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| NPRR Number | [1013](http://www.ercot.com/mktrules/issues/nprr1013) | NPRR Title | RTC - NP 1, 2, 16, and 25: Overview, Definitions and Acronyms, Registration and Qualification of Market Participants, and Market Suspension and Restart |
| Date of Decision | November 11, 2020 |
| Action | Recommended Approval |
| Timeline  | Urgent |
| Proposed Effective Date | Upon system implementation of the Real-Time Co-Optimization (RTC) Project |
| Priority and Rank Assigned | Not applicable |
| Nodal Protocol Sections Requiring Revision  | 1.3.1.1, Items Considered Protected Information1.3.1.4, Expiration of Protected Information Status1.3.3, Expiration of Confidentiality2.1, Definitions2.2, Acronyms and Abbreviations16.11.4.1, Determination of Total Potential Exposure for a Counter-Party16.11.4.3.2, Real-Time Liability Estimate25.3, Market Restart Processes |
| Related Documents Requiring Revision/Related Revision Requests | Nodal Operating Guide Revision Request (NOGRR) 211, RTC - NOG 2 and 9: System Operations and Control Requirements and Monitoring ProgramsNodal Protocol Revision Request (NPRR) 1007, RTC – NP 3: Management Activities for the ERCOT SystemNPRR1008, RTC - NP 4: Day-Ahead OperationsNPRR1009, RTC - NP 5: Transmission Security Analysis and Reliability Unit CommitmentNPRR1010, RTC - NP 6: Adjustment Period and Real-Time OperationsNPRR1011, RTC - NP 8: Performance MonitoringNPRR1012, RTC - NP 9: Settlement and BillingOther Binding Document Revision Request (OBDRR) 020, RTC - Methodology for Setting Maximum Shadow Prices for Network and Power Balance Constraints |
| Revision Description | This NPRR updates the Protected Information provisions, definitions and acronyms, registration and qualification of Market Participants, and Market Suspension and Restart in the Protocols to address changes associated with the implementation of RTC. Specifically, this NPRR addresses the following Key Principles:* + - * KP1.4 - Systems/Applications that Provide Input into the Real-Time Optimization Engine;
			* KP1.6 – Ancillary Service Imbalance Settlement;
			* KP4 – The Supplemental Ancillary Service Market Process;
			* KP5 – Day-Ahead Market;
			* KP6 – Market-Facing Reports; and
			* KP7 – Performance Monitoring.
 |
| Reason for Revision |  Addresses current operational issues. Meets Strategic goals (tied to the [ERCOT Strategic Plan](http://www.ercot.com/content/wcm/lists/144926/ERCOT_Strategic_Plan_2019-2023.pdf) or directed by the ERCOT Board). Market efficiencies or enhancements Administrative Regulatory requirements Other: (explain)*(please select all that apply)* |
| Business Case | This NPRR aligns Protected Information provisions, definitions and acronyms, registration and qualification of Market Participants, and Market Suspension and Restart with the upcoming RTC terminology and operating environment. |
| Credit Work Group Review | To be determined |
| PRS Decision | On 6/11/20, PRS unanimously voted via roll call to table NPRR1013. All Market Segments were present for the vote.On 11/11/20, PRS unanimously voted via roll call to grant NPRR1013 Urgent status; to recommend approval of NPRR1013 as amended by the 10/23/20 ERCOT comments; and to forward to TAC NPRR1013 and the Impact Analysis. All Market Segments were present for the vote. |
| Summary of PRS Discussion | On 6/11/20, there was no discussion.On 11/11/20, ERCOT Staff provided an overview of the RTC initiative, noting the filed comments reflecting consensus reached by the Real-Time Co-Optimization Task Force (RTCTF), and participants reviewed the Impact Analysis and discussed the appropriate priority and rank for the RTC project. |

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| Sponsor |
| Name | Dave Maggio |
| E-mail Address | David.Maggio@ercot.com |
| Company | ERCOT |
| Phone Number | 512-248-6998 |
| Cell Number |  |
| Market Segment | Not applicable |

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| **Market Rules Staff Contact** |
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| **Comments Received** |
| **Comment Author** | **Comment Summary** |
| ERCOT 102320 | Proposed additional revisions reflecting consensus of the RTCTF and requested Urgent status for NPRR1013 |

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| **Market Rules Notes** |

Please note the definition of “Resource Attribute” has been updated to reflect the incorporation of the following NPRR(s) into the Protocols:

* NPRR973, Add Definitions for Generator Step-Up and Main Power Transformer (LDR) (incorporated 9/1/20)
* NPRR1000, Elimination of Dynamically Scheduled Resources (incorporated 9/1/20)
* NPRR1016, Clarify Requirements for Distribution Generation Resources (DGRs) and Distribution Energy Storage Resources (DESRs) (incorporated 9/1/20)

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

* NPRR928, Cybersecurity Incident Notification (unboxed 4/3/20)
	+ Section 1.3.1.1
* NPRR997, Gas Pipeline Coordination for Natural Gas Generation Resources (incorporated 5/1/20)
	+ Section 1.3.1.1

