

***OPERATING PROCEDURE***

***MANUAL***

**Reliability Unit Commitment Desk**

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# 1. Introduction

##

## 1.1 Purpose

This procedure provides the System Operator assigned to the Reliability Unit Commitment (RUC) Desk with detailed Procedures required for performing the duties assigned to that position. The RUC Desk is responsible for the oversight of the WRUC, DRUC, and HRUC market operation within ERCOT. The RUC Desk is responsible for ensuring that the RUC Market is facilitated and closed according to ERCOT Protocols and procedures. The RUC Desk also coordinates with the Real-Time Desk, Transmission and Security Desk, Resource Desk, Operations Support Engineer, Shift Supervisor and other ERCOT operators as necessary to maintain grid reliability. The RUC Desk also responds to QSE’s inquiries about the RUC commitments and other related tasks.

The **Weekly Reliability Unit Commitment (WRUC)** process is an eight-day (not including the current Operating Day; i.e., the time for which ERCOT has a COP and Load Forecast) look-ahead planning tool that is used to help ERCOT manage Generation Resources having start up times longer than the DRUC or HRUC study periods as well as project the transmission congestion for the next seven days. The WRUC process will be executed by the Operator each day at 02:00. The WRUC does not send commitment and dispatch instructions to QSEs.

The **Day-Ahead Reliability Unit Commitment (DRUC)** process runs for each hour of the next operating day. It normally commences at 14:30 on the day prior to the operating day and normally completes at 16:00 on the day prior to the operating day.

The **Hourly Reliability Unit Commitment (HRUC)** process will be run every hour for each hour of the rest of the current day and the next operating day after 18:00 or if DRUC for the next Operating Day has run, or else it runs for only the rest of the current day.

## 1.2 Scope

The instructions contained in these procedures are limited to those required for the RUC Desk. Instructions for other ERCOT Control Room positions are contained in separate procedures, one for each position. These Procedures do not imply that the duties contained herein are the only duties to be performed by this position. The individual assigned to this position will be required to follow any other instructions and perform any other duties required or requested by appropriate ERCOT Supervision.

Although the steps within the procedures are numbered, the numbering is for indexing purposes and are not sequential in nature.  The system operator will determine the sequence of steps, exclude steps, or take any additional actions required to ensure system security based on the information and situational awareness available during both normal and emergency conditions.

# 2. General

## 2.1 System Operator Responsibility and Authority

**Procedure Purpose:** To ensure the System Operators know their roles, responsibility, and authority.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **6.5.1.1** | **6.5.1.2(3)** | **6.5.2** | **6.5.3(1)** |
| **Guide Reference** | **4.5.2(1)** |  |  |  |
| **NERC Standard** |  |  |  |  |

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ERCOT ISO as a Transmission Operator (TOP), the single Balancing Authority (BA), and only Reliability Coordinator (RC) registered within the ERCOT Interconnection shares all information between these roles simultaneously and acts concurrently as a single entity, satisfying coordination between the TOP, BA, and RC.

The System Operator (SO) shall, in accordance with NERC Reliability Standards and ERCOT Protocols, have clear decision-making authority to act to address the reliability of its Reliability Coordinator Area by direct actions or by issuing Operator Instructions during both normal and emergency conditions. These actions shall be taken without delay and may include the shedding of firm load without obtaining approval from higher-level personnel.

The SO on duty is, in accordance with the ERCOT Protocols, Operating Guides, and NERC Reliability Standards, and acting as the Balancing Authority, Transmission Operator, and Reliability Coordinator shall request and receive information required to continually monitor the operating conditions which will assure the security and reliability of the ERCOT system.

The SO issues Dispatch Instructions / Operating Instructions for the Real-Time Operation of Transmission Facilities to a TO and to a QSE for the Real-Time Operation of a Resource.

The SO shall, on an ERCOT-wide basis, coordinate the ERCOT System Restoration (Black Start) Plan. The SO shall implement the Black Start Plan and shall direct the reconnection efforts of the islands, established by restoration activities.

The SO shall consider all equipment operating limits when issuing Dispatch Instructions / Operating Instructions. During Emergency Conditions, the SO may verbally request QSEs to operate its Resources outside normal operating parameters. If a Dispatch Instruction / Operating Instruction conflicts with a restriction placed on equipment by a TO or QSE to protect the integrity of equipment, ERCOT shall honor the restriction.

The SO performs security analyses on a Day Ahead and Real-Time basis and ensures that all Forced Outages are entered into the Outage Scheduler. The SO shall obtain or arrange to provide Emergency Energy over the DC Tie(s) on behalf of ERCOT.

The SO shall issue appropriate OCN’s, AAN’s, Advisories, Watches, and Emergency Notices, and coordinate the reduction or cancellation of clearances, re-dispatch of generation, and request, order, or take other action(s) that the SO determines necessary to maintain safe and reliable operating conditions on the ERCOT System in accordance with ERCOT Protocols, Operating Guides, and NERC Reliability Standards. The SO will implement and terminate ERCOT Time Corrections and will determine the need for and implement the operation of a QSE on Constant Frequency Control for loss of ERCOT’s Load Frequency Control System.

## 2.2 Communication

**Procedure Purpose:** To ensure proper communication is used to reduce the possibility of miscommunication that could lead to action or inaction harmful to the reliability of the grid.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **6.5.7.8** |  |  |  |
| **Guide Reference** | **3.1.3** |  |  |  |
| **NERC Standard** | **COM-002-4****R5, R7** |  |  |  |

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| **Version: 1**  | **Revision: 6** | **Effective Date: December 31, 2021** |

| **Step** | **Action** |
| --- | --- |
| Three-Part Communication |
| **Note** | * Operating Instructions and Dispatch Instructions are synonymous, and both require ‘three-part communication’.
* Refer to the Communications Protocols document for requirements.
 |
| **1** | When issuing Operating Instructions, use three-part communication:* Issue the Operating Instruction
* Receive a correct repeat back
* Give an acknowledgement
 |
| **2** | Many scripts have been placed throughout the procedures as a reminder of three-part communication. However, a script cannot be provided for every scenario. Effective three-part communication skills are mandatory. |
| Hotline Call Communication |
| **1** | When making Hotline calls, ensure one QSE/TO repeats back the message.**IF:*** Time and circumstances all;

**THEN:*** Review the Consortium hotline attendance report to verify every QSE/TO was in attendance
* Contact the QSE/TO using their OPX line or LD line to provide them with the message
* Inquire why they were not on the Hotline call
* Open a Help ticket if ERCOT’s Telecommunications department is needed to investigate.
 |
| VDI to Master QSE |
| **1** | Issue the VDI to the Master QSE of a Generation Resource that has been split to function as two or more Split Generation Resources as deemed necessary by ERCOT to effectuate actions for the total Generation Resource for instances when electronic Dispatch Instructions are not feasible. |
| **Log** | Log all actions. |

## 2.3 Publish A/S Requirements and Review System Conditions

**Procedure Purpose:** To publish and verify daily Ancillary Service requirements are posted to the market.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **4.2.1.1(1)** | **4.2.1.1(2)** | **4.2.1.2(2)** | **4.3(2)** |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **BAL-002-2 R2** | **EOP-011-2****R2, R2.1, R2.2, R2.2.3, R2.2.3.2, R2.2.3.3** | **TOP-002-4****R4, R4.4** |  |

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| **Version: 1**  | **Revision: 20** | **Effective Date: June 9, 2023** |

| **Step** | **Action** |
| --- | --- |
| **Note** | * Review and update A/S Requirements must be completed prior to 0500.
* The Shift Supervisor must verify the posted ancillary service requirements for the 1st day of the month.
 |
| Review Weather Data Information |
| **1** | REVIEW the Weather Data for the next operating day in the EMS. |
| **2** | **REVIEW REFERENCE DISPLAY:**EMS Applications>Weather Details>Real Time Displays>Weather Forecast Directory**IF:** * The Last Weather Source Update or Last Weather Read is *less* than one (1) hour old;

**THEN:**  * Using the usual sources, review the weather forecast for at least two days out.

**IF:** * The data update or read is *more* than one (1) hour old;

**THEN:*** Notify the Shift Supervisor and the Help Desk.
 |
| **3** | Evaluating the weather forecast for several days ahead is needed to help determine if there is a potential for fuel supply problems. The trigger will usually be an extreme weather event. It may be necessary to discuss fuel switching with the Supervisor and appropriate QSE to optimize fuel supply if a reliability concern exists. |
| **Fuel Switching** | **IF:*** Notified of fuel limitations;

**THEN:*** Consult with Supervisor and determine if reliability concerns exist
	+ Identify potential transmission issues
	+ Identify potential capacity issues

**IF:*** Reliability concerns exists;

**THEN:*** Consider fuel switching options (gas to oil) by discussing with appropriate QSE if capability exists. Refer to Fuel oil capability spreadsheet on System Operations SharePoint.
 |
| **Optimize Fuel Supply** | **IF:*** A particular fuel supply is at risk;

**THEN:*** Consult with Supervisor and determine if reliability concerns exist
	+ Identify potential transmission issues
	+ Identify potential capacity issues

**IF:*** Reliability concerns exists;

**THEN:*** Consider RUC committing Resources with fuel that is not at risk.
 |
| Review and Select Load Forecast  |
| **1** | Review and Select load forecast for next day **(Refer to Desktop Guide RUC Section 2.17**. |
| **2** | **IF:*** There is a large difference between the load forecasts, AND
* There is uncertainty on which load forecast is correct;

**THEN:*** Call the Load Forecasting group for guidance on updating the weather or load forecast.
 |
| **3** | Notify by e-mail the following distribution lists of the issue:* Load Forecasting Department
* 1 ERCOT Shift Supervisors
 |
| Publish A/S Requirements |
| **1** | **REFERENCE DISPLAY:**Market Participation > Physical Market > AS Market > AS PlanBefore 04:00, verify the hourly ERCOT system total A/S requirements for each of the following, for each hour of the operating day:

|  |  |
| --- | --- |
| * Reg-Up
 | * RRS
 |
| * Reg-Down
* ECRS
 | * Non-Spin
 |

 |
| **2** | **REFERENCE DISPLAY:**Market Participation > Monitoring > Event Manager > EventsSearch / Filter for AS\_OBLIGATION\_CALCBefore 06:00, verify the hourly ERCOT system total A/S requirements have been automatically published at 04:55:**IF:** * Status indicates complete, no further action is necessary, OR
* Status indicates anything else;

**THEN:*** Change status to start now and select submit to database poke point.
 |
| Increasing A/S Requirements before A/S Obligations Publish |
| **Note** | This procedure would be performed when it has been determined that additional A/S is needed, such as to support a weather event. |
| **Note** | If an Emergency Condition may exist that would adversely affect system reliability, ERCOT may change the percentage of Load Resources that are allowed to provide RRS from the monthly amounts determined previously. |
| **Note** | If the operation day ***D*** is identified as a High Forecast Variability Day on day ***D-2*** (2-day advance). Two days prior to the OD identified as a High Variability Day, the GMS team will update NSRS quantities and the updated AS plan will be reflected in the [DAM Ancillary Service Plan](https://mis.ercot.com/public/data-products/grid/forecasts?id=NP4-33-CD) report. The Control room will be notified two days in advance of a High Variability Day and the corresponding AS plan. Before 04:00, verify the updated High Variability RRS and Non Spin quantities that will be applicable.  Notify the GMS Production Support Team immediately if requirements are not correct in the AS Plan. |
| **1** | **REFERENCE DISPLAY:**Market Participation > Physical Market > AS Market > AS PlanBefore 04:00, increase the hourly ERCOT system total A/S requirements for each requirement needed for each hour of the next operating day:

|  |  |
| --- | --- |
| * Reg-Up
 | * RRS
 |
| * Reg-Down
* ECRS
 | * Non-Spin
 |

 |
| **2** | **REFERENCE DISPLAY:**Market Participation > Monitoring > Event Manager > EventsSearch / Filter for AS\_OBLIGATION\_CALCBefore 06:00, verify the hourly ERCOT system total A/S requirements have been automatically published at 04:55:**IF:** * Status indicates complete, no further action is necessary, OR
* Status indicates anything else;

**THEN:*** Change status to start now and select submit to database poke point.
 |
| **3** | **IF:** * The A/S requirements were increased,

**THEN:*** The next day will copy the new A/S requirements unless you return the A/S requirements to the A/S Plan requirements for the month.

**REFERENCE DISPLAY:**Market Participation > Physical Market > AS Market > AS Plan Before 04:00 update the A/S requirements. |
| **Note** | Refer to the A/S requirements for the current month’s A/S Plan if no changes are required. |
| Priority Outages |
| **1** | A Priority Outage is one that affects generation.**Prior to 1200:*** Review the Outage Notes for the next Operating Day, make lists of Priority Outages, sorted by the affected TOs,
* The file is located in P:\DAY AHEAD – TDSP PRIORITY OUTAGE NOTIFICATION,
* Email the Priority Outages to the appropriate TO using the email addresses provided in the **RUC Desktop Guide Section 2.22**,
* Copy and paste the information into the body of the email,
* The Subject line should read “Priority Outages”, “<Company Name>”, “<Date>”
* At the bottom of each email, be sure to include a Confidentiality Notice and your signature,
* Ensure each document has a Note which states to notify ERCOT within 30 minutes of the Actual Start and Actual End times for the Priority Outages,
* If email is unavailable, follow the same guidelines using the Fax Machine,
* Place hard copies in Daily Log File.
 |
| Blackstart Availability |
| **1** | **REFERENCE DISPLAY:**Market Participation > Physical Market > Market Participant Submissions > Availability PlanERCOT SharePoint > System Operations – Control Center > Documents > Blackstart Availability**REVIEW:*** Blackstart Availability Plan for next operating day (OD+1 tab)

**IF:*** Blackstart Availability Plan for next operating day is missing

**THEN:*** Call the QSE and request them to submit their Blackstart Availability Plan for next operating day
* Update the Blackstart Availability spreadsheet located on SharePoint
 |
| **Log** | LOG when completed and any additional actions taken. |
| Verification of Published A/S Requirements |
| **Note** | This step may be completed after 0600. |
| **1** | VERIFY by spot-checking the following information posted to the ERCOT Website for the next operating day (or two days if two-day Ahead market is in effect) is posted.* Planned Transmission line and equipment outages for the operating day.
* *ERCOT Website; Grid; Transmission; Consolidated Transmission Outage Report*
* Weather assumptions used to provide the system conditions forecast.
* *ERCOT Website; Data Products; Markets; Weather assumptions*
* The hourly ERCOT System total Ancillary Service requirements for Regulation Down – REGDN, Regulation Up – REGUP, Responsive Reserve – RRS, ERCOT Contingency Reserve Service – ECRS, and Non-spinning Reserve – NSPIN.
* *ERCOT Website; Data Products; Markets; DAM Ancillary Service Plan.*
 |
| **Log** | LOG any significant problems including any action taken. |

## 2.4 RMR Resource Commitment

**Procedure Purpose:** This task is performed to notify ERCOT Market Operations of RMR resources that are required, in the Day-Ahead, to maintain system security/stability of the ERCOT Interconnection.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **4.2.1.1(5)** | **4.3(2)** | **4.4.8** | **5.5.3** |
| **6.3.2 (3) (c)** | **6.4.2 (2)** | **6.4.4 (2)** | **6.5.1.1(d)** |
| **6.5.9.4.1** |  |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

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| **Version: 1**  | **Revision: 5** | **Effective Date: December 28, 2017** |

| **Step** | **Action** |
| --- | --- |
| **Note** | ERCOT shall notify the QSE representing a RMR Unit for any unit that is being committed in DAM or DRUC at the same time that the DAM and DRUC participants are notified of the results of that respective process. |
| **Note** | ERCOT currently does not have a RMR contract. No RMR is available for RMR service that may be required for voltage support, stability, or management of localized transmission constraints under Credible Single Contingency criteria where market solutions do not exist.  |
| **Note** | ERCOT will minimize the use of the RMR Resources for capacity purposes. The following RMR can only be committed [No RMR contracted] when there is no market solution to meet demand needs first. In conditions where ERCOT indicates a capacity reserve shortage with no market Resources available, and with a risk of an EEA event, then the RMR Resource will be committed under Reliability Unit Commitment (RUC).RMR Resources will only be dispatched from the Hourly Reliability Unit Commitment (HRUC). |
| **Resources** |  [No RMR contracted]QSEs will show a COP status of OFF when Resources are available. |
| **1** | **Each day:**DETERMINE, by referring to the system area requirements, if the [No RMR contracted] RMR Resource may be required for congestion or to provide local voltage support for any hour of the next operating day.* Consult the Daily Outage Notes for indications of required RMR generation need.

Note: Changes in system configuration in the area due to planned or forced outages may also create the need to schedule RMR generation. This can also be evaluated through STNET studies, DRUC and HRUC studies. |
| **2** | **IF:*** The [No RMR contracted] RMR Resource is needed;

**THEN:*** Follow the Tasks prior to Execution of HRUC Procedure and COMMIT the Resource. REFER to 3.1 Tasks prior to Execution of HRUC
 |
| **3** | Log actions taken. |

## 2.5 Monthly A/S Requirement Posting

**Procedure Purpose:** To notify QSEs of monthly Ancillary Service requirements.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **3.16** | **AS OBD** |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

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| **Version: 1** |  | **Revision: 6** | **Effective Date: December 31, 2020** |

| **Step** | **Action** |
| --- | --- |
| **Note** | Once specified by ERCOT for an hour and published on the ERCOT Website, A/S quantity requirements for an Operating Day may not be decreased. |
| **Monthly****ERCOT Website** **Posting** | Operations Planning will provide the A/S requirements for the entire year. * By the 20th of each month, post a reminder for the projected Ancillary Services requirements.
* Typical ERCOT Website Posting: The minimum monthly Ancillary Services quantities have been posted to the ERCOT Website; Data Products; Grid; Forecasts under the Projected Ancillary Service Requirements link located under the Reports & Extracts heading. The posted quantities reflect minimum requirements only. ERCOT will follow-up with a Notification if any upward adjustments to these minimum quantities are made.

