	
Estimated Cost/Budgetary Impact		None.	
Estimated Time Requirements		No project required. This Nodal Protocol Revision Request (NPRR) can take effect following Public Utility Commission of Texas (PUCT) approval.	
ERCOT Staffing Impacts (across all areas)		Ongoing Requirements: No impacts to ERCOT staffing.	
ERCOT Computer System Impacts		No impacts to ERCOT computer systems.	
ERCOT Business Function Impacts		ERCOT will update its business processes to implement this NPRR.	
Grid Operations & Practices Impacts		No impacts to ERCOT grid operations and practices.	

Evaluation of Interim Solutions or Alternatives for a More Efficient Implementation
None offered.

Comments
None.

Board Report

NPRR Number	1177	NPRR Title	Enhance Exceptional Fuel Cost Process
Date of Decision		June 20, 2023	
Action		Recommended Approval	
Timeline		Urgent – to ensure Qualified Scheduling Entities (QSEs) have a process to reflect their costs in their Energy Offer Curves in Real-Time without the risk of mitigation and uneconomic dispatch resulting in unrecoverable financial losses that if left unchecked would speed up Generation Resource retirements and increase market costs.	
Proposed Effective Date		June 30, 2023 until January 1, 2025	
Priority and Rank Assigned		Not Applicable	
Nodal Protocol Sections Requiring Revision		2.1, Definitions 4.4.9.4.1, Mitigated Offer Cap	
Related Documents Requiring Revision/Related Revision Requests		None	
Revision Description		This Nodal Protocol Revision Request (NPRR) enables Generation Resources to file Exceptional Fuel Costs that include contractual cost and pipeline-mandated costs, and enhances the process for ERCOT and the Independent Market Monitor (IMM) to verify these costs.	
Reason for Revision		[X] Addresses current operational issues. [X] Meets Strategic goals (tied to the ERCOT Strategic Plan or directed by the ERCOT Board). [X] Market efficiencies or enhancements [ ] Administrative [ ] Regulatory requirements [ ] Other: (explain) *(please select all that apply)*	

Board Report

Business Case	In order to preserve reliability and reduce market costs, Generation Resources need the ability to reflect their costs, including contractual costs, in their Energy Offer Curves without the risk of Real-Time mitigation that will result in unrecoverable financial losses. Currently, while Generation Resources that are mitigated have no mechanism to recover their costs, which can be substantial. ERCOT has acknowledged the need to address this gap and are currently developing a more robust process to recognize, capture, and validate contractual costs. However, ERCOT's proposed concept of providing Resources the ability to submit a multi-tier marginal fuel curve is still under development and will also require system changes, which would therefore not be operational for years. This NPRR provides a temporary solution (until January 1, 2025 or as extended by an NPRR) that leverages the existing Exceptional Fuel Cost processes to include the ability to include contractual costs. Additionally, this NPRR gives ERCOT the discretion to reject any ineligible costs submitted by the QSE. In allowing Generation Resources to reflect their costs, this enhancement to the Exceptional Fuel Cost process will have an added benefit of reducing Reliability Unit Commitments (RUCs) since QSEs will no longer have to choose whether to risk financial harm by offering their Generation Resources in Real-Time or whether to keep Generation Resources offline and risk the physical strain of the Generation if called for RUC. Reducing RUCs will reduce uplift costs borne by the market.
PRS Decision	On 5/10/23, PRS voted unanimously to grant NPRR1177 Urgent status. PRS then voted to recommend approval of NPR1177 as revised by PRS and to forward to TAC NPRR1177. There was one opposing vote from the Consumer (Occidental) Market Segment, and three abstentions from the Consumer (Residential) and Independent Retail Electric Provider (IREP) (2) (Reliant, Chariot Energy) Market Segments. All Market Segments participated in the votes.
Summary of PRS Discussion	On 5/10/23, participants debated whether NPRR1177 should be tabled and referred to WMS for consideration along with other Revision Requests addressing Exceptional Fuel Costs and to consider RUCs holistically. Participants expressed concern for the immediate ongoing risk of Entities unable to recover costs for lack of a mechanism in the Protocols. Some participants expressed concern that the mechanism proposed in NPRR1177 would become permanent, and that guardrails should be developed. ERCOT Staff requested time to observe the results of NPRR1177 prior to proposing a permanent solution, and offered a clarification to the proposed language.

Board Report

TAC Decision	On 5/23/23, TAC voted to table NPRR1177. There was one abstention from the Independent Generator (Luminant) Market Segment. All Market Segments participated in the vote. On 6/5/23, TAC voted unanimously to recommend approval of NPRR1177 as recommended by PRS in the 5/10/23 PRS Report, as amended by the 6/1/23 Constellation comments, and the 5/16/23 Impact Analysis; with a recommended effective date of the day after Public Utility Commission of Texas (PUCT) approval and a recommended sunset date of January 1, 2025. All Market Segments participated in the vote.
Summary of TAC Discussion	On 5/23/23, TAC reviewed the ERCOT Opinion, ERCOT Market Impact Statement, and Independent Market Monitor (IMM) Opinion for NPRR1177. Participants reviewed the 5/22/23 Consumers comments and potential desktop edits to NPRR1177 as submitted. Participants discussed Consumers preference for a holistic approach to cost recovery; that certain parties are suffering unrecoverably losses; that additional time is needed to review the 5/22/23 Consumer comments; and that a temporary solution with a sunset date might be preferable to waiting for a long-term solution. Participants requested additional time to review comments, and encouraged interested parties to file additional comments ahead of a Special TAC meeting dedicated to NPRR1177. On 6/5/23, participants reviewed the 5/31/23 Consumers comments and the 6/1/23 Constellation comments, and discussed an effective date and sunset date for NPRR1177 language. The issue of standard language for firm fuel supply contracts was referred to WMS.
ERCOT Board Decision	On 6/20/23, the ERCOT Board voted unanimously to recommend approval of NPRR1177 as recommended by TAC in the 6/5/23 TAC Report.

Opinions	
Credit Review	ERCOT Credit Staff and the Credit Finance Sub Group (CFSG) have reviewed NPRR1177 and do not believe that it requires changes to credit monitoring activity or the calculation of liability.
Independent Market Monitor Opinion	The IMM does not oppose NPRR1177 as a temporary solution, and therefore supports the TAC-recommended version that contains a sunset date.
ERCOT Opinion	ERCOT supports approval of NPRR1177.

Board Report

ERCOT Market Impact Statement	ERCOT Staff has reviewed NPRR1177 and believes the market impact for NPRR1177 will be to preserve reliability and reduce market costs by providing a temporary mechanism leveraging the Exceptional Fuel Cost processes to recognize, capture, and validate contractual costs, allowing Generation Resources to reflect costs in their Energy Offer Curves without the risk of Real-Time mitigation that will result in unrecoverable financial losses.

Sponsor	
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Cell Number	
Market Segment	Independent Generator

Market Rules Staff Contact	
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Comments Received	
Comment Author	**Comment Summary**
Consumers 052223	Proposed additional language to require QSEs to complete an attestation that the forward fuel contract costs are known and actual; to allow ERCOT to prohibit a QSE or Resource from using this functionality if they submit offers that exceed their costs; to direct ERCOT to develop fuel contract language that can be used to support this process and protect consumers and generators from fuel contracts that are designed to target specific cost recovery provisions of the Protocols; to modify the Exceptional Fuel Cost definition to distinguish it from the Fuel Contract Cost definition and other types of costs; and suggested a sunset date of January 1, 2027 for NPRR1177
Consumers 053123	Allowed ERCOT to determine if any costs are ineligible; clarified that Exceptional Fuel Costs are distinct from fuel adders; codified some

	of the language in the Exceptional Fuel Cost attestation; and suggested a sunset date of January 1, 2025 for NPRR1177
Constellation 060123	Accepted a shorter sunset timeline for the development of a long-term solution or extension of the sunset date; clarified that an attestation for Exceptional Fuel Costs are accurate and variable, based on the dispatch of the Resource

Market Rules Notes

The following NPRR(s) also propose revisions to the following section(s):

- NPRR1172, Fuel Adder Definition, Mitigated Offer Caps, and RUC Clawback
  - Section 4.4.9.4.1

Proposed Protocol Language Revision

2.1 DEFINITIONS

Exceptional Fuel Cost

The hourly volume-weighted price of natural gas, purchased during an Operating Day or after the Day-Ahead nomination deadline of 1300 Central Prevailing Time (CPT) on the prior Operating Day, submitted in accordance with paragraph (1)(f) of Section 4.4.9.4.1, Mitigated Offer Cap. ~~Exceptional costs are not routine or reoccurring and predictable costs.~~ Starting January 1, 2024, fuel adders shall not include any fuel purchases included in the submission of Exceptional Fuel Costs as described in paragraph (1)(f) of Section 4.4.9.4.1, Mitigated Offer Cap.