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

* NPRR1039, Replace the Term MIS Public Area with ERCOT Website
	+ Section 1.3.1.4
	+ Section 1.3.3
* NPRR1041, Adjust Expiration of Protected Information Status for Wholesale Storage Load (WSL) Data
	+ Section 1.3.1.1
* NPRR1054, Removal of Oklaunion Exemption Language
	+ Section 16.11.4.3.2

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| Proposed Protocol Language Revision |

**1.3.1.1 Items Considered Protected Information**

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

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

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

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

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

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

(c) Status of Resources, including Outages, limitations, or scheduled or metered Resource data. The Protected Information status of this information shall expire 60 days after the applicable Operating Day;

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

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

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

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

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

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

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

(i) Wholesale Storage Load (WSL) data identifiable to a specific QSE. The Protected Information status of this information shall expire 180 days after the applicable Operating Day;

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

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

(l) Information related to generation interconnection requests, to the extent such information is not otherwise publicly available. The Protected Information status of certain generation interconnection request information expires as provided in Section 1.3.3, Expiration of Confidentiality;

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| ***[NPRR902: Replace paragraph (l) above with the following upon system implementation, but no earlier than July 1, 2020:]***(l) Information related to generation interconnection requests, to the extent such information is not otherwise publicly available. The Protected Information status of certain generation interconnection request information expires as provided in Section 1.3.1.4, Expiration of Protected Information Status; |

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

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

(i) The Protected Information status of the identities of CRR bidders that become CRR Owners and the number and type of CRRs that they each own shall expire at the end of the CRR Auction in which the CRRs were first sold; and

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

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

(p) Credit limits identifiable to a specific QSE;

(q) Any information that is designated as Protected Information in writing by Disclosing Party at the time the information is provided to Receiving Party except for information that is expressly designated not to be Protected Information by Section 1.3.1.2 or that, pursuant to Section 1.3.3, is no longer confidential;

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| ***[NPRR902: Replace paragraph (q) above with the following upon system implementation, but no earlier than July 1, 2020:]***(q) Any information that is designated as Protected Information in writing by Disclosing Party at the time the information is provided to Receiving Party except for information that is expressly designated not to be Protected Information by Section 1.3.1.2 or that, pursuant to Section 1.3.1.4, is no longer confidential;  |

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

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

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

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| ***[NPRR857: Replace item (t) above with the following upon system implementation:]***(t) QSE, Transmission Service Provider (TSP), Direct Current Tie Operator (DCTO), and Distribution Service Provider (DSP) backup plans collected by ERCOT under the Protocols or Other Binding Documents; |

(u) Direct Current Tie (DC Tie) information provided to a TSP or DSP under Section 9.17.2, Direct Current Tie Schedule Information;

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| ***[NPRR857: Replace item (u) above with the following upon system implementation:]***(u) Direct Current Tie (DC Tie) Schedule information provided to a TSP or DSP under Section 9.17.2, Direct Current Tie Schedule Information; |

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

(i) PUCT Substantive Rules on performance measure reporting;

(ii) These Protocols or Other Binding Documents; or

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

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

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

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

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

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

(bb) Generation Resource emergency operations plans and weatherization plans;

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

(dd) Any data related to Load response capabilities that are self-arranged by the LSE or pursuant to a bilateral agreement between a specific LSE and its Customers, other than data either related to any service procured by ERCOT or non-LSE-specific aggregated data.  Such data includes pricing, dispatch instructions, and other proprietary information of the Load response product;

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

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| ***[NPRR829: Replace paragraph (ee) above with the following upon system implementation:]***(ee) Status of Settlement Only Generators (SOGs), including Outages, limitations, schedules, metered output data, or data telemetered for use in the calculation of Real-Time Liability (RTL) as described in Section 16.11.4.3.2, Real-Time Liability Estimate, except that ERCOT may disclose metered output data from an SOG as part of an extract or forwarded TX SET transaction provided to the LSE associated with the ESI ID of the Premise where the SOG is located. The Protected Information status of this information shall expire 60 days after the applicable Operating Day; |

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

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

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

(ii) Information disclosed in response to paragraphs (1)-(4) of the Gas Pipeline Coordination section of Section 22, Attachment K, Declaration of Completion of Generation Resource Summer Weatherization Preparations and Natural Gas Pipeline Coordination for Resource Entities with Natural Gas Generation Resources, submitted to ERCOT in accordance with Section 3.21.1, Natural Gas Pipeline Coordination Requirements for Resource Entities with Natural Gas Generation Resources for Summer Preparedness and Summer Peak Load Season. The Protected Information status of Resource Outage information shall expire as provided in paragraph (1)(c) of Section 1.3.1.1.