 <https://mis.ercot.com/secure/data-products/grid/forecasts>  * + Create Freeform Notice
	+ Notice Type is “AS Postings”
	+ Notice Priority is “Low”
 |
| **After 20th of the month** | **REFERENCE DISPLAY:**Market Participation > Physical Market > AS Market > AS Plan Validation and Approval Prior to last day of the month. Verify AS Plan Validation and Approval has been validated and approved. Notify EMMS Production Support Team immediately if requirements are not approved and/or correct. |
| **Last** **Day of****Month** | **REFERENCE DISPLAY:**Market Participation > Physical Market > AS Market > AS Plan Before 04:00 on the last day of the month, verify the A/S requirements for the next month are in the AS Plan. Notify EMMS Production Support Team immediately if requirements are not correct in the AS Plan. |

## 2.6 Suspected Sabotage or Sabotage Events

**Procedure Purpose:** To be aware of cyber intrusions and communicate concerning activity and any unusual occurrences.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** |  |  |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

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| **Version: 1**  | **Revision: 0** | **Effective Date: March 1, 2022** |

| **Step** | **Action** |
| --- | --- |
| **ERCOT****Event** | **Refer to Cyber Intrusion Guide and Cyber Security Incident Response Plan located in procedure binder.****IF:*** Unusual system behavior is observed;

**THEN:*** Notify Shift Supervisor
 |
| **Entity****Event** | **IF:*** A TO or QSE reports an act of suspected sabotage or a sabotage event, including cyber;

**THEN:*** Notify Shift Supervisor
 |

# 3. Hourly RUC

## 3.1 Tasks prior to Execution of HRUC

**Procedure Purpose:** To make manual corrections for bad/suspect telemetry, load forecast modifications, or to RUC commit/de-commit Resources prior to running the RUC process.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **3.12.1(3)** | **5.1** | **5.2.2.2(11)** | **5.3(3)** |
| **5.5.1** | **5.5.2(9)** |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **TOP-002-4****R4, R4.2, R4.3** |  |  |  |

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| --- | --- | --- |
| **Version: 1**  | **Revision: 9** | **Effective Date: January 31, 2020** |

| **Step** | **Action** |
| --- | --- |
| Tasks prior to execution of HRUC |
| **Note** | The RUC Study Period for DRUC is the next Operating Day. The RUC Study Period for HRUC is the balance of the current Operating Day plus the next Operating Day if the DRUC for the Operating Day has been solved or after 18:00 if DRUC did not solve. |
| **Continuous****Monitoring** | **REVIEW REFERENCE DISPLAY:**Market Operation>EMS Interface>EMSI Workflow ParametersMarket Operation>EMS Interface>EMSI Workflow**IF:*** The EMSI Workflow Parameters does not indicate EMSI has run in the last hour and Load Forecast are **NOT** running (should be continuous);

**THEN:*** Open EMSI Workflow, select “Start up”. When start up is complete, select “Run”.

**IF:*** EMSI Workflow does not complete;

**THEN:*** Notify Helpdesk and Control Room staff.
 |
| **Load Forecast** | Periodically monitor the Load Forecast to ensure it is accurate:**IF:*** Adjustments need to be made, they will be done in the EMS and updated to the MMS;

**THEN:*** Adjust (Refer to Desktop Guide RUC Section 2.17).
 |
| **Wind Forecast Updates** | Periodically monitor the Wind Forecast and verify data is updating:**IF:*** Wind forecast is not updating;

**THEN:*** Notify Supply Integration & Grid Application group,
* Be aware that this could skew HRUC results.
 |
| **RMR****Consideration** | **All other generation resources should be considered prior to a RMR commitment for capacity purposes:** **IF:*** An RMR unit needs to be considered in HRUC;

**THEN:*** Ensure COP status is “OFF”.

**IF:*** An RMR unit is needed but is not to be considered in HRUC;

**THEN:*** Commit unit before HRUC is executed,
* Follow 3.2 Review, Approve and Post HRUC Results step RMR Commitment.
 |
| **COP****Validation** | **REVIEW REFERENCE DISPLAY:**Market Participation>Monitoring>Event Manager>Events>filter Event Name for COP Validation**IF:*** A Resource Forced Outage has occurred and the QSE has not update their COP, OR
* COP Validation ERROR;

**THEN:*** Select “START-NOW" in the Status column,
* Be aware that the results may be skewed and determine the need for procuring equivalent MW capacity elsewhere.
 |
| **Review****AS Differences** | **REVIEW REFERENCE DISPLAYS:**Market Participation>Physical Market>SASM Market>AS Responsibility – QSEMarket Participation>Monitoring>Event Manager>Events**IF:*** AS Differences exist;

**THEN:*** Notify the Resource Operator.
 |
| **Bad/Suspect****Telemetry** | Periodically monitor:**IF:*** Notified of bad/suspect telemetry;

**THEN:*** Determine if issues will be resolved for next HRUC run,
* Discuss with Shift Supervisor if the HRUC should be run or delayed until the issues can be resolved,
* Consider requesting Operations Support Engineer to manual over-ride SCADA values (be aware that this could skew the results),
* If it is determined to delay HRUC, follow the “HRUC Failure/Timeline Deviation” procedure.
 |
| **E-Tags** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment> HRUC Displays> DSI Displays> DSI Data Processes> DSI DC Tie Schedule Market Operation>Reliability Unit Commitment> HRUC Displays> DSI Displays> External Input Data> MI COPVerify that E-tags are being imported into the MMS:**IF:*** Individual schedules need to be reviewed;

**THEN:*** Go to the MI COP display and filter ‘ERCOT’ as the QSE name.
 |
| **Verify** | **REVIEW REFERENCE DISPLAYS:**Market Operation>EMS Interface>EMSI Workflow ParametersMarket Operation>EMS Interface>EMSI Workflow MessagesEMSI has completed successfully within the last hour Market Operation>Reliability Unit Commitment>HRUC Displays>UC Displays>HRUC UC Execution Control ParametersMarket Operation>Reliability Unit Commitment>HRUC Displays>NSM Displays>NSM Execution Control ParametersMarket Operation>Reliability Unit Commitment>HRUC Displays>DSI Displays>DSI Execution Control Parameters * “Retrieve MF Interface Data” flag set to “Yes”.
* “Retrieve MI Interface Data” flag set to “Yes”.
* “Retrieve EMS Interface Data” flag set to “Yes”.
* “Check Market Status set to “Yes”,
* “Use Save case set to “No”
 |
| **DSI** | **EXECUTE:*** The DSI sequence;

**VERIFY:*** For error or warning messages and take necessary action if needed to correct the errors,
* The input data is properly transferred.

**If NOT:** * Contact Help Desk immediately to determine the cause and expected time of resolution.
 |
| **Manual Commitment** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays> DSP RUC Commitment/Decommitment SummaryMarket Operation>Reliability Unit Commitment>HRUC Displays>DSI Displays> External Input Data>MF Generator ParametersMarket Operations>Reliability Unit Commitment>HRUC Displays>DSI Displays>DSI Data Processes> DSI Operator Manual CommitmentMarket Operations>Reliability Unit Commitment>HRUC Displays>DSI Displays>External Input Data> MF Generator Parameter **All other generation resources should be considered prior to a RMR commitment for capacity purposes:** **IF:*** An RMR unit is needed and is not to be considered in HRUC;

**THEN:*** RUC commit unit before HRUC is executed,
* Follow 3.2 Review, Approve and Post HRUC Results step RMR Commitment.

**IF:*** Additional resources are needed to solve for transmission congestion;

**THEN:*** Consult with the Operations Support Engineer and/or the Transmission and Security Desk Operator to determine which resources should be RUC committed, **AND**
* Determine the temporal constraints for each of the units.

**IF:*** The resource start-up time doesn’t allow enough time to re-evaluate the need for its commitment in future HRUC Study Periods;

**THEN:*** Change ‘blank’ to ‘Commit’,
* List reason.
 |
| **Note** | If a RMR unit was RUC committed in DSI Operator Manual Commitment and it is the only change since the DSI was last run the next step is not necessary. |
| **Verify** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSI Displays>DSI Execution Control Parameters **IF:** * Manual changes have been made to the HRUC input data;

**CHANGE:*** The appropriate flags are set to prevent the data from being over-written.
	+ “Retrieve MF Interface Data set to No”,
	+ “Retrieve MI Interface Data set to No”,
	+ “Retrieve EMS Interface Data set to No”, OR
	+ “Use Save case set to “Yes”
 |
| Verify HRUC executed at XX: 03 |
| **1** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>HRUC Displays>Workflow>HRUC WorkflowMarket Operation>Reliability Unit Commitment>HRUC Displays>Workflow>HRUC Workflow MessagesVerify execution of the HRUC sequence. |

## 3.2 Review, Approve and Post HRUC Results

**Procedure Purpose:** Monitor RUC applications to determine if systems are functioning properly. Verify results and correct for any warning or error messages. Review and approve final results for market posting.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **4.4.8** | **5.1** | **5.3(3)** | **5.5.1** |
| **5.5.2** | **5.5.3** | **6.1(2)** | **6.4.9.1.2** |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **EOP-011-2****R2, R2.2, R2.2.3, R2.2.3.1** | **IRO-001-4****R1** | **TOP-001-5****R1, R2** | **TOP-002-4 R1, R2, R3, R4, R4.1, R4.4, R5** |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 41** | **Effective Date: March 31, 2023** |

| **Step** | **Action** |
| --- | --- |
| **Note** | See Desktop Guide Common to Multiple Desks Section 2.16 if the savecase function fails when running RUC |
| **Monitor** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>HRUC Displays>Workflow>HRUC WorkflowMarket Operation>Reliability Unit Commitment>HRUC Displays>Workflow>HRUC Workflow Messages* Monitor the HRUC Workflow display to determine when it is complete,

**ENSURE:** * The workflow has completed before the study is approved and published.

**IF:*** The study is approved before it completes,
	+ Incorrect RUC deployments are sent to QSE’s

**THEN:*** Make hotline call to notify QSE’s that deployments for HRUC are invalid,
* Notify Director Control Room Operations and/or Designee,
* ERCOT may use information from the DAM processes as decision support during the HRUC processes.
 |
| **System Summary** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>UC Displays>Output Display Menu>System Outputs>Summary**IF:*** All load forecasts seem unreasonable;

**THEN:*** Select the most reasonable forecast, AND
* Call the Load Forecasting group for guidance on updating the weather or load forecast
* Notify by e-mail the following distribution lists of the issue:
	+ Load Forecasting Department
	+ 1 ERCOT Shift Supervisors
 |
| **Excess Generation** | During periods of low load and excess generation:**PERIODICALLY REVIEW:*** Splunk Dashboard Viewer under the MOS\_DEV folder:
	+ “Last Approved HRUC Capacity” which is based on the last ran HRUC solution

**VERIFY:*** TOTAL\_LOAD is less than SS\_LASL,

**IF:*** Load forecast is reasonable AND the decision needs to be made in the near future,

**THEN:*** Decommit generation from the HRUC next study,
	+ Priority should be on WGR’s or Resources that resolve congestion;

**IF:*** The decision needs to be made immediately,

**THEN:*** Issue an electronic Dispatch Instruction confirmation
* Priority should be given to WGRs and Resources that resolve congestion
	+ Choose “DECOMMIT” as the Instruction Type from Resource tab
	+ Enter “ERCOT requested RUC decommit/capacity surplus” in Other Information.

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |
| **A/S****Infeasibility** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays> DSP Undeliverable Ancillary Service Capacity SummaryMarket Participation>Physical Market>SASM Market>AS InfeasibilityMarket Participation>Physical Market>SASM Market>AS Replacement**IF:*** Undeliverable Ancillary Service are indicated;

**THEN:*** Determine if the infeasibility is valid

**IF:*** Valid;

**THEN:*** Notify the affected QSE for the following information
	+ the amount of A/S that must be reduced, and
	+ the start and stop times of the reduction.
* The QSE can substitute or ERCOT can open a SASM

**IF:*** The QSE elects to substitute;

**THEN:*** Determine the feasibility of the substitution.
* If deemed infeasible, a SASM can be opened
* Notify the Resource Operator of possible infeasibility issue.
 |
| **A/S Insufficiency****from SASM** | If a SASM market has been previously run, the following display will indicate if additional A/S Insufficiencies exist: **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays> DSP Decision Support for Ancillary Service Deployment**IF:*** A/S Insufficiency;

**THEN*** If deemed necessary, RUC commit the necessary Resources that are qualified to provide the service that is deficient while honoring temporal constraints,
* Refer to Desktop Guide RUC Section 2.18.
 |
| **Undeliverable****A/S****Capacity** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays> DSP Undeliverable Ancillary Service Capacity Summary**IF:*** Undeliverable A/S due to transmission constraints;

**THEN:*** Notify the Resource Operator.
 |
| **STNET Study** | The Risk operator has the primary responsibility to perform these voltage studies, however if needed as a backup this step is provided.**Each hour run a STNET study for four hours out (example it is 0100, run study for 0500) to review voltage violations.** **IF:*** Voltage contingencies exist;

**THEN:*** Check “Voltage Tracking Issues” spreadsheet on SharePoint to ensure the contingency is not listed
* If not listed, convey the voltage violations to the Transmission and Security Operator with the potential resolution
* Create a savecase, use naming convention “SC\_RUC(HE)\_(DATE)
* Make at least one detailed log entry per shift that the studies are being executed. If any new voltage violations are identified that do not have a solution, log the information, and notify the Transmission and Security Operator of the new violation(s)
* Update the “Voltage Tracking Issues” spreadsheet listing the new voltage violation with the contingency resolution.

**IF:*** Unsolved contingencies exist;

**THEN:*** Communicate any unsolved contingency to the Shift Engineer and Transmission Security Desk Operator with potential solutions.
* Some potential solutions could be transmission switching, creation of a manual constraint, bringing on an additional Resource, returning a planned outage, or development of a CMP
* Validate the resolution
* Update the “Voltage Tracking Issues” spreadsheet listing the new unsolved contingency with the contingency resolution.
 |
| **Violated Constraints** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays> DSP Binding Constraint SummaryMarket Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays> DSP Constraint Summary**REVIEW:*** Violated constraints. If needed, notify Operations Support Engineer to determine the validity;

**IF:*** Invalid, no further action is required;

**IF:*** Valid; AND
* Related to a phase shifter tap settings,

**THEN:*** Notify Operations Support Engineer to determine if adjusting a Phase Shifter would reduce the flow,
* Create Suggestion Plan for Constraint,
* Manually RUC commit resources as needed,

**IF:*** Valid; AND no Suggestion Plan or Resource is available to commit within the timeframe of the violated constraint,

**THEN:*** Notify the Operations Support Engineer and Transmission & Security Desk Operator to determine if an outage can be withdrawn within the timeframe,

**IF:*** No outage can be withdrawn within the timeframe of the violated constraint,

**THEN:*** Notify Operations Support Engineer to develop a Congestion Management Plan and provide it to the TO and Transmission & Security Desk Operator, Notify Shift Supervisor to contact the Director Control Room Operations and/or Designee of actions taken

Refer to Desktop Guide RUC Section 2.14. |
| **Capacity Reserve Margin** | **Monitor:*** Available Committed Capacity Margin and the Available Capacity Margin columns.

**IF:*** If the Available Committed Capacity Margin threshold is less than minimum requirement OR;
* If the Available Capacity Margin threshold is less than the minimum requirements:

**THEN:*** Inform Shift Supervisor

Refer to Desktop Guide RUC Section 2.24 |
| **HRUC Committed****Units** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSI Displays>External Input Data>MF Generator Parameter**IF:*** HRUC recommends the commitment of any unit;

**THEN:*** Determine the validity,
* Determine the temporal constraints for each of the unit’s recommendation.
* Refer to Desktop Guide RUC Section 2.23.

**IF:*** Temporal constraint exceedances at the same facility do not conflict,
* The resource start-up time allows enough time to re-evaluate the need for its commitment in future HRUC Study Periods, and
* There is no reliability reason requiring the resource commitment decision to be made immediately;

**THEN:*** De-select the resource prior to approving the HRUC study by changing ‘Commit’ to ‘blank’ and list reason,

**IF:*** Temporal constraint exceedances at the same facility,
* There is a reliability reason requiring the resource commitment decision to be made immediately;
	+ Resources returning from outages
	+ Congestion or Capacity deficiencies that are creating HRUC performance issues

**THEN:*** Log the reason for not de-selecting the resource.

**NOTE:** A reason must be entered for commit, decommit, and uncommitting, otherwise a message window will pop up in DSP approval process.Examples below:* Evaluate later (should be used when waiting until the last possible hour to commit)
* Short start (should be used for units that can start within 1 hour)
* Voltage support
* Valley import
* Valley Reliability
* Capacity
* Constraint name (SLWSCRL5) \* Do not use special characters
* Minimum Run Time

When issuing a confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |
| **EMR Resources** | Resources with **“EMR”** Resource status can only be RUC committed during **Emergency** conditions. |
| **RMR****Resources** | QSEs will show a COP status of OFF when Resources are available. RMR Resources will only be dispatched from the Hourly Reliability Unit Commitment (HRUC). |
| **RMR****Commitment** | **WHEN:*** HRUC recommends a RMR unit, AND
* A capacity reserve shortage is projected, and no market Resources are available to meet the projected system demand, and there is a risk of an EEA event;

**THEN:*** Determine if an RMR Resource will need to be considered in HRUC Study Period;

**ISSUE:*** Watch for projected reserve capacity shortage with no market solution;

**THEN:*** Ensure COP status is “OFF”, and the resource start-up time allows enough time to procure the RMR for the hours showing to be deficient with risk of an EEA event;

**SELECT:*** Commit Resource before HRUC is approved
	+ Commit Resource,
	+ List reason (RMR for Capacity).

Call QSE with any modification to the Delivery Plan as a result of a commitment. |
| **Hotline** | **Q#77 - Typical Hotline Script for Watch for projected reserve capacity shortage** Notify Transmission Operator to make Hotline call to TOs. |
| **Post** | **Typical ERCOT Website posting:** ERCOT issued a Watch fora projected reserve capacity shortage with no market solution available. HRUC recommended RMR Resources have been committed. |
| **Cancel** | **WHEN:*** Committed RMR Resources are off-line

**THEN:*** Making hotline call to QSEs
* Cancelling ERCOT Website posting
* Notify Transmission Operator to make hotline call to TOs.