~~**Fuel Contract Cost**~~

~~A fuel price that includes forward fuel contract costs at High Sustained Limit (HSL).~~

4.4.9.4.1 Mitigated Offer Cap

(1) Energy Offer Curves may be subject to mitigation in Real-Time operations under Section 6.5.7.3, Security Constrained Economic Dispatch, using a Mitigated Offer Cap (MOC). ERCOT shall construct an incremental MOC curve in accordance with Section 6.5.7.3 such that each point on the MOC curve is calculated as follows:

[NPRR1014: Replace paragraph (1) above with the following upon system implementation:]

(1) Energy Offer Curves and Energy Bid/Offer Curves may be subject to mitigation in Real-Time operations under Section 6.5.7.3, Security Constrained Economic Dispatch, using a Mitigated Offer Cap (MOC). For Generation Resources, ERCOT shall

construct an incremental MOC curve in accordance with Section 6.5.7.3 such that each point on the MOC curve is calculated as follows:

$$MOC_{q,r,h} = Max [GIHR_{q,r} * Max(FIP, WAFP_{q,r,h}), (IHR_{q,r} * FPRC_{q,r} + OM_{q,r}) * CFMLT_{q,r}]$$

[NPRR1058: Replace the formula "$MOC_{q,r,h}$" above with the following upon system implementation:]

$$MOC_{q,r,h} = Max [GIHR_{q,r} * Max(FIP, WAFP_{q,r,h}), (IHR_{q,r} * FPRC_{q,r} + OM_{q,r})]$$

Where,

If a QSE has submitted an Energy Offer Curve on behalf of a Generation Resource and the Generation Resource has approved verifiable costs, then

$$FPRC_{q,r} = Max(WAFP_{q,r,h}, FIP + FA_{q,r}) * RTPERFIP_{q,r} / 100 + FOP * RTPERFOP_{q,r} / 100$$

If a QSE has not submitted an Energy Offer Curve on behalf of a Generation Resource and the Generation Resource has approved verifiable costs, then

$$FPRC_{q,r} = Max(WAFP_{q,r,h}, FIP + FA_{q,r}) * GASPEROL_{q,r} / 100 + FOP * OILPEROL_{q,r} / 100 + (SFP + FA_{q,r}) * SFPEROL_{q,r} / 100$$

The above variables are defined as follows:

Variable	Unit	Definition
$MOC_{q,r,h}$	$/MWh	*Mitigated Offer Cap per Resource*—The MOC for Resource *r*, for the hour. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train.
$GIHR_{q,r}$	MMBtu/MWh	*Generic Incremental Heat Rate*—The generic, single-value, incremental heat rate. For Generation Resources with a Commercial Operations Date on or before January 1, 2004, the generic incremental heat rate shall be set to 10.5. For Generation Resources that have a Commercial Operations Date after January 1, 2004, this value shall be set to 14.5. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train.
$IHR_{q,r}$	MMBtu/MWh	*Verifiable Incremental Heat Rate per Resource*—The verifiable incremental heat rate curve for Resource *r*, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train.
FIP	$/MMBtu	*Fuel Index Price*—The natural gas index price as defined in Section 2.1, Definitions.
$RTPERFIP_{q,r}$	none	*Fuel Index Price Percentage*—The percentage of natural gas used by Resource *r* to operate above LSL, as submitted with the energy offer curve.
FOP	$/MMBtu	*Fuel Oil Price*—The fuel oil index price as defined in Section 2.1.

Variable	Unit	Definition
RTPERFOP $_{q, r}$	none	*Fuel Oil Price Percentage*—The percentage of fuel oil used by Resource *r* to operate above LSL, as submitted with the energy offer curve.
SFP	$/MMBtu	*Solid Fuel Price*—The solid fuel index price is $1.50.
FPRC $_{q, r}$	$/MMBtu	*Fuel Price Calculated per Resource*—The calculated index price for fuel for the Resource based on the Resources fuel mix. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train.
GASPEROL $_{q, r}$	none	*Percent of Natural Gas to Operate Above LSL*—The percentage of natural gas used by Resource *r* to operate above LSL, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train.
OILPEROL $_{q, r}$	none	*Percent of Oil to Operate Above LSL*—The percentage of fuel oil used by Resource *r* to operate above LSL, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train.
SFPEROL $_{q, r}$	none	*Percent of Solid Fuel to Operate Above LSL*—The percentage of solid fuel used by Resource *r* to operate above LSL, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train.
FA $_{q, r}$	$/MMBtu	*Fuel Adder*—The fuel adder is the average cost above the index price Resource *r* has paid to obtain fuel. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. See the Verifiable Cost Manual for additional information.
OM $_{q, r}$	$/MWh	*Variable Operations and Maintenance Cost above LSL*—The O&M cost for Resource *r* to operate above LSL, including an adjustment for emissions costs, as approved in the verifiable cost process. Where for a Combined Cycle Train, the Resource r is a Combined Cycle Generation Resource within the Combined Cycle Train. See the Verifiable Cost Manual for additional information.
CFMLT $_{q, r}$	none	*Capacity Factor Multiplier*—A multiplier based on the corresponding monthly capacity factor as described in paragraph (1)(d) below.
[NPRR1058: Delete the variable "CFMLT $_{q, r}$" above upon system implementation.]		
WAFP $_{q, r, h}$	$/MMBtu	*Weighted Average Fuel Price*—The volume-weighted average intraday, same-day and spot fuel price, ~~of~~the projected incremental fuel consistent with a fuel supply contract(s), or a combination of these two prices, submitted to ERCOT during the Adjustment Period for a specific Resource and specific hour within the Operating Day, as described in paragraph (1)(f) below.
q	none	A QSE.
r	none	A Generation Resource.
h	none	The Operating Hour.

(a) For a Resource contracted by ERCOT under paragraph (4) of Section 6.5.1.1, ERCOT Control Area Authority, ERCOT shall increase the O&M cost such that every point on the MOC curve is greater than the SWCAP in $/MWh.

[NPRR1008 and NPRR1014: Replace applicable portions of paragraph (a) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1008; or upon system implementation for NPRR1014:]

(a) For a Resource contracted by ERCOT under paragraph (4) of Section 6.5.1.1, ERCOT Control Area Authority, ERCOT shall increase the O&M cost such that every point on the MOC curve is greater than the effective Value of Lost Load (VOLL) in $/MWh.

(b) Notwithstanding the MOC calculation described in paragraph (1) above, the MOC for ESRs shall be set at the SWCAP. No later than December 31, 2023, ERCOT and stakeholders shall submit a report to TAC that includes a recommendation to continue the existing approach or a proposal to implement an alternative approach to determine the MOC for ESRs.

[NPRR1008 and NPRR1014: Replace applicable portions of paragraph (b) above with the following upon the system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1008; or upon system implementation for NPRR1014:]

(b) Notwithstanding the MOC calculation described in paragraph (1) above, the MOC for ESRs shall be set at the RTSWCAP. No later than December 31, 2023, ERCOT and stakeholders shall submit a report to TAC that includes a recommendation to continue the existing approach or a proposal to implement an alternative approach to determine the MOC for ESRs.

(c) For Quick Start Generation Resources (QSGRs) the MOC shall be adjusted in accordance with Verifiable Cost Manual Appendix 7, Calculation of the Variable O&M Value and Incremental Heat Rate used in Real Time Mitigation for Quick Start Generation Resources (QSGRs).

[NPRR1008 and NPRR1014: Insert applicable portions of paragraph (d) below upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1008; or upon system implementation for NPRR1014; and renumber accordingly:]

(d) For On-line hydro Generation Resources not operating in Synchronous Condenser Fast-Response mode, the MOC shall be adjusted in accordance with Verifiable Cost Manual, Appendix 12, Calculation of the Variable O&M Value and Incremental Heat Rate used in Real Time Mitigation for On-Line Hydro Generation Resources not operating in Synchronous Condenser Fast-Response mode.

(d) The multipliers for the MOC calculation above are as follows:

(i) 1.10 for Resources running at a ≥ 50% capacity factor for the previous 12 months;

(ii) 1.15 for Resources running at a ≥ 30 and < 50% capacity factor for the previous 12 months;

(iii) 1.20 for Resources running at a ≥ 20 and < 30% capacity factor for the previous 12 months;

(iv) 1.25 for Resources running at a ≥ 10 and < 20% capacity factor for the previous 12 months;

(v) 1.30 for Resources running at a ≥ 5 and < 10% capacity factor for the previous 12 months;

(vi) 1.40 for Resources running at a ≥ 1 and < 5% capacity factor for the previous 12 months; and

(vii) 1.50 for Resources running at a less than 1% capacity factor for the previous 12 months.