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|  ***[NPRR902: Insert Section 1.3.1.4 below upon system implementation, but no earlier than July 1, 2020:]*****1.3.1.4 Expiration of Protected Information Status**(1) If PUCT Substantive Rules or other sections of the ERCOT Protocols require public posting (or posting to all Market Participants) of information identified as Protected Information in Section 1.3.1.1, Items Considered Protected Information, the Protected Information status of such information shall expire at the time such information is required to be posted.(2) ERCOT shall make the following information available on the MIS Public Area in a standard reporting format:(a) Ancillary Service Obligation for each QSE. This information shall be made available 180 days after the Operating Day;(b) Complete COP data for each QSE snapshot on each hour. This information shall be made available 60 days after the Operating Day; and (c) In a separate report from item (b) above, complete COP data for each Resource for each update to that Resource’s COP. This information shall be made available 60 days after the Operating Day. (3) ERCOT shall make available the AML for each QSE by LSE, by Load Zone and by Settlement Interval, from the True-Up settlement. This data shall be made available within two Business Days of the 180 day expiration of Protected Information status. Data for the posting will remain accessible for six months after such data are posted.(4) The Protected Information status of information related to generation interconnection requests expires once ERCOT receives a request from an Interconnecting Entity (IE) for a Full Interconnection Study (FIS), except that information described in item (1)(m) of Section 1.3.1.1 shall remain Protected Information.(5) Upon the expiration of the Protected Information status of any data specified in Section 1.3.1.1, which does not have specific posting requirements, that data must be made available to the extent required under Section 12, Market Information System.(6) Information that is no longer Protected Information, but not posted, including Dispatch Instructions, is available on request under the ERCOT Request for Records and Information Policy. Requested information must be provided within a reasonable timeframe. For Dispatch Instructions, the information may be requested with respect to a specific Resource, where applicable, and by service type and Settlement Interval or as integrated over each Settlement Interval for Dispatch Instructions with sub-Settlement Interval frequency. |

***1.3.3 Expiration of Confidentiality***

(1) If PUCT Substantive Rules or other sections of the ERCOT Protocols require public posting (or posting to all Market Participants) of information identified as Protected Information in Section 1.3.1.1, Items Considered Protected Information, the Protected Information status of such information shall expire at the time such information is required to be posted.

(2) ERCOT shall make the following information available on the MIS Public Area in a standard reporting format:

(a) Ancillary Service Obligation for each QSE. This information shall be made available 180 days after the Operating Day;

(b) Complete COP data for each QSE snapshot on each hour. This information shall be made available 60 days after the Operating Day; and

(c) In a separate report from item (b) above, complete COP data for each Resource for each update to that Resource’s COP. This information shall be made available 60 days after the Operating Day.

(3) ERCOT shall make available the AML for each QSE by LSE, by Load Zone and by Settlement Interval, from the True-Up settlement. This data shall be made available within two Business Days of the 180 day expiration of confidentiality date. Data for the posting will remain accessible for six months after such data are posted.

(4) The Protected Information status of information related to generation interconnection requests expires once ERCOT receives a request from an Interconnecting Entity (IE) for a Full Interconnection Study (FIS), except that information described in item (1)(m) of Section 1.3.1.1 shall remain Protected Information.

(5) Upon the expiration of the Protected Information status of any data specified in Section 1.3.1.1, which does not have specific posting requirements, that data must be made available to the extent required under Section 12, Market Information System.

(6) Information that is no longer Protected Information, but not posted, including Dispatch Instructions, is available on request under the ERCOT Request for Records and Information Policy. Requested information must be provided within a reasonable timeframe. For Dispatch Instructions, the information may be requested with respect to a specific Resource, where applicable, and by service type and Settlement Interval or as integrated over each Settlement Interval for Dispatch Instructions with sub-Settlement Interval frequency.

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| ***[NPRR902: Replace Section 1.3.3 above with the following upon system implementation, but no earlier than July 1, 2020:]*****1.3.3 RESERVED** |

**2.1 DEFINITIONS**

**Ancillary Service Demand Curve (ASDC)**

A curve that reflects the value of each Ancillary Service product by price/quantity pairs for each hour of the Operating Day.

**Ancillary Service Imbalance**

The difference between the amount of an Ancillary Service cleared in the Day-Ahead Market (DAM) and through trades and the amount of that Ancillary Service awarded in the Real-Time Market (RTM).

**Ancillary Service Offer**

An offer to supply Ancillary Service capacity in the Day-Ahead Market (DAM) or Real-Time Market (RTM).

Resource-Specific Ancillary Service OfferA Resource-specific offer to supply Ancillary Service capacity in the Day-Ahead Market (DAM) or Real-Time Market (RTM).

Ancillary Service Only Offer

An offer to sell Ancillary Service capacity in the Day-Ahead Market (DAM) that is not associated with a specific Resource.

**Ancillary Service Position**

The net amount of Ancillary Service capacity to which a Qualified Scheduling Entity (QSE) has financially committed in the ERCOT market, as described in Section 5.4.1, Ancillary Service Positions.

**Current Operating Plan (COP)**

A plan by a QSE reflecting anticipated operating conditions for each of the Resources that it represents for each hour in the next seven Operating Days, including Resource operational data, Resource Status, and Ancillary Service capabilities.

**Day-Ahead System-Wide Offer Cap (DASWCAP)**

The DASWCAP shall be determined in accordance with Public Utility Commission of Texas (PUCT) Substantive Rules.

