

TAC Report

NPRR Number	637	NPRR Title	Clarification of ERS Language and ERCOT Process for Co-located Resources
Timeline	Normal	Action	Recommended Approval
Date of Decision	August 28, 2014		
Proposed Effective Date	November 1, 2014		
Priority and Rank Assigned	Not applicable.		
Nodal Protocol Sections Requiring Revision	3.14.3.1, Emergency Response Service Procurement 8.1.3.1.2, Performance Evaluation for Emergency Response Service Generators 8.1.3.1.3.3, Contract Period Availability Calculations for Emergency Response Resources 8.1.3.1.3.4, Event Performance Criteria for Emergency Response Resources 8.1.3.2, Testing of Emergency Response Resources 8.1.3.3.1, Suspension of Qualification of Non-Weather Sensitive Emergency Response Service Loads and/or their Qualified Scheduling Entities 8.1.3.3.2, Payment Reduction and Suspension of Qualification of Weather-Sensitive Emergency Response Service Loads and/or their Qualified Scheduling Entities		
Other Binding Documents Requiring Revision or Related Revision Requests	Emergency Response Service Procurement Methodology Emergency Response Service Technical Requirements and Scope of Work		
Revision Description	This Nodal Protocol Revision Request (NPRR) provides for changes to Emergency Response Service (ERS) including the following: <ol style="list-style-type: none"> 1. Clarifies procedures for ERS procurement. 2. Clarifies procedures for classification and treatment of ERS. Generators particularly when they are co-located with an ERS Load. 3. Clarifies procedures for calculating ERS Resource Availability when the obligation of one or more ERS Resources is exhausted. 4. Clarifies rules for testing of ERS Resources. 5. Clarifies procedures for payment reduction for Weather Sensitive and Non-Weather Sensitive ERS Resources. 		
Reason for Revision	<input type="checkbox"/> Addresses current operational issues. <input type="checkbox"/> Meets Strategic goals (tied to the ERCOT Strategic Plan or directed by the ERCOT Board).		

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	<input type="checkbox"/> Market efficiencies or enhancements <input checked="" type="checkbox"/> Administrative <input type="checkbox"/> Regulatory requirements <input type="checkbox"/> Other: (explain) <i>(please select all that apply)</i>
Credit Work Group Review	ERCOT Credit Staff and the Credit Work Group (Credit WG) have reviewed NPRR637 and do not believe that it requires changes to credit monitoring activity or the calculation of liability.
Procedural History	<ul style="list-style-type: none"> ➤ On 7/2/14, NPRR637 and an associated Impact Analysis were posted. ➤ On 7/10/14, ERCOT comments were posted. ➤ On 7/17/14, PRS considered NPRR637. ➤ On 8/14/14, PRS considered the 7/17/14 PRS Report and Impact Analysis for NPRR637. ➤ On 8/28/14, TAC considered NPRR637.
PRS Decision	<p>On 7/17/14, PRS voted to recommend approval of NPRR637 as amended by the 7/10/14 ERCOT comments. There was one opposing vote from the Independent Power Marketer (IPM) Market Segment. All Market Segments were present for the vote.</p> <p>On 8/14/14, PRS voted to endorse and forward the 7/17/14 PRS Report and Impact Analysis for NPRR637 to TAC. There was one opposing vote from the IPM Market Segment. All Market Segments were present for the vote.</p>
Summary of PRS Discussion	<p>On 7/17/14, ERCOT Staff stated that the ERS Other Binding Documents would be updated for the October ERS Contract Period with the clarifying language that does not pertain to co-located ERS Resources.</p> <p>On 8/14/14, there was no discussion.</p>
TAC Decision	On 8/28/14, TAC unanimously voted to recommend approval of NPRR637 as recommended by PRS in the 8/14/14 PRS Report. All Market Segments were present for the vote.
Summary of TAC Discussion	On 8/28/14, there was no discussion.
ERCOT Opinion	ERCOT supports approval of NPRR637.

Business Case	
Qualitative Benefits	<ul style="list-style-type: none"> • Corrects and clarifies procedures for ERS
Quantitative Benefits	<ul style="list-style-type: none"> •

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Impact to Market Segments	•
Credit Implications	•
Other	

Sponsor	
Name	Carl L. Raish
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Market Segment	Not applicable.

Market Rules Staff Contact	
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Comments Received	
Comment Author	Comment Summary
ERCOT 071014	Provided additional clarification for calculating ERS Resource availability when the obligation of one or more ERS Resources is exhausted.

Proposed Protocol Language Revision

3.14.3.1 Emergency Response Service Procurement

- (1) ERCOT shall issue Requests for Proposals to procure ERS for each Standard Contract Term. The ERS Standard Contract Terms are as follows:
 - (a) February through May;
 - (b) June through September; and
 - (c) October through January.

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- (2) ERCOT shall procure ERS from one or more of the four following ERS service types:
 - (a) Weather-Sensitive ERS-10
 - (b) Non-Weather-Sensitive ERS-10
 - (c) Weather-Sensitive ERS-30
 - (d) Non-Weather-Sensitive ERS-30
- (3) ERS offers shall be submitted only by QSEs capable of receiving both Extensible Markup Language (XML) messaging and Verbal Dispatch Instructions (VDIs) on behalf of represented ERS Resources.
- (4) Each site in an ERS Generator must have an interconnection agreement with its Transmission and/or Distribution Service Provider (TDSP) prior to submitting an ERS offer.
- (5) In order to qualify as weather-sensitive, an ERS Load must meet one of the following criteria:
 - (a) The ERS Load must consist exclusively of residential sites; or
 - (b) The ERS Load must consist exclusively of non-residential sites and must qualify as weather-sensitive based on the accuracy of the regression baseline evaluation methodology as described in Section 8.1.3.1.1, Baseline Assignments for Emergency Response Service Loads, as an indicator of actual interval Load. ERCOT shall establish minimum accuracy standards for qualification as an ERS Load under the regression baseline evaluation methodology. An ERS Load must have at least nine months of interval meter data to qualify as weather-sensitive under the regression baseline evaluation methodology. ERCOT's determination that an ERS Load qualifies as a weather-sensitive ERS Load is independent of ERCOT's determination of which baseline methodologies may be appropriate for purposes of evaluating the ERS Load's performance.
- (6) QSEs representing ERS Resources may submit offers for one or more ERS Time Periods within an ERS Contract Period. ERS Time Periods shall be defined by ERCOT in the Request for Proposal for that ERS Standard Contract Term. An ERS offer is specific to an ERS Time Period. In submitting an offer, both the QSE and the ERS Resource are committing to provide ERS for that ERS Time Period if selected.
- (7) A QSE may submit separate offers for an ERS Resource to provide any or all of the four ERS service types during the same or different ERS Time Periods in the same ERS Standard Contract Term, but ERCOT shall only award offers for one service type for each ERS Resource.
- (8) The minimum capacity offer for an ERS Load on the weather sensitive baseline is one half (0.5) MW; all other ERS capacity offers will have a minimum amount that may be

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offered of one-tenth (0.1) MW. ERS Resources may be aggregated to reach this requirement.