**Q#78 - Typical Hotline Script for canceling Watch for projected reserve capacity shortage**  |
| **Manual Commitment** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays> DSP RUC Commitment/Decommitment SummaryMarket Operation>Reliability Unit Commitment>HRUC Displays>DSI Displays> External Input Data>MF Generator Parameters**IF:*** Additional resources are needed to solve for transmission issues (such as for voltage support) and were not picked up in the HRUC run;

**THEN:*** RUC commit unit before HRUC is approved
	+ Change ‘blank’ to ‘Commit’,
	+ List reason RUC commit for (constraint name, valley import or voltage support), a message window will pop up in DSP approval process if no reason is provided.
* Give courtesy call to QSE when commitments are made
 |
| **Manual Commitment to bring a Unit of a Combined Cycle On-line**  | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays>DSP Combined Cycle Plant Suggestion Plan**IF:*** Additional resources are needed to solve for transmission issues and were not picked up in the HRUC run;

**THEN:*** RUC commit higher configuration of a Combined Cycle before HRUC is approved
	+ Determine the temporal constraints for the higher configuration.
	+ Change ‘blank’ to ‘Commit’,
	+ List reason RUC commit for (constraint name, valley import or voltage support), a message window will pop up in DSP approval process if no reason is provided.
* Give courtesy call to QSE when commitments are made

**Refer to** [**Desktop Guide Reliability Unit Commitment Desk**](http://ep.ercot.com/docs/SOCR/Desktop%20Guide%20Reliability%20Unit%20Commitment%20Desk.docx) **2.20** |
| **Note** | * Resources cannot be decommitted for just a portion of a DAM-Committed Interval, which is a one-hour interval.
* ERCOT may only decommit a Resource to resolve transmission constraints that are otherwise unsolvable or to maintain the reliability of the ERCOT System. Qualifying Facilities (QFs) may be decommitted only after all other types of Resources have been assessed for decommitment.
* If ERCOT communicates HRUC commitments and decommitments verbally to a QSE, then the same Resource attributes communicated programmatically must be communicated when ERCOT gives a verbal Resource commitment or decommitment.
* QSE’s shall acknowledge the notice of commit or decommit by updating their COP.
 |
| **HRUC Decommitted****Resources** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays> DSP RUC Commitment/Decommitment Summary**IF:*** If HRUC recommends decommitments;

**Determine if:** * Outage related,
* Possible Network Model error/ Normal Breaker status variances,
* COP error for Combine Cycle configurations / JOU,
* Qualifying Facilities should be de-committed **ONLY** as a last resort,

**THEN:*** If this is a true decommitment:
	+ Confirm Decommitment
	+ List reason (most likely reason is ‘transmission outage’), a message window will pop up in DSP approval process if no reason is provided
* If Decommitment is error related:
	+ No action is required
 |
| **Note** | Canceling unintended RUC Commits must be completed before additional RUC Commitments are issued on the same Resource(s). Doing it after the new RUC Commitment cancels all RUC Commitments for the resource. |
| **Canceling****RUC****Commitments** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSI Displays>DSI Data Processes>DSI Operator Manual Commitment**IF:*** A Resource is RUC committed that needs to be canceled;
	+ Only cancel RUC commits if the ERCOT Operator Resource commitment was unintended.

**THEN:*** Issue electronic Dispatch Instruction to cancel the RUC instruction
	+ Choose “CANCEL RUC COMMIT” as the Instruction Type
	+ Enter “unintended commitment” in other information

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |
| **Post** | Notice Type: Operational InformationNotice Priority: LowAudience: Public**Typical ERCOT Website posting:** Cancelled RUC commitment at timestamp [Date & Time] for [resource] for [Date & Time] due to unintended commitment. |
| VSAT and RUC perform AC Analysis |
| **Note** | **IF:*** RUC cannot complete the process;

**THEN:*** Notify the Transmission & Security Operator and additional personnel as required.
 |
| **Validate** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>UC Displays>Output Display Menu>System Outputs>Summary**VERIFY:*** Input data
* Updated Time
* Results are reasonable
 |
| **Approval** | **HRUC must be approved by XX:50****REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSP Displays> DSP Execution Control Parameters**IF:*** The HRUC results are reasonable and after all necessary modifications have been made;

**THEN:*** Sort the RUC Commitment column before approving so it shows commitments at the top of the screen that currently may be lower in the table but not shown in the window;
* Approve the results (all RUC commitment, operator manual commitment/decommit/blank out must have a reason, otherwise a message window will pop up), **OR**

**IF:*** The results are unacceptable;

**THEN:*** Click on Disapprove button, AND
* Follow the Manage HRUC Timeline Failure in the next section.

**IF:*** Disapprove button was selected in error;

**THEN:*** Contact Helpdesk to open ticket for EMMS Production Support to correct it.
 |
| **After** **Approval** | **AFTER:*** Approval button is pushed;

**THEN:*** Double check display Market Participation>Physical Market>Market Results>HRUC> HRUC Results,
* Make sure the records in this display matches data in display Market Operation>Reliability Unit Commitment>HRUC Displays >DSP Displays>DSP RUC Commitment/Decommitment Summary.

**IF:*** Displays are different, the RUC commitments thought to be blanked out were sent out;

**THEN:*** Notify the Helpdesk to call the On-Call EMMS Production support, and
* Issue electronic Dispatch Instructions to cancel RUC instructions

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |
| **Log** | Log actions taken. |

## 3.3 HRUC Failure/Timeline Deviation

**Procedure Purpose:** To address situations in which the HRUC process has failed. Failures can be identified by software failure, results not approved in a timely manner or certain conditions.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **6.5.9.1(2)** | **6.5.9.3.3(2)(e)** |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **TOP-001-5****R9** |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 18** | **Effective Date: April 7, 2022** |

| **Step** | **Action** |
| --- | --- |
| **Logs** | Document decisions made and actions taken within this procedure in the Operator Logs. |
| **Note** | Market Participants must be notified of any planned outages, and unplanned outages of **30 minutes or more,** of telemetering, monitoring and assessment capabilities, and associated communication channels between affected entities |
| HRUC Failure/Timeline Deviation |
| **Failure** | **IF:*** HRUC solved with invalid solution,
* Time does not allow for full review of results, OR
* HRUC software fails without expectation of timely repair;

**THEN:*** Notify Help Desk and Control Room Staff,
* Issue a Watch by making a Hotline call to QSEs
* Make posting on the ERCOT Website.
* Notify Transmission Operator to make Hotline call to TOs

**Q#79 - Typical Hotline Script for Watch for HRUC failure/timeline deviation****WHEN:*** HRUC is operating properly;

**THEN:*** Making hotline call to QSEs
* Cancelling ERCOT Website posting
* Notify Transmission Operator to make hotline call to TOs.

**Q#80 - Typical Hotline Script to Cancel Watch for HRUC failure/timeline deviation** |
| **Create****Save****Case** | **IF:*** HRUC is aborted or shut down;

**THEN:**1. Go to display **System Administration > Savecase Management**.
2. Choose **File Type** as HRUC.
3. Fill in **File Name** (no spaces allowed)
4. Fill in **Description**.
5. Push **Create** Button.
6. The message will show up in the **Text** field.
7. Refresh the display (F5), make sure the savecase name will show up in the **File Name** Field.

Also refer to Desktop Guide Common to Multiple Desks Section 2.16, if needed.* Contact Helpdesk to notify EMMS Production Support that HRUC was aborted or shut down and a Savecase was created.
 |
| **Note** | **IF:*** HRUC is having trouble solving in the required timeline due to transmission/capacity violations in the study;

 **THEN:*** Have Operations Support Engineer check validity of violation AND if correct,
* Consider committing Resource(s) sooner instead of waiting to evaluate later.
 |
| **Commit/****De-Commit****Resources****By VDI** | **IF Needed:*** RUC Commit/De-Commit Resources by issuing electronic Dispatch Instructions for the following:
	+ Choose COMMIT or DECOMMIT as the Instruction Type from the RES Level,
	+ Enter reason RUC commit for (capacity, capacity surplus or contingency name) in “other information”

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |

## 3.4 Approve/Reject Resource Decommitment Request

**Procedure Purpose:** Review and approve or reject Resource decommitments in the Adjustment Period.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **5.1** | **5.5.2(1)** | **5.5.3** | **6.4.7.2** |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 1** | **Effective Date: September 30, 2016** |

| **Step** | **Action** |
| --- | --- |
| **Approve/Reject Decommitment QSE Requests in Adjustment Period** |
| **Note** | The Adjustment Period is for each Operating Hour, the time between 1800 in the Day-Ahead up to the start of the hour before that Operating Hour. |
| **Resources Startup Time Less Than One Hour** | To decommit an otherwise available Resource for hours other than the Operating Period, the QSE must update the COP indicating the change in Resource Status for each hour in the COP for the remaining hours in the Adjustment Period. On detection of a change from On-Line to Off-Line Available state in future hours for a Resource, ERCOT shall review all requests for decommitment using the next scheduled HRUC. The Resource must be shown as available for HRUC commitment. ERCOT shall also review the list of Off-Line Available Resources with a start-up time of one hour or less.**REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSI Displays>DSI Data Processes> DSI Offline Resources Startup Time Within One Hour |
| **1** | A QSE may request to decommit a Resource for any interval that is not a RUC-Committed Interval by indicating a change in unit status in the QSE’s COP.**IF:*** A Resource Status changes from “ONLINE” to “OFFLINE” during the hour before the HRUC run, HRUC identifies this as a request by the QSE to de-commit the Resource;

**THEN:*** Results show that the de-commitment request is denied if next HRUC run commits the Resource.
 |
| **2** | Log actions taken. |

## 3.5 Committing Resources to provide A/S

**Procedure Purpose:** When SASM offers are insufficient to procure the needed Ancillary Services.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **4.5.2(2)** | **6.5.9.3.3** |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **TOP-002-4** **R4, R4.4** |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 10** | **Effective Date: September 1, 2021** |

| **Step** | **Action** |
| --- | --- |
| **Note** | **IF:*** SASM was not able to cover shortage, AND
* It has been determined that the unavailable of RRS or REG has a high probability of being used;

**THEN:*** Proceed with this procedure.
 |
| **REG/****RRS - RUC Committed Shortages** | **IF:*** Committing a Resource to provide Regulation or Responsive Reserve;

**THEN:*** Issue a Watch due to insufficient A/S offers
* Commit the Resource for the time frame needed,
* Enter A/S MW amount and A/S type which the Resource is required to provide in comment field when committing,
* Enter the AS procured MW in the corresponding DSP Ancillary Service Procurement Summary display before approving the RUC.
* Give courtesy call to QSE with amount and service type which they are required to provide,
* The Resource must show a status of ONREG when committed to provide Regulation, unless the QSE chooses to opt out of the RUC instruction using the ONOPTOUT status. The Resource can provide Regulation using a status of ONOPTOUT and should use that status in COP and real-time

**Q#81 - Typical Hotline Script for Watch for insufficient A/S** **WHEN:*** A/S offers are committed in HRUC;

**THEN:*** Make hotline call to QSEs
* Cancel ERCOT Website posting
* Notify Transmission Operator to make hotline call to TOs.

**Q#82 - Typical Hotline Script Cancel Watch for insufficient A/S**  |
| **Log**  | Log actions taken. |

## 3.6 Assigning Ancillary Services

Procedure Purpose: Process for assigning Ancillary Services when the DAM, SASM, RUC processes have failed to procure the needed A/S for on-line generation.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **4.5.2(2)** | **6.5.9.3.3** |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **TOP-002-4** **R4, R4.4** |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 4** | **Effective Date: June 9, 2023** |

| **Step** | **Action** |
| --- | --- |
| **Note** | If there is A/S insufficiencies in DAM and shortage is large enough to cause a reliability concern, SASM will be used to procure the insufficiencies. If the SASM process is not sufficient, HRUC will be used to commit the necessary Resources to provide the needed A/S. If HRUC is not sufficient, Ancillary Services will be prorated among QSEs representing On-line capacity not already reserved for AS in a way that maximizes the distribution of the assignments. Assignments will be on a QSE level, the QSE will assign to the Resource(s) of choice. |
| **A/S Insufficiency****Offers** | **IF:*** There is insufficient A/S after the DAM, SASM, and the HRUC processes, AND
* Reliability concerns exists;

**VERIFY:*** A Watch due to insufficient A/S offers has been issued;

**Q#81 - Typical Hotline Script for Watch for insufficient A/S** **THEN:*** Assign A/S to QSEs with On-Line Resources
 |
| **SPLUNK****Display** | **Refer to Splunk Dashboard display MOS - 014 Emergency AS Assignment*** It is sorted with the greatest amount of capacity at top
* AS\_PRC is the percentage of qualified AS capacity that is already assigned AS (total of Reg-Up, Reg-Down and RRS) in the COP
 |
|  **REG Up** | **SELECT:** * Up to 10 QSEs with the most available capacity and carrying the least amount of A/S;
	+ If assigning Reg-Up, select the same QSEs for both services if Reg-Down is needed and available,

**NOTIFY:** * Each QSE of their assigned obligation
	+ Example: 100 MW of Reg-Up being assigned, each QSE is assigned 10 MW.
* Resource telemetry must be place on ONREG
 |
| **REG Down** | **SELECT:*** Up to 10 QSEs with the most available capacity and carrying the least amount of A/S;
	+ If assigning Reg-Down, select the same QSEs for both services if Reg-Up is needed and available,

**NOTIFY:** * Each QSE of their assigned obligation
	+ Example: 100 MW of Reg-Down being assigned, each QSE is assigned 10 MW.
* Resource telemetry must be place on ONREG
 |
| **Responsive****Reserve** | **SELECT:*** Up to 10 QSEs with the most available capacity and carrying the least amount of A/S;
	+ If assigning Reg-Up or Reg-Down, the same QSEs can be selected for RRS,

**NOTIFY:** * Notify each QSE of their assigned obligation
	+ Example: 100 MW of RRS being assigned, each QSE is assigned 10 MW.
* Resource telemetry must be place on RRS
 |
| **Issue****VDIs** | **ISSUE:*** Electronic VDIs
* QSE Level
	+ Instruction Type: Other for QSE
	+ Other Information: Specify A/S type, amount, and reasons for this VDI

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |
| **Cancellation** | A QSE may request cancellation of the assignment of Ancillary Services to its On-Line Resources if there are equipment or Resource control issues which limit the ability of the Resources to provide the Ancillary Services. **IF:** ERCOT accepts the cancellation; ERCOT may require QSEs to submit supporting information describing the Resource control issues. |
| **Non-Spin,****ECRS** | Non-Spin, ECRS will not be assigned. |
| **REG/RRS Assigned Shortages** | **WHEN:*** A/S offers are Assigned;

**THEN:*** Make hotline call to QSEs
* Cancel ERCOT Website posting
* Notify Transmission Operator to make hotline call to TOs.

**Q#82 - Typical Hotline Script Cancel Watch for insufficient A/S** |
| **Log** | Log actions taken. |

## 3.7 Manual Dispatch of Resources

**Procedure Purpose:** Manually Dispatch Resources as necessary to ensure system security when HRUC cannot be used.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **3.14.5** | **5.1(12)** | **5.5.2** | **5.5.3(3)** |
|  | **6.5.9 (3)** | **8.1.1.2(16)** |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **EOP-011-2****R1, R1.1, R1.2, R1.2.4, R2, R2.1** |  |  |  |

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| **Version: 1**  | **Revision: 25** | **Effective Date: December 29, 2023** |

| **Step** | **Action** |
| --- | --- |
| **Note** | * ERCOT shall honor all Resource operating parameters in Dispatch Instruction / Operating Instructions under normal conditions and Emergency Condition. During Emergency Conditions, ERCOT may verbally request QSE’s to operate its Resources outside normal operating parameters. If such request is received by a QSE, the QSE shall discuss the request with ERCOT in good faith and may choose to comply with the request
* A QSE can self-commit by setting the telemetered Resource Status to ONOPTOUT for the first SCED run that the Resource is On-Line and available for SCED dispatch during the first hour of a contiguous block of RUC-Committed Hours
* If a QSE-committed Resource experiences a Forced Outage or Startup Loading Failure in an hour for which another Resource under the control of the same QSE is committed by a RUC instruction, the QSE may opt out of the RUC instruction by self-committing the Resource as described above
* If a Resource is RUC committed from one operating day to the next operating day, new RUC commits will need to be sent for the new day.
 |
| Manual RUC Commit of a Resource |
| **Note** | QSEs are required to notify ERCOT of physical limitations on their Resources ability to start that are not able to be modeled in the RUC software.ERCOT expects QSEs to enter the shortest start-up time for each unit without consideration of dependencies.**IF:*** ERCOT has been notified that Resources cannot be brought on-line at the same time due to temporal constraint exceedances exist at the same facility;

**THEN:*** Stagger the start times of resources when HRUC committing the resources at the same facility.

See Desktop Guide Reliability Unit Commitment Desk Section 2.23 for information on Resource Facilities with Temporal Constraints. The QSE must provide the ERCOT Shift Supervisor notice of that limitation at least seven days prior to the Operating Day in which the instruction occurs. The QSE shall be excused from complying with the portion of the RUC Dispatch Instruction that it could not meet due to the identified limitation if the proper notifications were given.**IF:*** A QSE receives a RUC Dispatch Instruction that it cannot meet due to a physical limitation;

**THEN:*** The QSE representing the Resource shall notify the ERCOT Operator of the inability to fully comply with the instruction and shall comply with the instruction to the best of the Resource’s ability.

**IF:*** The QSE has provided the ERCOT Operator notice of that limitation at least seven days prior to the Operating Day in which the instruction occurs;

**THEN:*** The QSE shall be excused from complying with the portion of the RUC Dispatch Instruction that it could not meet due to the identified limitation.

**IF:*** A QSE provided notice pursuant to the above of a physical limitation that would delay the RUC-committed Resource’s ability to reach its LSL in accordance with a RUC Dispatch Instruction;

**THEN:*** ERCOT shall extend the RUC Dispatch Instruction so that the Resource’s minimum run time is respected. However, if the Resource will not be available in time to address the issue for which it received the RUC instruction, ERCOT may instead cancel the RUC Dispatch Instruction.
 |
| **1** | **IF:*** It has been determined that a Resource is needed in real-time for a transmission condition or critical inertia level after the close of the Adjustment Period (Typically will be short start, Quick Start resources available or resources scheduled to come off within the operating hour);

**THEN:*** Notify QSE an electronic Dispatch Instruction will be issued
* Verify lead time with QSE
* Issue an electronic Dispatch Instruction to RUC commit the Resource,
* Choose “COMMIT” as the Instruction Type from Resource level
* Enter reason, such as RUC commit for contingency name, capacity, or critical inertia level in “other information”
* Confirm with QSE that the electronic Dispatch Instruction was received
	+ The same Resource attributes communicated programmatically must be communicated when giving a VDI.