**Emergency Ramp Rate**

The maximum rate of change (up and down) in MW per minute of a Resource to provide energy during Emergency Conditions that is provided to ERCOT in up to ten segments, each represented by a single MW per minute value (across the capacity of the Resource), which describes the available rate of change for the given range (between High Sustained Limit (HSL) and Low Sustained Limit (LSL)) of the generation or consumption of a Resource. In Real-Time Security-Constrained Economic Dispatch (SCED) Dispatch, the up and down Emergency Ramp Rates are telemetered by the Qualified Scheduling Entity (QSE) to ERCOT and represent the total capacity (in MW) that the Resource can change from its current actual generation or consumption within the next five minutes divided by five.

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| ***[NPRR863: Replace the above definition “Emergency Ramp Rate” with the following upon system implementation:]*****Emergency Ramp Rate** The maximum rate of change (up and down) in MW per minute of a Resource to provide energy during Emergency Conditions that is provided to ERCOT in up to ten segments, each represented by a single MW per minute value (across the capacity of the Resource), which describes the available rate of change for the given range (between High Sustained Limit (HSL) and Low Sustained Limit (LSL)) of the generation or consumption of a Resource. In Real-Time Security-Constrained Economic Dispatch (SCED) Dispatch, the up and down Emergency Ramp Rates are telemetered by the Qualified Scheduling Entity (QSE) to ERCOT and represent the total capacity (in MW) that the Resource can change from its current actual generation or consumption within the next five minutes divided by five. |

**Energy Imbalance Service**The difference between the amount of energy cleared in the Day-Ahead Market (DAM) and through trades and the amount of delivery of that energy in the Real-Time Market (RTM).

**Fast Frequency Response (FFR)**

The automatic self-deployment and provision by a Resource of their obligated response within 15 cycles after frequency meets or drops below a preset threshold, or a deployment in response to an ERCOT Verbal Dispatch Instruction (VDI) within 10 minutes. Resources capable of automatically self-deploying and providing their full Ancillary Service Resource award within 15 cycles after frequency meets or drops below a preset threshold and sustaining that full response for at least 15 minutes may provide Responsive Reserve (RRS).**Frequency Responsive Capacity (FRC)**

The telemetered portion of a Generation Resource’s total output that represents the fraction of the output provided from capacity that is capable of providing Primary Frequency Response (PFR). Capacity not capable of providing PFR includes, but may not be limited to, capacity from duct firing, auxiliary boilers, and other methods that do not immediately respond, arrest, or stabilize frequency excursions following a disturbance without secondary frequency response or instructions from ERCOT.

**Make-Whole Payment**

A payment made by ERCOT to a Qualified Scheduling Entity (QSE) for a Resource to reimburse a QSE for allowable startup and minimum energy costs of a Resource not recovered in energy or Ancillary Service revenue when a Resource is committed by Reliability Unit Commitment (RUC) and the QSE has not elected to opt out of RUC Settlement, or when a Resource is committed by the Day-Ahead Market (DAM).

**Market Clearing Price for Capacity (MCPC)**

The price for Ancillary Service capacity awarded in the Day-Ahead Market (DAM) or the Real-Time Market (RTM).

**Qualified Scheduling Entity (QSE) Clawback Interval**

Any QSE-Committed Interval that is part of a contiguous block that includes at least one Reliability Unit Commitment (RUC)-Committed Hour unless it is:

(a) QSE-committed in the RUC Snapshot before the first RUC instruction for any RUC-Committed Hour in that contiguous block;

(b) Part of a contiguous block of a QSE-Committed Intervals, at least one of which was committed by the QSE in the RUC Snapshot before the RUC instruction described in paragraph (a) above; or

(c) Part of a contiguous block of QSE-Committed Intervals, at least one of which is a RUC Buy-Back Hour.

**Real-Time Market (RTM)**

A Real-Time, co-optimized market in the Operating Day for Ancillary Service capacity and energy.

**Real-Time Reliability Deployment Price**

Real-Time Reliability Deployment Price for Ancillary Service

A Real-Time price for each 15-minute Settlement Interval determined for each Ancillary Service reflecting the impact of reliability deployments on Ancillary service prices, which is calculated from the Real-Time Reliability Deployment Price Adder for Ancillary Service.

Real-Time Reliability Deployment Price for Energy

A Real-Time price for each 15-minute Settlement Interval reflecting the impact of reliability deployments on energy prices that is calculated from the Real-Time Reliability Deployment Price Adder for Energy.

**Real-Time Reliability Deployment Price Adder**

Real-Time Reliability Deployment Price Adder for Ancillary Service

A Real-Time price adder that captures the impact of reliability deployments on prices for each Ancillary Service for each Security-Constrained Economic Dispatch (SCED) process, as detailed in Section 6.5.7.3.1, Determination of Real-Time Reliability Deployment Price Adders.

Real-Time Reliability Deployment Price Adder for Energy

A Real-Time price adder that captures the impact of reliability deployments on energy prices for each Security-Constrained Economic Dispatch (SCED) process as detailed in Section 6.5.7.3.1, Determination of Real-Time Reliability Deployment Price Adders.

