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| NPRR Number | [850](http://www.ercot.com/mktrules/issues/NPRR850) | NPRR Title | Market Suspension and Restart |
|  |  |
| Date | May 17, 2018 |
|  |  |
| Submitter’s Information |
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| Company | ERCOT |
| Phone Number | 512-248-3954; 512-225-7014 |
| Cell Number |  |
| Market Segment | Not applicable |

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| Comments |

ERCOT accepts the Texas SET Working Group comments to insert the word “ERCOT” in the titles of Sections 25.6 and 25.6.1. ERCOT recommends the following additional changes to Nodal Protocol Revision Request (NPRR) 850 in order to provide further clarification while preserving the objectives described in the initial filing of NPRR850.

Specific changes within these comments include the following:

• An adjustment billing determinant in the calculation of Market Suspention Make-Whole Payment to allow ERCOT to make adjustments based on actual fuel costs submitted for the Resource;

• Modification to the Load Allocated Real-Time Market Suspension Charge to include payments to Reliability Must-Run (RMR) Units and Black Start Resources;

• Clarification that Qualified Scheduling Entities (QSEs) representing Generation Resources may file actual fuel costs within five months of the Market Restart; and

• To reduce the risk to Counter-Parties of large collateral calls being issued immediately upon Market Restart, extention of the period in which ERCOT may exercise discretion in issuing collateral calls for two Bank Business Days following the restart of the Day-Ahead Market (DAM).

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| Market Rules Notes |

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

* NPRR683, Revision to Available Credit Limit Calculation (unboxed 2/7/18)
	+ Section 16.11.4.6

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| Revised Cover Page Language |

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| --- | --- |
| Nodal Protocol Sections Requiring Revision  | 2.1, Definitions4.4.8, RMR Offers5.2.2.2, RUC Process Timeline After an Aborted Day-Ahead Market16.11.4.6, Determination of Counter-Party Available Credit Limits25, Market Suspension and Restart (new)25.1, Introduction (new)25.2, Market Suspension Principles (new)25.3, Market Restart Processes (new)25.4, Market Suspension Credit Processes (new)25.4.1, Market Suspension Credit Assumptions (new)25.4.2, Determination of Counter-Party Available Credit Limits (new)25.4.3, Collateral Management (new)25.5, Market Suspension and Market Restart Settlement (new)25.5.1, Settlement Activity for a Market Suspension (new)25.5.2, Market Suspension Make-Whole Payment (new)25.5.3, Market Suspension DC Tie Import Payment (new)25.5.4, Market Suspension Block Load Transfer Payment (new)25.5.5, Market Suspension Charge Allocation (new)25.5.6, Market Suspension Data Submissions (new)25.5.7, Invoice Payment and Charges Schedule (new)25.5.8, RMR Settlements (new)25.6, ERCOT Retail Operations (new)25.6.1, ERCOT Retail Operations Market Suspension Procedures (new) |

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| Revised Proposed Guide Language |

2.1 DEFINITIONS

**Market Restart**

The processes by which ERCOT market-related systems and activities are returned to normal operations during and/or following a Market Suspension.

**Market Suspension**

The time period during which market-related systems and activities are terminated due to a triggering event that disables all, or a significant portion of, the necessary data and/or infrastructure for operations of those systems and markets. Such triggering events may include, but are not limited to, Blackouts, Partial Blackouts, and Force Majeure Events.

4.4.8 RMR Offers

(1) ERCOT shall decide, in its sole discretion, to commit a Reliability Must-Run (RMR) Unit using the DRUC or HRUC process only when it has determined that the RMR Unit is likely to be needed in Real-Time for reliability reasons, taking into consideration whether Security-Constrained Economic Dispatch (SCED) will solve transmission constraints without the RMR Resource, contractual constraints on the Resource, and any other adverse effects on the RMR Unit that may occur as the result of the dispatch of the RMR Resource.

(a) If ERCOT has determined that an RMR Unit will be needed in Real-Time to resolve a transmission constraint, then ERCOT shall manually commit the Resource for the capacity required to resolve the transmission constraint using the DRUC or HRUC process.

(b) ERCOT may submit Energy Offer Curves at the SWCAP in $/MWh on behalf of RMR Units committed in the DRUC or HRUC, and subsequently available for Dispatch by SCED, unless ERCOT declares a Market Suspension, in which case no Energy Offer Curves will be submitted, and ERCOT may, at its discretion, Dispatch RMR Units to restore the ERCOT Transmission Grid.

(c) RMR offers shall be treated as if they were Resource offers for purposes of posting under Section 3.2.5, Publication of Resource and Load Information*.*

**5.2.2.2 RUC Process Timeline After an Aborted Day-Ahead Market**

(1) If ERCOT aborts all or part of the Day-Ahead process in accordance with Section 4.1.2, Day-Ahead Process and Timing Deviations, for any reason not due to a Market Suspension, then ERCOT shall use the following Supplemental Ancillary Services Market (SASM) process to purchase Ancillary Services for the next Operating Day and the Hourly Reliability Unit Commitment (HRUC) process described in this Section in lieu of the DRUC process. If ERCOT aborts the Day-Ahead process due to a Market Suspension, it shall act in accordance with Section 25.3, Market Restart Processes.

(2) When the DAM is aborted, ERCOT shall include in the Watch notification required by paragraph (2) of Section 4.1.2 the time when it intends to conduct the SASM described in this Section 5.2.2.2 to procure the amounts of Ancillary Services necessary to meet the Ancillary Service Plan for the Operating Day affected by the aborted DAM. ERCOT shall allow at least one hour between the issuance of the Watch and the beginning of this SASM.