- (9) ERCOT may establish an upper limit, in MWs, on the amount of ERS capacity it will procure for any ERS Time Period in any ERS Standard Contract Term.
- (10) A QSE's offer to provide ERS shall include:
 - (a) The name of the QSE representing the ERS Resource and the name of an individual authorized by the QSE to represent the QSE and its ERS Resource(s);
 - (b) The name of an Entity that controls the ERS Resource, and an affirmation that the QSE has obtained written authorization from the Entity to submit ERS offers on its behalf and to represent the Entity in all matters before ERCOT concerning the Entity's provision of ERS;
 - (c) Any information or data specified by ERCOT, including access to historical meter data, and affirmation by the QSE that it has obtained written authorization from the controlling Entity of the ERS Resource for the QSE to obtain such data;
 - (d) Affirmation that the controlling Entity of the ERS Resource has reviewed P.U.C. SUBST. R. 25.507, Electric Reliability Council of Texas (ERCOT) Emergency Response Service (ERS), these Protocols and Other Binding Documents relating to the provision of ERS, and has agreed to comply with and be bound by such provisions;
 - (e) An agreement by the QSE to produce any written authorization or agreement between the QSE and any ERS Resource it represents, as described in this Section, upon request from ERCOT or the PUCT;
 - (f) Affirmation that the capacity being offered into ERS is not capacity that is separately obligated to respond during any of the same hours, and receiving a separate reservation payment for such obligation, occurring in the contracted ERS Time Period. ERCOT shall treat an ERS Resource containing sites found to be dually committed as failing to meet its ERS obligations and may prohibit participation by the ERS Resource and/or the dually committed sites in the next ERS Standard Contract Term following the discovery; and
 - (g) An affirmation that the QSE and the controlling Entity the ERS Resource are familiar with any applicable federal, state or local environmental regulations that apply to the use of any generator in the provision of ERS, and that the use of such generator(s) to provide of ERS would not violate those regulations. This provision applies to both ERS Generators and to the use of backup generation by ERS Loads.
- (11) Upon request from a QSE, ERCOT shall provide the dates and times for any deployment events or tests of any ERS site during the previous three ERS Standard Contract Terms, provided that the QSE has obtained written authorization from the ERS site to obtain the

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information from ERCOT. Such QSE requests shall include the following site-specific information: Electric Service Identifier (ESI ID), unique meter identifier (if applicable), or, if the site is in a Non-Opt-In Entity (NOIE) area, site name and site address.

- (12) Sites associated with a Dynamically Scheduled Resource (DSR) may not participate in ERS. Offers for Resources containing sites associated with a DSR will be rejected by ERCOT. If ERCOT determines that any participating site is associated with a DSR, that site will be treated as removed from the Resource on the date the determination was made. An ERS Resource's obligation will not change as a result of any such site removal.
- (13) A QSE may modify the population of an aggregated ERS Load on a weather-sensitive baseline once per month during an ERS Standard Contract Term via a process defined by ERCOT. Such adjustments shall be effective on the first day of each month following the first month.
 - (a) During an ERS Standard Contract Term, a QSE may increase the number of sites in an aggregated ERS Load on a weather-sensitive baseline by no more than the greater of the following:
 - (i) 100% of the initial number of sites; or
 - (ii) Two MW times the QSE's projection of the maximum number of sites in the aggregation during the ERS Standard Contract Term, divided by the MW capacity offered for the aggregation.
 - (b) Any sites added to an ERS Load on a weather-sensitive baseline are subject to the same requirements for historical meter data as the other sites in the aggregation, as described in paragraph (5) of Section 8.1.3.1.1.
 - (c) Each offer submitted by a QSE on behalf of an aggregated ERS Load on a weather-sensitive baseline shall include the QSE's projection of the maximum number of sites in the aggregation during the ERS Standard Contract Term. ERCOT shall review this projection and the information provided regarding the initial size of each aggregated ERS Load and shall reject any offer on behalf of such an ERS Load if the maximum size of the ERS Load projected by the QSE would violate the limits of site participation growth described in paragraph (a) above.
- (14) For each of the four ERS service types, an ERS Standard Contract Term may consist of a single ERS Contract Period or multiple non-overlapping ERS Contract Periods, as follows:
 - (a) If no ERS Resources' obligations are exhausted for an ERS service type during an ERS Contract Period pursuant to Section 3.14.3.3, Emergency Response Service Provision and Technical Requirements, the ERS Contract Period for that ERS

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service type shall terminate at the end of the last Operating Day of the ERS Standard Contract Term.