**Real-Time System-Wide Offer Cap (RTSWCAP)**

The RTSWCAP shall be determined in accordance with Public Utility Commission of Texas (PUCT) Substantive Rules.

**Regulation Service**

An Ancillary Service that consists of either Regulation Down Service (Reg-Down) or Regulation Up Service (Reg-Up).

***Regulation Down Service (Reg-Down)***

An Ancillary Service that provides capacity that can respond to signals from ERCOT within five seconds to respond to changes in system frequency. Such capacity is the amount available below any Base Point but above the LSL of a Generation Resource and may be called on to change output as necessary throughout the range of capacity available to maintain proper system frequency. A Load Resource providing Reg-Down must be able to increase and decrease Load as deployed within its Ancillary Service award for Reg-Down below the Load Resource’s MPC limit.

***Regulation Up Service (Reg-Up)***

An Ancillary Service that provides capacity that can respond to signals from ERCOT within five seconds to respond to changes in system frequency. Such capacity is the amount available above any Base Point but below the HSL of a Generation Resource and may be called on to change output as necessary throughout the range of capacity available to maintain proper system frequency. A Load Resource providing Reg-Up must be able to increase and decrease Load as deployed within its Ancillary Service award for Reg-Up above the Load Resource’s LPC limit.

**Resource Attribute**

Specific qualities associated with various Resources (i.e., specific aspects of a Resource or the services the Resource is qualified to provide).

***Aggregate Generation Resource (AGR)***

A Generation Resource that is an aggregation of generators, with the exception of Intermittent Renewable Resources (IRRs) pursuant to paragraph (12) of Section 3.10.7.2, Modeling of Resources and Transmission Loads, each of which is less than 20 MW in output, which share identical operational characteristics and are interconnected at the same Point of Interconnection (POI) and located behind the same Generator Step-Up (GSU) transformer (with a high-side voltage greater than 60 kV).

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| [NPRR973: Replace the definition “Aggregate Generation Resource (AGR)” above with the following upon system implementation of PR106:]***Aggregate Generation Resource (AGR)***A Generation Resource that is an aggregation of generators, with the exception of Intermittent Renewable Resources (IRRs) pursuant to paragraph (12) of Section 3.10.7.2, Modeling of Resources and Transmission Loads, each of which is less than 20 MW in output, which share identical operational characteristics and are interconnected at the same Point of Interconnection (POI) and located behind the same Main Power Transformer (MPT). |

***Black Start Resource***

A Generation Resource under contract with ERCOT to provide Black Start Service (BSS).

***Decommissioned Generation Resource***

A Generation Resource for which a Resource Entity has submitted a Notification of Suspension of Operations or a Notification of Change of Generation Resource Designation, for which ERCOT has declined to execute a Reliability Must-Run (RMR) Agreement, and which has been decommissioned and permanently retired.

***Dynamically Scheduled Resource (DSR)***

A Resource that has been designated by the Qualified Scheduling Entity (QSE), and approved by ERCOT, as a DSR status-type and that follows a DSR Load.

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| [NPRR1000: Delete the definition “Dynamically Scheduled Resource (DSR)” above upon system implementation.] |

***Intermittent Renewable Resource (IRR)***

A Generation Resource that can only produce energy from variable, uncontrollable Resources, such as wind, solar, or run-of-the-river hydroelectricity.

***Intermittent Renewable Resource (IRR) Group***

A group of two or more IRRs whose performance in responding to Security-Constrained Economic Dispatch (SCED) Dispatch Instructions will be assessed as an aggregate for Generation Resource Energy Deployment Performance (GREDP) and Set Point Deviation. An IRR Group cannot contain any IRRs that are Split Generation Resources. Additionally, only IRRs that have the same Resource Node can be mapped to an IRR Group. Resource Entities can choose to group IRRs and shall provide the grouping information in a timely manner for ERCOT review prior to the scheduled database loads.

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| [NPRR1016: Insert the following definition “Inverter-Based Resource (IBR)” upon system implementation:]***Inverter-Based Resource (IBR)***A Resource that is connected to the ERCOT System either completely or partially through a power electronic converter interface. |

***Limited* *Duration* *Resource* (*LDR*)**

An Energy Storage Resource (ESR) that may be unavailable to Security-Constrained Economic Dispatch (SCED) due to the need to maintain its current state of charge.

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| ***[NPRR986: Delete the definition “Limited Duration Resource (LDR)” above upon system implementation.]*** |

***Mothballed Generation Resource***

A Generation Resource for which a Resource Entity has submitted a Notification of Suspension of Operations, for which ERCOT has declined to execute a Reliability Must-Run (RMR) Agreement, and which has not been decommissioned and retired.

***Quick Start Generation Resource (QSGR)***

A Generation Resource that in its cold-temperature state can come On-Line within ten minutes of receiving ERCOT notice and has passed an ERCOT QSGR test that establishes an amount of capacity that can be deployed within a ten-minute period.

***Split Generation Resource***

Where a Generation Resource has been split to function as two or more independent Generation Resources in accordance with Section 10.3.2.1, Generation Resource Meter Splitting, and Section 3.10.7.2, Modeling of Resources and Transmission Loads, each such functionality independent Generation Resource is a Split Generation Resource.