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement

See Desktop Guide Common to Multiple Desks Section 2.3 for additional information to submit a correct electronic Dispatch Instruction. |
| **Log** | Log all actions. |
| Manual Dispatch of an OFFQS Resource |
| **1** | **IF:*** It has been determined that a OFFQS Resource is needed in real-time for a transmission condition;

**THEN:*** Notify QSE an electronic Dispatch Instruction will be issued
* Verify LSL when resource is generating to the grid
* Issue an electronic Dispatch Instruction to RUC commit the Resource,
* Verbal Dispatch Instructions [RUC Desk]
* Notification Date/Time: This is the time the QSE was first notified.
* Start Date/Interval(IE): This is the hour ending start time of the VDI
* End Date/Interval(IE): This is the hour ending end time of the VDI (if known)
* Resource Name: Name of OFFQS Resource being committed
* Instruction Type: Choose “COMMIT”
* Reason: Voltage Stability or critical inertia level
* Enter reason, such as RUC commit for contingency name in “other information”
* Confirm with QSE that the electronic Dispatch Instruction was received
	+ The same Resource attributes communicated programmatically must be communicated when giving a VDI.

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement

See Desktop Guide Common to Multiple Desks Section 2.3 for additional information to submit a correct electronic Dispatch Instruction. |
| **Log** | Log all actions. |
| Manual Dispatch to take a Unit Off-Line |
| **1** | **IF:*** A manual dispatch instruction / Operating Instruction will result in the unit being dispatched off-line (i.e., less than the minimum operating limit for that Resource);

**THEN:*** Issue an electronic Dispatch Instruction taking the Resource to zero until it can be released,
	+ Choose “DECOMMIT” as the Instruction Type from Resource level
	+ Enter RUC Decommit for contingency name in “other information”

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
* Ensure QSE updates telemetry.
 |
| Manual Dispatch to take a Unit of a Combined Cycle Off-line |
| **1** | **IF:*** System conditions require one unit of a Combined Cycle Plant to be manually dispatched off-line;

**THEN:*** Contact the QSE and request which unit the QSE would like to shutdown,
* Request the planned/current CC configuration and then the CC configuration that the Resource will need to be operating,
* Issue an electronic Dispatch Instruction confirmation to “DECOMMIT” the QSE to their CC configuration. All data must be entered but pay attention to the following details.
	+ Choose the proper QSE from the Participant name
	+ Select the CC configuration that you are instructing the Resource to operate in from the Resource name
	+ Choose “DECOMMIT” as the Instruction Type from Resource level
	+ Enter RUC decommit for contingency name in “other information”

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
* Log the above information.
 |
| Manual Dispatch to bring a Unit of a Combined Cycle On-line |
| **1** | **IF:*** System conditions require a unit of a Combined Cycle Plant to be manually dispatched on-line;

**THEN:*** Contact the QSE and notify which unit will be committed,
* Request the planned/current CC configuration and then the CC configuration that the Resource will need to be operating,
* Determine the temporal constraints for the CC configuration.
* Issue an electronic Dispatch Instruction to “COMMIT” the QSE to their CC configuration. All data must be entered but pay attention to the following details.
	+ Choose the proper QSE from the Participant name
	+ Select the CC configuration that you are instructing the Resource to operate in from the Resource name
	+ Choose “COMMIT” as the Instruction Type from Resource level
	+ Enter RUC commit for contingency name or critical inertia level in “other information”

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
* Log the above information.
 |
| Manual RUCAC to bring a Unit of a Combined Cycle On-line to a Higher Configuration for Additional Capacity |
| **1** | **IF:*** System conditions require a higher configuration of a Combined Cycle Plant to be manually dispatched on-line for additional capacity;

**THEN:*** Contact the QSE and notify which higher configuration will be committed,
* Request the planned/current CC configuration and then the CC configuration that the Resource will need to be operating,
* Issue an electronic Dispatch Instruction to “RUC COMMIT” the QSE to their CC configuration. All data must be entered but pay attention to the following details.
	+ From RUCAC VDI tab
	+ Choose QSE in the “QSE Name” dropdown list
	+ VDIs need a start/stop time
	+ Choose the Combined Cycle Train in the “CCT Name” dropdown list
	+ Choose the original QSE-committed Combined Cycle Generation Resource in “QSE CCGR” dropdown list
	+ Choose the new configuration to be committed in “RUC CCGR” dropdown list
	+ Once the CCGRs have been selected and commitment block is entered, the HSL and Status fields should automatically be populated
	+ Choose “COMMIT” as the “Instruction Type”
	+ Choose “System Capacity” from dropdown list as the “Reason”
	+ Enter RUC commit for capacity in “other information”

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
* Log the above information.
 |
| Canceling RUC Commitments |
| **Note** | Canceling unintended RUC Commits must be completed before additional RUC Commitments are issued on the same Resource(s). Doing it after the new RUC Commitment cancels all RUC Commitments for the resource. |
| **1** | **IF:*** A Resource is RUC committed that needs to be canceled;
	+ Only cancel RUC commits if the ERCOT Operator Resource commitment was unintended.

**THEN:*** Issue an electronic Dispatch Instruction to cancel the RUC instruction
	+ Choose “CANCEL RUC COMMIT” as the Instruction Type
* Enter “unintended RUC commitment” in other information
 |
| **Post** | Notice Type: Operational InformationNotice Priority: LowAudience: Public**Typical ERCOT Website posting:** Cancelled RUC commitment at timestamp [Date & Time] for [resource] for [Date & Time] due to unintended commitment. |
| **Log** | Log all actions. |
| Firm Fuel Supply Service (FFSS) |
| **Note** | Do not RUC commit a FFSS Resource when a VDI is issued for the FFSSR obligation. It is the responsibility of the FFSSR to meet their obligation. Take into consideration lead times and switching to firm fuel times when issuing the FFSSR VDI. |
| **1** | **IF:*** Within the contracted obligation period of November 15th – March 15th;
* There is evidence of an impending or actual fuel supply disruption affecting a FFSS Resource;
* System conditions require a FFSS Resource to be manually dispatched on-line; AND
* ERCOT has issued a Watch for extreme cold weather

**THEN:*** Notify the QSE with the FFSS Resource providing FFSS,
* Issue an electronic Dispatch Instruction
 |
| **Electronic****Dispatch****Instruction** | **Verbal Dispatch Instructions [Emergency] MOI display*** Choose FFSS tab
* Choose Participant Name
* Choose Resource Name
* Choose FFSS MW (LSL)
* Choose Instruction Type: “DEPLOY FIRM FUEL SUPPLY SERVICE”
* Notification Time will be populated in the background when the VDI is sent.
* Input Initiation Time
* Completion Time will be inserted when completion time is known after the VDI is initially sent
* Click “Send” (do not “Commit to Database”)

Notify QSE that an electronic Dispatch Instruction has been issued.When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement

**Refer to Desktop Guide RUC Section 2.24** |
| **Canceling a FFSS VDI** | **IF:** * For any reason a VDI issued needs to be canceled;

**THEN:*** Cancel the VDI by inserting a completion time on the VDI that was issued.:
 |
| **Electronic****Dispatch****Instruction Completion Time** | **WHEN:** * Notified that FFSS Completion Time is known;

**THEN:*** Perform/verify the following, if appropriate:
	+ Verify Completion Time from the Verbal Dispatch Instructions [Emergency] MOI display has a Completion Time entered for the appropriate FFSS Resource.

**Refer to Desktop Guide RUC Section 2.24** |
| **Log** | Log all actions. |
| **2** | **IF:*** A QSE representing an FFSSR coordinates with ERCOT and seeks approval to take the FFSSR Off-Line for no more than four hours to perform critical maintenance associated with consuming the reserved fuel;

**THEN:*** If the QSE coordinates with ERCOT and receives approval to take the FFSSR unit Off-Line and brings the FFSSR back On-Line within four hours or less, this shall not count as failure to stay On-Line.
 |
| **Log** | Log all actions. |
| FFSSR Availability |
| **1** | **REFERENCE DISPLAY:**Market Participation > Physical Market > Market Participant Submissions > Availability PlanERCOT SharePoint > System Operations – Control Center > Documents > Blackstart Availability**REVIEW:*** FFSSR Availability Plan for next operating day (OD+1 tab)

**IF:*** FFSSR Availability Plan for next operating day is missing

**THEN:*** Call the QSE and request them to submit their FFSSR Availability Plan for next operating day
* Update the Blackstart and FFSS Availability spreadsheet located on SharePoint
 |
| **2** | **WHEN:*** Notified by a QSE that a Alternate Resource FFSSR will be replacing a Primary Resource FFSSR with their FFSS obligation or back to normal,

**THEN:*** Update the FFSS speadsheet and send a email to Shift Supervisor
 |
| **Log** | Log all actions. |
| FFSSR Restocking Request |
| **Note** | **IF:*** During or following the deployment of FFSS, the QSE for an FFSSR may request an approval from ERCOT to restock their fuel reserve to restore their FFSS capability.

**THEN:*** Request the QSE to submit a written request to the ERCOT Shift Supervisors email.
 |
| **Log** | LOG when completed and any additional actions taken. |

## 3.8 Projected Reserve Capacity Shortage with no Market Solution

**Procedure Purpose:** To provide notice that all available Resources have been committed and no market solution exists to meet the project system demand.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **3.1.6.9** |  |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **EOP-011-2 R2, R2.1, R2.2, R2.2.3, R2.2.3.1** |  |  |  |

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| --- | --- | --- |
| **Version: 1**  | **Revision: 11** | **Effective Date: December 1, 2023** |

| **Step** | **Action** |
| --- | --- |
| **Monitor** | **PUCT Lookahead Margin****When the Available Capacity Margin column shows a negative**  |
| **Watch** | **WHEN:*** A reserve capacity shortage is projected, and no market solution is available to meet the projected system demand, and
* There is a risk of an EEA event;

**THEN:*** Issue a Watch for projected reserve capacity shortage
* Notify Transmission Operator to make Hotline call to TOs
* Post message on the ERCOT Website
 |
| **Hotline** | **Q#83 - Typical Hotline Script for Watch for projected reserve capacity shortage with no market solution**  |
| **Post** | **Typical ERCOT Website posting:** ERCOT issued a Watch fora projected reserve capacity shortage with no market solution available for [HE XX – XX], which causes a high risk for an EEA event.  |
| **Cancel** | Cancel Watch when projected reserve capacity shortage has ended by making hotline call to QSEs and cancelling the posting. Ask Transmission Operator to make hotline call to TOs.**Q#84 - Typical Hotline Script to Cancel Watch for projected reserve capacity shortage with no market solution** |
| **Log** | Log actions taken. |
| Advance Action Notice (AAN) |
| **Definition** | An Advance Action Notice (AAN) is a type of Operating Condition Notice (OCN) that identifies a possible future Emergency Condition and describes future action ERCOT expects to take to address that condition unless the need for ERCOT action is alleviated by Qualified Scheduling Entity (QSE) and/or Transmission Service Provider (TSP) actions or by other system developments. |
| **Note** | ERCOT may issue an (AAN) in anticipation of a possible Emergency Condition. Any AAN will identify actions ERCOT expects to take to address the possible Emergency Condition unless the need for ERCOT action is alleviated by QSE and/or TSP actions taken, or by other system developments that occur before a time stated in the AAN. |
| **Time Periods** | ERCOT shall issue the AAN a minimum of 24 hours prior to performing an Outage Adjustment Evaluation (OAE). Additionally, unless impracticable, the OAE should not be performed until eight Business Hours have elapsed following issuance of the AAN. ERCOT shall not issue an Outage Scheduler Adjustment (OSA) under this Section unless it has first completed an OAE.  |
| **1** | **IF:*** ERCOT forecasts an inability to meet applicable transmission reliability standards and has exercised all other reasonable options
* There are Resources with approved or accepted Resource Outages, whose approval or acceptance could be withdrawn to meet the applicable transmission reliability standards

**THEN:*** As instructed by the Shift Supervisor and in coordination with System Operations Management, Outage Coordination Management and Operations Support Management, issue an AAN.
 |
| **Hotline Issue AAN** | Notify QSEs of an AAN Notice.**Q#126 – Typical Hotline Script for an AAN** |
| **Post** | ERCOT Website postings are usually made by the Resource Operator, the Typical Posting Script below is for reference if needed:**Typical Posting Script:**ERCOT is issuing an AAN due to a possible future Emergency Condition of [reserve capacity deficiency or reliability problem] beginning [date HE XX] until [date HE XX].  [Summary of actions ERCOT may take].  ERCOT may seek [amount of capacity] from an OAE and then make the OSA.  On [date] at [xx:xx] ERCOT will execute an OAE if deemed necessary. Please notify ERCOT by email aan@ercot.com if a specific resource cannot be considered in the OAE. |
| **2** | **IF:*** Conditions change

**THEN:*** Update the AAN
 |
| **Hotline Update AAN** | Notify QSEs of an AAN Update Notice.**Q#127 –Typical Hotline Script for an Update of an AAN** |
| **Updated Post** | ERCOT Website postings are usually made by the Resource Operator, the Typical Posting Script below is for reference if needed:**Typical Posting Script:**ERCOT is updating an AAN due to conditions changing and a possible future Emergency Condition of [reserve capacity deficiency or reliability problem] beginning [date HE XX] until [date HE XX].  [Summary of actions ERCOT may take].  ERCOT may seek [amount of capacity] from an OAE and then make the OSA.  On [date] at [xx:xx] ERCOT will execute an OAE if deemed necessary. |
| **Instructing Generation Resources Planned Outages Return Early** | **IF:*** ERCOT forecasts an inability to meet applicable transmission reliability standards and has exercised all other reasonable options AND;
* There are Resources with planned Resource Outages, who may have the ability to return from their planned outage early;

**THEN:*** As instructed by the Shift Supervisor and in coordination with System Operations Management, Outage Coordination Management and Operations Support Management;
* Instruct QSEs.

**Q#129 –** **Typical Hotline Script for Instructing Generation Resources Planned Outages Return Early** |
| **OSA** | **WHEN:*** Notified by the Shift Supervisor the OSA has executed

**THEN:*** Notify QSEs of executing the OSA process.

**Q#130 – Typical Hotline Script for Outage Scheduler Adjustment (OSA)** |
| **Post** | ERCOT Website postings are usually made by the Resource Operator, the Typical Posting Script below is for reference if needed:**Typical Posting Script:**ERCOT has executed the OSA process due to a possible future Emergency Condition of [reserve capacity deficiency or reliability problem] projected for OSA Period [date HE XX] until [date HE XX]. Outages not moved voluntarily prior to [date] at [time] will be considered an OSA.. |

|  |  |
| --- | --- |
| **Self-Scheduled Resources** | **IF:*** A OSA Resource self-schedules their Resource during a OSA Period,

**THEN:*** A VDI RUC Instruction will be required for the hours they are self-scheduled.
 |
| **RUC Committed Resources** | **IF:*** A OSA Resource is OFF during a OSA Period,

**THEN:*** A RUC Instruction will be required for the hours they are needed for Reliability.
 |
| **Hotline Cancel AAN** | **WHEN:*** ERCOT determines that the possible Emergency Condition has been alleviated by QSE or TSP action, by ERCOT action, or by other system developments;

**THEN:*** Using the Hotline, cancel the AAN,

**Q#128 –Typical Hotline Script to cancel an AAN** |
| **Cancel** **Posting** | **WHEN:*** ERCOT determines that the possible Emergency Condition has been alleviated by QSE or TSP action, by ERCOT action, or by other system developments.

**THEN:*** Coordinate with the Transmission Operator and Resource Operator to cancel ERCOT Website message(s).
 |
| **Log** | Log all actions. |

# 4. Day-Ahead RUC

## 4.1 Tasks prior to Execution of OFFLINE study

**Procedure Purpose:** To make manual corrections for bad/suspect telemetry, load forecast modifications, or to commit Resources prior to running the DRUC process. Perform an unconstrained OFF-LINE study to compare with the normal DRUC study.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** |  |  |  |  |
|  |  |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 1** | **Effective Date: December 28, 2018** |

| **Step** | **Action** |
| --- | --- |
| **Before a DRUC study is performed** |
| **Note** | **IF:*** Any manual corrections prior to running the DRUC process;

**THEN:*** Perform an OFF-LINE study to compare with the normal DRUC study.
 |
| **Setting parameters for OFFLINE study** | **REVIEW REFERENCE DISPLAY:**System Administration>Data Management**CHANGE:*** Connect to Schema

**TO:*** OFFLINE, SD1 or SD2
 |
| **Verify parameters for OFFLINE study** | **REVIEW REFERENCE DISPLAYS:**Market Operation>EMS Interface>EMSI Workflow ParametersMarket Operation>EMS Interface>EMSI Workflow Messages* EMSI is not set in the OFFLINE configuration to automatically run every hour, it will be necessary to run EMSI.