- (b) If one or more ERS Resources' obligations in a given ERS service type are exhausted pursuant to Section 3.14.3.3, the ERS Contract Period for that ERS service type shall terminate at the end of the Operating Day during which the exhaustion occurred. However, if ERS Resources participating in a service type remain deployed at the end of that Operating Day, the ERS Contract Period for that ERS service type shall terminate at the end of the Operating Day on which those ERS Resources are recalled.
 - (c) If an ERS Contract Period terminates as provided in paragraph (b) above, and one or more ERS Resources' obligations were not exhausted or ERCOT elects to renew the obligations of any Resources whose obligations were exhausted, a new ERS Contract Period for the ERS service type shall begin at hour ending 0100 on the following Operating Day. This new ERS Contract Period shall terminate as provided in this Section.
- (15) ERS Resources shall be obligated in ERS Contract Periods as follows:
- (a) For the first ERS Contract Period in an ERS Standard Contract Term, all ERS Resources awarded by ERCOT shall be obligated.
 - (b) For each of any subsequent ERS Contract Periods for a given ERS service type in an ERS Standard Contract Term, any ERS Resource with remaining obligation due to cumulative deployment time of less than eight hours at the end of the last ERS Contract Period shall be obligated for only this remaining deployment time in the new ERS Contract Period.
 - (c) For each of any subsequent ERS Contract Periods in an ERS Standard Contract Term, ERCOT may renew the obligations of certain ERS Resources as follows:
 - (i) During the offer submission process, QSEs shall designate on the ERS offer form, which is posted on the ERCOT website, whether an ERS Resource elects to participate in renewal ERS Contract Periods ("renewal opt-in"). Except as provided in paragraph (iv) below, this election is irrevocable once the ERS Resource has been committed for an ERS Standard Contract Term.
 - (ii) If the obligations of one or more ERS Resources are exhausted before the end of an ERS Standard Contract Term, ERCOT shall determine whether to include renewal opt-ins in the subsequent ERS Contract Period. ERCOT may limit any renewal to one or more ERS Time Periods in which obligations have been exhausted.
 - (iii) If ERCOT decides to include renewal opt-ins in the subsequent ERS Contract Period, ERCOT shall promptly notify all ERS QSEs as to the ERS Time Periods that it has elected to renew.

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- (iv) By the end of the second Business Day in any renewal ERS Contract Period, a QSE may revoke the renewal opt-in status of any of its committed ERS Resources for any subsequent ERS Contract Periods within that ERS Standard Contract Term. ERCOT shall develop a method for QSEs to communicate such information.
 - (v) By the end of the third Business Day in any ERS Contract Period other than the first ERS Contract Period in an ERS Standard Contract Term, ERCOT shall communicate to QSEs a confirmation of the terms of participation for all of their committed ERS Resources.
- (16) In any 12-month period beginning on February 1st and ending on January 31st, ERCOT shall not commit dollars toward ERS in excess of the ERS cost cap. ERCOT may determine cost limits for each ERS Contract Period in order to ensure that the ERS cost cap is not exceeded.
- (17) ERCOT shall reduce the available expenditure under the ERS cost cap by the value of the amount of ERS Self-Provision. ERCOT shall value ERS Self-Provision at the clearing price multiplied by the total MW of ERS Self-Provision during each relevant ERS Time Period.
- (18) ERCOT shall evaluate each offer to determine whether it comports with the actual capacity an ERS Resource is capable of providing and may limit any award to that ERS Resource based on the results of the evaluation.
- (19) ERCOT shall procure ERS Resources for each ERS Time Period using a clearing price. ~~ERCOT shall describe the procurement methodology in an Other Binding Document. The Emergency Response Service Procurement Methodology, posted on the ERCOT website, is an Other Binding Document that describes the methodology used by ERCOT to procure ERS.~~ ERCOT may consider geographic location and its effect on congestion in making ERS awards. ERCOT may prorate the capacity awarded to an ERS Resource in an ERS Time Period if the capacity offered for that ERS Resource would cost more awards when there are more MWs available at a given price than the Emergency Response Service Procurement Methodology allows under the time period expenditure limit. ~~ERCOT decides to procure. Such proration shall only be done if the proration is acceptable to each offering QSE.~~ QSE indicates on its offer for an ERS Resource that the QSE is willing to have the capacity prorated and also has indicated the lowest prorated capacity limit which is acceptable for that ERS Resource. An ERS offer may declare a minimum amount of MW that the ERS Resource is willing to provide. If proration would result in an award below an ERS Resource's designated ~~minimum prorated capacity limit~~ or below the minimum MW offer of one-tenth (0.1) MW applicable to the ERS service type as specified in paragraph (8) above, the offer will not be awarded. ~~Additional steps may be required to select from among tied offers; those steps shall be described in the Other Binding Document describing the procurement methodology.~~
- (20) Payments and Self-Provision credits to QSEs representing ERS Resources are subject to adjustments as described in Section 8.1.3.3, Payment Reductions and Suspension of

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Qualification of Emergency Response Service Resources and/or their Qualified Scheduling Entities. Deployment of ERS Resources will not result in additional payments other than any payment for which the QSE may be eligible through Real-Time energy imbalance or other ERCOT Settlement process.

- (21) QSEs representing ERS Resources selected to provide ERS shall execute a Standard Form Emergency Response Service Agreement, as provided in Section 22, Attachment G, Standard Form Emergency Response Service Agreement.

8.1.3.1.2 Performance Evaluation for Emergency Response Service Generators

- (1) ERCOT shall evaluate the event performance of an ERS Generator by measuring net injection of energy to the ERCOT System using data from metering as described in paragraph (5)(a) of Section 3.14.3.3, Emergency Response Service Provision and Technical Requirements. ERCOT shall evaluate the availability of an ERS Generator by using 15-minute interval metering dedicated to the ERS Generator.
- (2) ~~If an ERS Generator is co-located with an ERS Load, both ERS Resources must participate in the same ERS service type, and event and test performance of the ERS Generator and ERS Load shall be evaluated jointly.~~ An ERS Load will be classified as co-located with an ERS Generator if the ESI IDs and unique meter identifiers of each site in the ERS Load is physically located with a site in the ERS Generator. Both the ERS Generator and the ERS Load must be represented by the same QSE and must participate in the same ERS service type. If separate offers are received from different QSEs, both offers will be rejected. ~~Availability performance for ERS Loads and ERS Generators, however, will be evaluated separately.~~
- (3) If an ERS Generator is co-located with an ERS Load that is assigned to an ERS Default Baseline, the event and test performance of the ERS Generator and ERS Load shall be evaluated jointly using interval data from the Transmission and/or Distribution Service Provider (TDSP) installed metering. The joint performance will be attributed to both the ERS Load and ERS Generator.
- (4) If an ERS Generator is co-located with an ERS Load assigned to the ERS Alternate Baseline, the performance shall be evaluated using one of two methods selected by the QSE:
 - (a) The QSE may elect to have the performance of the ERS Generator and ERS Load evaluated separately. In this case all site Load must participate in the ERS Load and ERCOT shall calculate interval-by-interval values for the sites in the ERS Load by adding the respective intervals of the QSE installed sub-metering on the output of the generator(s) at the site to the MWh registered on the TDSP meter and subtracting the MWh exported to the ERCOT Transmission Grid as registered on the TDSP metering. The performance of the ERS Load shall be evaluated using the ERCOT calculated values of the site Load, and the ERS Generator shall

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be evaluated using the sub-metering installed on each generator to directly measure the output of those generators.