[NPRR1058: Delete paragraph (d) above upon system implementation and renumber accordingly.]

(e) The previous 12 months' capacity factor must be updated by ERCOT by the 20th day of each month using the most recent data for use in the next month. ERCOT shall post to the MIS Secure Area the capacity factor for each Resource before the start of the effective month.

[NPRR1058: Delete paragraph (e) above upon system implementation and renumber accordingly.]

(f) During the Adjustment Period, a QSE representing a Resource may submit Exceptional Fuel Cost ~~or Fuel Contract Cost~~ as a volume-weighted average fuel price for use in the MOC calculation for that Resource. To qualify as Exceptional Fuel Cost ~~as Exceptional Fuel Cost~~, the submission must meet the following conditions:

(i) For all Resources, the weighted average fuel price must exceed FIP for the applicable Operating Day, plus a threshold parameter value of $1/MMBtu, plus the applicable fuel adder. For Resources without approved verifiable costs, the fuel adder will be set to the default value assigned to Resources with approved verifiable costs, as defined in the Verifiable Cost Manual. The threshold parameter value in this paragraph shall be recommended by

the Wholesale Market Subcommittee (WMS) and approved by the Technical Advisory Committee (TAC). ERCOT shall update the threshold value on the first day of the month following TAC approval unless otherwise directed by the TAC. ERCOT shall provide a Market Notice prior to implementation of a revised parameter value.

(ii) Fixed cost (fees, penalties and similar non-gas costs) may not be included in the calculation of the weighted average fuel price.

(iii) The weighted average fuel price in paragraph (1) above must be a single value and based on the following fuel price options:

(A) A volume-weighted price considering ~~A~~all intra-day, same day, and spot fuel purchases for the Resource; or

(B) A projected fuel price for a Resource with a fuel supply contract(s) that also has submitted an Energy Offer Curve for the Operating Hour where the Energy Offer Curve is calculated as the incremental heat rate times the incremental fuel price plus Operations and Maintenance (O&M) cost; or

(C) A combination of the above two options.

A weighted average fuel price based on actual fuel purchases must be included in the calculation of the weighted average fuel price in paragraph (1) above. These must account for at least 10% of the total fuel volume burned by the applicable Resource for the hour for which the weighted average fuel price is computed. A projected incremental fuel price must be consistent with the terms of the fuel supply contract(s). A weighted average fuel price based on a combination of these options must meet the requirements described for each of the options. As noted in paragraph (l) below, the methodology used in the allocation of the cost and volume of ~~purchased~~ fuel to the Resource for the hour is subject to validation by ERCOT.

(iv) Weighted average fuel prices must be submitted individually for each Operating Hour for which they are applicable. Values submitted outside of the Adjustment Period will be rejected and not used in the calculation of the MOC for the designated Operating Hour.

(v) A projected volume-weighted average fuel price must be consistent with the Energy Offer Curve for each Operating Hour for which they are applicable, and consistent with the signed and executed fuel supply contract(s) for each Resource.

(vi) ~~An Exceptional~~ An Exceptional Fuel ~~Contract~~ Cost submitted based on projected fuel prices may not match with the actual volume-weighted average fuel price due to prospective costs and/or contractual costs.

(g) ERCOT may notify the Independent Market Monitor (IMM) if a QSE submits an Exceptional Fuel Cost ~~or Fuel Contract Cost~~.

(h) No later than five Business Days after an Operating Day for which an Exceptional Fuel Cost ~~or Fuel Contract Cost~~ is submitted, ERCOT shall issue a Market Notice indicating the affected Operating Hours and the number of Resources for which a QSE submitted Exceptional Fuel Cost ~~or Fuel Contract Cost~~ for a particular Operating Day.

[NPRR1121: Replace paragraph (h) above with the following upon system implementation:]

(h) The day following an Operating Day for which an Exceptional Fuel Cost ~~or Fuel Contract Cost~~ is submitted, ERCOT shall post a report on the ERCOT website indicating the affected Operating Hours and the number of Resources for which a QSE submitted Exceptional Fuel Cost for a particular Operating Day.

(i) No later than 1700 Central Prevailing Time (CPT) on the 15th day following an Exceptional Fuel Cost ~~or Fuel Contract Cost~~ submission, the submitting QSE shall provide ERCOT with the calculation of the weighted average fuel price, intraday or same-day fuel purchases, if applicable, and any available supporting documentation. Such information may include, but is not limited to, documents of the following nature: relevant contracts between the QSE or Resource Entity and fuel supplier, trade logs, transportation, storage, balancing and distribution agreements, calculation of the weighted average fuel price, or any other documentation necessary to support the Exceptional Fuel Cost ~~or Fuel Contract Cost~~ price and volume for the applicable period(s).

(j) No later than 1700 Central Prevailing Time (CPT) on the 60th day following an Exceptional Fuel Cost submission, the submitting QSE shall provide ERCOT with all supporting documentation not previously provided to ERCOT. No supporting documentation will be accepted after the 60th day.

(k) The accuracy of submitted Exceptional Fuel Cost ~~and Fuel Contract Cost~~ and the need for purchasing intraday or same-day gas must be attested to by a duly authorized officer or agent of the QSE representing the Resource. The attestation must be provided in a standardized format acceptable to ERCOT and submitted with the other documentation described in paragraph (i) above. ~~The~~An attestation for Exceptional Fuel Costs must state that the costs are ~~not routine costs~~accurate and variable, based on the dispatch of the Resource. ~~An attestation for Fuel Contract Costs must state that the costs are known and actual fuel costs.~~

(l) ERCOT will use the supporting documentation to validate the Exceptional Fuel Cost ~~or Fuel Contract Cost~~ for the applicable period. Validation will include, but not be limited to, the cost and the quantity of purchased fuel, Resource-specific heat rates, and the methodology used in the allocation of the cost and volume of

purchased fuel if applicable, to the Resource for the applicable hour used in the weighted average fuel price calculation. In connection with the validation process ERCOT may request additional documentation or clarification of previously submitted documentation. Such requests must be honored within ten Business Days.

(m) At ERCOT's sole discretion, submission and follow-up information deadlines may be extended on a case-by-case basis.

(n) The documentation described in paragraphs (i) through (l) above is only required for the hours for which Exceptional Fuel Costs were submitted and the Resource was ~~flagged or~~ subject to mitigation.

(o) For Resources submitting Exceptional Fuel Costs based on projected incremental fuel prices based on a contract(s) the QSE must submit to ERCOT all applicable fuel supply contracts at least ten Business Days in advance of submitting Exceptional Fuel Costs. ERCOT may, at any time, notify the QSE of any cost identified in the contract that is ineligible for inclusion in any Exceptional Fuel Cost submission. Upon receiving such notification, the QSE shall ensure that such cost is not included in any Exceptional Fuel Cost submission or in any Energy Offer Curve submission for any hours for which Exceptional Fuel Costs are submitted. The absence of any such notification shall not imply that such cost is eligible for inclusion in any Exceptional Fuel Cost submission or in any Energy Offer Curve submission.

~~(p) In its sole discretion, ERCOT may reject the use of a fuel contract used for Fuel Contract Costs that it believes are not known actual fuel costs. By May 1, 2024, ERCOT must develop a standardized fuel contract format or structure that reflects known and actual costs. At minimum, this contract format or structure must guarantee that the Resource knows the full cost of fuel and associated costs before it submits an Energy Offer Curve. A Resource is not required to use the suggested contract format or structure, but a contract that does not use it may be determined by ERCOT to not reflect known and actual fuel costs.~~

~~(q) If ERCOT determines that a Resource submitted Exceptional Fuel Costs or Fuel Contract Costs that exceeded their actual fuel and verified O&M costs, ERCOT may, in its sole discretion, prohibit the Resource or its QSE from using the Exceptional Fuel Cost process or Fuel Contract Cost process until the issues that led to the exceedance have been addressed to ERCOT's satisfaction.~~

ERCOT Impact Analysis Report

NPRR Number	1177	NPRR Title	Enhance Exceptional Fuel Cost Process
Impact Analysis Date		May 16, 2023	
Estimated Cost/Budgetary Impact		None.	
Estimated Time Requirements		No project required. This Nodal Protocol Revision Request (NPRR) can take effect following Public Utility Commission of Texas (PUCT) approval.	
ERCOT Staffing Impacts (across all areas)		Ongoing Requirements: No impacts to ERCOT staffing.	
ERCOT Computer System Impacts		No impacts to ERCOT computer systems.	
ERCOT Business Function Impacts		No impacts to ERCOT business functions.	
Grid Operations & Practices Impacts		No impacts to ERCOT grid operations and practices.	