**REFERENCE DISPLAY:**Market Operation>EMS Interface>EMSI WorkflowMarket Operation>Reliability Unit Commitment>DRUC Displays>UC Displays>DRUC UC Execution Control ParametersMarket Operation>Reliability Unit Commitment>DRUC Displays>NSM Displays>NSM Execution Control ParametersMarket Operation>Reliability Unit Commitment>DRUC Displays>DSI Displays>DSI Execution Control Parameters * “Retrieve MF Interface Data” flag set to “Yes”.
* “Retrieve MI Interface Data” flag set to “Yes”.
* “Retrieve EMS Interface Data” flag set to “Yes”.
* “Check Market Status set to “Yes”
* “Use Save case set to “No”
 |
| **EXECUTE****off-line study** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>DRUC Displays>Workflow>DRUC WorkflowMarket Operation>Reliability Unit Commitment>DRUC Displays>Workflow>DRUC Workflow Messages* The RUC study time interval is set properly,
* The “Execution Mode” is set to “Unconstrained”,
* The current data management mode is “OFFLINE”,
* Execute the entire DRUC sequence (Run All) in OFFLINE mode.
 |
| **Review and compare results** |
| **Note** | The unconstrained OFF-LINE study can be used to compare a constrained DRUC study and an unconstrained DRUC study. |
| **Review** | Review the OFF-LINE study and normal DRUC study**IF:*** The results are different;

**THEN:*** Most likely the differences are due to congestion.

**IF:*** The results are similar;

**THEN:*** The results are related to capacity.
 |

## 4.2 Tasks prior to Execution of DRUC

**Procedure Purpose:** To make manual corrections for bad/suspect telemetry, load forecast modifications, or to commit Resources prior to running the RUC process.

|  |  |  |  |  |
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| **Protocol Reference** | **5.1** | **5.3(1)** | **5.5.1** |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **TOP-002-4****R4, R4.2, R4.3** |  |  |  |

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| **Version: 1**  | **Revision: 9** | **Effective Date: March 1, 2022** |

| **Step** | **Action** |
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| By 13:00 each day, perform the following |
| **COP** | **REVIEW REFERENCE DISPLAYS:**Market Participation>Physical Market>Market Operator Data> Missing COP Check>Market Participation>Monitoring>Event Manager>Events**VERIFY:*** “Missing COP Check” has automatically notified the QSEs of missing COPs;

**SELECT:** * “START-NOW" in the Status column if not already completed by Market Operations.
 |
| **Load Forecast** | Review the Day Ahead Load Forecast in the EMS:**IF:*** Adjustments need to be made in the EMS;

**THEN:*** Adjust using the following: **(Refer to Desktop Guide RUC Section 2.17)**

**Reference Displays:*** Load Forecast
* Similar Day Function
* Load Forecast Scaling functions
	+ Perform load scaling or
	+ Perform peak scaling or
	+ Perform factor scaling
	+ Manually override forecast value(s)
* Notify the Shift Supervisor if an invalid Load Forecast exists for the study period of DRUC.
 |
| **Outage****Notes/Off-Line Studies** | **IF:*** Resources are needed for identified Voltage issues;

**THEN:*** Once COPs have been updated, identify the appropriate resources that can be utilized if needed.
 |
| **Review** | **REVIEW REFERENCE DISPLAY:**Market Operation>EMS Interface>EMSI Workflow Parameters **IF:*** The EMSI Workflow Controller (Time Stamped – runs XX:50 every hour) function (data transfer between EMS and MMS) and Load Forecast are **NOT** running (should be continuous);

**THEN:*** Notify Help Desk and Control Room Staff.
 |
| By 13:30 each day, perform the following |
| **Note** | * The DRUC process may not be used to buy Ancillary Service unless the Ancillary Service Offers submitted in the DAM are insufficient to meet the requirements of the Ancillary Service Plan.
* By default, Resources without an entry in COP are considered to have a Resource Status of OUT and are unavailable in RUC Procedure.
 |
| **WRUC** | **IF:*** Prior to 1330, ERCOT may issue a WRUC instruction to a QSE that a Resource is required to be On-Line for all or part of a future Operating Day;

**THEN:*** The QSE may self-commit the Resource for the WRUC instructed hours by updating the Resource’s COP to reflect the appropriate On-Line Status for the WRUC hours prior to the DRUC process execution, OR
* The Resource will be committed as part of the DRUC process for all WRUC-instructed hours not DAM-committed or QSE self- committed.
 |
| By 14:00 each day, perform the following |
| **Note** | As time permits, contact QSEs that have NOT submitted a COP for the DRUC study period. |
| **Long Lead Times** | Identify resources that have a lead-time greater than the DRUC timeline, WRUC results should be utilized for identifying resources with long lead-times.**IF:*** Resources are identified;

**THEN:*** RUC Commit the necessary resources as needed.
 |
| By 14:25 each day, perform the following |
| **Note** | If the DAM did not complete by 1330, then DRUC will be delayed. MPs need an hour between the completion of DAM and the opening of DRUC to update COPs. |
| **Verify** | Verify that the DAM has completed.**IF:*** DAM will not complete until after 1430;

**THEN:*** Follow the “Manage DAM/DRUC Timeline Deviation/Failure” procedure.
 |
| **Setting parameters for ONLINE** | **REVIEW REFERENCE DISPLAY:**System Administration>Data ManagementVerify that “Connect to Schema” is set to “ONLINE”. |
| **Verify** | **REVIEW REFERENCE DISPLAYS:**Market Operation>EMS Interface>EMSI Workflow ParametersMarket Operation>EMS Interface>EMSI Workflow MessagesEMSI has completed successfully within the last hour Market Operation>Reliability Unit Commitment>DRUC Displays>UC Displays>DRUC UC Execution Control ParametersMarket Operation>Reliability Unit Commitment>DRUC Displays>NSM Displays>NSM Execution Control ParametersMarket Operation>Reliability Unit Commitment>DRUC Displays>DSI Displays>DSI Execution Control Parameters * “Retrieve MF Interface Data” flag set to “Yes”.
* “Retrieve MI Interface Data” flag set to “Yes”.
* “Retrieve EMS Interface Data” flag set to “Yes”.
* “Check Market Status set to “Yes”,
* “Use Save case set to “No”
 |
| At ~14:32 each day, perform the following |
| **Note** | The DSI sequence should never be started or still be running when a SCED sequence is running. |
| **DSI** | **EXECUTE:*** The DSI sequence

**VERIFY:*** For error or warning messages and take necessary action if needed to correct the errors,
* The input data is properly transferred.

**If NOT:** Contact EMMS production support personnel immediately to determine the cause and expected time of resolution. |
| **Verify** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>DRUC Displays>DSI Displays>External Input Data>MI DAM AS InsufficiencyThis display will give the Operator an indication if any A/S insufficiencies have occurred in DAM. If insufficiencies exist, the Operator can start looking at resources that can be committed to resolve the insufficiency in DSP. |
| **E-Tags** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment> DRUC Displays> DSI Displays> DSI Data Processes> DSI DC Tie Schedule Market Operation>Reliability Unit Commitment> DRUC Displays> DSI Displays> External Input Data> MI COP Verify that E-tags are being imported into the MMS.**IF:*** Individual schedules need to be reviewed;

**THEN:*** Go to the MI COP display and filter ‘ERCOT’ as the QSE name
 |
| **Verify** | * Identify and correct Bad/Suspect Telemetry
* Modify Input for Block Load Transfer (BLT) movement
* Modify Input for Verbal Dispatch Instructions

**Refer to Desktop Guide RUC Section 2.3** |
| **Manual****Commitment** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment> DRUC Displays> DSI Displays>DSI Data Processes>DSI Operator Manual Commitment**IF:*** Additional resources are needed to solve for voltage issues;

**THEN:*** Consult with the Operations Support Engineer and/or the Transmission and Security Desk Operator to determine which resources should be RUC committed, **AND**
* Determine the temporal constraints for each of the units.

**IF:*** The resource start-up time doesn’t allow enough time to re-evaluate the need for its commitment in future HRUC Study Periods;

**THEN:*** Filter for the unit
* Change ‘Auto’ to ‘On’,
* List reason.
 |
| **Set** **Flags** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>DRUC Displays>DSI Displays>DSI Execution Control Parameters **IF:** * Manual changes have been made to the DRUC input data;

**CHANGE:*** The appropriate flags are set to prevent the data from being over-written.
	+ “Retrieve MF Interface Data set to No”,
	+ “Retrieve MI Interface Data set to No”,
	+ “Retrieve EMS Interface Data set to No”, OR
	+ “Use Save case set to “Yes”
 |
| **Execute** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>DRUC Displays>Workflow>DRUC WorkflowMarket Operation>Reliability Unit Commitment>DRUC Displays>Workflow>DRUC Workflow MessagesExecute the entire DRUC sequence (Run All). |
| **STNET Studies** | **Notify:*** Operations Support Engineer to run NSA for each hour of the next operating Day.
 |

## 4.3 Review, Approve and Post DRUC Results

**Procedure Purpose:** To work collaboratively with Market Operations Support Personnel in reviewing, and if necessary, modifying DRUC data, to approve and post the final DRUC results.

|  |  |  |  |  |
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| **Protocol Reference** | **4.4.8** | **5.1 (9)** | **5.3(3)** | **5.5.1(9)** |
| **5.5.2** | **5.5.3(2)** | **6.4.9.1(3)** |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **IRO-008-2** **R1, R2, R3** | **TOP-002-4 R1, R2, R3, R4, R4.1, R4.4, R5** |  |  |

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| **Version: 1**  | **Revision: 34** | **Effective Date: July 1, 2022** |

| **Step** | **Action** |
| --- | --- |
| **Note** | See Desktop Guide Common to Multiple Desks Section 2.16 if the savecase function fails when running RUC |
| **Monitor** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>DRUC Displays>Workflow>DRUC WorkflowMarket Operation>Reliability Unit Commitment>DRUC Displays>Workflow>DRUC Workflow Messages |
| **Review** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>DRUC Displays>UC Displays>Output Display Menu>System Outputs>Summary When DRUC has completed. If necessary, work with Market Operations and Operations Support Engineer to review the results.* Monitor the DRUC Workflow display to determine when it is complete,

**ENSURE:** * The workflow has completed before the study is approved and published,

**IF:*** The study is approved before it completes,
	+ Incorrect RUC deployments are sent to QSE’s

**THEN:*** Make hotline call to notify QSE’s that deployments for DRUC are invalid,
* Notify the Director Control Room Operations and/or Designee immediately,
* Abnormal system condition in the summary display after IUC (Initial Unit Commitment component of MMS) and NCUC (Network Constrained Unit Commitment component of MMS).
	+ For Under Generation, prepare for following “DRUC Committed Units” section of this procedure
	+ For Over generation, check for COP or Load Forecast errors
	+ For System Lambda greater than $10, check intermediate NSM (Network Security Manager Component of MMS) results for constraint violation.

For abnormal constraints in the NSM outputs and abnormal commitments in IUC and NCUC outputs, refer to Desktop Guide RUC Section 2.6, step 5. |
| **Note** | * Resources with **NO** Current Operating Plan (COP) entry are considered as “Unavailable” in RUC.
* Resources with **“EMR”** Resource status can only be RUC committed during **Emergency** conditions.
 |
| **System Summary** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>DRUC Displays>UC Displays>Output Display Menu>System Outputs>SummaryMarket Operation>Reliability Unit Commitment>DRUC Displays>UC Displays>Output Display Menu>System Outputs>Summary Line Flow**DETERMINE IF:*** The load forecast is reasonable for each hour,
* Any under/over generation;

**THEN:*** Be aware of these when running HRUC.
 |
| **A/S Insufficiency****from DAM** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>DRUC Displays>DSP Displays> DSP Decision Support for Ancillary Service DeploymentMarket Operation>Reliability Unit Commitment>DRUC Displays>DSP Displays> DSP RUC Commitment/Decommitment Summary**IF:*** Notified from Market Operations of A/S Insufficiency from DAM;

**THEN*** Issue a Watch to QSEs
* Notify Transmission Operator to make Hotline call to TOs
* Verify Market Operations has posted message on the ERCOT Website
* Refer to Desktop Guide RUC Section 2.1.

**Q#85 - Typical Hotline Script for Watch for A/S insufficiency in DAM, procuring in DRUC****WHEN:*** A/S offers are committed in DRUC;

**THEN:*** Making hotline call to QSEs
* Cancelling ERCOT Website posting
* Notify Transmission Operator to make hotline call to TOs.

**Q#86 - Typical Hotline Script Cancel Watch for A/S insufficiency in DAM** |
| **Undeliverable****A/S****Capacity** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>DRUC Displays>DSP Displays> DSP Undeliverable Ancillary Service Capacity Summary**IF:*** Undeliverable A/S due to Transmission Constraints and Reliability issues exist;

**THEN:*** Notify the QSEs and provide the following information:
	+ The amount of its Resource capacity that does not qualify to provide A/S
	+ The projected hours
* Notify the Resource Desk Operator.
 |
| **Violated Constraints** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>DRUC Displays>DSP Displays> DSP Binding Constraint SummaryMarket Operation>Reliability Unit Commitment>DRUC Displays>DSP Displays> DSP Constraint Summary**REVIEW:*** Violated constraints. If needed, notify Operations Support Engineer to determine the validity;

**IF:*** Invalid, no further action is required,
* Valid;

**THEN*** Locate the constraint on the DSP Constraint Summary display,
* Create a Suggestion Plan for the identified violated constraint
* Review the temporal constraints of the suggested resources
	+ If resource start-up time allows enough time to re-evaluate the need for its commitment, be aware of these conditions when running HRUC,
	+ RUC commit resources as needed prior to DRUC approval if needed due to temporal constraints.

**IF:*** Valid; AND no Suggestion Plan or Resource is available to commit within the timeframe of the violated constraint,

**THEN:*** Notify Operations Support Engineer and Transmission & Security Desk Operator to determine if an outage can be withdrawn within the timeframe,

**IF:*** No outage can be withdrawn within the timeframe,

**THEN:*** Notify Operations Support Engineer to develop a Congestion Management Plan and provide it to the TDSP and Transmission & Security Desk Operator,
* Notify Shift Supervisor to contact the Director Control Room Operations and/or Designee of actions taken

Refer to Desktop Guide RUC Section 2.6. |
| **Note** | RUC Operators can decide to postpone a commitment if the startup time is well into the future. It will be left up to future HRUC solutions to commit the unit. |
| **DRUC Committed****Units** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>DRUC Displays>DSI Displays>External Input Data>MF Generator ParameterMarket Operation>Reliability Unit Commitment>DRUC Displays>DSP Displays>DSP RUC Commitment/Decommitment Summary**IF:*** DRUC recommends the commitment of any unit;

**THEN:*** Determine the validity,
* Determine the temporal constraints for each of the units,

**IF:*** The resource start-up time allows enough time to re-evaluate the need for its commitment in future HRUC Study Period, AND
* There is no reliability reason requiring the resource commitment decision to be made immediately;

**THEN:*** De-select the resource prior to approving the DRUC study by changing ‘Commit’ to ‘blank’ and list reason.

**IF:*** There is reliability reason requiring the resource commitment decision to be made immediately;
	+ Resources with long start-up times
	+ Resources returning from outages
	+ Congestion or Capacity deficiencies that may create HRUC performance issues

**THEN:*** Log the reason for not de-selecting the resource.

**NOTE:** A reason must be entered for commit, decommit, uncommitting, examples below:* Evaluate later (should be used when waiting until the last possible hour to commit)
* Short start (should be used for units that can start within 1 hour)
* Voltage support
* Valley import
* Constraint name (SLWSCRL5) \* Do not use special characters

When issuing a confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |
| **Excess Generation** | During periods of low load and excess generation:**PERIODICALLY REVIEW:*** Splunk Dashboard Viewer under the MOS\_DEV folder:
	+ “6 DRUC Capacity” which is based on the last ran DRUC

**VERIFY:*** TOTAL\_LOAD is less than SS\_LASL,

**IF:*** Load forecast is reasonable AND the decision can be made in the future,

**THEN:*** Issue OCN for Excess Reserve Capacity
* Notify Transmission Operator to make Hotline call to TOs
* Post message on the ERCOT Website

**Q#87 - Typical Hotline Script for OCN for Excess Capacity****Typical ERCOT Website Posting:**ERCOT issued an OCN due to a projected excess reserve capacity for [HE XX – HE XX]. **WHEN:*** Projected excess reserve capacity;

**THEN:*** Making hotline call to QSEs
* Cancelling ERCOT Website posting
* Notify Transmission Operator to make hotline call to TOs.

**Q#88 - Typical Hotline Script to Cancel OCN for Excess Capacity** |
| **DRUC****Committed** **For Capacity****Shortage** | **IF:*** DRUC recommends Resource(s) for capacity;

**THEN*** Determine if start-up time allows enough time to re-evaluate, and
* De-select the Resource(s) prior to approving the DRUC,

**After DRUC is approved:*** Issue an OCN for projected reserve capacity shortage
* Notify Transmission Operator to make Hotline call to TOs
* Post message on the ERCOT Website

**Q#89 - Typical Hotline Script for OCN for committing capacity in DRUC****Typical ERCOT Website Posting:**ERCOT issued an OCN due to a projected capacity shortage for [HE XX – HE XX]. **WHEN:*** Projected reserve capacity shortage no longer exists;

**THEN:*** Making hotline call to QSEs
* Cancel ERCOT Website posting
* Notify Transmission Operator to make hotline call to TOs.

**Q#90 - Typical Hotline Script cancellation for OCN for committing capacity in DRUC** |
| **Manual Commitment** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>DRUC Displays>DSP Displays> DSP RUC Commitment/Decommitment Summary**IF:*** Additional resources are needed to solve for transmission issues (such as voltage support) and were not picked up in the DRUC run,
* The resource start-up time doesn’t allow enough time to re-evaluate the need for its commitment in the HRUC Study Period, OR
* A Resource was given a WRUC instruction and chose not to self-commit for all hours needed;

**THEN:*** Change ‘blank’ to ‘Commit’
* List reason (capacity, constraint name or voltage issue).
* Give courtesy call to QSE when commitments are made
 |
| **Note** | Resources cannot be decommitted for just a portion of a DAM-Committed Interval, which is a one-hour interval. ERCOT may only decommit a Resource to resolve transmission constraints that otherwise cannot be resolved. Qualifying Facilities (QFs) may be decommitted only after all other types of Resources have been assessed for decommitment. |
| **DRUC Decommitted****Resources** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>DRUC Displays>DSP Displays> DSP RUC Commitment/Decommitment Summary**IF:*** If RUC recommends commitments/decommitments;

**DETERMINE IF:** * Outage related’
* Possible Network Model error’
* COP error for Combine Cycle configurations / JOU,
* Qualifying Facilities should be de-committed **ONLY** as a last resort;

**THEN:*** If this is a true decommitment:
	+ Confirm Decommitment
	+ List reason (most likely reason is ‘transmission outage’)
* If Decommitment is error related:
	+ No action is required
 |
| **Note** | Once you have completed your review of DRUC, consult with Market Operations to ensure they see no issues before approving.  |
| **Validate** | **REVIEW REFERENCE DISPLAY:**Market Participation>Physical Market>SASM Market>AS Responsibility - QSEMarket Operation>Reliability Unit Commitment>DRUC Displays>UC Displays>Output Display Menu>System Outputs>Summary**VERIFY:*** Input data
* Updated Time
* Results are reasonable
 |
| **Approval** | **DRUC must be approved by 1600****REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>DRUC Displays>DSP Displays> DSP Execution Control Parameters**IF:*** The DRUC results are reasonable after all necessary modifications have been made;

**THEN:*** Sort the RUC Commitment column before approving so it shows commitments at the top of the screen that currently may be lower in the table but not shown in the window;
* Approve the results, **OR**

**IF:*** The results are unacceptable;

**THEN:*** Click on Disapprove button
* Follow the Manage DRUC Failure/Timeline Deviation procedure.

**IF:*** Disapprove button was selected in error;

**THEN:*** Contact Helpdesk to open ticket for EMMS Production Support to correct it.
 |
| **Note** | If the Operator disapproves the results, the results will be saved in the database for future analysis and will not be published to the MPs. |
| **After** **Approval** | **AFTER:*** Approval button is pushed;

**THEN:*** Double check display Market Participation>Physical Market>Market Results>DRUC> DRUC Results,
* Make sure the records in this display matches data in display Market Operation>Reliability Unit Commitment>DRUC Displays >DSP Displays>DSP RUC Commitment/Decommitment Summary.