***Switchable Generation Resource (SWGR)***

A Generation Resource that can be connected to either the ERCOT Transmission Grid or a non-ERCOT Control Area.

**Reliability Unit Commitment (RUC) Snapshot**

A record of a Qualified Scheduling Entity’s (QSE’s) Capacity Trades, Energy Trades, Ancillary Service Positions, Ancillary Service Offers, Direct Current Tie (DC Tie) imports and most recent Current Operating Plan (COP) at the time the snapshot is taken.

**Security-Constrained Economic Dispatch (SCED)**

A process for determining Ancillary Service awards and Base Point instructions for Resources using Energy Offer Curves, Energy Bid/Offer Curves, RTM Energy Bids, Ancillary Service Offers and Ancillary Service Demand Curves. A SCED execution results in Ancillary Service awards and Base Point instructions that maximize bid-based revenues less offer-based costs while considering State Estimator (SE) output for Load at transmission-level Electrical Buses, Resource limits, and transmission limits to provide the least offer-based cost dispatch of the ERCOT System.

**Self-Arranged Ancillary Service Quantity**

The quantity of an Ancillary Service that a QSE secures for itself in the Day-Ahead Market (DAM) using Resources represented by that QSE and Ancillary Service Trades.

**Updated Desired Set Point**

A calculated MW value representing the expected MW output of a Resource, as described in Section 6.5.7.4.1, Updated Desired Set Points.

**2.2 ACRONYMS AND ABBREVIATIONS**

**AASP** Average Aggregated Set Point

**ASDC** Ancillary Service Demand Curve

**DASWCAP** Day-Ahead System-Wide Offer Cap

**FRC** Frequency Responsive Capacity

**UDSP** Updated Desired Set Point

**RTSWCAP** Real-Time System-Wide Offer Cap

**16.11.4.1 Determination of Total Potential Exposure for a Counter-Party**

(1) A Counter-Party’s TPE is the sum of its “Total Potential Exposure Any” (TPEA) and TPES:

(a) TPEA is the positive net exposure of the Counter-Party that may be satisfied by any forms of Financial Security defined under paragraphs (1)(a) through (1)(d) of Section 16.11.3, Alternative Means of Satisfying ERCOT Creditworthiness Requirements. TPEA will include all exposure not included in TPES.

(b) TPES is the positive net exposure of the Counter-Party that may be satisfied only by forms of Financial Security defined under paragraphs (1)(b) through (1)(d) of Section 16.11.3. The Future Credit Exposure (FCE) that reflects the future mark-to-market value for CRRs registered in the name of the Counter-Party is included in TPES.

(2) For all Counter-Parties:

TPEA = Max [0, MCE, Max [0, ((1-TOA) \* EAL *q* + TOA \* EAL *t* +EAL *a*)]] + PUL

TPES = Max [0, FCE *a*] + IA

The above variables are defined as follows:

| **Variable** | **Unit** | **Description** |
| --- | --- | --- |
| EAL *q* | $ | *Estimated Aggregate Liability for all QSEs that represents Load or generation*—EAL for all QSEs represented by the Counter-Party if at least one QSE represented by the Counter-Party represents either Load or generation. |
| EAL *t* | $ | *Estimated Aggregate Liability for all QSEs* —EAL for all QSEs represented by the Counter-Party if none of the QSEs represented by the Counter-Party represent either Load or generation. |
| EAL *a* | $ | *Estimated Aggregate Liability for all CRR Account Holders*—EAL for all CRR Account Holders represented by the Counter-Party. |
| PUL | $ | *Potential Uplift*—Potential uplift to the Counter-Party, to the extent and in the proportion that the Counter-Party represents Entities to which an uplift of a short payment will be made pursuant to Section 9.19, Partial Payments by Invoice Recipients. It is calculated as the sum of: (a) Amounts expected to be uplifted within one year of the date of the calculation; and (b) 25%, or such other percentage based on available statistics regarding payment default under bankruptcy reorganization plans, of any short payment amounts being repaid to ERCOT under a bankruptcy reorganization plan that are due more than one year from the date of the calculation.  |
| FCE *a* | $ | *Future Credit Exposure for all CRR Account Holders*—FCE for all CRR Account Holders represented by the Counter-Party. |
| MCE | $ | *Minimum Current Exposure*—For each Counter-Party, ERCOT shall determine a Minimum Current Exposure (MCE) as follows: MCE = Max[RFAF \* MAF \* Max[{**[**L *i, od, p* \* RTSPP *i, od, p*]/*n*}, {**[[[**L *i, od, p* \* *T2***-** G *i, od, p* \* (1-*NUCADJ*) \* *T3*] \* RTSPP *i, od, p*] + [RTQQNET *i, od, p*\* *T5*]]**/***n*},  {**[**G *i, od, p* \* *NUCADJ* \* *T1* \* RTSPP *i, od, p***]/**n}, {{DARTNET*i, od, p* \* *T4*/*n*} {DARTASONET *i, od, c \* T4/n*}}], MAF \* IMCE]RTQQNET *i, od, p* = Max**[(**RTQQES *i, od, p, c -*RTQQEP *i, od, p, c*), *BTCF* \* (RTQQES *i, od, p, c* – RTQQEP *i, od, p, c*)] \* RTSPP *i, od, p*DARTNET *i, od, p*  = DAM EOO Cleared *i, od, p* \* DART *i, od, p*+ DAM TPO Cleared *i, od, p* \* DART *i, od, p* + DAM PTP Cleared *i, od, p* \* DARTPTP *i, od, p*– DAM EOB Cleared *i, od, p* \* DART *i, od, p* DARTASONET *i, od* = DAM ASOO Cleared *i, od* \* DARTMCPC *i, od*Where:G *i, od, p* = *Total Metered Generation at all Resource Nodes* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*L *i, od, p* = *Total Adjusted Metered Load (AML) at all Load Zones* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*MAF = *Market Adjustment Factor*—Used to provide for the potential for overall price increases based on changes to ERCOT market rules or market conditions. This factor shall not be set below 100%. Revisions to this factor will be recommended by TAC and the ERCOT Finance and Audit (F&A) Committee, and approved by the ERCOT Board. Such revisions shall be implemented on the 45th calendar day following ERCOT Board approval unless otherwise directed by the ERCOT Board.*NUCADJ*= *Net Unit Contingent Adjustment*—To allow for situations where a generator may unintentionally or intentionally meet its requirement from the Real-Time Market (RTM).RTQQNET *i, od, p* = *Net QSE-to-QSE Energy Trades* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*RTQQES *i, od, p, c* = *QSE Energy Trades* for which the Counter-Party is the seller for interval *i* for Operating Day *od* at Settlement Point *p* with Counter-Party *c*RTQQEP *i, od, p, c* = *QSE Energy Trades* for which the Counter-Party is the buyer for interval *i* for Operating Day *od* at Settlement Point *p* with Counter-Party *c*DARTASONET *i, od* = *Net DAM Ancillary Service Only activities* for interval *i* for Operating Day *od* DAM ASOO Cleared *i, od* = DAM Ancillary Service Only Offers Cleared in DAM for interval *i* for Operating Day *od*DARTMCPC *i, od* = Day-Ahead – Real Time MCPC Spread for interval *i* for Operating Day *od**BTCF* = *Bilateral Trades Credit Factor*RTSPP *i, od, p* = *Real-Time Settlement Point Price* for interval *i* for Operating Day *od* at Settlement Point *p*DARTNET *i, od, p* = *Net DAM activities* for the Counter-Party for interval *i* for Operating Day *od* at Settlement Point *p*DART *i, od, p* = *Day-Ahead - Real-Time Spread*  for interval *i* for Operating Day *od* at Settlement Point *p*DAM EOB Cleared*i, od, p* = *DAM Energy Only Bids Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*DAM EOO Cleared *i, od, p* = *DAM Energy Only Offers Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*DAM TPO Cleared *i, od, p* = *DAM Three-Part Offers Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*DAM PTP Cleared *i, od, p* = *DAM Point-to-Point (PTP) Obligations Cleared* for interval *i* for Operating Day *od* at Settlement Point *p*DARTPTP *i, od, p* = *Day-Ahead - Real-Time Spread*  for value of PTP Obligation for interval *i* for Operating Day *od* at Settlement Point *p**c* = Bilateral Counter-Party *cif = Cap Interval Factor* - Represents the historic largest percentage of System-Wide Offer Cap (SWCAP) intervals during a calendar day*e* = Most recent *n* Operating Days for which RTM Initial Settlement Statements are available*i* = Settlement Interval*n* = Days used for averaging*nm =* Notional Multiplier*od* = Operating Day*p* = A Settlement Point |
| IMCE | $ | *Initial Minimum Current Exposure* IMCE = TOA \* (EFFCAP \* *nm* \* *cif%*)Where:EFFCAP = *Effective Cap.* The greater of Value of Lost Load (VOLL), as described in the Methodology for Implementing Operating Reserve Demand Curve (ORDC) to Calculate Real-Time Reserve Price Adder, or the SWCAP, as determined in accordance with Public Utility Commission of Texas (PUCT) Substantive Rules.  |
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| [NPRR978: Replace the variable “IMCE” above with the following upon system implementation:]

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| --- | --- | --- |
| IMCE | $ | *Initial Minimum Current Exposure* IMCE = TOA \* (SWCAP \* *nm* \* *cif%*)  |

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 |
| TOA | None | *Trade-Only Activity*—Counter-Party that does not represent either a Load or a generation QSE. Set to “0” if Counter-Party represents a QSE that has an association with a Load Serving Entity (LSE) or a Resource Entity, or if Counter-Party does not represent any QSE;otherwise set to 1. |
| *q* | None. | QSEs represented by Counter-Party. |
| *a* | None. | CRR Account Holders represented by Counter-Party. |
| IA | $ | *Independent Amount*—The amount required to be posted as defined in Section 16.16.1, Counter-Party Criteria. |
| RFAF | None | *Real-Time Forward Adjustment Factor*—The adjustment factor for RTM-related forward exposure as defined in Section 16.11.4.3.3, Forward Adjustment Factors. |