Evaluation of Interim Solutions or Alternatives for a More Efficient Implementation
None offered.

Comments
None.

Board Report

NPRR Number	1178	NPRR Title	Expectations for Resources Providing ERCOT Contingency Reserve Service
Date of Decision		June 20, 2023	
Action		Recommended Approval	
Timeline		Urgent – to align Protocol language with the expected performance of ERCOT Contingency Reserve Service (ECRS) as quickly as possible.	
Proposed Effective Date		July 1, 2023	
Priority and Rank Assigned		Not applicable	
Nodal Protocol Sections Requiring Revision		3.9.1, Current Operating Plan (COP) Criteria 6.4.4.1, Energy Offer Curve for On-Line Non-Spinning Reserve Capacity 6.5.7.6.2.4, Deployment and Recall of ERCOT Contingency Reserve Service 8.1.1.4.4, ERCOT Contingency Reserve Service Energy Deployment Criteria	
Related Documents Requiring Revision/Related Revision Requests		Nodal Operating Guide Revision Request (NOGRR) 253, Related to NPRR1178, Expectations for Resources Providing ERCOT Contingency Reserve Service	
Revision Description		This Nodal Protocol Revision Request (NPRR) provides clarifications and updates regarding expectations for Resources providing ECRS. First, this NPRR provides clarity on expectations for Resource Status for Load Resources, other than Controllable Load Resources, when the Resource is providing ECRS simultaneously with Responsive Reserve (RRS). Under the current Protocols, the choice of Resource Status by the Qualified Scheduling Entity (QSE) may not be apparent. Second, to align with NPRR892, Non-Spin Reserve Energy Floor Clarification, this NPRR places an offer floor on capacity for Resources providing ECRS concurrently with On-Line Non-Spinning Reserve (Non-Spin). This change ensures that On-Line capacity for providing Non-Spin is priced above the $75/MWh offer floor. NPRR892 addressed this requirement for when a Resource is providing RRS and/or Regulation Up Service (Reg-Up) in addition to On-Line Non-Spin, however the timing of that NPRR was such that ECRS was not included in the proposed language. Lastly, this NPRR updates the ECRS deployment obligation requirements for Load Resources, other than Controllable Load	

	Resources. The proposed language makes the requirement consistent with what will be in place with the implementation of Real-Time Co-optimization (RTC) of energy and Ancillary Services and states that any response to a deployment must remain in effect until recalled by ERCOT.
Reason for Revision	☒ Addresses current operational issues. ☐ Meets Strategic goals (tied to the ERCOT Strategic Plan or directed by the ERCOT Board). ☐ Market efficiencies or enhancements ☒ Administrative ☐ Regulatory requirements ☐ Other: (explain) *(please select all that apply)*
Business Case	This NPRR addresses three concerns with the existing Protocol language. First, this NPRR provides clarity on Resource Status selection for Load Resources, other than Controllable Load Resources, that are providing ECRS simultaneously with RRS. Under the current Protocols, there may be confusion on which Resource Status to use when the two Ancillary Services are being provided at the same time. Second, the current Protocols require Resources providing On-Line Non-Spin to offer that capacity at or above $75/MWh. Additionally, if the same Resource is also providing RRS and/or Reg-Up, the same floor applies to the capacity for those Ancillary Services as well. This Protocol language was introduced with NPRR892 and ensures that On-Line capacity for providing Non-Spin is priced above the $75/MWh offer floor. With the timing of NPRR892 relative to the NPRR that introduced ECRS, inclusion of ECRS in this requirement was not included in the proposed language. This NPRR address that incidental omission. Lastly, this NPRR updates the ECRS deployment obligation requirements for Load Resources, other than Controllable Load Resources, and states the any response to an ECRS deployment must remain in effect until recalled by ERCOT. The proposed language makes the requirement consistent with other Ancillary Services being provided by these Resources and with what will be in place with the implementation of RTC.
PRS Decision	On 5/10/23, PRS voted unanimously to grant NPRR1178 Urgent status. PRS then voted to recommend approval of NPRR1178 as

	submitted and to forward to TAC NPRR1178 and the 5/3/23 Impact Analysis. There was one abstention from the Investor Owned Utility (IOU) (Lone Star Transmission) Market Segment. All Market Segments participated in both votes.
Summary of PRS Discussion	On 5/10/23, ERCOT Staff provided an overview of NPRR1178 and the request for Urgent status. Participants discussed the interaction of Energy Offer Curves for, and possible deployment scenarios involving, ECRS and On-Line Non-Spin within Section 6.4.4.1.
TAC Decision	On 5/23/23, TAC voted to recommend approval of NPRR1178 as recommended by PRS in the 5/10/23 PRS Report. There was one abstention from the Independent Generator (Luminant) Market Segment. All Market Segments participated in the vote.
Summary of TAC Discussion	On 5/23/23, TAC reviewed the ERCOT Opinion, ERCOT Market Impact Statement, and Independent Market Monitor (IMM) Opinion for NPRR1178.
ERCOT Board Decision	On 6/20/23, the ERCOT Board voted unanimously to recommend approval of NPRR1178 as recommended by TAC in the 5/23/23 TAC Report.

Opinions	
Credit Review	ERCOT Credit Staff and the Credit Finance Sub Group (CFSG) have reviewed NPRR1178 and do not believe that it requires changes to credit monitoring activity or the calculation of liability.
Independent Market Monitor Opinion	The IMM abstains from proffering an opinion on the $75 offer floor provision and recognizes that an alternative may be needed in time if ECRS is frequently deployed before Non-Spin.
ERCOT Opinion	ERCOT supports approval of NPRR1178.
ERCOT Market Impact Statement	ERCOT Staff has reviewed NPRR1178 and believes the market impact for NPRR1178 clarifies and aligns Protocols with the expectations for Resources providing ECRS.

Sponsor	
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Company	ERCOT

Board Report

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Market Segment	Not applicable

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Comments Received	
Comment Author	**Comment Summary**
None	

Market Rules Notes

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

- NPRR863, Creation of ERCOT Contingency Reserve Service and Revisions to Responsive Reserve (unboxed 6/9/23)
  - Section 6.5.7.6.2.4
  - Section 8.1.1.4.4
-

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.

[NPRR1085: Replace paragraph (2) above with the following upon system implementation:]

(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. Each QSE shall timely update its COP unless in the reasonable judgment of the QSE, such compliance would create an undue threat to safety, undue risk of bodily harm, or undue damage to equipment. The QSE is excused from updating the COP only for so long as the undue threat to safety, undue risk of bodily harm, or undue damage to equipment exists. The time for updating the COP begins once the undue threat to safety, undue risk of bodily harm, or undue damage to equipment no longer exists.

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

[NPRR1007, NPRR1014, and NPRR1029: Replace applicable portions of paragraph (3) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029:]

(3) Each QSE that represents a Resource shall update its COP to reflect the ability of the Resource to provide each Ancillary Service by product and sub-type.

(4) Load Resource COP values may be adjusted to reflect Distribution Losses in accordance with Section 8.1.1.2, General Capacity Testing Requirements.

(5) 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. Unless otherwise provided below, these Resource Statuses are to be used for COP and/or Real-Time telemetry purposes, as appropriate.

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

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

[NPRR1007, NPRR1014, and NPRR1029: Delete item (B) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029; and renumber accordingly.]

(C) ON – On-Line Resource with Energy Offer Curve;

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

[NPRR1000: Delete item (D) above upon system implementation and renumber accordingly.]

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

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

[NPRR1007, NPRR1014, and NPRR1029: Delete item (F) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029; and renumber accordingly.]

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

[NPRR1000, NPRR1007, NPRR1014, and NPRR1029: Delete item (G) above upon system implementation for NPRR1000, NPRR1014, or NPRR1029; or upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; and renumber accordingly.]

(H) FRRSUP – Available for Dispatch of Fast Responding Regulation Service (FRRS). This Resource Status is only to be used for Real-Time telemetry purposes;

[NPRR1007, NPRR1014, and NPRR1029: Delete item (H) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 and NPRR1029; and renumber accordingly.]

(I) ONTEST – On-Line blocked from Security-Constrained Economic Dispatch (SCED) for operations testing (while ONTEST, a Generation Resource may be shown on Outage in the Outage Scheduler);

(J) 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);

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

[NPRR1007, NPRR1014, and NPRR1029: Delete item (K) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029; and renumber accordingly.]