**IF:*** Displays are different, the RUC commitments thought to be blanked out were sent out;

**THEN:*** Notify the Helpdesk to call the On-Call EMMS Production support, and
* Issue VDIs to cancel RUC instructions

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |
| **Canceling****RUC****Commitments** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>HRUC Displays>DSI Displays>DSI Data Processes>DSI Operator Manual Commitment**IF:*** A Resource is RUC committed and needs to be canceled;
	+ Only cancel RUC commits if the ERCOT Operator Resource commitment was unintended.

**THEN:*** Issue an electronic Dispatch Instruction confirmation to cancel the RUC instruction
	+ Choose “CANCEL RUC COMMIT” as the Instruction Type
	+ Enter “unintended commitment” in other information

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |

## 4.4 DAM/DRUC Timeline Deviation

**Procedure Purpose:** To address situations in which the DAM/DRUC process has deviated from its timeline.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **4.1.2** | **5.2.2.1** |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** | **TOP-001-5****R9** |  |  |  |

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| **Version: 1**  | **Revision: 18** | **Effective Date: March 31, 2023** |

| **Step** | **Action** |
| --- | --- |
| **Logs** | Document decisions made and actions taken within this procedure in the Operator Logs. |
| **Note** | Market Participants must be notified of any planned outages, and unplanned outages of **30 minutes or more,** of telemetering, monitoring and assessment capabilities, and associated communication channels between affected entities |
| DAM Timeline Deviation |
| **DAM Timeline****Deviation** | **IF:*** Notified by Market Operations that the DAM Market timeline is deviated;

**THEN:*** Issue an Advisory for DAM timeline deviation
* Notify Transmission Operator to make Hotline call to TOs
* Market Operations will post message on the ERCOT Website

**Q#91 - Typical Hotline Script for Advisory for DAM timeline deviation****WHEN:*** DAM completes;

**THEN:*** Make Hotline call to QSE’s and give one hour notice to update COPs
* Post message on the ERCOT Website

**Q#92 - Typical Hotline Script to Cancel Advisory for DAM timeline deviation****Typical ERCOT Website Posting:**DAM is complete, DRUC will begin at [xx:xx]. |
| DRUC Delay |
| **DRUC Delay** | **Note: This step is for any reason other than DAM timeline deviation. DAM completed on time however there is an issue with DRUC****By 16:00****IF:*** DRUC is delayed for any reason other than DAM timeline deviation;

**THEN:*** Notify Shift Supervisor and Helpdesk,
* Issue an Advisory by making a Hotline call to QSEs
* Notify Transmission Operator to make Hotline call to TOs
* Post message on the ERCOT Website

**Q#93 - Typical Hotline Script for Advisory for DRUC delay****Typical ERCOT Website Posting:**ERCOT issued an Advisory for DRUC timeline deviation. ERCOT will continue to try to complete DRUC by 18:00. |
| **DRUC****Completes****By****18:00** | **By 18:00****IF:*** DRUC has completed by 18:00;

**THEN:*** Notify Shift Supervisor,
* Cancel the Advisory by making a Hotline call to QSEs
* Notify Transmission Operator to make Hotline call to TOs
* Cancel message on the ERCOT Website

**Q#94 - Typical Hotline Script to Cancel Advisory for DRUC delay** |
| **DRUC****Not Complete****By 18:00** | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>DRUC Displays>Workflow>DRUC Workflow**By 18:00****IF:*** DRUC completed and the results cannot be approved;

**THEN:*** No need to abort DRUC Process, just don’t approve.

**IF:*** DRUC has not completed (i.e., software issues);

**THEN:*** Abort DRUC Process.
 |
| **1** | **IF:*** DRUC has not completed by 18:00;

**THEN:*** Notify the Help Desk and control room staff,
* Issue a Watch by making a Hotline call to QSEs
* Notify Transmission Operator to make Hotline call to TOs
* Posting message on the ERCOT Website

**Q#95 - Typical Hotline Script for Watch for DRUC not complete by 18:00****Typical ERCOT Website Posting:**ERCOT issued a Watch for DRUC not completing at 18:00 due to [reason]. |
| **2** | **AFTER:*** HRUC has been approved for 18:00;

**THEN:*** Cancel the Watch by making hotline call to QSEs
* Cancel ERCOT Website posting
* Notify Transmission Operator to make hotline call to TOs.

**Q#96 - Typical Hotline Script to Cancel Watch for DRUC not complete by 18:00** |
| **3** | **IF:*** DRUC is aborted or shut down;

**THEN:**1. Go to display **System Administration > Savecase Management**.
2. Choose **File Type** as DRUC.
3. Fill in **File Name** (no spaces allowed)
4. Fill in **Description**.
5. Push **Create** Button.
6. The message will show up in the **Text** field.
7. Refresh the display (F5), make sure the savecase name will show up in the **File Name** Field.

Also refer to Desktop Guide Common to Multiple Desks Section 2.16, if needed. |
| **Note** | After 1800, HRUC will run for the rest of the current day and the next day even if DRUC has not run successfully. |

## 4.5 A/S Insufficiency in DAM

**Procedure Purpose:** When there is an insufficiency in A/S offers in DAM.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **4.5.2** | **5.1(11)** | **6.5.9.3.3(2)(b)** | **6.5.9.3.3(5)** |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

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| --- | --- | --- |
| **Version: 1**  | **Revision: 9** | **Effective Date: December 1, 2021** |

| **Step** | **Action** |
| --- | --- |
| **A/S Insufficiency****Offers** | **ERCOT shall determine if there is an insufficiency in A/S Offers before executing the DAM.****IF:*** Notified by the DAM Operator of an insufficiency in A/S offers in DAM;

**THEN:*** Determine which A/S offers are insufficient
* Issue a Watch by making a Hotline to QSEs
* DAM Operator will post message on the ERCOT Website
* Notify Transmission Operator to make Hotline call to TOs

**Q#97 - Typical Hotline Script for Watch for Insufficient A/S Offers in DAM, requesting Additional Offers** |
| **Note** | Market Operations will not begin executing the second DAM sooner than 30 minutes after issuing a Watch. |
| **DAM****Complete with A/S** | **WHEN:*** The second DAM is complete, AND
* Was successful in procuring all required A/S;

**THEN:*** Cancel the Watch by making a Hotline call
* Cancel the ERCOT Website posting (if not already done by Market Operations)
* Notify Transmission Operator to make Hotline call to TOs

**Q#98 - Typical Hotline Script to Cancel Watch, DAM completed with A/S** |
| **A/S****Still****Insufficient** | **IF:*** Notified by Market Operations that A/S offers in DAM are still insufficient, and
* It is determined to be a potential Reliability concern;

**THEN:*** Procure the difference in capacity between the Day-Ahead Ancillary Service Plan and the DAM-reduced Ancillary Service Plan amounts using the Supplemental Ancillary Service Market (SASM) process.

**IF:*** The SASM process is not sufficient;

**THEN:*** The HRUC process shall be conducted to commit planned Off-Line Resources qualified to provide the Ancillary Service(s) that are insufficient
 |
| **Cancel****Watch** | **WHEN:*** DRUC is complete, AND
* The needed A/S has been procured;

**THEN:*** Cancel the Watch by making a Hotline call to QSEs
* Cancel the ERCOT Website posting (if not already done by Market Operations)
* Notify Transmission Operator to make Hotline call to TOs

**Q#99 - Typical Hotline Script to Cancel Watch for Insufficient A/S**  |

## 4.6 DAM Failure

**Procedure Purpose:** When DAM has failed.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **4.1.2(2)** | **4.5.2(2)** | **5.1(11)** | **5.2.2.2** |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 12** | **Effective Date: December 31, 2020**  |

| **Step** | **Action** |
| --- | --- |
| **DAM Failure** | **IF:*** Notified by Market Operations that DAM has been aborted and A/S will need to be procured through SASM;

**THEN:*** Notify Shift Supervisor and Resource Desk
* Issue a Watch by making a Hotline call to QSEs
	+ Must allow one hour between issuance of the Watch and the start of the SASM
* Market Operations will post message on the ERCOT Website
* Notify Transmission Operator to make Hotline call to TOs

**Q#100 - Typical Hotline Script for Watch for DAM Failure** |
| **SASM not able to Procure all A/S Requested** | **IF:*** Notified by the Resource Operator that SASM did not procure adequate A/S;

**THEN:*** Procure Resources through HRUC that are qualified to provide A/S, See Desktop Guide RUC Section 2.18.
 |
| **Cancel****Watch** | **WHEN:*** Notified by the Resource Operator that SASM procured adequate A/S, OR
* Resources were committed in HRUC;

**THEN:*** Cancel the Watch by making Hotline call to QSEs
* Cancel ERCOT Website posting
* Notify Transmission Operator to make Hotline call to TOs

**Q#101 - Typical Hotline Script to Cancel Watch for DAM Failure** |

# 5. Weekly RUC

## 5.1 Tasks prior to Execution of WRUC

**Procedure Purpose:** A look-ahead planning tool that is used to help manage Generation Resources having start up times longer than the DRUC or HRUC study periods as well as project the transmission congestion for the next 168 hours.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **5.1** |  |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

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| --- | --- | --- |
| **Version: 1**  | **Revision: 3** | **Effective Date: March 3, 2022** |

| **Step** | **Action** |
| --- | --- |
| By 02:00 each day or executing the WRUC process |
| **Note** | The load forecast only goes out 168 hours. The study period for WRUC will be for that time period. |
| **Load Forecast** | Review the Load Forecast in the EMS**IF:*** Adjustments need to be made in the EMS;

**THEN:*** Adjust using the following:

**Reference Displays:*** Load Forecast
* Similar Day Function
* Load Forecast Scaling functions
	+ Perform load scaling or
	+ Perform peak scaling or
	+ Perform factor scaling
	+ Manually override forecast value(s)
* Notify the Shift Supervisor if an invalid Load Forecast exists for the study period of WRUC.
 |
| **Outage****Notes/Off-Line Studies** | **IF:*** Resources are needed for identified Voltage issues;

**THEN:*** Identify the appropriate resources that can be utilized if needed.
 |
| **Review** | **REVIEW REFERENCE DISPLAY:**Market Operation>EMS Interface>EMSI Workflow>Parameters**IF:*** Ensure the “Retrieve WRUC Data” is set to “YES” in EMSI
* The EMSI Workflow Controller (Time Stamped – runs every 5 minutes) function (data transfer between EMS and MMS) and Load Forecast are **NOT** running (should be continuous);

**THEN:*** Notify EMMS Production Support, Operations Support Engineer, and Shift Supervisor.
 |
| **Note** | By default, Resources without an entry in COP are considered to have a Resource Status of OUT and are unavailable in RUC Procedure. |
| **Verify** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>WRUC Displays>UC Displays>WRUC UC Execution Control ParametersMarket Operation>Reliability Unit Commitment>WRUC Displays>NSM Displays>NSM Execution Control ParametersMarket Operation>Reliability Unit Commitment>WRUC Displays>DSI Displays>DSI Execution Control Parameters * + “Retrieve MF Interface Data” flag set to “Yes”.
	+ “Retrieve MI Interface Data” flag set to “Yes”.
	+ “Retrieve EMS Interface Data” flag set to “Yes”.
	+ “Check Market Status set to “Yes”,
	+ “Use Save case set to “No”,

Verify the following WRUC settings are correct.* EMSI has completed successfully within the last hour,
* The RUC study time interval is set properly,
* The “Execution Mode” is set to “constrained”,
* The proper number of days is set for WRUC to evaluate
* The current data management mode is “ONLINE”,
	+ “Retrieve MF Interface Data” flag set to “Yes”.
	+ “Retrieve MI Interface Data” flag set to “Yes”.
	+ “Retrieve EMS Interface Data” flag set to “Yes”.
 |
| After 01:02 and by 02:30 each day |
| **Note** | The DSI sequence should never be started or still be running when a SCED sequence is running. |
|  | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>WRUC Displays>Workflow>WRUC Workflow Messages**EXECUTE:*** The DSI sequence

**VERIFY:*** For error or warning messages and take necessary action if needed to correct the errors,
* The input data is properly transferred.

**If NOT:** Contact EMMS production support personnel immediately to determine the cause and expected time of resolution. |
|  | **REVIEW REFERENCE DISPLAY:**Market Operation>Reliability Unit Commitment>WRUC Displays>DSI Displays>DSI Execution Control Parameters**IF:** * Manual changes have been made to the WRUC input data;

**CHANGE:*** The appropriate flags to “No”, to prevent the data from being over-written.
	+ “Retrieve MF Interface Data”,
	+ “Retrieve MI Interface Data” and
	+ “Retrieve EMS Interface Data”
 |
| **Execute** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>WRUC Displays>Workflow>WRUC WorkflowMarket Operation>Reliability Unit Commitment>WRUC Displays>Workflow>WRUC Workflow MessagesExecute the entire WRUC sequence (Run All). |

## 5.2 Review WRUC Results

**Procedure Purpose:** To identify commitments with a long lead time and develop a list of violated/binding constraints that have a high probability of being binding in SCED or DAM.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **5.1**  |  |  |  |
|  |  |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

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| --- | --- | --- |
| **Version: 1**  | **Revision: 13** | **Effective Date: July 31, 2020** |

| **Step** | **Action** |
| --- | --- |
| **Note** | * WRUC does not send commitments or electronic Dispatch Instructions to QSEs.
* WRUC does not retrieve any QSE-submitted Three-Part Supply Offers.
* WRUC relies exclusively on the QSE-submitted COPs.
 |
| **Monitor** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>WRUC Displays>Workflow>WRUC WorkflowMarket Operation>Reliability Unit Commitment>WRUC Displays>Workflow>WRUC Workflow Messages |
| **Violated Constraints** | **REVIEW REFERENCE DISPLAYS:**Market Operation>Reliability Unit Commitment>WRUC Displays>DSP Displays> DSP Binding Constraint SummaryMarket Operation>Reliability Unit Commitment>WRUC Displays>DSP Displays> DSP Constraint Summary**REVIEW:*** Violated constraints;

**IF:*** WRUC identifies a Resource with a lead-time greater than the DRUC timeline and it is confirmed in the Outage Notes or a gap study;

**THEN:*** Instruct the QSE that their Resource needs to be On-line by [date] at [time] and they have the option of:
* Self-committing the Resource by updating the COP before the DRUC process execution, or
* ERCOT will commit the Resource in the DRUC process.
 |
| **Electronic Dispatch Instruction** | **When instructing a QSE their resource needs to be On-line by [date] at [time]:*** Commit Resources by issuing electronic Dispatch Instructions for the following:
	+ Choose the proper QSE from the Participant name
	+ Choose COMMIT as the Instruction Type from the RES Level,
	+ Enter reason RUC commit for (capacity, or contingency name) in “other information”

When issuing a VDI or confirmation, ensure the use of three-part communication:* + Issue the Operating Instruction
	+ Receive a correct repeat back
	+ Give an acknowledgement
 |
| **Disapprove** | **IF:*** WRUC completes the 7 days successfully, **disapprove** the study

**IF:*** WRUC fails to complete the 7 days, rerun with 5 days. When it completes successfully, **disapprove** the study.
* If fails to complete the 7 days, send e-mail to “Shiftsupv” to make notification that WRUC was unable to complete the 7 days. Provide error message in e-mail.
* If fails to complete the 5 days, send e-mail to “Shiftsupv” to make notification that WRUC was unable to complete the 5 days. Provide error message in e-mail.
 |
| **Do Not Approve** | **IF:*** Study is accidentally **Approved**

**THEN:*** Notify EMMS Production Support On-Call immediately;
* Send an e-mail to “Shiftsupv” to make notification that WRUC was **approved.**
 |
| **Create****Save****Case** | **IF:*** WRUC is aborted or shut down;

**THEN:**1. Go to display **System Administration > Savecase Management**.
2. Choose **File Type** as WRUC.
3. Fill in **File Name** (no spaces allowed)
4. Fill in **Description**.
5. Push **Create** Button.
6. The message will show up in the **Text** field.
7. Refresh the display (F5), make sure the savecase name will show up in the **File Name** Field.
8. Notify Helpdesk and send e-mail to “shiftsupv” for back office to follow up.