The above parameters are defined as follows:

| **Parameter** | **Unit** | **Current Value\*** |
| --- | --- | --- |
| *nm* | None | 50 |
| *cif* | Percentage | 9% |
| *NUCADJ* | Percentage | Minimum value of 20%. |
| *T1* | Days | 2 |
| *T2* | Days | 5 |
| *T3* | Days | 5 |
| *T4* | Days | 1 |
| *T5* | Days | For a Counter-Party that represents Load this value is equal to 5, otherwise this value is equal to 2. |
| *BTCF* | Percentage | 80% |
| *n* | Days | 14 |
| \* 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. |

(3) If ERCOT, in its sole discretion, determines that the TPEA or the TPES for a Counter-Party calculated under paragraphs (1) or (2) above does not adequately match the financial risk created by that Counter-Party’s activities under these Protocols, then ERCOT may set a different TPEA or TPES for that Counter-Party. ERCOT shall, to the extent practical, give to the Counter-Party the information used to determine that different TPEA or TPES. ERCOT shall provide written or electronic Notice to the Counter-Party of the basis for ERCOT’s assessment of the Counter-Party’s financial risk and the resulting creditworthiness requirements.

(4) ERCOT shall monitor and calculate each Counter-Party’s TPEA and TPES daily.

***16.11.4.3.2 Real-Time Liability Estimate***

(1) ERCOT shall estimate RTL for an Operating Day as the sum of estimates for the following RTM Settlement charges and payments:

(a) Section 6.6.3.1, Real-Time Energy Imbalance Payment or Charge at a Resource Node, using Real-Time Metered Generation (RTMG) as generation estimate;

(b) Section 6.6.3.2, Real-Time Energy Imbalance Payment or Charge at a Load Zone, using 14 day or seven day old LRS for Load estimate;

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| ***[NPRR829: Replace item (b) above with the following upon system implementation:]*** (b) Section 6.6.3.2, Real-Time Energy Imbalance Payment or Charge at a Load Zone, using 14 day or seven day old LRS for Load estimate and Real-Time telemetry of net generation as the generation estimate; |

(c) Section 6.6.3.3, Real-Time Energy Imbalance Payment or Charge at a Hub;

(d) Section 6.6.3.4, Real-Time Energy Payment for DC Tie Import;

(e) Section 6.6.3.6, Real-Time Energy Charge for DC Tie Export Represented by the QSE Under the Oklaunion Exemption;

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| ***[NPRR917: Insert item (f) below upon system implementation and renumber accordingly:]*** (f) Section 6.6.3.9, Real-Time Payment or Charge for Energy from a Settlement Only Distribution Generator (SODG) or a Settlement Only Transmission Generator (SOTG), using the Real-Time telemetry, if provided, of net generation as the outflow estimate and the Real-Time Price for each SODG or SOTG site; |

(f) Section 6.6.4, Real-Time Congestion Payment or Charge for Self-Schedules;

(g) Section 7.9.2.1, Payments and Charges for PTP Obligations Settled in Real-Time;

(h) Section 6.7.5.1, Regulation Up Payments and Charges;

(i) Section 6.7.5.2, Regulation Down Payments and Charges;

(j) Section 6.7.5.3, Responsive Reserve Payments and Charges;

(k) Section 6.7.5.4, Non-Spinning Reserve Payments and Charges; and

(l) Section 6.7.5.5, ERCOT Contingency Reserve Service Payments and Charges.

**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;

(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); and

(e) Shall not restart the RTM until ERCOT has satisfied paragraph (6) below.

(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. This process will remain in place until the RTM is able to award Ancillary Services to Resources.

(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;

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

(d) ERCOT has satisfied paragraph (6) below.

(6) ERCOT shall not restart the RTM or DAM until:

(a) The ERCOT Board has approved the restart and ERCOT has issued a Market Notice stating that the ERCOT Board has approved the restart; or

(b) If, after taking into consideration the possibility of conducting an urgent meeting and holding such meeting by teleconference as set forth in paragraphs (b) and (c) of Section 4.6, Meetings, of the ERCOT Bylaws, it is not reasonably practicable to obtain ERCOT Board approval prior to the restart, the ERCOT CEO, or if designated by the ERCOT CEO, the ERCOT General Counsel, have approved the restart.

(i) The ERCOT CEO or ERCOT General Counsel shall not approve a restart of the RTM or DAM pursuant to this paragraph (b) unless the ERCOT CEO or ERCOT General Counsel has consulted with each Market Segment Director or Segment Alternate to the extent a Market Segment Director is unavailable (as such terms are defined in the ERCOT Bylaws) and a majority of the Market Segment Directors and Segment Alternates consulted agree in writing to restart the RTM or DAM as proposed by ERCOT.

(ii) Prior to restarting the RTM or DAM pursuant to this paragraph (b), ERCOT shall issue a Market Notice stating that it was not reasonably practicable to obtain ERCOT Board approval prior to the restart, however, the majority of the Market Segment Directors and Segment Alternates have agreed in writing to restart the RTM or DAM.

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