(b) The QSE may elect to have the performance of the ERS Generator and ERS Load evaluated jointly. In this case, ERCOT shall use the TDSP metering installed for the performance evaluation.

(i) If ERCOT determines that one of its established Default Baseline types accurately represents the ERS Load's Demand response contribution, the contribution of the ERS Load to the joint performance shall be based on that response.

(ii) If ERCOT determines that none of its established Default Baseline types accurately represents the ERS Load's Demand response contribution, the contribution of the ERS Load to the joint performance shall be deemed to be the product of the ERS Load's obligation for the interval and the ERS Interval Performance Factor (EIPF) as computed in Section 8.1.3.1.4, Event Performance Criteria for Emergency Response Service Resources.

(iii) The joint performance will be attributed to both the ERS Load and ERS Generator.

(5) An ERS Generator which is not co-located with an ERS Load shall have its performance based on its metered output to the ERCOT System as measured by the TDSP metering.

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8.1.3.1.3.3 Contract Period Availability Calculations for Emergency Response Service Resources

- (1) ERCOT shall compute a single time- and capacity-weighted availability factor (ERSAFCOMB) for each ERS Resource for an ERS Contract Period from the ERS Time Period ERSAFs calculated in Sections 8.1.3.1.1, Baseline Assignments for Emergency Response Service Loads, and 8.1.3.1.3.2, Time Period Availability Calculations for Emergency Response Service Generators, as follows:

If HOURS_{qce(tp)d} = 0, ERSAFCOMB_{qced} = 1

Otherwise

$$\text{ERSAFCOMB}_{qced} = \sum_{tp} (\text{HOURS}_{qce(tp)d} * \text{OFFERMW}_{qce(tp)d} *)$$

$$\text{ERSAF}_{qce(tp)d} / \sum_{tp} (\text{HOURS}_{qce(tp)d} * \text{OFFERMW}_{qce(tp)d})$$

The above variables are defined as follows:

Variable	Unit	Description
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ERSAFCOMB _{qced}	None	Time- and capacity-weighted availability factor for an ERS Contract Period per ERS service type <i>d</i> .
HOURS _{qce(tp)d}	Hours	The number of hours an ERS Resource is obligated in an ERS Time Period per ERS service type <i>d</i> minus any hours in that Time Period excluded for purposes of computing availability.
OFFERMW _{qce(tp)d}	MWh	The ERS Resource's contracted capacity for that time period per ERS service type <i>d</i> expressed in units of MWh.
ERSAF _{qce(tp)d}	None	Availability factor for an ERS Resource for an ERS Time Period and per ERS service type <i>d</i> .
q	None	A QSE.
c	None	ERS Contract Period.
e	None	Individual ERS Resource.
tp	None	ERS Time Period.
d	None	ERS service type (Weather-Sensitive ERS-10, Non-Weather-Sensitive ERS-10, Weather -Sensitive ERS-30, or Non-Weather-Sensitive ERS-30).

- (2) In an ERS Contract Period with no ERS deployment events, the ERSAFWT for all ERS Resources shall be set to ~~one~~ 1.0.
- (3) In an ERS Contract Period with one or more ERS deployment events and in which no ERS Resource's ERS obligation is exhausted~~lasting for less than eight hours in aggregate~~, the ERSAFWT for deployed ERS Resources shall be set to 0.25 and the ERSAFWT for all undeployed ERS Resources shall be set to 1.0.
- (4) In an ERS Contract Period in which ~~an one or more~~ ERS Resource's ERS obligation ~~is~~ are exhausted, the following shall apply:
- (a) For all deployed ERS Resources, the ERSAFWT of the exhausted ERS Resource shall be set to $0.25 \times \text{ERSAFHRS}_{qced}$ with ERSAFHRS determined as calculated paragraph (c) below.
- (b) For all ERS Resources with no deployments during the ERS Contract Period, ERSAFWT shall be set to 1.0.
- (c) Otherwise, ERSAFHRS for the ERS Contract Period shall be calculated using the following formula:

$$\text{ERSAFHRS}_{qced} = (\text{AFHOURS}_{qced} / (\text{AFHOURS}_{qced} + \sum_{tp} \text{HOURS}_{qce(tp)d}))$$

The above variables are defined as follows:

Variable	Unit	Description
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ERSAFHRS _{qced}	None	The ratio of Availability Factor Hours to the total Standing Contract Term hours for an ERS Resource per ERS service type <i>d</i> .
AFHOURS _{qced}	Hours	Number of the ERS Resource's obligated hours prior to the exhaustion of the ERS Resource's obligation per ERS service type <i>d</i> , minus any hours during that time excluded for purposes of computing availability.
HOURS _{qsee(tp)d}	Hours	The total number of awarded hours for an ERS Time Period in the ERS Standard Contract Term preceding the beginning of the ERS Contract Period and following the exhaustion of the ERS obligation per ERS service type <i>d</i> .
q	None	A QSE.
s	None	ERS Standard Contract Term.
c	None	ERS Contract Period.
e	None	Individual ERS Resource.
tp	None	ERS Time Period.
d	None	ERS service type (Weather-Sensitive ERS-10, Non-Weather-Sensitive ERS-10, Weather -Sensitive ERS-30, or Non-Weather-Sensitive ERS-30).

(~~5~~~~b~~~~d~~) An ERS Resource shall be deemed to have met its availability requirements for an ERS Contract Period if ERSAFHRS for the ERS Contract Period is less than 0.5 and if the ERS Resource achieves an ERSAFCOMB greater than or equal to the value calculated in the formula below:

$$3.8 * \text{ERSAFHRS}_{qced} - 3.8 * (\text{ERSAFHRS}_{qced})^2$$

(~~6~~~~e~~~~e~~) An ERS Resource that is deemed to have met its availability requirements under paragraph (~~5~~~~b~~~~d~~) above shall have its availability factor for that ERS Contract Period set to one.