(3) After the issuance of the Watch described in paragraph (2) above and prior to the beginning of this SASM, a Qualified Scheduling Entity (QSE) may cancel unexpired Ancillary Service Offers that were submitted for the aborted DAM.

(4) A QSE may submit Ancillary Service Offers for this SASM after the issuance of the Watch described in paragraph (2) above and prior to the beginning of this SASM.

(5) For this SASM, the QSE must submit the Self-Arranged Ancillary Service Quantity for the next Operating Day in accordance with the timeline described in paragraph (3) of Section 6.4.9.2, Supplemental Ancillary Services Market. This amount may be different from the self-arrangement amounts previously submitted for the aborted DAM.

(6) The amount of each Ancillary Service to be procured by ERCOT in this SASM is the amount of each Ancillary Service specified in the ERCOT Ancillary Service Plan posted prior to the aborted DAM less the total amount of each Ancillary Service in the QSE submittals for self-arranged Ancillary Services for this SASM.

(7) This SASM will settle in accordance with Section 6.7, Real-Time Settlement Calculations for the Ancillary Services.

(8) The SASM process for acquiring Ancillary Services in the event of an aborted Day-Ahead process shall be conducted in accordance with Section 6.4.9.2.2, SASM Clearing Process, but shall use the following activities and timeline as specified in paragraph (3) of Section 6.4.9.2, with time “X” being the time specified by ERCOT for the beginning of the SASM process in the Watch notification described above.

(9) As soon as practicable, but no later than the time specified in paragraph (3) of Section 6.4.9.2, ERCOT shall notify each QSE of its awarded Ancillary Service Offer quantities, specifying Resource, Ancillary Service type, SASM Market Clearing Price for Capacity (MCPC), and the first and last hours of the awarded offer.

(10) As soon as practicable, but no later than the time specified in paragraph (3) of Section 6.4.9.2, ERCOT shall post on the MIS Public Area the hourly:

(a) SASM MCPC for each type of Ancillary Service for each hour;

(b) Total Ancillary Service procured in MW by Ancillary Service type for each hour; and

(c) Aggregated Ancillary Service Offer Curve for each Ancillary Service for each hour.

(11) No sooner than 1800 in the Day-Ahead and after the completion of the SASM process described in this Section 5.2.2.2, ERCOT shall execute an HRUC process.

(a) The RUC Study Period for this HRUC process is the balance of the current Operating Day plus the next Operating Day. This HRUC process may be a post-1800 HRUC for the current Operating Day.

(b) The COP and Trades Snapshot taken just prior to the execution of the HRUC process described in this Section 5.2.2.2 will be used to settle RUC charges in the Operating Day affected by the aborted DAM.

(c) This HRUC process described in this Section 5.2.2.2 may commit Resources to supply Ancillary Services if the Ancillary Service Offers submitted in the SASM described in this Section 5.2.2.2 are insufficient to meet the requirements of the Ancillary Services Plan in the Operating Day affected by the aborted DAM.

(d) A QSE may request cancellation of a RUC instruction to supply Ancillary Services if the Resource requested is not capable of providing the Ancillary Services due to equipment issues that are the result of non-frequency responsive power augmentation or other Resource control issues. If ERCOT accepts the cancellation, ERCOT may require QSEs to submit supporting information describing the Resource control issues.

**16.11.4.6 Determination of Counter-Party Available Credit Limits**

(1) ERCOT shall calculate an Available Credit Limit for the CRR Auction (ACLC) and an Available Credit Limit for the DAM (ACLD) as follows:

(a) ACLC for each Counter-Party equal to the maximum of zero and the net of its:

(i) Secured Financial Security; minus

(ii) (1+ACLIRF) \* TPES; minus

(iii)Net Positive Exposure of approved CRR Bilateral Trades; minus

(iv) Maximum of:

(A) Zero; and

(B) ((1+ACLIRF) \* TPEA) minus the Unsecured Credit Limit minus Financial Security defined as guarantees in paragraph (1)(a) of Section 16.11.3, Alternative Means of Satisfying ERCOT Creditworthiness Requirements.

(b) ACLD for each Counter-Party equal to the maximum of zero and the net of its:

(i) Unsecured Credit Limit; plus

(ii) Financial Security defined as guarantees in paragraph (1)(a) of Section 16.11.3; plus

(iii) Remainder Collateral; minus

(iv) ACLIRF \* TPES; minus

(v) (1+ACLIRF) \* TPEA.

(c) If all or part of a Counter-Party’s ACLC and/or ACLD cannot be computed due to an ERCOT computer system failure or Market Suspension, then ERCOT shall estimate ACLC and/or ACLD for that Counter-Party and provide the information used to determine such estimates to that Counter-Party. If all or part of ACLC and/or ACLD cannot be estimated with current data, then the most recently available values shall be used to determine the Counter-Party’s ACLC and/or ACLD. ERCOT shall provide electronic Notice, as soon as practicable, to Counter-Parties when utilizing this methodology, and shall further provide electronic Notice to Counter-Parties when current data is restored and available to calculate ACLC and ACLD under paragraphs (a) and (b) above.