(L) ONECRS – On-Line as a synchronous condenser providing ERCOT Contingency Response Service (ECRS) but unavailable for Dispatch by SCED and available for commitment by RUC;

[NPRR1007, NPRR1014, and NPRR1029: Delete item (L) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029; and renumber accordingly.]

(M) ONOPTOUT – On-Line and the hour is a RUC Buy-Back Hour;

(N) SHUTDOWN – The Resource is On-Line and in a shutdown sequence, and has no Ancillary Service Obligations other than Off-Line Non-Spinning Reserve (Non-Spin) which the Resource will provide following the shutdown. This Resource Status is only to be used for Real-Time telemetry purposes;

[NPRR1007, NPRR1014, and NPRR1029: Replace paragraph (N) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029:]

(N) SHUTDOWN – The Resource is On-Line and in a shutdown sequence, and is not eligible for an Ancillary Service award. This Resource Status is only to be used for Real-Time telemetry purposes;

(O) STARTUP – The Resource is On-Line and in a start-up sequence and has no Ancillary Service Obligations. This Resource Status is only to be used for Real-Time telemetry purposes;

[NPRR1007, NPRR1014, and NPRR1029: Replace paragraph (O) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029:]

(O) STARTUP – The Resource is On-Line and in a start-up sequence and is not eligible for an Ancillary Service award, unless coming On-Line in response to a manual deployment of ERCOT Contingency Reserve Service (ECRS) or Non-Spinning

Reserve (Non-Spin). This Resource Status is only to be used for Real-Time telemetry purposes;

(P) OFFQS – Off-Line but available for SCED deployment. Only qualified Quick Start Generation Resources (QSGRs) may utilize this status; and

[NPRR1007, NPRR1014, and NPRR1029: Replace paragraph (P) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029:]

(P) OFFQS – Off-Line but available for SCED deployment and to provide ECRS and Non-Spin, if qualified and capable. Only qualified Quick Start Generation Resources (QSGRs) may utilize this status;

(Q) ONFFRRRS – Available for Dispatch of RRS providing Fast Frequency Response (FFR) from Generation Resources. This Resource Status is only to be used for Real-Time telemetry purposes;

[NPRR1015: Replace paragraph (Q) above with the following upon system implementation of NPRR863:]

(Q) ONFFRRRS – Available for Dispatch of RRS when providing Fast Frequency Response (FFR) from Generation Resources. This Resource Status is only to be used for Real-Time telemetry purposes. A Resource with this Resource Status may also be providing Ancillary Services other than FFR;

[NPRR1007, NPRR1014, and NPRR1029: Delete item (Q) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029; and renumber accordingly.]

[NPRR1007, NPRR1014, NPRR1029, and NPRR1085: Insert applicable portions of items (K) and (L) below upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014, NPRR1029, or NPRR1085:]

(K) ONSC – Resource is On-Line operating as a synchronous condenser and available to provide Responsive Reserve (RRS) and ECRS, if qualified and capable, and for commitment by

RUC, but is unavailable for Dispatch by SCED. For SCED, Resource Base Points will be set equal to the telemetered net real power of the Resource available at the time of the SCED execution; and

(L) ONHOLD – Resource is On-Line but temporarily unavailable for Dispatch by SCED or Ancillary Service awards. This Resource Status is only to be used for Real-Time telemetry purposes. For SCED, Resource Base Points will be set equal to the telemetered net real power of the Resource available at the time of the SCED execution.

(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, as appropriate.

(A) OUT – Off-Line and unavailable, or not connected to the ERCOT System and operating in a Private Microgrid Island (PMI);

(B) OFFNS – Off-Line but reserved for Non-Spin;

[NPRR1007, NPRR1014, and NPRR1029: Delete item (B) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029; and renumber accordingly.]

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

[NPRR1007, NPRR1014, and NPRR1029: Replace item (C) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029:]

(B) OFF – Off-Line but available for commitment in the Day-Ahead Market (DAM), RUC, and providing Non-Spin, if qualified and capable;

(D) EMR – Available for commitment as a Resource contracted by ERCOT under Section 3.14.1, Reliability Must Run, or under paragraph (4) of Section 6.5.1.1, ERCOT Control Area Authority, or available for commitment only for ERCOT-declared Emergency Condition events; the QSE may appropriately set LSL and HSL to reflect operating limits;

(E) EMRSWGR – Switchable Generation Resource (SWGR) operating in a non-ERCOT Control Area, or in the case of a Combined Cycle Train with one or more SWGRs, a configuration in which one or more of the physical units in that configuration are operating in a non-ERCOT Control Area.

(iii) Select one of the following for Load Resources. Unless otherwise provided below, these Resource Statuses are to be used for COP and/or Real-Time telemetry purposes.

(A) ONRGL – Available for Dispatch of Regulation Service by Load Frequency Control (LFC) and, for any remaining Dispatchable capacity, by SCED with a Real-Time Market (RTM) Energy Bid;

(B) FRRSUP – Available for Dispatch of FRRS by LFC and not Dispatchable by SCED. This Resource Status is only to be used for Real-Time telemetry purposes;

(C) FRRSDN - Available for Dispatch of FRRS by LFC and not Dispatchable by SCED. This Resource Status is only to be used for Real-Time telemetry purposes;

(D) ONCLR – Available for Dispatch as a Controllable Load Resource by SCED with an RTM Energy Bid;

(E) ONRL – Available for Dispatch of RRS or Non-Spin, excluding Controllable Load Resources. A Load Resource, excluding Controllable Load Resources, may not provide ECRS with this Resource Status;

[NPRR1007, NPRR1014, and NPRR1029: Delete items (A)-(E) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029; and renumber accordingly.]

(F) ONECL – Available for Dispatch of ECRS, or available for Dispatch of ECRS and RRS simultaneously, excluding Controllable Load Resources;

[NPRR1007, NPRR1014, and NPRR1029: Delete item (F) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029; and renumber accordingly.]

(G) OUTL – Not available;

(H) ONFFRRRSL – Available for Dispatch of RRS, excluding Controllable Load Resources. This Resource Status is only to be used for Real-Time telemetry purposes;

[NPRR1015: Replace paragraph (H) above with the following upon system implementation of NPRR863:]

(H) ONFFRRRSL – Available for Dispatch of RRS when providing FFR, excluding Controllable Load Resources. This Resource Status is only to be used for Real-Time telemetry purposes;

[NPRR1007, NPRR1014, and NPRR1029: Delete item (H) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029.]

[NPRR1007, NPRR1014, NPRR1029: Insert item (B) below upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029:]

(B) ONL – On-Line and available for Dispatch by SCED or providing Ancillary Services.

[NPRR1014 or NPRR1029: Insert applicable portions of paragraph (iv) below upon system implementation:]

(iv) Select one of the following for Energy Storage Resources (ESRs). Unless otherwise provided below, these Resource Statuses are to be used for COP and Real-Time telemetry purposes:

(A) ON – On-Line Resource with Energy Bid/Offer Curve;

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

(C) ONTEST – On-Line blocked from SCED for operations testing (while ONTEST, an Energy Storage Resource (ESR) may be shown on Outage in the Outage Scheduler);

(D) 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);

(E) ONHOLD – Resource is On-Line but temporarily unavailable for Dispatch by SCED or Ancillary Service awards. ESRs shall not be discharging into or charging from the grid. This Resource Status is only to be used for Real-Time telemetry purposes; and

(F) OUT – Off-Line and unavailable, or not connected to the ERCOT System and operating in a Private Microgrid Island (PMI);

(c) The HSL;

(i) For Load Resources other than Controllable Load Resources, the HSL should equal the expected power consumption;

[NPRR1014 and NPRR1029: Insert applicable portions of paragraph (ii) below upon system implementation:]

(ii) For ESRs, the HSL may be negative;

(d) The LSL;

(i) For Load Resources other than Controllable Load Resources, the LSL should equal the expected Low Power Consumption (LPC);

[NPRR1014 and NPRR1029: Insert applicable portions of paragraph (ii) below upon system implementation:]

(ii) For ESRs, the LSL may be positive;

(e) The High Emergency Limit (HEL);

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

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

[NPRR1007, NPRR1014, and NPRR1029: Replace applicable portions of item (g) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029:]

(g) Ancillary Service capability in MW for each product and sub-type.

(i) Regulation Up (Reg-Up);

(ii) Regulation Down (Reg-Down);

(iii) RRS;

(iv) ECRS; and

(v) Non-Spin.

[NPRR1007, NPRR1014, and NPRR1029: Delete items (i)-(v) above upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029.]

(6) 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).