8.1.3.1.4 Event Performance Criteria for Emergency Response Service Resources

- (1) No later than 45 days after the end of an ERS Standard Contract Term in which one or more ERS deployment events occurred, ERCOT shall provide each QSE representing ERS Resources with an event performance report containing the results of ERCOT's evaluation of the event(s). The report shall contain:
 - (a) For each event, the ERS event performance factor (ERSEPF) for each ERS Resource in the QSE's ERS portfolio, as described in this Section;
 - (b) For each event, the QSE's portfolio-level event performance factor, as described in Section 8.1.3.3, Payment Reductions and Suspension of Qualification of Emergency Response Service Resources and/or their Qualified Scheduling Entities;

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- (c) The QSE's portfolio-level event performance factor for the ERS Standard Contract Term, as described in Section 8.1.3.3.
- (2) An ERS Resource's performance shall not be evaluated for an ERS deployment if either of the following ~~is~~^{are} true:
 - (a) The QSE has submitted timely notice to ERCOT pursuant to Section 8.1.3.1.3.1, Time Period Availability Calculations for Emergency Response Service Loads, that one or more sites in the ERS Resource are unavailable, and the period of unavailability during the ERS deployment does not exceed the 2% maximum specified in that section; or
 - (b) The ERS Resource does not have an obligation for at least one full interval during the Sustained Response Period of that event.
- (3) Otherwise, ERCOT shall evaluate an ERS Resource's performance during an ERS deployment based on two criteria:
 - (a) Within the applicable ramp period, ERS Loads shall curtail Load and ERS Generators shall output energy and reach a level of energy injection to the ERCOT System in accordance with their ERS contractual obligations. The ramp period for ERS Resources in ERS-10 is ten minutes. The ramp period for ERS Resources in ERS-30 is 30 minutes. ERCOT shall assess each ERS Resource's compliance with this requirement by using the ~~ERS Interval Performance Factors (EIPFs)~~, calculated in paragraph (b) below, for the first full interval of the Sustained Response Period.
 - (b) ERCOT shall measure each ERS Resource's performance throughout the duration of an ERS deployment event by analyzing 15-minute interval meter data associated with the ERS Resource. ERCOT will compute an ERSEPF for each ERS Resource based upon this analysis.
 - (i) The ERSEPF is computed as the time-weighted arithmetic average of the EIPFs for the Sustained Response Period. An EIPF is computed for the ERS Resource for each of the 15-minute intervals in an ERS Sustained Response Period for which the ERS Resource has contracted capacity. If the last interval of the Sustained Response Period has an interval fraction (IntFrac) of less than one, the EIPF for that interval shall be excluded for the computation of ERSEPF. For an interval, $EIPF_i$ is computed as follows:

$$EIPF_i = \text{Max}(\text{Min}(((\text{Base_MWh}_i - \text{Actual_MWh}_i) / (\text{IntFrac}_i * \text{OFFERMW})), 1), 0)$$

The above variables are defined as follows:

Variable	Unit	Description
IntFrac _i	None	Interval fraction for that ERS Resource for that interval.

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Variable	Unit	Description
Base_MWh _i	MWh	<p>For an ERS Load assigned to a <u>Default Baseline</u>, the aggregated sum of baseline MWh values estimated by ERCOT for all sites in the ERS Load for that interval.</p> <p>For an ERS Load assigned to the alternate baseline, the sum of the ERS Load's OFFERMW and Maximum Base Load for that interval.</p> <p>For a <u>stand-alone ERS Generator or an ERS Generator co-located and jointly evaluated with an ERS Load</u>, the net energy injected to the ERCOT System for that interval.</p> <p><u>For an ERS Generator co-located with, but evaluated separately from an ERS Load, the energy output of the ERS Generator.</u></p>
Actual_MWh _i	MWh	<p>For an ERS Load, the aggregated sum of the actual MWh values for all sites in the ERS Load for that interval.</p> <p>For an ERS Generator, the ERS Generator's declared injection capacity, expressed in units of MWh.</p>
OFFERMW	MWh	The ERS Resource's contracted capacity for that interval expressed in units of MWh.
i	None	An interval.

and where IntFrac_i corresponds to the fraction of time for that interval for which the Sustained Response Period is in effect and is computed as follows:

$$\text{IntFrac}_i = (\text{CEndT}_i - \text{CBegT}_i) / 15$$

The above variables are defined as follows:

Variable	Unit	Description
IntFrac _i	None	Interval fraction for that ERS Resource for that interval.
CBegT _i	Minutes	If the Sustained Response Period begins after the start of that interval, the time in minutes from the beginning of that interval to the beginning of the Sustained Response Period, otherwise it is zero.
CEndT _i	Minutes	If the Sustained Response Period ends during that interval, the time in minutes from the beginning of that interval to the end of the Sustained Response Period, otherwise it is 15.
i	None	An interval.

- (ii) For an ERS Load assigned to an alternate baseline, if the IntFrac for the first interval of the Sustained Response Period is less than one, the EIPF for that interval calculated in the formula shown in paragraph (i) above shall use Base_MWh_i derived from historical interval meter data determined by ERCOT to represent an appropriate estimate of the ERS Load's business-as-usual Load specific to the conditions associated with the ERS deployment event.

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- (iii) If an ERS deployment event lasts more than eight hours, the time-weighting factor for intervals beyond the eighth hour shall be reduced by 25%.
 - (iv) In any ERS Standard Contract Term in which ERCOT has deployed ERS, the ERSEPF for an ERS Resource shall be the time-weighted average of the event performance factors for all events for which the ERS Resource was deployed.
 - (v) Irrespective of its ERSEPF, an ERS Resource shall be deemed to have met its event performance requirements if it is an ERS Load determined by ERCOT to have met its Load reduction obligations in the ERS deployment event if measured on one of ERCOT's established ~~D~~efault ~~b~~Baseline types other than the baseline type to which it is assigned, and ERCOT determines that the different baseline more accurately represents the ERS Load's ~~demand~~-Demand response contribution.
- (4) For an ERS deployment event, ERCOT shall calculate EIPFs and an ERSEPF for a Weather-Sensitive ERS Load consistent with the provisions of paragraph (3)(b)(i) above. No other provisions in paragraph (3) above shall apply to Weather-Sensitive ERS Loads.
 - (5) Regardless of the number of enrolled sites in the Weather-Sensitive ERS Load at the time of an event or test, the contracted capacity value (OFFERMW) used will be the value submitted by the QSE in its offer.
 - (6) For an ERS deployment event for a Weather-Sensitive ERS Load with two or more full intervals in the Sustained Response Period, if the ERS Load's EIPF for the first full interval of the Sustained Response Period is less than 75% of the average EIPF for the remaining full intervals of the Sustained Response Period, the baseline used to evaluate the ERS Load shall be reduced to the level at which the ERSEPF for that event or test is equal to 0.75 times the ERSEPF determined by using the initial baseline.