The above parameters are defined as follows.

| Parameter | Unit | Current Value\* |
| --- | --- | --- |
| *ACLIRF* | Percentage | 10% *— ACL Incremental Risk Factor*. |
| \* The current value for the parameters referenced in this table above will be recommended by TAC and approved by the ERCOT Board. ERCOT shall update parameter values on the first day of the month following ERCOT Board approval unless otherwise directed by the ERCOT Board. ERCOT shall provide a Market Notice prior to implementation of a revised parameter value. |

# 25 Market Suspension and Restart

25.1 Introduction

(1) A Market Suspension triggering event may result in the suspension and restart of market activity, including but not limited to:

(a) Day-Ahead Market (DAM) activities;

(b) Real-Time Market (RTM) activities;

(c) Congestion Revenue Right (CRR) Auctions;

(d) Market credit activities;

(e) Retail market activities;

(f) Network Operations Model updates;

(g) Market reporting activities; and

(h) Other impacted ERCOT operations and activities.

(2) A Market Suspension will be declared by ERCOT at its sole discretion and communicated to Market Participants in as timely a manner, as feasible, given the constraints of the triggering event.

**25.2 Market Suspension Principles**

(1) The specific activities that will take place during a Market Suspension will depend on the nature of the triggering event, the extent to which market-supporting systems and processes have been curtailed, and other specific circumstances. However, in acting to restore markets ERCOT shall act in accordance with the following principles:

(a) ERCOT shall use its crisis communication procedures to foster orderly and timely communication of information with the Public Utility Commission of Texas (PUCT), other Governmental Authorities, Market Participants and stakeholders, the media, and the general public.

(b) During Market Suspension, ERCOT shall act in accordance with the State of Texas Emergency Management Plan (Annex L).

(c) Restart of the Real-Time Market (RTM) will be prioritized before other markets and activities.

(d) Congestion Revenue Right (CRR) Auctions and related functions will start only after the RTM and Day-Ahead Market (DAM) are restored. CRR Auctions will be rescheduled on a best efforts basis. CRR Auctions may be cancelled.

(e) In the event of market outage where there are DAM awards with no corresponding Security-Constrained Economic Dispatch (SCED) execution, or CRRs with no corresponding DAM execution, these results will be invalidated for the hours corresponding to the Market Suspension.

(f) Certain transactions, such as trades, DAM bids and offers, and CRR bids and offers, may be restricted until such time as supporting systems are deemed stable.

(g) Limited Settlement functionality is expected while restoring ERCOT markets. To the extent data are available, reconciliation Settlements may be produced after ERCOT market operations are fully restored.

(h) Payments to Qualified Scheduling Entities (QSEs) representing Resources shall be made in as timely a manner as possible to support recovery of market functionality.

(i) As necessary, QSEs representing Resources that support restoration of the ERCOT Transmission Grid shall be made whole to their costs as described in Section 25.5.2, Market Suspension Make-Whole Payment.

(j) Startup Costs and operating costs incurred during a Market Supension shall be uplifted on a Load Ratio Share (LRS) basis after Market Restart. If necessary to avoid financial disruption to Market Participants, uplift charges may be assessed on an installment basis.

(k) If additional liquidity is required during a Market Suspension, ERCOT may utilize available funds such as undistributed CRR Auction Revenues before seeking emergency funding to pay QSEs representing Resources.

(l) Credit and collateral requirements will be reviewed by ERCOT staff as appropriate to facilitate Market Restart. This could include relaxation of credit requirements and release of cash or other collateral to provide short-term Market Participant liquidity.

(m) Potential Mass Transitions arising in consequence of the event shall be suspended.

(n) Retail operations will follow the processes outlined in Retail Market Guide Section 7.10, Extended Unplanned Outage, and related supporting documentation.

**25.3 Market Restart Processes**

(1) Specific Market Restart processes may be modified depending on the nature of the triggering event.

(2) Market Restart processes work in conjunction with, but will not supersede, other ERCOT emergency processes and procedures such as Black Start procedures.

(3) Following a declaration by ERCOT of a Market Suspension, in effectuating Market Restart for the Real-Time Market (RTM), ERCOT:

(a) Shall determine the interval to resume Security-Constrained Economic Dispatch (SCED) execution based on availability and functioning of:

(i) The Energy Management System (EMS);

(ii) The Market Management System (MMS);

(iii) The ERCOT System operating as a single Island as described in the Nodal Operating Guides; and

(iv) Electronic communications between ERCOT and Market Participants.

(b) Shall suspend all RTM Settlements and shall settle pursuant to Section 25.5, Market Suspension Settlement;

(c) Shall suspend Day-Ahead Market (DAM) Settlements for any Operating Days for which ERCOT declares the RTM was suspended; and

(d) May assign Ancillary Services once the ERCOT System is operating as a single Island as described in the Nodal Operating Guides, and ERCOT is ready to control the system using Load Frequency Control (LFC).

(4) When there are no posted DAM results for the Operating Day, and operational conditions allow, ERCOT shall assign Ancillary Services to Qualified Scheduling Entities (QSEs) based on the amount of capacity that their Resources have or can bring On-Line.

(5) Following a declaration by ERCOT of a Market Suspension, in effectuating a Market Restart for the DAM, ERCOT shall restart the DAM when the below conditions are satisfied:

(a) The RTM has restarted pursuant to paragraph (3) above;

(b) ERCOT is reasonably able to model the expected state of the ERCOT Transmission Grid for the next day; and

(c) ERCOT is able to receive market submissions to successfully run the DAM.

(6) During the Market Restart process, credit constraints may be relaxed as applicable as detailed in Section 25.4, Market Suspension Credit Processes.

25.4 Market Suspension Credit Processes

25.4.1 Market Suspension Credit Assumptions

(1) During a Market Suspension, the estimation of market credit is contingent upon the following conditions:

(a) ERCOT systems critical to credit processes have been restored, with the understanding that some data normally used in credit calculations might not be available;

(b) Adequate means of communication with Counter-Parties are available; and

(c) Systems are available for transfer of funds to and from Market Participants.