[NPRR1007, NPRR1014, and NPRR1029: Replace paragraph (c) above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project for NPRR1007; or upon system implementation for NPRR1014 or NPRR1029:]

(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 SCED.

(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.

(7) ERCOT may accept COPs only from QSEs.

(8) For the first 168 hours of the COP, ERCOT will update the HSL values for Wind-powered Generation Resources (WGRs) with the most recently updated Short-Term Wind Power Forecast (STWPF), and the HSL values for PhotoVoltaic Generation Resources (PVGRs) with the most recently updated Short-Term PhotoVoltaic Power Forecast (STPPF). ERCOT will notify the QSE via an Extensible Markup Language (XML) message each time COP HSL values are updated with the forecast values. A QSE representing a WGR may override the STWPF HSL value but must submit an HSL value that is less than or equal to the amount for that Resource from the most recent STWPF provided by ERCOT; a QSE representing a PVGR may override the STPPF HSL value but must submit an HSL value that is less than or equal to the amount for that Resource from the most recent STPPF provided by ERCOT.

[NPRR1029: Replace paragraph (8) above with the following upon system implementation:]

(8) For the first 168 hours of the COP, ERCOT will update the HSL values for Wind-powered Generation Resources (WGRs) with the most recently updated Short-Term

Wind Power Forecast (STWPF), and the HSL values for PhotoVoltaic Generation Resources (PVGRs) with the most recently updated Short-Term PhotoVoltaic Power Forecast (STPPF). A QSE representing a DC-Coupled Resource shall provide the capacity value of the Energy Storage System (ESS) that is included in the HSL of the DC-Coupled Resource, and ERCOT will update the DC-Coupled Resource's HSL with the sum of the forecasts of the intermittent renewable generation component and the QSE-submitted value for the ESS component. ERCOT will notify the QSE via an Extensible Markup Language (XML) message each time COP HSL values are updated with the forecast values. A QSE representing a WGR may override the STWPF HSL value but must submit an HSL value that is less than or equal to the amount for that Resource from the most recent STWPF provided by ERCOT; a QSE representing a PVGR may override the STPPF HSL value but must submit an HSL value that is less than or equal to the amount for that Resource from the most recent STPPF provided by ERCOT. A QSE representing a DC-Coupled Resource may override the COP HSL value with a value that is lower than the ERCOT-populated value, and may override with a value that is higher than the ERCOT-populated value if the ESS component of the DC-Coupled Resource can support the higher value.

(9) A QSE representing a Generation Resource that is not actively providing Ancillary Services or is providing Off-Line Non-Spin that the Resource will provide following the shutdown, may only use a Resource Status of SHUTDOWN to indicate to ERCOT through telemetry that the Resource is operating in a shutdown sequence or a Resource Status of ONTEST to indicate in the COP and through telemetry that the Generation Resource is performing a test of its operations either manually dispatched by the QSE or by ERCOT as part of the test. A QSE representing a Generation Resource that is not actively providing Ancillary Services may only use a Resource Status of STARTUP to indicate to ERCOT through telemetry that the Resource is operating in a start-up sequence requiring manual control and is not available for Dispatch.

(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.

(12) A QSE representing a Resource may only use the Resource Status code of EMR for a Resource whose operation would have impacts that cannot be monetized and reflected through the Resource's Energy Offer Curve or recovered through the RUC make-whole process or if the Resource has been contracted by ERCOT under Section 3.14.1 or under paragraph (4) of Section 6.5.1.1. If ERCOT chooses to commit an Off-Line unit with EMR Resource Status that has been contracted by ERCOT under Section 3.14.1 or under

paragraph (4) of Section 6.5.1.1, the QSE shall change its Resource Status to ONRUC. Otherwise, the QSE shall change its Resource Status to ONEMR.

(13) A QSE representing a Resource may use the Resource Status code of ONEMR for a Resource that is:

(a) On-Line, but for equipment problems it must be held at its current output level until repair and/or replacement of equipment can be accomplished; or

(b) A hydro unit.

(14) A QSE operating a Resource with a Resource Status code of ONEMR may set the HSL and LSL of the unit to be equal to ensure that SCED does not send Base Points that would move the unit.

(15) A QSE representing a Resource may use the Resource Status code of EMRSWGR only for an SWGR.

[NPRR1026: Insert paragraph (16) below upon system implementation:]

(16) A QSE representing a Self-Limiting Facility must ensure that the sum of the COP HSL/LSL and the sum of the telemetered HSL/LSL submitted for each Resource within the Self-Limiting Facility do not exceed either the limit on MW Injection or the limit on the MW Withdrawal established for the Self-Limiting Facility.

[NPRR1029: Insert paragraph (16) below upon system implementation:]

(16) A QSE representing a DC-Coupled Resource shall not submit an HSL that exceeds the inverter rating or the sum of the nameplate ratings of the generation component(s) of the Resource.

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.

[NPRR1058: Replace paragraph (a) above with the following upon system implementation:]

(a) 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), ERCOT Contingency Reserve Service (ECRS), 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, ECRS, 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.

[NPRR1131: Replace Section 6.4.4.1 above with the following upon system implementation:]

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

(1) The following applies to Generation Resources and Controllable Load 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) Prior to the end of the Adjustment Period for an Operating Hour during which a Controllable Load Resource is assigned On-Line Non-Spin Ancillary Service Resource Responsibility, the QSE shall ensure that an Energy Bid Curve for the Operating Hour has been submitted and accepted by ERCOT. The Energy Bid Curve submitted by the QSE for the capacity assigned to Non-Spin may not be less than $75 per MWh.

(c) If the QSE also assigns Responsive Reserve (RRS), ERCOT Contingency Reserve Service (ECRS), 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, ECRS, 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.

(d) If the QSE also assigns RRS, ECRS, and/or Reg-Up to a Controllable Load Resource that has been assigned Non-Spin, the QSE shall ensure that a valid Energy Bid Curve for the Operating Hour has been submitted and accepted by ERCOT. The Energy Bid Curves submitted by the QSE for the capacity assigned to the sum of the RRS, ECRS, Reg-Up, and Non-Spin Ancillary Service Resource Responsibilities may not be less than $75 per MWh.

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

6.5.7.6.2.4 Deployment and Recall of ERCOT Contingency Reserve Service

(1) ECRS is intended to:

(a) Help restore the frequency to 60 Hz within ten minutes of a significant frequency deviation;

(b) Provide energy to avoid, or during the implementation of, an EEA;

(c) Provide backup to Reg-Up; and

(d) Provide energy upon detection of insufficient available capacity for net load ramps.

(2) ERCOT shall deploy ECRS to meet NERC Standards and other performance criteria as specified in these Protocols and the Operating Guides~~,~~ by taking one or more of the following actions:

(a) Automatic Dispatch Instruction signal to release ECRS capacity from Generation Resources and Controllable Load Resources to SCED; and/or

(b) Dispatch Instruction for deployment of ~~Load Resources~~ energy from Load Resources via electronic Messaging System.

(3) ERCOT shall release ECRS from Generation Resources and Controllable Load Resources to SCED when frequency drops below 59.91 Hz and available Reg-Up is not sufficient to restore frequency. Upon deployment of Off-Line ECRS from a QSGR providing ECRS, the Resource's Ancillary Service Schedule for ECRS must be adjusted for the ERCOT instructed ECRS deployment and the Resource's status must be set to OFFQS to be available for dispatch by SCED. Once recalled QSGRs providing ECRS must follow the decommitment process outlined in Section 3.8.3.1, Quick Start Generation Resource Decommitment Decision Process.

(4) Energy from Resources providing ECRS may also be manually deployed by ERCOT pursuant to Section 6.5.9, Emergency Operations.

(5) ERCOT shall use SCED and Non-Spin as soon as practicable to recover ECRS reserves.

(6) Following an ECRS deployment to SCED-dispatchable Resources, the QSE's obligation to deliver ECRS remains in effect until ERCOT issues a recall instruction or its ECRS obligation expires, whichever occurs first. Following an ECRS deployment to Load Resources, excluding Controllable Load Resources, or Resources operating in synchronous condenser fast-response mode, the QSE's obligation to deliver ECRS remains in effect until ERCOT issues a recall instruction.

(7) Following a deployment or recall Dispatch Instruction of ECRS, a QSE shall adjust the telemetered ECRS Ancillary Service Schedule for the Resource providing the service and ERCOT shall adjust the HASL based on the QSE's telemetered Ancillary Service Schedule for ECRS, as described in Section 6.5.7.2, Resource Limit Calculator, to account for such deployment.