8.1.3.2 Testing of Emergency Response Service Resources

- (1) ERCOT may conduct an unannounced test of any ERS Resource at any time during an ERS Time Period in which the ERS Resource is contracted to provide ERS. Prior to the beginning of a Standard Contract Term, a QSE may request that one or more of its ERS Resources awarded in ERS-30 be tested as if subject to a ten-minute ramp during that ERS Standard Contract Term. The duration of a test will not count toward the ERS Resource's eight hours of maximum deployment time for an ERS Contract Period.
 - (a) For Non-Weather-Sensitive ERS Resources, ERCOT shall determine a test performance factor for each test using the methodology defined in paragraph Section 8.1.3.1.4, Event Performance Criteria for Emergency Response Service Resources. The test performance factors for Non-Weather-Sensitive ERS Resources resulting from those tests will be used in Settlement for that and subsequent ERS Standard Contract Terms as specified in Section 8.1.3.3,

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Payment Reductions and Suspension of Qualification of Emergency Response Service Resources and/or their Qualified Scheduling Entities. A test shall be deemed to be successful if the ERS Resource achieves both a test performance factor of 0.95 or greater and an EIPF for the full first interval of the test of 0.95 or greater. An ERS Resource that successfully completes a test with a ten-minute ramp shall not be subject to an additional test for at least 365 days regardless of whether the ERS Resource is participating in ERS-10 or ERS-30. An ERS Resource that successfully completes a test with a 30-minute ramp shall not be subject to an additional test for at least 365 days unless the ERS Resource participates in ERS-10 during that period. An ERS Resource participating in ERS-10 that meets its performance obligations during any ERS deployment event shall not be subject to a test for at least the following 365 days. An ERS Resource participating in ERS-30 that meets its performance obligations during any ERS deployment event shall not be subject to a test for at least the following 365 days unless the ERS Resource participates in ERS-10 during that period. Notwithstanding the foregoing, if ERCOT determines that an ERS Generator failed to perform adequately in one or more scheduled self-tests, ERCOT may test that ERS Generator more than once in the following 365-day period.

- (b) For Weather-Sensitive ERS Resources, ERCOT shall conduct unannounced testing of each Weather-Sensitive ERS Load at least once but no more than twice per month of obligation during an ERS Standard Contract Term, unless testing has been superseded by deployment events as described in paragraph (vii) below.
 - (i) The tests will be conducted according to normal ERS testing procedures.
 - (ii) At the time of Dispatch during a test, ERCOT will not advise the QSE of the test duration, which may vary from one full 15-minute interval to 12 full 15-minute intervals.
 - (iii) ERCOT may conduct a test during any of a Weather-Sensitive ERS Load's obligated hours. However, tests will generally be targeted toward periods of peak weather conditions.
 - (iv) For a Weather-Sensitive ERS Load assigned to the control group baseline, for each test ERCOT will designate a single group which shall be removed from the test population.
 - (A) The non-tested group will serve as the control group.
 - (B) Selection of the group to serve as the control group for each test will be random and will cycle through the groups within the ERS Load.
 - (v) ERCOT shall calculate a test performance factor for each test of a Weather-Sensitive ERS Load using the event performance methodology described in Section 8.1.3.1.4.

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- (vi) The QSE is responsible for managing group assignments and for deploying only the group(s) dispatched by ERCOT during a test.
 - (vii) ERCOT may reduce the number of tests administered by the number of deployment events during the ERS Standard Contract Term.
 - (viii) The test performance factors for Weather-Sensitive ERS Resources shall always be set to one for use in Settlement for the ERS Standard Contract Term.
- (2) ERCOT shall conduct an unannounced test of an ERS Resource that has been suspended from participation in ERS pursuant to Section 8.1.3.3. ERCOT will conduct such a test only after the QSE representing the ERS Resource has communicated to ERCOT a request for reinstatement of the suspended ERS Resource.
- (3) An ERCOT unannounced test of an ERS Generator must demonstrate injection of energy to the ERCOT System. The use of Load banks is prohibited for ERCOT unannounced tests.
- (4) If an ERS Generator is co-located with an ERS Load as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, Performance Evaluation for Emergency Response Service Generators, ERCOT shall test both such ERS Resources simultaneously, and the test performance of the ERS Load and the ERS Generator shall be considered jointly.
- (5) In order to assist QSEs and ERS Resources in managing environmental compliance, ERCOT shall limit the cumulative duration of Sustained Response Periods of testing of an ERS Resource to a maximum of one hour per ERS Standard Contract Term unless otherwise required to conduct re-testing.
- (6) Notwithstanding paragraph (5) above, Weather-Sensitive ERS Resources shall be subject to testing as described in paragraph (1)(b) above.

8.1.3.3.1 Suspension of Qualification of Non-Weather-Sensitive Emergency Response Service Resources and/or their Qualified Scheduling Entities

- (1) If a QSE's portfolio-level availability factor and event performance factors as calculated in Section 8.1.3.3.3, Performance Criteria for Qualified Scheduling Entities Representing Emergency Response Service Resources Other than Weather-Sensitive ERS Loads, both equal or exceed 0.95, the QSE will be deemed to have met its ERS performance requirements for the ERS Contract Period, and the QSE and its ERS Resources are not subject to suspension.
- (2) If a QSE fails to meet its portfolio-level availability and/or event performance requirements as described in Section 8.1.3.3.3, ERCOT shall take the following actions:
- (a) If a QSE failure is based only on event performance failure and ERS Resources that comprise 95% or more of the QSE's obligation for each of the events in the

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ERS Contract Term are deemed to have met their obligations, the QSE shall be deemed to have met its event performance requirements for the ERS Contract Term; otherwise