25.4.2 Determination of Counter-Party Available Credit Limits

(1) During a Market Suspension, a Counter-Party’s Available Credit Limit for the CRR Auction (ACLC) and Available Credit Limit for the DAM (ACLD) will be determined pursuant to Section 16.11.4.6, Determination of Counter-Party Available Credit Limits.

(2) During a Market Suspension, ERCOT may, at its sole discretion, set an Unsecured Credit Limit for Counter-Parties not otherwise eligible per the ERCOT Creditworthiness Standards and/or increase Unsecured Credit Limits for Counter-Parties currently eligible for Unsecured Credit.

(3) In accordance with Section 25.4.3, Collateral Management, ERCOT may, at its sole discretion, waive, in part or in full, the requirements in paragraph (2) of Section 16.11.5, Monitoring of a Counter-Party’s Creditworthiness Credit Exposure by ERCOT, for Counter-Parties to maintain designated amounts of Secured and/or Remainder Collateral.

(4) The exercise of any measures described in paragraphs (2) and (3) above shall be reflected in the estimated ACLC and/or ACLD values provided to Counter-Parties pursuant to Section 16.11.4.6.

25.4.3 Collateral Management

(1) During a Market Suspension, and for no more than two Bank Business Days following restart of the Day-Ahead Market (DAM), ERCOT may, at its sole discretion, forego the requirement in paragraph (3) of Section 16.11.5, Monitoring of a Counter-Party’s Creditworthiness Credit Exposure by ERCOT, to provide prompt notice to Counter-Parties of the need to increase Financial Security.

(2) During a Market Suspension, and for no more than two Bank Business Days following restart of the DAM, ERCOT may, at its sole discretion, extend the timelines in paragraph (6) of Section 16.11.5 to allow Counter-Parties to make arrangements to provide collateral, without unmet requests for collateral being designated as Late Payments.

25.5 Market Suspension and Market Restart Settlement

25.5.1 Settlement Activity for a Market Suspension

(1) Settlement for the Operating Days for which the Real-Time Market (RTM) has been suspended shall be limited to the following payments and charges:

(a) Market Suspension Make-Whole Payment;

(b) Market Suspension DC Tie Import Payment;

(c) Market Suspension Block Load Transfer Payment;

(d) RMR Standby Payment;

(e) RMR Payment for Energy;

(f) Black Start Hourly Standby Fee Payment;

(g) Market Suspension Charge Allocation; and

(h) ERCOT System Administration Fee.

(2) During a Market Suspension:

(a) To the extent feasible, ERCOT shall calculate and pay the Real-Time Market Suspension Make-Whole Payment to each eligible Qualified Scheduling Entity (QSE).

(b) ERCOT shall wire the funds to the QSE’s banking institution as soon as practicable, subject to the availability of funds and the availability of systems for transfer of funds.

(c) At its sole discretion, ERCOT may suspend calculating monthly verifiable cost updates.

(d) ERCOT shall not assess:

(i) Market Suspension Charge Allocation as defined in Section 25.5.5, Market Suspension Charge Allocation;

(ii) Market Suspension DC Tie Import Payment as defined in Section 25.5.3, Market Suspension DC Tie Import Payment;

(iii) Market Suspension Block Load Transfer Payment as defined in Section 25.5.4, Market Suspension Block Load Transfer Payment;

(iv) RMR Standby Payment;

(v) RMR Payment for Energy;

(vi) Black Start Hourly Standby Fee Payment; and

(vii) ERCOT System Administration Fee.

(3) ERCOT may, at its sole discretion, settle the Operating Days that occur during a Market Suspension without use of RTM Settlement Statements, Settlement Invoices, and associated provisions, as described in Section 9, Settlement and Billing.

(4) ERCOT shall maintain available supporting billing determinant Settlement data for Market Suspension Operating Day Settlement and shall provide this information to each QSE as soon as practicable.

(5) ERCOT shall cease to utilize the provisions for Market Suspension Settlement beginning with the first complete Operating Day for which ERCOT issues Dispatch Instructions to QSEs in accordance with Section 25.3, Market Restart Processes.

(6) After Market Restart ERCOT shall:

(a) Reconcile payments to QSEs with Generation Resources pursuant to Section 25.5.2, Market Suspension Make-Whole Payment, using the best available generation data;

(b) Calculate Market Suspension DC Tie Import Payments as defined in Section 25.5.3;

(c) Calculate Market Suspension Block Load Transfer Payments as defined in Section 25.5.4;

(d) Allocate costs in accordance with Section 25.5.5; and

(e) Assess the ERCOT System Administration Fee for the time period of the Market Suspension in accordance with Section 9.16.1, ERCOT System Administration Fee, using the best available Load data.

(7) ERCOT shall provide Notice no less than two Business Days prior to issuing any reconciliation Settlement for the impacted period.

(8) ERCOT shall resume other Settlement activities that were suspended as a result of, or in relation to, the Market Suspension as soon as practicable following the Market Restart, including, but not limited to, pending Congestion Revenue Right (CRR), Day-Ahead Market (DAM) and RTM Settlement for Operating Days prior to the Market Suspension.