Also refer to Desktop Guide Common to Multiple Desks Section 2.16, if needed. |
| **Log** | Log actions taken. |

# 6. Emergency Operations

## 6.1 Market Notifications

**Procedure Purpose:** Guidelines for issuing Emergency Conditions and the four possible levels: Operating Condition Notices (OCN), Advisories, Watches, and Emergency Notices.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **6.3.3** | **6.5.9.3** | **6.5.9.3.1** | **6.5.9.3.2** |
| **6.5.9.3.3** | **6.5.9.3.4** |  |  |
| **Guide Reference** | **4.2.1** | **4.2.2** | **4.2.3** | **4.2.4** |
| **NERC Standard** |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 23** | **Effective Date: December 31, 2021** |

| **Step** | **Action** |
| --- | --- |
| **Note** | * ERCOT is in an Emergency Condition whenever ERCOT Transmission Grid status is such that a violation of security criteria presents the threat of uncontrolled separation or cascading Outages and/or large-scale service disruption to Load (other than Load being served from a radial transmission line) and/or overload of a Transmission Element, and no timely solution is obtainable through SCED or CMPs.
* Consider the severity of the potential Emergency Condition prior to the issuance of a notification. The severity of the Emergency Condition could be limited to an isolated local area, or the condition might cover large areas affecting several entities, or the condition might be an ERCOT-wide condition potentially affecting the entire ERCOT System.
* The sequence of notifications issued may vary due to changing system conditions or other operational issues and it may be necessary to skip certain notifications due to the severity of the situation.
 |
| Operating Condition Notice (OCN) |
| **Note** | OCN’s are used to inform Market Participants of a possible future need for more Resources due to conditions that could affect ERCOT System reliability. OCNs are for informational purposes only and may solicit additional information to determine whether the issuance of an Advisory, Watch, or Emergency Notice is warranted. OCNs serve as a reminder to QSEs and TSPs that some attention to the changing conditions may be warranted. |
| **1** | As instructed by the Shift Supervisor or when appropriate, issue an OCN. The OCN can be issued for any of the following reasons:* Insufficient Resources to meet forecasted conditions
* There is a projected reserve capacity shortage in DRUC that could affect reliability and may require more Resources
* When extreme cold weather is developing and forecasted to impact the ERCOT Region
* When extreme hot weather is forecasted to impact the ERCOT Region
* When a Hurricane or Tropical Storm is developing and forecasted to impact the ERCOT Region
* Unplanned transmission Outages that may impact reliability

When anticipated adverse weather conditions are forecasted, ERCOT may confer with TOs and QSEs regarding the potential for adverse reliability impacts and contingency preparedness |
| Advance Action Notice (AAN) |
| **Note** | Outage Adjustment Evaluation (OAE)Outage Schedule Adjustment (OSA)An AAN is a type of OCN, ERCOT may issue an AAN in anticipation of a possible Emergency Condition. An AAN will identify actions ERCOT expects to take to address the condition unless the need for ERCOT action is alleviated by QSE and/or TSP actions or by other system developments. |
| **1** | As instructed by the Shift Supervisor and in coordination with Outage Coordination and Operations Support, issue an AAN. The AAN can be issued for any of the following reasons:* Insufficient Resources to meet forecasted conditions
* There is a projected reserve capacity shortage in DRUC that could affect reliability and may require more Resources
* When extreme cold weather is developing and forecasted to impact the ERCOT Region
* When extreme hot weather is forecasted to impact the ERCOT Region
* When a Hurricane or Tropical Storm is developing and forecasted to impact the ERCOT Region
* Unplanned transmission Outages that may impact reliability

When anticipated adverse weather conditions are forecasted, ERCOT may confer with TOs and QSEs regarding the potential for adverse reliability impacts and contingency preparedness |
| ADVISORY |
| **1** | As instructed by the Shift Supervisor or when appropriate, issue an Advisory. The Advisory can be issued for any of the following reasons:* When the probability of an approaching Hurricane or Tropical Storm impacting the ERCOT Region increases, and concerns exist to escalate awareness
* When the probability of extreme cold weather impacting the ERCOT Region increases, and concerns exist to escalate awareness
* When the probability of extreme hot weather impacting the ERCOT Region increases, and concerns exist to escalate awareness
* When conditions are developing or have changed and more Ancillary Services will be needed to maintain current or near-term reliability
* ERCOT exercises its authority to increase Ancillary Service requirements above the quantities originally specified in the Day-Ahead Market (DAM) in accordance with ERCOT Procedures
* When extreme weather or ERCOT System conditions require more lead-time than the normal Day-Ahead Market (DAM) allows
* Transmission system conditions are such that operations within security criteria are not likely or possible because of Forced Outages or other conditions unless a CMP exists
* Loss of communications or control condition is anticipated or significantly limited
* ERCOT may require information from QSEs representing Resources regarding the Resources’ fuel capabilities. Requests for this type of information shall be for a time period of no more than seven days from the date of the request
 |
| WATCH |
| **1** | As instructed by the Shift Supervisor or when appropriate, issue a Watch. The Watch can be issued for any of the following reasons:* A reserve capacity shortage is projected with no market solution available that could affect reliability
* When an approaching Hurricane or Tropical Storm is imminent and anticipated to have an adverse impact on the ERCOT Region
* When impacts from extreme cold weather is imminent and anticipated to have an adverse impact on the ERCOT Region
* When impacts from extreme hot weather is imminent and anticipated to have an adverse impact on the ERCOT Region
* Conditions have developed such that additional Ancillary Services are needed in the Operating Period
* Insufficient Ancillary Services or Energy Offers in the DAM
* Market-based congestion management techniques embedded in SCED will not be adequate to resolve transmission security violations
* Forced Outages or other abnormal operating conditions have occurred, or may occur that require ERCOT to operate with active transmission violations of security criteria as defined in the Operating Guides unless a CMP exists
* The SCED process fails to reach a solution, whether or not ERCOT is using one the measures in Failure of the SCED Process.
* The need to immediately procure Ancillary Services from existing offers
* ERCOT may instruct TOs to reconfigure transmission elements as necessary to improve the reliability of the system
 |
| EMERGENCY NOTICE |
| **1** | As instructed by the Shift Supervisor or when appropriate, issue an Emergency Notice. The Emergency Notice can be issued for any of the following reasons:* Loss of Primary Control Center functionality
* Load Resource deployment for North-Houston voltage stability
* ERCOT cannot maintain minimum reliability standards (for reasons including fuel shortages) during the Operating Period using every Resource practically obtainable from the market
* Immediate action cannot be taken to avoid or relive a Transmission Element operating above its Emergency Rating
* ERCOT forecasts an inability to meet applicable reliability standards and it has exercised all other reasonable options
* A transmission condition has been identified that requires emergency energy from any of the DC-Ties or curtailment of schedules
* The Transmission Grid is such that a violation of security criteria as defined in the Operating Guides presents the threat of uncontrolled separation or cascading outages, large-scale service disruption to Load (other than Load being served from a radial transmission line) and/or overload of Transmission Elements and no timely solution is obtainable through SCED or CMP
* When extreme cold weather is beginning to have an adverse impact on the ERCOT System
* When extreme hot weather is beginning to have an adverse impact on the ERCOT System
* When a Hurricane or Tropical Storm is beginning to have an adverse impact on the System
 |
| Operating Condition Script |
| **Hotline** | Notify QSEs of Notice**#46 - Typical Hotline Script for Operating Condition [OCN/Advisory/Watch/Emergency]** |
| **Post** | * All notices must be posted on the ERCOT Website.
* For “free form” messages, the “Notice Priority” will be specified as follows:
	+ Operational Information/OCN type messages – low priority
	+ Advisory/Watch type messages – medium priority
	+ Emergency type messages – high priority
 |
| **Hotline Cancellation** | **#47 - Typical Hotline Script to Cancel Operating Condition [OCN/Advisory/Watch/Emergency]** |
| **Log** | Log all actions. |

## 6.2 EEA

**Procedure Purpose:** To ensure all available generation Resources are committed within the timeframe of the emergency.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **3.9.1**  | **6.5.9.4** | **6.5.9.4.2** |  |
| **Guide Reference** | **4.5.3.1** |  |  |  |
| **NERC Standard** | **EOP-011-2****R2, R2.1, R2.2, R2.2.3, R2.2.3.1** |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 11** | **Effective Date: June 9, 2023** |
|  |  |  |
| **Step** | **Action** |
| **SWGRs using EMRSWGR Status** | **REFERENCE DISPLAY:**Market Participation > Physical Market > Market Operator Data > SWGR Capacity Status SummarySwitchable Generation Resource (SWGRs) is a Generation Resource that can be connected to either the ERCOT Transmission Grid or a non-ERCOT Control Area. Use the Switchable Generation Resources (SWGRs) User Guide **(See Desktop Guide Reliability Unit Commitment Desk Section 2.21)** for a list of resources.EMRSWGR: Available for RUC commitment only for ERCOT-declared Emergency Condition or ERCOT foresees entering an emergency event. **IF:*** A SWGR is in EMRSWGR status;

**VERIFY:*** QSE appropriately set temporal limits,
* QSE appropriately set LSL and HSL to reflect operating limits,
* The SWGR can be brought On-Line within the timeframe of the emergency;

**THEN:*** Notify Shift Supervisor for coordination and possible transfer of non-ERCOT Control Area generation.
 |

|  **ERCOT Request Switch of SWGR** | **IF:*** The non-ERCOT Control Area RC releases the SWGR;

**THEN:*** Follow the VDI EMR process below.

**NOTIFY:*** The QSE of ERCOT committing the resource into ERCOT,
* To avoid direct connection between the ERCOT interconnection and Eastern interconnection instruct a “break before make” with all switching.

**Q#122 Typical Script ERCOT requests SWGR:** |
| --- | --- |
| **ERCOT is the Controlling Party** | **IF:*** MISO or SPP call to request one or more SWGR be switched into them;

**THEN:*** As soon as practicable, determine that releasing the SWGRs does not cause an Adverse Reliability Impact for ERCOT.

**NOTIFY:*** The QSE of ERCOT releasing the resource into MISO or SPP,
* To avoid direct connection between the ERCOT interconnection and Eastern interconnection instruct a “break before make” with all switching.

**Q#123 Typical Script SPP or MISO requests SWGR:** |
| **Primary Party Switch request / Recall** | **IF:*** MISO or SPP calls to request the Switch of one or more SWGR’s in which they are identified as the Primary Party.
* Or when the Primary Party makes notification of an existing or anticipated Emergency Condition and Recalls the SWGR’s:

**THEN:*** The Secondary System Operator will release the SWGR as soon as possible, even if doing so would require controlled load shed.
* See list of Primary Party and Secondary Parties in Exhibit B of the Coordination\_Plans

**NOTIFY:*** The QSE of ERCOT releasing the resource into MISO or SPP,
* To avoid direct connection between the ERCOT interconnection and Eastern interconnection instruct a “break before make” with all switching.

**Q#124 Typical Script Notification to QSE of Release:** |
| **SWGR Requested by ERCOT released back to SPP or MISO** | **WHEN:*** ERCOT is no longer in an existing or anticipated Emergency Condition.
* As soon as practicable, determine that releasing the SWGRs does not cause an Adverse Reliability Impact for ERCOT.

**NOTIFY:*** The QSE of ERCOT releasing the resource into MISO or SPP,
* To avoid direct connection between the ERCOT interconnection and Eastern interconnection instruct a “break before make” with all switching.

**Q#125 Typical Script SWGR Requested by ERCOT released back to SPP or MISO:** |
| **VDI** | **IF:*** A Generation Resource (without ECRS, Non-Spin obligation) which has a unit status of OFF, EMR or EMRSWGR and can be brought On-line within the timeframe of the emergency;

**THEN:*** Issue an electronic Dispatch Instruction to commit the Resource
* Choose “Commit” as the Instruction Type from Resource level
* Choose “System Capacity” as the Reason
* VDIs need a start/stop time (issue one hour at a time)
* Enter “RUC commit for capacity” in “other information”

When issuing a VDI or confirmation, ensure the use of three-part communication:* Issue the Operating Instruction
* Receive a correct repeat back
* Give an acknowledgement
 |
| **VDI Combined Cycle**  | **IF:*** A Combined Cycle Generation Resource (without Non-Spin obligation) which has a unit status of OFF, EMR or EMRSWGR and can be brought On-line within the timeframe of the emergency;

**THEN:*** Issue an electronic Dispatch Instruction to commit the Resource
	+ From RUCAC VDI tab
	+ Choose QSE in the “QSE Name” dropdown list
	+ VDIs need a start/stop time (issue one hour at a time)
	+ Choose the Combined Cycle Train in the “CCT Name” dropdown list
	+ Choose the original QSE-committed Combined Cycle Generation Resource in “QSE CCGR” dropdown list
	+ Choose the new configuration to be committed in “RUC CCGR” dropdown list
	+ Once the CCGRs have been selected and commitment block is entered, the HSL and Status fields should automatically be populated
	+ Choose “COMMIT” as the “Instruction Type”
	+ Choose “System Capacity” from dropdown list as the “Reason”
	+ Enter “RUC commit for additional capacity” in “other information

When issuing a VDI or confirmation, ensure the use of three-part communication:* Issue the Operating Instruction
* Receive a correct repeat back
* Give an acknowledgement
 |
| **1** | **IF:*** A Generation Resource was scheduled to come Off-line before the start of the emergency and requests to come Off-line;

**THEN:*** Issue an electronic Dispatch Instruction to commit the Resource
* Choose “Commit” as the Instruction Type from Resource level
* VDIs need a start/stop time (issue one hour at a time)
* Enter “RUC commit for capacity” in “other information”

When issuing a VDI or confirmation, ensure the use of three-part communication:* Issue the Operating Instruction
* Receive a correct repeat back
* Give an acknowledgement
 |
| **Log** | Log all actions. |

## 6.3 Restoration of Primary Control Center Functionality

**Procedure Purpose:** To be performed once RUC Operator has arrived at ACC.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** |  |  |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

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| --- | --- | --- |
| **Version: 1**  | **Revision: 3** | **Effective Date: March 31, 2017** |

| **Step** | **Action** |
| --- | --- |
| **Note** | Before normal operation can be restored, be sure to communicate with the other desks to determine the current state of the grid and any communications that may have taken place with TOs and/or QSEs. |
| **Prior to Resuming****Day-Ahead****Market** | Upon arrival to the ACC:* Check with Day-Ahead Market Operator to check on the status of their activities, if appropriate,
* Notify Real-time Operator
* Resume with RUC activities.
 |
| **Log** | Log all actions. |

# 7. Communication Testing

## 7.1 Monthly Testing of Satellite Phone Conference Bridge

**Procedure Purpose:** To ensure ERCOT maintains communication capability via the Satellite Phone System.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** |  |  |  |  |
| **Guide Reference**  |  |  |  |  |
| **NERC Standard** |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 7** | **Effective Date: February 28, 2020** |

| **Step** | **Action** |
| --- | --- |
| Primary Control Center |
| **Note** | When a participant dials into the conference bridge before the moderator dials in, they will hear music and be placed on hold. |
| **Note** | On the first weekend of each month, between the hours of 0000 Saturday and 0500 Monday, the **Satellite Phone System Conference Bridge** will be tested with the TOs. As the Shift Supervisor makes the call to the individual TO, they will set a time that the ERCOT Operator will call the **Satellite Phone System Conference Bridge** and establish communication with the appropriate TO. |
| **Note** | Use the ERCOT Satellite Phone User Guide **(See Desktop Guide Common to Multiple Desks Section 2.7)** for a list of the TOs that will be contacted by the ERCOT Operator and instructions on how to place a Satellite Phone System Conference Bridge call. |
| **Note** | The numbers for the ERCOT Operator to call into the Conference Bridge are Desk specific.**Select:** SATELLITE directory or go to page 41 to view the programmed numbers on the Turret phone for each Bridge:* BLACKSTRT RUC – RUC Desk
* BLACKSTRT RRD - Reliability Risk Desk
* BLACKSTRT RES – Resource Desk
* BLACKSTRT REAL – Real-Time Desk
* BLACKSTRT TS#1 – Transmission Desk (Island Coordination)
* BLACKSTRT TS#2 – Transmission Desk
 |
| **1** | **IF:*** Open a helpdesk ticket and cc “shiftsupv”
* The preprogrammed number does not function correctly,

**THEN:*** Refer to the ERCOT Satellite Phone User Guide **(See Desktop Guide Common to Multiple Desks Section 2.7.2)** for the appropriate conference number and continue with this procedure.
 |
| **2** | **When prompted:*** Enter the Moderator Pass Code
* If necessary, allow five minutes for Participants to dial in
* As each Participant connects, record the following:
	+ Name of Participant
	+ Company Name
	+ Any problems identified with the connection process
 |
| **3** | **IF:*** One or more of the TOs fails to connect to the Bridge call;

**THEN:*** Follow up with the TO to determine the cause:
	+ Reason for inability to connect
	+ Establish a time for a retest of the TOs not able to connect in the initial test.
 |
| **4** | Inform the Shift Supervisor when test is complete indicating any issues identified. |
| **Log** | Log the test date and results in the Operations Log. |

# 8. Perform Miscellaneous

## 8.1 Responding to QSE Issues

**Procedure Purpose:** Responding to Market Participant issues regarding website questions, SCED deployments, LMPs, etc.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Protocol Reference** | **6.5.7.1.13(4)** |  |  |  |
| **Guide Reference** |  |  |  |  |
| **NERC Standard** |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Version: 1**  | **Revision: 3** | **Effective Date: December 31, 2020** |

| **Step** | **Action** |
| --- | --- |
| QSE Issues |
| **1** | If a QSE is not satisfied with ERCOT Operations responses to their issues, refer them to their Wholesale Client Representative for clarification/resolution. |
| **2** | If the System Operator believes the issue is with ERCOT systems applications (ICCP down, etc.), notify the ERCOT Help Desk. |
| **3** | If the QSE is having an issue with ERCOT system applications (unable to access the portal, outage scheduler, etc.), instruct them to call the ERCOT Help Desk. |
| **4** | As time permits, log and notify the Shift Supervisor of any actions taken and unresolved issues. |
| Missing Data from ERCOT Website Postings |
| **1** | **IF:*** A call is received about data missing or data being incorrect,

**THEN:*** Transfer call to the Help Desk, and
* Notify the Operations Support Engineer.
 |
| **Log** | Log the information. |