- (b) ERCOT may suspend the QSE from participation in ERS, and the QSE may be subject to administrative penalties imposed by the Public Utility Commission of Texas (PUCT). ERCOT may consider mitigating factors such as equipment failures and Force Majeure Events in determining whether to suspend the QSE.
- (3) If a QSE's portfolio-level availability factor is less than 0.95, ERS Resources in that portfolio shall be subject to the following:
 - (a) If an ERS Resource in the QSE's portfolio achieves an availability factor of 0.85 or greater, the ERS Resource shall not be subject to a reduction of its availability factor;
 - (b) If an ERS Resource in the QSE's portfolio achieves an availability factor of less than 0.85, the ERS Resource's availability factor shall be squared; and
 - (c) If the availability factor for one or more ERS Resources is squared pursuant to paragraph (b) above, ERCOT shall compute the QSE's final portfolio-level availability factor using that modified availability factor.
- (4) If a QSE's portfolio-level event performance factor for a deployment event is less than 0.95 or its portfolio-level interval performance factor for the first full interval of the Sustained Response Period is less than 0.95, ERS Resources in that portfolio shall be subject to the following:
 - (a) If an ERS Resource in the QSE's portfolio achieves an event performance factor of 0.95 or greater and an interval performance factor for the first full interval of the Sustained Response Period of 0.95 or greater, the ERS Resource shall not be subject to a reduction of its event performance factor for that event.
 - (b) If an ERS Load that is in the QSE's portfolio and that is not co-located with an ERS Generator, as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, Performance Evaluation for Emergency Response Service Generators, achieves an event performance factor of less than 0.95 and an interval performance factor for the first full interval of the Sustained Response Period of 0.95 or greater, the baseline for that ERS Resource shall be multiplied by a reduction factor that results in the final event performance factor being equal to the square of its original event performance factor.
 - (c) If an ERS Generator that is in the QSE's portfolio and that is not co-located with an ERS Load or is evaluated separately from a co-located ERS Load, as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, achieves an event performance factor of less than 0.95 and an interval performance factor for the first full interval of the Sustained Response Period of 0.95 or greater, the net energy injected to the ERCOT System for that ERS Resource for each interval of the event shall be

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multiplied by a reduction factor that results in the final event performance factor being equal to the square of its original event performance factor.

- (d) If an ERS Load and an ERS Generator in a QSE's portfolio that are co-located and evaluated jointly, as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, Performance Evaluation for Emergency Response Service Generators, achieve a combined event performance factor of less than 0.95 and a combined interval performance factor for the first full interval of the Sustained Response Period of 0.95 or greater, the net energy injected to the ERCOT System for the ERS Generator for each interval of the event shall be multiplied by a reduction factor that results in the final combined event performance factor being equal to the square of its original combined event performance factor. If a reduction factor of zero results in the combined event performance factor being greater than the square of the original combined event performance factor the, net energy injected to the ERCOT System shall be set to zero for all intervals in the event and the baseline for the ERS Load shall be multiplied by a reduction factor that results in the final combined event performance factor being equal to the square of the original combined event performance factor.
- (e) If an ERS Load that is in the QSE's portfolio and that is not co-located with an ERS ~~Load Generator or is evaluated separately~~, as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, achieves an event performance factor of 0.95 or greater and an interval performance factor for the first full interval of the Sustained Response Period of less than 0.95, the baseline for that ERS Resource shall be multiplied by a reduction factor that results in the final event performance factor being equal to 0.75 times its original event performance factor.
- (f) If an ERS Generator that is in the QSE's portfolio and that is not co-located with an ERS Load or is evaluated separately, as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, achieves an event performance factor of 0.95 or greater and an interval performance factor for the first full interval of the Sustained Response Period of less than 0.95, the net energy injected to the ERCOT System for that ERS Resource for each interval of the event shall be multiplied by a reduction factor that results in the final event performance factor being equal to 0.75 times its original event performance factor.
- (g) If an ERS Load and an ERS Generator in a QSE's portfolio that are co-located and are evaluated jointly, as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, achieve a combined event performance factor of 0.95 or greater and a combined interval performance factor for the first full interval of the Sustained Response Period of less than 0.95, the net energy injected to the ERCOT System for the ERS Generator for each interval of the event shall be multiplied by a reduction factor that results in the final combined event performance factor being equal to 0.75 times its original combined event performance factor. If a reduction factor of zero results in the combined event performance factor being greater than the square of the original combined event performance factor the net energy injected to the ERCOT System shall be set to zero for all intervals in the event and the

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baseline for the ERS Load shall be multiplied by a reduction factor that results in the final combined event performance factor being equal to the square of the original combined event performance factor.

- (h) If an ERS Load that is in the QSE's portfolio and that is not co-located with an ERS ~~LoadGenerator~~, as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, achieves an event performance factor of less than 0.95 and an interval performance factor for the first full interval of the Sustained Response Period of less than 0.95, the baseline for that ERS Resource shall be multiplied by a reduction factor that results in the final event performance factor being equal to 0.75 times the square of its original event performance factor.
 - (i) If an ERS Generator that is in the QSE's portfolio and that is not co-located with an ERS Load ~~or is evaluated separately~~, as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, achieves an event performance factor of less than 0.95 and an interval performance factor for the first full interval of the Sustained Response Period of less than 0.95, the net energy injected to the ERCOT System for that ERS Resource for each interval of the event shall be multiplied by a reduction factor that results in the final event performance factor being equal to 0.75 times the square of its original event performance factor.
 - (j) If an ERS Load and an ERS Generator in a QSE's portfolio that are co-located ~~and are evaluated jointly~~, as specified in ~~paragraph (2) of~~ Section 8.1.3.1.2, achieve a combined event performance factor of less than 0.95 and an interval performance factor for the first full interval of the Sustained Response Period of less than 0.95, the net energy injected to the ERCOT System for the ERS Generator for each interval of the event shall be multiplied by a reduction factor that results in the final combined event performance factor being equal to 0.75 times the square of its original combined event performance factor. If a reduction factor of zero results in the combined event performance factor being greater than 0.75 times the square of the original combined event performance factor the net energy injected to the ERCOT System shall be set to zero for all intervals in the event and the baseline for the ERS Load shall be multiplied by a reduction factor that results in the final combined event performance factor being equal to 0.75 times the square of the original combined event performance factor.
 - (k) If the final event performance factor for one or more ERS Resources in a QSE's portfolio is reduced pursuant to paragraphs (b) through (j) above, ERCOT shall re-compute the QSE's final portfolio-level event performance factor using each ERS Resource's final event performance factor.
- (5) If an ERS Resource achieves a test performance factor of 0.95 or greater and an interval performance factor of 0.95 or greater for the first full interval of the Sustained Response Period of an unannounced ERCOT test as described in Section 8.1.3.2, Testing of Emergency Response Service Resources, or is not tested during an ERS Standard Contract Term, the ERS test performance factor (ERSTESTPF) shall be set to one for that ERS Standard Contract Term.