(8) For Generation Resources and Controllable Load Resources providing ECRS, Base Points include ECRS energy as well as any other energy dispatched by SCED. A Resource must be able to be fully dispatched by SCED to its ECRS Ancillary Service Resource Responsibility within the ten-minute time frame according to its telemetered Emergency Ramp Rate.

(9) Each QSE providing ECRS shall meet the deployment performance requirements specified in Section 8.1.1.4.2, Responsive Reserve Energy Deployment Criteria.

(10) ERCOT shall issue instructions to release ECRS capacity provided from Generation Resources and Controllable Load Resources to SCED over ICCP~~,~~ and shall issue

deployment instructions for Load Resources providing ECRS via XML. Such instructions shall contain the MW requested.

(11) To the extent that ERCOT deploys a Load Resource that is not a Controllable Load Resource and that has chosen a block deployment option, ERCOT shall either deploy the entire Ancillary Service Resource Responsibility or, if only partial deployment is possible, skip the Load Resource with the block deployment option and proceed to deploy the next available Resource.

(12) ERCOT shall recall automatically deployed ECRS capacity once system frequency recovers above 59.97 Hz.

(13) ERCOT shall recall ECRS deployment provided from a Load Resource that is not a Controllable Load Resource once PRC is above a pre-defined threshold, as described in the Operating Guides.

[NPRR1010: Replace Section 6.5.7.6.2.4 above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

6.5.7.6.2.4 Deployment and Recall of ERCOT Contingency Reserve Service

(1) ECRS is intended to:

(a) Help restore the frequency to 60 Hz within ten minutes of a significant frequency deviation;

(b) Provide energy to avoid, or during the implementation of, an EEA;

(c) Provide backup to Reg-Up; and

(d) Provide energy upon detection of insufficient available capacity for net load ramps.

(2) ERCOT shall deploy ECRS to meet NERC Standards and other performance criteria as specified in these Protocols and the Operating Guides, by taking one or more of the following actions:

(a) ERCOT shall issue ECRS deployment Dispatch Instructions, specifying the required MW output, over ICCP for Resources awarded ECRS with a Resource Status of ONSC.

(b) Dispatch Instruction for deployment of ~~Load Resources~~ energy from Load Resources via electronic Messaging System.

(3) Energy from Resources providing ECRS may also be manually deployed by ERCOT pursuant to Section 6.5.9, Emergency Operations.

(4) ERCOT shall use SCED and Non-Spin as soon as practicable to recover ECRS reserves.

(5) Following a manual ECRS deployment to Load Resources, excluding Controllable Load Resources, or Resources telemetering a Resource Status of ONSC, the QSE's obligation to deliver ECRS remains in effect until ERCOT issues a recall instruction.

(6) For Generation Resources and Controllable Load Resources providing ECRS, Base Points include ECRS energy as well as any other energy dispatched by SCED. A Resource must be able to be fully dispatched by SCED to its ECRS Ancillary Service award within the ten-minute time frame according to its telemetered ramp rate that reflects the Resource's capability of providing ECRS.

(7) Each Resource providing ECRS shall meet the deployment performance requirements specified in Section 8.1.1.4.2, Responsive Reserve Energy Deployment Criteria.

(8) ERCOT shall issue deployment instructions for Load Resources providing ECRS via XML. Such instructions shall contain the MW requested.

(9) To the extent that ERCOT deploys a Load Resource that is not a Controllable Load Resource and that has chosen a block deployment option, ERCOT shall either deploy the entire Ancillary Service award or, if only partial deployment is possible, skip the Load Resource with the block deployment option and proceed to deploy the next available Resource.

(10) ERCOT shall recall deployed ECRS capacity provided from Resource telemetering Resource Status of ONSC once system frequency recovers above 59.98 Hz.

(11) ERCOT shall recall ECRS deployment provided from a Load Resource that is not a Controllable Load Resource once PRC is above a pre-defined threshold, as described in the Operating Guides.

8.1.1.4.4 ERCOT Contingency Reserve Service Energy Deployment Criteria

(1) Each QSE providing ECRS shall so indicate by appropriate entries in the Resource's Ancillary Service Schedule and the Ancillary Service Resource Responsibility providing that service. ERCOT shall adjust the Generation Resource's Base Point for any requested ECRS energy in the next cycle of SCED as specified in Section 6.5.7.6.2.4, Deployment and Recall of ERCOT Contingency Reserve Service. For Controllable Load Resources, the QSE shall control its Controllable Load Resources ~~to~~such that each operates to the Resource's Scheduled Power Consumption minus any Ancillary Service deployments. Control performance during periods in which ERCOT has deployed ECRS shall be based on the requirements below and failure to meet any one of these requirements shall be reported to the Reliability Monitor as non-compliance:

(a) Within one minute following a deployment instruction, the QSE must update the telemetered Ancillary Service Schedule for ECRS for its Generation Resources~~,~~

and Load Resources to reflect the deployment amount. The difference between the sum of the QSE's Resource ECRS schedules and the sum of the QSE's Resource ECRS responsibilities must be equal to the QSE's total ECRS deployment instruction, excluding the deployment to Load Resources ~~which~~that are not Controllable Load Resources.

(b) For QSEs with Load Resources, excluding Controllable Load Resources, ten minutes following deployment instruction the sum of the QSE's Load Resource response shall not be less than 95% of the requested MW deployment, nor more than 150% of the lesser of the following:

(i) The QSE's Responsibility for ECRS from non-Controllable Load Resources; or

(ii) The requested MW deployment.

The QSE's portfolio shall maintain this response until recalled~~ or the Resource's obligation to provide ECRS expires~~. The combination of the QSE's ECRS responsibility and additional available capacity shall not exceed 150% of the sum of the QSE's Ancillary Service Resource Responsibility for ECRS from non-Controllable Load Resources. Any additional available capacity from Load Resources other than Controllable Load Resources shall be deployed concurrently with ECRS.

(c) For Load Resources, excluding Controllable Load Resources, associated with a QSE that does not successfully deploy as defined under this Section, ERCOT shall evaluate, identify and investigate each Load Resource that contributed to such failure~~,~~ in order to determine failure under paragraph (9) of Section 8.1.1.1, Ancillary Service Qualification and Testing.

(d) A Load Resource providing ECRS, excluding Controllable Load Resources, must return to at least 95% of its Ancillary Service Resource Responsibility for ECRS within three hours following a recall instruction unless replaced by another Resource as described below. However, the Load Resource should attempt to return to at least 95% of its Ancillary Service Resource Responsibility for ECRS as soon as practical considering process constraints. For a Load Resource that is not a Controllable Load Resource that is unable to return to its Ancillary Service Resource Responsibility within three hours of a recall instruction, its QSE may replace the quantity of deficient ECRS capacity within that same three hours using other Generation Resources or other Load Resources not previously committed to provide ECRS.

(e) During periods when the Load level of a Load Resource (excluding Controllable Load Resources) has been affected by a Dispatch Instruction from ERCOT, the performance of a Load Resource in response to a Dispatch Instruction must be determined by subtracting the Load Resource's actual Load response from its Baseline. "Baseline" capacity is calculated by measuring the average of the real

power consumption for five minutes before the Dispatch Instruction if the Load level of a Load Resource had not been affected by a Dispatch Instruction from ERCOT. The actual Load response is the average of the real power consumption data being telemetered to ERCOT during the Settlement Interval indicated in the Dispatch Instruction.

[NPRR1011: Replace applicable portions of Section 8.1.1.4.4 above with the following upon system implementation of the Real-Time Co-Optimization (RTC) project:]

8.1.1.4.4 ERCOT Contingency Reserve Service Energy Deployment Criteria

(1) Control performance during periods in which ERCOT has manually deployed ECRS shall be based on the requirements below and failure to meet any one of these requirements shall be reported to the Reliability Monitor as non-compliance:

(a) For a Resource providing ECRS with a Resource Status of ONSC, once the ECRS is deployed, the Resource must maintain the response until recalled by ERCOT.

(b) For QSEs with Load Resources, excluding Controllable Load Resources, ten minutes following deployment instruction the sum of the QSE's Load Resource response shall not be less than 95% of the requested MW deployment, nor more than 150% of the lesser of the following:

(i) The QSE's awards for ECRS from non-Controllable Load Resources; or

(ii) The requested MW deployment.

The QSE's portfolio shall maintain this response until recalled.

(c) For Load Resources, excluding Controllable Load Resources, associated with a QSE that does not successfully deploy as defined under this Section, ERCOT shall evaluate, identify and investigate each Load Resource that contributed to such failure, in order to determine failure under paragraph (9) of Section 8.1.1.1, Ancillary Service Qualification and Testing.