25.5.2 Market Suspension Make-Whole Payment

(1) To compensate QSEs representing Generation Resources for providing energy during a Market Suspension, ERCOT shall calculate a Market Suspension Make-Whole Payment for the Operating Day as follows:

MSMWAMT *q,r,d* = (-1) \* (MSSUC*q,r,d* + MSOC *q,r,d* + MSACADJ *q,r,d*)

Where,

The startup cost (MSSUC) is calculated as follows:

For Black Start Resources:

MSSUC *q,r,d*  = $0.00

For Combined Cycle Trains:

MSSUC *q,r,d* = MSSUPR *q,r,*s + (MAX (0, MSSUPR afterCCGR –

MSSUPR beforeCCGR))

For all other Resources:

MSSUC *q,r,d*  =  MSSUPR *q,r,s*

The startup price (MSSUPR) and operating cost (MSOC) are calculated as follows:

If ERCOT has approved verifiable costs for the Generation Resource:

MSSUPR *q,r,s* = RABCFCRS *q,r,s* \* (MSAVGFP *j* + FA *q,r* ) + RVOMS *q,r,s*

MSOC *q,r,d* = (AHR *q, r ,i* \* (MSAVGFP *j*   + FA *q,r* ) + ROM *q,r* ) \* MSGEN *q,r,i*

Otherwise,

MSSUPR *q,r,s* = RCGSC

MSOC *q,r,d* = (PAHR*r, i* \* (MSAVGFP *j*  + PFA*rc*) + STOM*rc*) \* MSGEN *q,r,i*

Where,

MSAVGFP *j* = MSAVGFIP *j* for Generation Resources that indicate in the Resource Registration process or the verifiable cost process to start on natural gas

Or,

MSAVGFP *j* = MSAVGFOP *j* for Generation Resources that indicate in the Resource Registration process or through the verifiable cost process to start on fuel oil

The above variables are defined as follows:

| Variable | Unit | Definition |
| --- | --- | --- |
| MSMWAMT *q,r,d* | $ | *Market Suspension Make-Whole Payment*—The Market SuspensionMake-Whole Payment to the QSE *q,* for Resource *r*, for the Operating Day *d*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| MSACADJ *q,r,d* | $ | *Market Suspension Actual Costs Adjustment*— Adjustment to the Market SuspensionMake-Whole Payment to pay or charge the QSE *q* for actual costs for Resource *r*, for the Operating Day *d*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| MSSUC *q,r,d*  | $ | *Market Suspension Start-Up Cost* —The Startup Costs for Resource *r* represented by QSE *q* during restart hours, for the Operating Day *d*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| MSSUPR *q,r,s* | $ | *Market Suspension Startup Price per Start*—The MarketSuspensionSettlement price for Resource *r* represented by QSE *q* for the start *s*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RABCFCRS *q,r,s* | MMBtu | *Raw Actual Breaker Close Fuel Consumption Rate per Start –* The raw actual verifiable fuel consumption rate, from first fire to breaker close, for the Resource *r* represented by QSE *q*, per start *s,* for the warmth state, as submitted through the verifiable cost process. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| MSOC *q,r,d*  | $ | *Market Suspension Operating Cost* —The MarketSuspensionoperating cost for Resource *r* represented by QSE *q* for operations after breaker close for the Operating Day *d*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| RVOMS *q,r,s* | $/start | *Raw Verifiable Operations and Maintenance Cost per Start –* The raw verifiable Operations and Maintenance (O&M) cost for the Resource *r* represented by QSE *q*, per start *s,* for the warmth state, as submitted through the verifiable cost process*.* Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train.  |
| ROM *q,r* | $/MWh | *Raw Verifiable Operations and Maintenance Cost Above LSL–* The raw verifiable O&M cost for the Resource *r* represented by QSE *q* for operations above Low Sustained Limit (LSL). Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| STOM *rc* | $/MWh | *Standard Operations and Maintenance Cost -* The standard O&M cost for the Resource category *rc* for operations above LSL, shall be set to the minimum energy variable O&M costs, as described in paragraph (6)(c) of Section 5.6.1, Verifiable Costs.  |
| MSAVGFP | $/MMBtu | *Market Suspension Average Fuel Price* — The Market Suspensionaverage fuel price calculated based on MSAVGFIP or MSAVGFOP. |
| MSAVGFIP | $/MMBtu | *Market Suspension Average Fuel Index Price* — The Market Suspensionaverage Fuel Index Price (FIP) calculated as the average price of FIP for the 15 days prior to the Market Suspensionevent, calculated on a daily rolling basis for Operating Days the index price is available to ERCOT.  |
| MSAVGFOP | $/MMBtu | *Market Suspension Average Fuel Oil Price* — The Market Suspension average Fuel Oil Price (FOP) calculated as the average price of FOP for the 15 days prior to the Market Suspensionevent, calculated on a daily rolling basis for Operating Days the index price is available to ERCOT.  |
| RCGSC | $/start | *Resource Category Generic Startup Cost*—The Resource Category Generic Startup Cost cap for the category of the Resource, according to Section 4.4.9.2.3, Startup Offer and Minimum-Energy Offer Generic Caps, for the Operating Day. |
| FA *q,r* | $/MMBtu | *Verifiable Average Fuel Adder* — The verifiable average fuel price adder for the Resource *r* represented by QSE *q*. The fuel adder shall be set to the actual approved verifiable fuel adder or the standard value defined in the Verifiable Cost Manual. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| PFA *rc* | $/MMBtu | *Proxy Fuel Adder –* The proxy fuel price adder for the Resource category *rc*. For all thermal Generation Resources, the fuel adder shall be set to $0.50/MMBtu; otherwise, the fuel adder shall be set to $0.00/MMBtu.  |
| AHR *q,r,i* | MMBtu / MWh | *Average Heat Rate per Resource–* The verifiable average heat rate for the Resource *r* represented by QSE *q*, for operating levels between LSL and High Sustained Limit (HSL), for the 15-minute Settlement Interval *i*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| PAHR*r, i* | MMBtu / MWh | *Proxy Average Heat Rate-* The proxy average heat rate for the Resource *r* for the 15-minute Settlement Interval *i*. Where for a Combined Cycle Train, the Resource *r* is a Combined Cycle Generation Resource within the Combined Cycle Train. |
| MSGEN *q,r,i* | MWh | *Market Suspension Generation per Resource*—The generation for the Resource *r* represented by QSE *q* for the 15-minute Settlement Interval *i*.  |
| *q* | None | A QSE. |
| *r* | None | A Generation Resource. |
| *d* | None | An Operating Day during a Market Suspensionevent. |
| *i* | None | A 15-minute Settlement Interval within the hour of an Operating Day of a Market Suspensionevent. |
| *s* | None | A Generation Resource start during an Operating Day of a Market Suspension event. |
| *t* | None | A transition that is eligible to have its costs included in the Market Suspension Cost Guarantee. |
| *rc* | None | A Resource category. |
| *afterCCGR* | None | The Combined Cycle Generation Resource to which a Combined Cycle Train transitions. |
| *beforeCCGR* | None | The Combined Cycle Generation Resource from which a Combined Cycle Train transitions. |