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- (6) If, at the end of an ERS Standard Contract Term, an ERS Resource has failed only one test within a 365-day period, ERSTESTPF shall be set to one for that ERS Standard Contract Term.
- (7) If an ERS Resource ~~fails~~ has failed the two ~~consecutive-most recent~~ unannounced ERCOT tests within a 365-day period as a result of achieving a test performance factor of less than 0.95 and/or an interval performance factor for the first full interval of the Sustained Response Period of less than 0.95 as described in Section 8.1.3.2, the ERSTESTPF shall be set to the lower of 0.75 or the average of those two test performance factors. ERSTESTPF shall be used in calculating the payment to the QSE for the ERS Standard Contract Term during which the second failure occurs. Successful deployment in a subsequent ERS deployment event during that ERS Standard Contract Term shall result in ERSTESTPF being set to one for that ERS Standard Contract Term.
- (78) If a Governmental Authority issues a written determination that an ERS Resource is in violation of any environmental law that would preclude the ERS Resource's compliance with its ERS availability or deployment obligations, ERCOT shall treat the ERS Resource as having no availability for the remainder of the Standard Contract Term following the Governmental Authority's determination and shall treat the Resource as having an event performance factor of zero for any deployments in the remaining portion of the ERS Standard Contract Term. ERCOT shall also suspend the ERS Resource's participation in ERS until the ERS Resource's QSE certifies to ERCOT in writing that the violation has been remedied and that the ERS Resource may lawfully participate in ERS.
- (89) If a QSE is suspended pursuant to paragraph (2) above, each of the QSE's ERS Resources whose availability or event performance factors was reduced in accordance with paragraphs (3) or (4) above also shall be suspended, and each of the sites in those ERS Resources shall also be suspended. The duration of the suspension for such ERS Resources and sites shall be one ERS Standard Contract Term. ERCOT shall reject offers for ERS Resources that are suspended or that contain one or more suspended sites. Notwithstanding the foregoing, ERCOT may choose not to suspend an ERS Resource if it determines that the reduced availability or event performance factor was attributable to the fault of its QSE or to one or more mitigating factors, such as equipment failures and Force Majeure Events.
- (910) The suspension of an ERS Resource or a QSE representing an ERS Resource shall begin on the day following the expiration of the current or most recent ERS obligation.
- (4011) ERCOT may reinstate an ERS Resource's eligibility to offer into ERS upon the ERS Resource's satisfactory completion of the reinstatement process, including a test conducted by ERCOT, as described in Section 8.1.3.2 and in the ERS technical requirements.

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8.1.3.3.2 *Payment Reduction and Suspension of Qualification of Weather-Sensitive Emergency Response Service Loads and/or their Qualified Scheduling Entities*

- (1) If the QSE portfolio-level event performance factor for the QSE's portfolio of Weather-Sensitive ERS Loads for the ERS Contract Period as calculated in Section 8.1.3.3.4, Performance Criteria for Qualified Scheduling Entities Representing Emergency Response Service Loads Under the Weather-Sensitive Baseline, is greater than or equal to 0.90, ERCOT shall not impose a payment reduction for any of the those ERS Loads. Otherwise, ERCOT shall compute QSE portfolio-level Demand reduction values for each test and event throughout the ERS Contract Period as the greater of zero or the portfolio-level baseline estimate for each interval less the portfolio-level actual Load for that interval. The relationship of the Demand reduction values for each ERS Load to actual weather shall be modeled and used to derive a time-period specific Demand reduction value that would be realized under normalized peak weather conditions. If this normalized peak Demand reduction value summed across all ERS Loads in the portfolio is greater than or equal to 90% of the QSE's total offered MW capacity in each time period, ERCOT shall not impose a payment reduction for any of the ERS Loads in the portfolio.
- (2) If the provisions of paragraph (1) above are not met, ERCOT shall reduce a QSE's payment for Weather-Sensitive ERS Load as follows:
 - (a) If the maximum number of sites in the ERS Load during the ERS Standard Contract Term is less than 80% of the ~~maximum~~ number of sites projected by the QSE at the time of offer submission, as described in paragraph (13) of Section 3.14.3.1, Emergency Response Service Procurement, the baseline used to evaluate the Weather-Sensitive ERS Load shall be reduced to the level at which the ERSEPF is equal to the square of the ERSEPF determined by using the initial baseline.
 - (b) If the normalized peak Demand reduction value per site within the Weather-Sensitive ERS Load is less than 90% of the average Demand reduction value per site, based on the QSE's offer, and the ERS Load's ERSEPF is less than 0.90, the baseline used to evaluate the ERS Load for that event shall be reduced to the level at which the ERS Load's ERSEPF is equal to the square of the ERSEPF determined by using the initial baseline.
 - (c) If either paragraph (2)(a) or (b) above require a payment reduction, but not both, and the normalized peak demand reduction for the resource is greater than or equal to 90% of the QSE's offered MW capacity, no payment reduction for the event shall be imposed.
 - (d) If the provisions of both paragraphs (2)(a) and (b) above require the ERSEPF to be squared, the baseline used to evaluate the ERS Load shall be reduced to the level at which the ERSEPF for the ERS Load is equal to the cube of the ERSEPF determined by using the initial baseline.

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- (e) If an ERS Load's obligation is exhausted during an ERS Contract Period, the provisions of paragraphs (2)(a), (b) and (c) above shall not apply.
- (f) If the final event performance factor for one or more ERS Loads in a QSE's portfolio of ERS Loads under the weather-sensitive baseline is reduced pursuant to paragraphs (2)(a), (b) or (d) above, ERCOT shall re-compute the QSE's final portfolio-level event performance factor using each ERS Load's adjusted baselines.