(d) For a QSE self-providing ECRS on a Load Resource, excluding Controllable Load Resources that have been deployed, the QSE may move the self-provided amount to another Load Resource, while maintaining the deployment instructions on the previously deployed Load Resources, if:

(i) The Load Resource to which the ECRS is to be moved is not a Controllable Load Resource and has not been deployed for ECRS; and

(ii) The self-provided amount of ECRS is within the QSE's portfolio.

(e) During periods when the Load level of a Load Resource (excluding Controllable Load Resources) has been affected by a Dispatch Instruction from

ERCOT, the performance of a Load Resource in response to a Dispatch Instruction must be determined by subtracting the Load Resource's actual Load response from its Baseline. "Baseline" capacity is calculated by measuring the average of the real power consumption for five minutes before the Dispatch Instruction if the Load level of a Load Resource had not been affected by a Dispatch Instruction from ERCOT. The actual Load response is the average of the real power consumption data being telemetered to ERCOT during the Settlement Interval indicated in the Dispatch Instruction.

ERCOT Impact Analysis Report

NPRR Number	1178	NPRR Title	Expectations for Resources Providing ERCOT Contingency Reserve Service
Impact Analysis Date		May 3, 2023	
Estimated Cost/Budgetary Impact		None.	
Estimated Time Requirements		No project required. This Nodal Protocol Revision Request (NPRR) can take effect following Public Utility Commission of Texas (PUCT) approval.	
ERCOT Staffing Impacts (across all areas)		Ongoing Requirements: No impacts to ERCOT staffing.	
ERCOT Computer System Impacts		No impacts to ERCOT computer systems.	
ERCOT Business Function Impacts		ERCOT will update its business processes to implement this NPRR.	
Grid Operations & Practices Impacts		No impacts to ERCOT grid operations and practices.	

Evaluation of Interim Solutions or Alternatives for a More Efficient Implementation
None offered.

Comments
None.

Board Report

NOGRR Number	253	NOGRR Title	Related to NPRR1178, Expectations for Resources Providing ERCOT Contingency Reserve Service
Date of Decision		June 20, 2023	
Action		Recommended Approval	
Timeline		Urgent - to align the Nodal Operating Guide with the Protocols as quickly as possible regarding ERCOT Contingency Reserve Service (ECRS) and Non-Spinning Reserve (Non-Spin).	
Proposed Effective Date		Upon implementation of Nodal Protocol Revision Request (NPRR) 1178, Expectations for Resources Providing ERCOT Contingency Reserve Service	
Priority and Rank Assigned		Not applicable	
Nodal Operating Guide Sections Requiring Revision		2.3, Ancillary Services 2.3.2.1, Additional Operational Details for Non-Spinning Reserve Service Providers 2.3.3.1, Additional Operational Details for ERCOT Contingency Reserve Service (ECRS) Providers 4.8.1, Responsive Reserve Service Manual Deployment 4.8.2, Responsive Reserve Service Manual Recall	
Related Documents Requiring Revision/Related Revision Requests		NPRR1178	
Revision Description		This Nodal Operating Guide Revision Request (NOGRR) aligns the Nodal Operating Guide language regarding ECRS and Non-Spin with the revisions proposed in NPRR1178, as well as the Protocol language approved in NPRR1096, Require Sustained Two-Hour Capability for ECRS and Four-Hour Capability for Non-Spin. This NOGRR also clarifies that ERCOT may manually deploy Load Resources other than Controllable Load Resources that are providing ECRS or Responsive Reserve (RRS) to maintain a minimum 500 MWs of Physical Responsive Capability (PRC) reserves on Security Constrained Economic Dispatch (SCED)-dispatchable Resources to continuously balance the Demand with supply while maintaining the stable grid frequency for smaller disturbances.	
Reason for Revision		[X] Addresses current operational issues.	

Board Report

	☐ Meets Strategic goals (tied to the ERCOT Strategic Plan or directed by the ERCOT Board). ☐ Market efficiencies or enhancements ☐ Administrative ☐ Regulatory requirements ☐ Other: (explain) *(please select all that apply)*
Business Case	This NOGRR aligns the Nodal Operating Guide with revisions to Ancillary Services approved in NPRR1096. Upon implementation of ECRS, Load Resources other than Controllable Load Resources are able to provide ECRS and RRS either individually or simultaneously. During conditions that lead to a manual deployment of RRS, and ERCOT deploys Load Resources other than Controllable Load Resources per Section 4.8.1 this NOGRR clarifies that ERCOT may deploy Load Resources other than Controllable Load Resources that are providing both ECRS and RRS using the approach outlined in paragraph (2) in Nodal Protocol Section 6.5.9.4.2, EEA Levels.
ROS Decision	On 5/4/23, ROS voted unanimously to grant NOGRR253 Urgent status; to recommend approval of NOGRR253 as submitted; and to forward to TAC NOGRR253 and the 5/3/23 Impact Analysis. All Market Segments participated in the vote.
Summary of ROS Discussion	On 5/4/23, ERCOT Staff provided an overview of NOGRR253 and the justification for Urgent status.
TAC Decision	On 5/23/23, TAC voted to recommend approval of NOGRR253 as recommended by ROS in the 5/4/23 ROS Report. There was one abstention from the Independent Generator (Luminant) Market Segment. All Market Segments participated in the vote.
Summary of TAC Discussion	On 5/23/23, TAC reviewed the ERCOT Opinion, ERCOT Market Impact Statement, and Independent Market Monitor (IMM) Opinion for NOGRR253.
ERCOT Board Decision	On 6/20/23, the ERCOT Board voted unanimously to recommend approval of NOGRR253 as recommended by TAC in the 5/23/23 TAC Report.

Opinions

Board Report

Credit Review	Not applicable
Independent Market Monitor Opinion	IMM has no opinion on NOGRR253.
ERCOT Opinion	ERCOT supports approval of NOGRR253.
ERCOT Market Impact Statement	ERCOT Staff has reviewed NOGRR253 and believes the market impact for NOGRR253 clarifies and aligns the Nodal Operating Guide with the Protocols and expectations for Resources providing ECRS.

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Comments Received	
Comment Author	**Comment Summary**
None	

Market Rules Notes

Please note the baseline language in the following Section(s) has been updated to reflect the incorporation of the following NOGRR(s) into the Nodal Operating Guide:

- NOGRR187, Related to NPRR863, Creation of ERCOT Contingency Reserve Service and Revisions to Responsive Reserve (unboxed 6/9/23)
  - Section 2.3

- Section 2.3.3.1
- Section 4.8.1

Proposed Guide Language Revision

2.3 Ancillary Services

(1) The types of Ancillary Services required by ERCOT are described below:

ANCILLARY SERVICE TYPE	DESCRIPTION	ERCOT AUTHORITY ACTION
Regulation Down Service (Reg-Down) and Regulation Up Service (Reg-Up) (for Generation Resources and Energy Storage Resources (ESRs)) ***Reference: Protocol Section 2, Definitions and Acronyms***	Resource capacity provided by a Qualified Scheduling Entity (QSE) from a specific Generation Resource or ESR to control frequency within the system which is controlled second by second, normally by an Automatic Generation Control (AGC) system.	a. Reg-Down energy is a deployment to increase or decrease generation at a level below the Generation Resource's or ESR's Base Point in response to a change in system frequency. b. Reg-Up energy is a deployment to increase or decrease generation at a level above the Generation Resource's or ESR's Base Point in response to a change in system frequency.
Reg-Down and Reg-Up (for Load Resource) ***Reference: Protocol Section 2***	Load Resource capacity provided by a QSE from a specific Load Resource to control frequency within the system.	a. Reg-Down is a deployment to increase or decrease Load as deployed within its Ancillary Service Schedule for Reg-Down below the Load Resource's Maximum Power Consumption (MPC) limit in response to a change in system frequency. b. Reg-Up is a deployment to increase or decrease Load as deployed within its Ancillary Service Schedule for Reg-Up above the Load Resource's Low Power Consumption (LPC) limit in response to a change in system frequency.

ANCILLARY SERVICE TYPE	DESCRIPTION	ERCOT AUTHORITY ACTION
Responsive Reserve (RRS) ***Reference: Protocol Section 2***	Operating reserves on Generation Resources, ESRs, Load Resources, and Resources capable of providing Fast Frequency Response (FFR) maintained by ERCOT to help control the frequency of the system. RRS on Generation Resources, ESRs, and Controllable Load can be used as energy during an Energy Emergency Alert (EEA) event.	RRS may only be deployed as follows: a. Through automatic Governor action or under-frequency relay in response to frequency deviations; b. By electronic signal from ERCOT in response to the need; and c. As ordered by an ERCOT Operator during an EEA or other emergencies.