(2) The total compensation to each QSE for the Market SuspensionMake-Whole Payment for an Operating Day is calculated as follows:

**MSMWAMTQSETOT *q,d* =** **MSMWAMT *q,r,d***

And,

MSMWAMTTOT ***d*** =  MSMWAMTQSETOT *q,d*

The above variables are defined as follows:

| Variable | Unit | Definition |
| --- | --- | --- |
| MSMWAMTQSETOT*q ,d*  | $ | *Market Suspension Make-Whole Payment per QSE*—The total payment to QSE *q* for MarketSuspensionMake-Whole Payment for the Operating Day *d*. |
| MSMWAMTTOT ***d*** | $ | *Market Suspension Make-Whole Payment Total* —The total payment to all QSEs for MarketSuspensionMake-Whole Payment for the Operating Day.  |
| MSMWAMT *q,r,d* | $ | *Market Suspension Make-Whole Payment*—The MarketSuspensionMake-Whole Payment to the QSE *q,* for Resource *r*, for the Operating Day *d*. Where for a Combined Cycle Train, the Resource *r* is the Combined Cycle Train. |
| *q* | none | A QSE. |
| *r* | none | A Generation Resource. |
| *d* | none | An Operating Day during a Market Suspensionevent. |

(3) During a Market Suspension, ERCOT may cease making payments in accordance with this Section in the event that funds are not available to make such payments.

25.5.3 Market Suspension DC Tie Import Payment

(1) To compensate each QSE for energy imported into the ERCOT System through each Direct Current Tie (DC Tie) during a MarketSuspension, the payment for an Operating Day is calculated as follows:

MSEDCIMPAMT *q,p,d* = (-1) \*  (MSVEEPDCTP *q,p,i*\* MSCAEDCT \*

 MSEDCIMP *q,p,i* \* ¼)

The above variables are defined as follows:

|  |  |  |
| --- | --- | --- |
| Variable | Unit | Description |
| MSEDCIMPAMT *q, p,d* | $ | *Market Suspension Emergency DC Import Amount per QSE per Settlement Point*—The payment to QSE *q* for emergency energy imported through DC Tie *p*, during a Market Suspension*,* for the Operating Day *d*. |
| MSEDCIMP *q, p,i* | MW | *Market Suspension Emergency DC Import per QSE per Settlement Point*—The aggregated DC Tie Schedule for emergency energy imported by QSE *q* into the ERCOT System during a Market Suspension condition through DC Tie *p*, for the 15-minute Settlement Interval *i*. |
| MSVEEPDCTP *q, p, i* | $/MWh | *Market Suspension Verified Emergency Energy Price at DC Tie Point*—The ERCOT verified cost for the energy imported by QSE *q* into the ERCOT System during a MarketSuspension through a DC Tie *p* as instructed by a Dispatch Instruction, for the 15-minute Settlement Interval *i*. |
| MSCAEDCT | none | *Market Suspension Cost Adder for Emergency DC Tie Import*—A multiplier of 1.10. |
| *q* | none | A QSE. |
| *p* | none | A DC Tie Settlement Point. |
| *i* | none | A 15-minute Settlement Interval within the hour of an Operating Day of a Market Suspensionevent. |
| *d* | none | An Operating Day during a Market Suspensionevent. |

(2) The total payment to each QSE for all energy imported into the ERCOT System during a MarketSuspension through DC Ties for the Operating Day is calculated as follows:

MSEDCIMPAMTQSETOT *q,d* =  MSEDCIMPAMT *q, p,d*

And,

MSEDCIMPAMTTOT *d* =  MSEDCIMPAMTQSETOT *q,d*

The above variables are defined as follows:

| Variable | Unit | Definition |
| --- | --- | --- |
| MSEDCIMPAMTQSETOT *q,d* | $ | *Market Suspension Emergency DC Import Amount Total per QSE*⎯The total of the payments to QSE *q* for DC Tie import emergency energy imported into the ERCOT System during a Market Suspension condition through DC Ties*,* for the Operating Day *d*. |
| MSEDCIMPAMT *q, p,d* | $ | *Market Suspension Emergency DC Import Amount per QSE per Settlement Point*—The payment to QSE *q* for emergency energy imported through DC Tie *p,* for the Operating Day *d*.  |
| MSEDCIMPAMTTOT *d*  | $ | *Market Suspension Emergency DC Import Amount Total –* The total Market Suspension Emergency DC Import Amount charges for all QSEs. |
| *q* | none | A QSE. |
| *p* | none | A DC Tie Settlement Point. |
| *d* | none | An Operating Day during a Market Suspensionevent. |

25.5.4 Market Suspension Block Load Transfer Payment

(1) The total payment to each QSE for the energy delivered to an ERCOT Load through a Block Load Transfer (BLT) Point that is moved in response to an ERCOT Verbal Dispatch Instruction (VDI) for an Operating Day during a Market Suspension is calculated as follows:

MSBLTRAMT *q, bltp, p,d* = (-1) \* (MSVEEPBLTP*q, bltp,i* *\** MSCABLT \* BLTR*q, p,bltp, i*)

The above variables are defined as follows:

|  |  |  |
| --- | --- | --- |
| Variable | Unit | Definition |
| MSBLTRAMT *q, bltp, p,d* | $ | *Market Suspension Block Load Transfer Resource Amount per QSE per Settlement Point per BLT Point*⎯The payment to QSE *q* for the BLT Resource that delivers energy to Load Zone *p* through BLT Point *bltp* during a Market Suspension, for the Operating Day *d*. |
| MSVEEPBLTP *q, bltp, i* | $/MWh | *Market Suspension Verified Emergency Energy Price at BLT Point*⎯The ERCOT verified cost for the energy delivered to an ERCOT Load through BLT Point *bltp* , represented by QSE *q* during a Market Suspension event in ERCOT as determined by an ERCOT VDI, for the 15-minute Settlement Interval *i*. |
| MSCABLT | none | *Market Suspension Cost Adder for Block Load Transfer*⎯A multiplier of 1.10. |
| BLTR *q, p, bltp, i* | MWh | *Block Load Transfer Resource per QSE per Settlement Point per BLT Point*⎯The energy delivered to an ERCOT Load in Load Zone *p* through BLT Point *bltp* represented by QSE *q*, during a Market Suspension event, for the 15-minute Settlement Interval *i*.  |
| *q* | none | A QSE. |
| *p* | none | A Load Zone Settlement Point. |
| *bltp* | none | A BLT Point. |
| *i* | none | A 15-minute Settlement Interval within the hour of an Operating Day of a Market Suspensionevent. |
| *d* | none | An Operating Day during a Market Suspensionevent. |

(2) The total payment to each QSE for all energy delivered to ERCOT Loads through BLT Points during a Market Suspension eventfor the Operating Day is calculated as follows:

MSBLTRAMTQSETOT *q,d* = MSBLTRAMT *q, bltp, p,d*

And,

MSBLTRAMTTOT *d* =  MSBLTRAMTQSETOT *q,d*

The above variables are defined as follows:

|  |  |  |
| --- | --- | --- |
| Variable | Unit | Definition |
| MSBLTRAMTQSETOT*q,d* | $ | *Market Suspension Block Load Transfer Amount Total per QSE*⎯The total payment to QSE *q* for energy delivered into the ERCOT System through BLT Points during a Market Suspensionfor the Operating Day *d.* |
| MSBLTRAMT *q, bltp , p* | $ | *Market Suspension Block Load Transfer Resource Amount per QSE per Settlement Point per BLT Point*—The payment to QSE *q* for the BLT Resource that delivers energy to Load Zone *p* through BLT Point *bltp* during a Market Suspensionfor the Operating Day *d.*  |
| MSBLTRAMTTOT *d* | $ | *Market Suspension Block Load Transfer Amount Total –* The total Market Suspension Block Load Transfer Amount for all QSEs for the Operating Day *d*. |
| *q* | none | A QSE. |
| *p* | none | A Load Zone Settlement Point. |
| *bltp* | none | A BLT Point. |
| *d* | none | An Operating Day during a Market Suspensionevent. |

25.5.5 Market Suspension Charge Allocation

(1) After resumption of the RTM, and in accordance with Section 25.5.1, Settlement Activity for a Market Suspension, ERCOT shall allocate the cost on a Load Ratio Share (LRS) basis for the cost to:

(a) Reimburse QSEs representing Resources for Market Suspension Make-Whole Payments in accordance with Section 25.5.2, Market Suspension Make-Whole Payment;

(b) Reimburse QSEs for Market Suspension DC Tie Import Payments in accordance with Section 25.5.3, Market Suspension DC Tie Import Payment;

(c) Reimburse QSEs for Market Suspension Block Load Transfer Payments in accordance with Section 25.5.4, Market Suspension Block Load Transfer Payment;

(d) Reimburse QSEs for Market Suspension RMR Standby Payments in accordance with Section 6.6.6.1, RMR Standby Payment;

(e) Reimburse QSEs for Market Suspension RMR Payment for Energy in accordance with Section 6.6.6.2, RMR Payment for Energy;

(f) Reimburse QSEs for Market Suspension Black Start Service in accordance with Section 6.6.8.1, Black Start Hourly Standby Fee Payment; and

(g) Pay any other unfunded non-recurring costs incurred in restarting ERCOT markets.

(2) ERCOT shall charge for the costs described above through the Market Suspension Charge Allocation. These charges shall be allocated on an LRS basis for the most recent 30 days prior to the Market Suspension event for which Initial Settlement has been completed. For purposes of this charge, a QSE’s basis shall be the QSE’s total Real-Time Adjusted Metered Load (AML) for the 30 days prior to the Market Suspension divided by the total ERCOT Real-Time AML for the same period. The Market Suspension Charge is calculated as follows:

LARTMSAMT*q* = (-1) \* (MSMWAMTTOT *d* + MSEDCIMPAMTTOT *d* + MSBLTRAMTTOT *d* + RMRSBAMTTOT + RMREAMTTOT + BSSAMTTOT) \* RTMSLRS *q*

Where:

RTMSLRS *q*=  (max(0, RTAML *q, p,d30,i*)) / RTAMLTOT*d30,i*

 The above variables are defined as follows:

| Variable | Unit | Definition |
| --- | --- | --- |
| LARTMSAMT*q* | $ | *Load Allocated Real-Time Market Suspension Charge –* The allocated charge to QSE *q* for Market Suspension activities for the Operating Day. |
| MSEDCIMPAMTTOT *d*  | $ | *Market Suspension Emergency DC Import Amount Total –* The total Market Suspension Emergency DC Import Amount charges for all QSEs for the Operating Day *d*. |
| MSMWAMTTOT *d*  | $ | *Market Suspension Make-Whole Payment Total –* The total payment to all QSEs for Market SuspensionMake-Whole Payments for the Operating Day.  |
| MSBLTRAMTTOT *d* | $ | *Market Suspension Block Load Transfer Amount Total –* The total Market Suspension Block Load Transfer Amount for all QSEs for the Operating Day *d*. |
| BSSAMTTOT | $ | *Black Start Service Amount QSE Total ERCOT-Wide —* The total of the payments to QSE *q* for BSS provided by all the BSS Resource represented by this QSE for the hour *h*. See Section 6.6.8.2, Black Start Capacity Charge. |
| RMREAMTTOT | $ | *RMR Energy Amount Total*—The total of the energy cost payments to all QSEs for all RMR Units, for the hour. See Section 6.6.8.1, Black Start Hourly Standby Fee Payment. |
| RMRSBAMTTOT | $ | *RMR Standby Amount Total*—The total of the Standby Payments to all QSEs for all RMR Units, for the hour. See Section 6.6.6.5. |
| RTMSLRS *q* | $ | *Real-Time Market Suspension Load Ratio Share –* The ratio of the QSE *q*’s Real-Time AML to the total ERCOT Real-Time AML for the 30 day period prior to the Market Suspension for which Initial Settlement has been completed. |
| RTAML *q, p, d30, i* | MWh | *Real-Time Adjusted Metered Load –* The sum of the AML at the Electrical Buses that are included in Settlement Point *p*, represented by QSE *q*, for the day *d30*, for the 15-minute Settlement Interval *i*. |
| RTAMLTOT*d30 , i* | MWh | *Real-Time Adjusted Metered Load Total*—The total AML in ERCOT, for the day *d30*, for the 15-minute Settlement Interval *i*. |
| *d30* | none | A day in the 30-day period prior to the Market Suspension for which Initial Settlement has been completed |
| *i* | none | A 15-minute Settlement Interval within the hour of an Operating Day of a Market Suspensionevent. |
| *q* | none | A QSE. |
| *p* | none | A Load Zone Settlement Point. |
| *d* | none | An Operating Day during a Market Suspensionevent. |
| *h* | none | An hour within a Market Suspension. |

25.5.6 Market Suspension Data Submissions

(1) Any data submissions provided by the QSE representing the Generation Resource required or requested by ERCOT due to a Market Suspension shall be filed within five months of the Market Restart, including but not limited to:

(a) Generation data;

(b) Load data;

(c) Actual price paid for delivered natural gas, fuel oil or another fuel; and

(d) Costs associated with the transport or delivery of fuel.

25.5.7 Invoice Payment and Charges Schedule

(1) To the extent feasible, ERCOT will calculate and pay the Market Suspension Make-Whole Payment in accordance with Section 25.5.2, Market Suspension Make-Whole Payment, to each QSE during a Market Suspension Event.

(2) Beginning five Business Days after the Market Restart, ERCOT will issue initial daily Invoices, each Business Day for each Operating Day of the Market Suspension.

(3) ERCOT shall send a Market Notice and post a Settlement Calendar for the Operating Days of the Market Suspension no later than five Business Days after the Market Restart.

(4) ERCOT shall true up the initial Invoice with a final Invoice that shall be issued the first Business Day greater than or equal to 180 days after the initial Invoice was issued.

(5) Payments due to and from ERCOT for Settlement Invoices related to a Market Suspension shall be done in accordance with Section 9.7.1, Invoice Recipient Payment to ERCOT for the Settlement Invoices.

25.5.8 RMR Settlements

(1) After ERCOT resumes Settlement of the RTM following a Market Suspension, RMR Units shall be settled in accordance with Section 6.6.6.1, RMR Standby Payment, and Section 6.6.6.2, RMR Payment for Energy, except that, before actual costs are submitted, the FIP may be replaced with the Market Suspension Average Fuel Index Price (MSAVGFIP), as described in Section 25.5.2, Market Suspension Make-Whole Payment.

25.6 ERCOT Retail Operations

25.6.1 ERCOT Retail Operations Market Suspension Procedures

(1) Once ERCOT has declared a Market Suspension, Market Participants shall follow the processes outlined in Retail Market Guide Section 7.10, Extended Unplanned Outage, and in applicable supplementary documentation.

(2) Following a declaration of Market Suspension, when practicable, ERCOT shall issue a Market Notice informing Market Participants of when ERCOT expects to resume processing retail market transactions. This may not be contemporaneous with the restart of other ERCOT market-related functions.

(3) As soon as practicable, following the issuance of the Market Notice, ERCOT shall conduct one or more retail market conference calls. The calls are intended to allow ERCOT and Market Participants to identify and communicate ongoing issues and system constraints, coordinate processes for staging, ordering and submission of back-logged retail market transactions, and identify impacts on related processes such as flight testing.