**Document Control**

Preparation

| **Prepared by** | **Role** | **Date Completed** |
| --- | --- | --- |
| Frosch, Hartmann, Barcalow, Lowrie, and Stone | Preparers | November 10, 2010 |
| Frosch and Hartmann | Procedure writers and editors | November 29, 2010 |
| Frosch and Hartmann | Procedure writers and editors | December 13, 2010 |
| Frosch and Hartmann | Procedure writers and editors | January 26, 2011 |
| Frosch and Hartmann | Procedure writers and editors | March 23, 2011 |
| Frosch and Hartmann | Procedure writers and editors | April 20, 2011 |
| Frosch and Hartmann | Procedure writers and editors | June 6, 2011 |
| Frosch and Hartmann | Procedure writers and editors | July 18, 2011 |
| Frosch and Hartmann | Procedure writers and editors | August 22, 2011 |
| Frosch and Hartmann | Procedure writers and editors | August 30, 2011 |
| Frosch and Hartmann | Procedure writers and editors | October 28, 2011 |
| Frosch and Hartmann | Procedure writers and editors | December 13, 2011 |
| Frosch and Hartmann | Procedure writers and editors | January 16, 2012 |
| Frosch and Hartmann | Procedure writers and editors | February 27, 2012 |
| Frosch and Hartmann | Procedure writers and editors | April 25, 2012 |
| Frosch and Hartmann | Procedure writers and editors | July 10, 2012 |
| Frosch and Hartmann | Procedure writers and editors | October 26, 2012 |
| Frosch and Hartmann | Procedure writers and editors | February 26, 2013 |
| Frosch and Hartmann | Procedure writers and editors | May 28, 2013 |
| Frosch and Hartmann | Procedure writers and editors | July 8, 2013 |
| Cheng, Frosch, and Hartmann | Procedure writers and editors | August 7, 2013 |
| Frosch and Hartmann | Procedure writers and editors | December 11, 2013 |
| Frosch and Hartmann | Procedure writers and editors | December 20, 2013 |
| Frosch, Gaddy, and Hartmann | Procedure writers and editors | April 1, 2014 |
| Frosch, Gaddy, and Hartmann | Procedure writers and editors | May 27, 2014 |
| Frosch and Hartmann | Procedure writers and editors | September 29, 2014 |
| Frosch and Hartmann | Procedure writers and editors | December 10, 2014 |
| Frosch and Hartmann | Procedure writers and editors | February 25, 2015 |
| Frosch and Hartmann | Procedure writers and editors | April 29, 2015 |
| Hartmann and Gaddy | Procedure writers and editors | July 13, 2015 |
| Hartmann and Gaddy | Procedure writers and editors | September 25, 2015 |
| Hartmann and Gaddy | Procedure writers and editors | December 22, 2015 |
| Frosch, Hartmann, and Gaddy | Procedure writers and editors | January 22, 2016 |
| Hartmann and Gaddy | Procedure writers and editors | February 23, 2016 |
| Frosch, Hartmann, and Gaddy | Procedure writers and editors | June 24, 2016 |
| Hartmann and Gaddy | Procedure writers and editors | September 26, 2016 |
| Hartmann and Gaddy | Procedure writers and editors | October 31, 2016 |
| Hartmann and Gaddy | Procedure writers and editors | December 23, 2016 |
| Hartmann, Gaddy, and Frosch | Procedure writers and editors | March 27, 2017 |
| Hartmann, Gaddy, and Ballew | Procedure writers and editors | May 26, 2017 |
| Hartmann, Gaddy, and Ballew | Procedure writers and editors | June 23, 2017 |
| Hartmann, Gaddy, and Ballew | Procedure writers and editors | September 27, 2017 |
| Hartmann, Gaddy, and Ballew | Procedure writers and editors | December 22, 2017 |
| Hartmann, Gaddy, and Ballew | Procedure writers and editors | February 22, 2018 |
| Hartmann, Gaddy, and Ballew | Procedure writers and editors | March 26, 2018 |
| Hartmann, Gaddy, Ballew, and Frosch | Procedure writers and editors | April 27, 2018 |
| Hartmann, Gaddy, and Ballew | Procedure writers and editors | May 25, 2018 |
| Hartmann, Gaddy, and Ballew | Procedure writers and editors | August 24, 2018 |
| Hartmann, Gaddy, Ballew, and Frosch | Procedure writers and editors | December 21, 2018 |
| Hartmann, Gaddy, Luker, and Frosch | Procedure writers and editors | March 26, 2019 |
| Hartmann, Gaddy, and Pence | Procedure writers and editors | May 13, 2019 |
| Hartmann, Gaddy, and Pence | Procedure writers and editors | May 28, 2019 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | October 29, 2019 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | December 20, 2019 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | January 27, 2020 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | February 24, 2020 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | May 26, 2020 |
| Hartmann, Gaddy, Cyphers, and Frosch | Procedure writers and editors | June 25, 2020 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | July 28, 2020 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | October 26, 2020 |
| Hartmann, Gaddy, Cyphers, and Sheets | Procedure writers and editors | December 23, 2020 |
| Hartmann, Gaddy, Cyphers, and Sheets | Procedure writers and editors | June 11, 2021 |
| Hartmann, Gaddy, Cyphers, and Sheets | Procedure writers and editors | July 8, 2021 |
| Hartmann, Gaddy, Cyphers, and Sheets | Procedure writers and editors | July 28, 2021 |
| Hartmann, Gaddy, Cyphers, and Sheets | Procedure writers and editors | August 27, 2021 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | November 29, 2021 |
| Hartmann, Gaddy, Cyphers, and Frosch | Procedure writers and editors | December 17, 2021 |
| Hartmann, Gaddy, Cyphers, and Frosch | Procedure writers and editors | February 24, 2022 |
| Hartmann, Gaddy, Cyphers, and Frosch | Procedure writers and editors | March 31, 2022 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | June 27, 2022 |
| Hartmann, Gaddy, Cyphers, and Frosch | Procedure writers and editors | July 25, 2022 |
| Hartmann, Gaddy, and Cyphers | Procedure writers and editors | October 26, 2022 |
| Hartmann, Gaddy, Cyphers and Frosch | Procedure writers and editors | December 22, 2022 |
| Hartmann, Gaddy, Cyphers and Frosch | Procedure writers and editors | March 27, 2023 |
| Hartmann, Gaddy, Cyphers and Luker | Procedure writers and editors | June 5, 2023 |
| Hartmann, Gaddy, Cyphers and Luker | Procedure writers and editors | November 28, 2023 |
| Hartmann, Cyphers, and Luker | Procedure writers and editors | December 20, 2023 |

*Manual Change History*

|  |  |  |  |
| --- | --- | --- | --- |
| **Procedure** | **Ver/Rev** | **Reason for Issue** | **Effective Date** |
| All Sections | 1.0 / 0 | New procedures for all sections for Nodal implementation | November 28, 2010 |
| 2.32.43.23.34.3 | 1.0 / 11.0 / 11.0 / 11.0 / 11.0 / 1 | Added new procedure “Phase Shifter Tap Settings”Updated NoteUpdated step “Monitor”Updated steps “Commit/De-Commit”, “Violated Constraints” and “HRUC Committed” Updated step “Review”, “A/S Insufficiencyfrom DAM” and “DRUC Committed” | December 1, 2010 |
| 2.34.24.34.4 | 1.0 / 21.0 / 11.0 / 21.0 / 1 | Updated “Review Weather Data Information” step 2 Added steps “DRUC Committed for Capacity Shortage” and “Projected Reserve Capacity Shortage”Updated steps “DAM Timeline Deviation, DAM Failure, DRUC Delay & Software Failure” change to step 1 | December 15, 2010 |
| 3.24.34.14.46.1 | 1.0 / 21.0 / 31.0 / 21. / 2

1.0 / 1 | Updated step “HRUC Committed Units”, “Manual Commitment”, added steps “Excess Generation” and “Canceling RUC commitments”Updated step DRUC Committed Units”, “Manual Commitment, added steps “Excess Generation” and “Canceling RUC commitments”Updated step “DAM Timeline Deviation”, DAM Failure”, DRUC Delay”Updated scriptsUpdated script | January 31, 2011 |
| 3.23.33.54.34.46.1 | 1.0 / 31.0 / 21. / 0
2. /4
3. / 3

1.0 / 2  | Updated step Canceling RUC CommitmentsDeleted HRUC Timeline Deviation and updated HRUC Failure/Timeline DeviationAdded new sectionUpdated step Canceling RUC CommitmentsUpdated step DAM Timeline Deviation in DAM Timeline Deviation/Failure Timeline not Met in section DRUC Timeline Deviation/FailureUpdated Watch and Emergency Notice | March 25, 2011 |
| 2.53.23.34.36.16.2 | 1.0 / 11.0 / 41.0 / 31.0 / 51.0 / 31.0 / 1 | Updated Monthly MIS PostingUpdated step Canceling RUC CommitmentsUpdated step FailureUpdated step Canceling RUC CommitmentsUpdated step 1 in Watch and Emergency NoticeUpdated step & removed step Market Notification  | April 22, 2011 |
| 3.23.54.34.45.26.1 | 1.0 / 51.0 / 11.0 / 61.0 / 41.0 / 11.0 / 4 | Updated steps HRUC Committed Units and ApprovalUpdated all stepsUpdated step ApprovalUpdated step DAM Timeline DeviationUpdated step Long Lead TimesUpdated all steps | June 8, 2011 |
| 2.33.13.23.54.24.34.44.5 | 1.0 / 31.0 / 11.0 / 61.0 / 21.0 / 21.0 / 71.0 / 51.0 / 1 | Added steps for Publish A/S RequirementsUpdated Load Forecast stepUpdated steps Excess Generation, A/S Insufficiency from SASM, Violated Constraints and ApprovalCorrected title to match TOC and updated 1st noteUpdated Load Forecast stepUpdated Approval stepAdded subtitles, step DRUC Delay & step 1Moved section 2.6 to 4.5 | July 20, 2011 |
| 2.32.43.23.34.36.17.1 | 1.0 / 41. / 1

1.0 / 71.0 / 41.0 / 81.0 / 51.0 / 1 | Added Note to Increasing A/S Requirements before A/S Obligations PublishAdded information on RMR Resource Commitment Updated step Excess Generation, added RMR Resources, RMR Commitment and Canceling RUC CommitmentsUpdated step Commit/Decommit Resources by VDIUpdated step Canceling RUC CommitmentsAdded Projected Reserve Capacity Shortage to Watch Updated 4th note | August 24, 2011 |
| 3.24.24.36.17.1 | 1.0 / 81.0 / 31.0 / 91.0 / 61.0 / 2 | Added Note, updated step Hotline, Post and added step CancelDeleted step RMR, updated Manual Commitment, deleted NoteUpdated NoteAdded Extreme Hot Weather in WatchUpdated 3rd note and step 1 | September 1, 2011 |
| 2.32.43.13.24.34.44.54.64.5 Original | 1.0 / 51.0 / 21.0 / 21.0 / 91.0 / 101.0 / 61.0/ 01.0 / 01.0 / 2 | Deleted Phase Shifter Tap SettingsDeleted step ResourcesUpdated step Manual Commitment in Tasks prior to execution of HRUC Updated step RMR Resources and Canceling RUC CommitmentsUpdated step for Canceling RUC CommitmentsMoved A/S Insufficiency in DAM to section 4.5 & DAM Failure to section 4.6Moved A/S Insufficiency in DAM to section 4.5 & deleted Increase A/S Capacity needs about Day-Ahead RequirementsMoved from section 4.5Deleted procedure (was section 4.5), duplicate | November 1, 2011 |
| 2.36.1 | 1. / 6

1.0 / 7 | Removed Invalid SPS/RAP due to OutageUpdated Post in “Notifications”All procedures in this manual have been reviewed. | December 15, 2011 |
| 1.23.54.34.6 | 1.0 / 11.0 / 31.0 / 111.0 / 3 | Updated ScopeUpdated all stepsUpdated A/S Insufficiency from DAMUpdated desktop guide section  | January 19, 2012 |
| 2.12.32.53.13.23.33.74.24.34.44.54.65.26.17.1 | 1.0 / 11.0 / 71.0 / 21.0 / 31.0 / 101.0 / 51.0 / 01.0 / 41.0 / 121. / 7

1.0 / 31.0 / 41.0 / 21.0 / 81.0 / 3 | Updated 4th ParagraphUpdated Desktop Guide referenceUpdated Monthly MIS Posting Updated Desktop Guide referenceUpdated Desktop Guide references and step After Approval Added step Create Save CaseAdded new procedure Projected Capacity Reserve Shortage with no Market SolutionUpdated Desktop Guide references Updated Desktop Guide references and added step After ApprovalAdded step 2Updated Desktop Guide referenceUpdated Desktop Guide referenceAdded step Create Save CaseUpdated step 1 of WatchUpdated Desktop Guide references | March 1, 2012 |
| 1.12.13.13.23.34.24.35.15.26.18.1 | 1.0 / 11.0 / 21.0 / 41.0 / 111.0 / 61.0 / 51.0 / 131.0 / 11.0 / 31.0 / 91.0 / 1 | Changed Shift Engineer to Operations Support EngineerChanged TSP,DSP to TOChanged Shift Engineer to Operations Support EngineerChanged Shift Engineer to Operations Support EngineerChanged Shift Engineer to Operations Support EngineerChanged Shift Engineer to Operations Support Engineer and added WRUCChanged Shift Engineer to Operations Support Engineer and Manual CommitmentChanged Shift Engineer to Operations Support EngineerChanged Shift Engineer to Operations Support Engineer and updated step Long Lead Times for NPRR402Updated OCN, Advisory, Watch, Emergency Notice sectionsChanged Shift Engineer to Operations Support Engineer | May 1, 2012 |
| 1.11.32.33.13.23.34.24.34.45.26.17.1 | 1.0 / 21.0 / 11.0 / 81.0 / 51. / 12
2. / 7
3. / 6
4. / 14
5. / 8

1.0 / 41.0 / 101.0 / 4 | Updated last paragraph, HRUCRemoved ERCOT Shift Supervisor paragraph Updated step 3, added Fuel Switching and Optimize Fuel Supply & 2nd note Changed Shift Engineer to Operations Support EngineerUpdated HRUC Committed UnitsUpdated Create Save CaseUpdated Manual Commitment on 14:30 each dayUpdated DRUC Committed UnitsUpdated step 2 in Delay of DRUCUpdated Create Save CaseUpdated all step 1’sUpdated 4th note | July 16, 2012 |
| 2.23.24.3 | 1.0 / 11.0 / 131.0 / 15 | Added Hotline Call CommunicationUpdated Manual Commitment and ValidateUpdated Manual Commitment and Validate All procedures in this manual have been reviewed. | November 1, 2012 |
| 2.34.34.6 | 1.0 / 91.0 / 161.0 / 5 | Added Blackstart AvailabilityUpdated ReviewUpdated steps SASM not able to Procure all A/S Requested & Cancel Emergency Notice | March 1, 2013 |
| 3.13.23.33.53.74.34.44.54.65.26.1 | 1.0 / 61.0 / 141.0 / 81.0 / 41.0 / 11.0 / 171.0 / 91.0 / 41.0 / 61.0 / 51.0 / 11 | Updated step Deselect ContingenciesUpdated step Monitor, Excess Generation, Hotline, & CancelUpdated step Failure & Create Save CaseUpdated step REG/RRSUpdated all steps Updated 1st Note, A/S Insufficiency from DAM, Excess Generation &DRUC Committed from Capacity ShortageUpdated all stepsUpdated all stepsUpdated all stepsUpdated step Create Save CaseUpdated Notifications | June 1, 2013 |
| 3.54.34.44.66.1 | 1.0 / 51.0 / 181.0 / 101.0 / 71.0 / 12 | Correct typo in scriptCorrect typo’s in scriptsUpdated Delay of DRUC stepsCorrected reference in desktop guideUpdated step 1 in Watch & Emergency Notice | July 15, 2013 |
| 3.23.3 | 1.0 / 151.0 / 9 | Updated step HRUC Committed Units, Manual Commitment, HRUC Decommitted Resources & ApprovalUpdated step Create Save Case | August 9, 2013 |
| 3.24.35.15.2 | 1.0 / 161.0 / 191.0 / 21.0 / 6 | Updated steps Violated Constraints, HRUC Committed Units, RMR Commitment & Manual CommitmentUpdated steps Violated Constraints, DRUC Committed Units & Manual CommitmentUpdated titlesUpdated Violated Constraints, Disapprove & Log. Deleted Long Lead Times, All procedures in this manual have been reviewed. | December 13, 2013 |
| 3.34.44.66.1 | 1.0 / 101.0 / 111.0 / 81.0 / 13 | Updated for NPRR542Updated for NPRR542Updated for NPRR542Updated for NPRR542 and 529 | January 1, 2014 |
| 2.33.23.33.64.36.26.3 | 1.0 / 101.0 / 171. / 11

1.0 / 11.0 / 20 1.0 / 01.0 / 2 | Updated Review and Select Load Forecast Updated step System Summary, HRUC Committed Units & VDI informationUpdated VDI informationAdded Manual Commit of a Resource & Canceling RUC Commitments Updated VDI informationUpdated DRUC Committed Units & VDI informationAdded new EEA procedureChange section number from 6.2 to 6.3 | April 4, 2014 |
| 2.22.32.42.53.23.64.54.65.26.1 | 1.0 / 21.0 / 111.0 / 31.0 / 31.0 / 181.0 / 21.0 / 51.0 / 91.0 / 71.0 / 14  | Added VDIs to Master QSEsAdded Note to Increasing A/S before PublishingAdded NoteUpdated Monthly MIS Posting stepUpdated step A/S InfeasibilityUpdated step 1Updated step A/S Insufficiency OffersUpdated DAM FailureUpdated step DisapproveAdded Note, updated Advisory & Watch | June 1, 2014 |
| 3.26.1 | 1.0 / 191.0 / 15 | Updated Undeliverable A/S Capacity, added STNET Study and title change on VSAT and RUC perform AC AnalysisUpdated Generic Script | October 1, 2014 |
| 3.23.24.36.2 | 1.0 / 201.0 / 201.0 / 211.0 / 1 | Updated step STNET Study, HRUC Committed Units & Manual CommitmentUpdated STNET Study, HRUC Committed Units & Manual CommitmentUpdated step DRUC Committed Units & Manual CommitmentAdded step All procedures in this manual have been reviewed | December 15, 2014 |
| 2.22.33.23.33.64.34.46.2 | 1.0 / 31.0 / 121.0 / 211.0 / 121.0 / 31.0 / 221.0 / 121.0 / 2 | Added Dispatch & Verbal Dispatch InstructionDeleted Meterlogix number. Updated Priority OutagesCorrected VDI vs. Dispatch Instruction and Manual CommitmentCorrected VDI vs. Dispatch InstructionCorrected VDI vs. Dispatch InstructionUpdated step Manual Commitment & corrected VDI vs. Dispatch InstructionUpdated DAM Timeline DeviationCorrected VDI vs. Dispatch Instruction | March 1, 2015 |
| 3.23.33.53.63.74.34.44.54.66.1 | 1.0 / 221.0 / 131.0 / 61.0 / 41.0 / 21.0 / 231.0 / 131.0 / 61.0 / 101.0 / 16 | Moved scripts to new script procedureMoved scripts to new script procedureMoved scripts to new script procedureUpdated to implement NPRR679Moved scripts to new script procedureMoved scripts to new script procedureMoved scripts to new script procedureMoved scripts to new script procedureMoved scripts to new script procedureMoved scripts to new script procedure | May 1, 2015 |
| All Sections5.2 | 1.0 / 11.0 / 8 | Added a “Q” for QSE scriptsUpdated Disapprove with email notification | July 15, 2015 |
| 3.6 | 1.0 / 5 | Updated 1st note | October 1, 2015 |
| 2.53.33.53.74.34.44.54.66.1 | 1.0 / 41.0 / 141.0 / 71.0 / 31.0 / 241.0 / 141.0 / 71.0 / 111.0 / 17 | Updated Monthly MIS PostingAdded step After 20th of the monthUpdated step Last Day of the MonthUpdated HRUC Failure/Timeline Deviation step Failure Q#79 & Q#80Updated step REG/RRS – RUC Committed Shortages Q#81& Q#82Updated step Hotline Q#83Updated step Cancel Q#84Updated step A/S Insufficiency from DAM Q#86Updated step Excess Generation Typical Script Q#87 & Q#88Updated DAM Timeline Deviation step DAM Timeline Deviation Q#92Updated Title DRUC DelayUpdated DRUC Delay step DRUC Completes By 18:00 Q#94Updated DRUC Delay step 2 Typical Script Q#96Updated step A/S Insufficiency Offers Q#97Updated step DAM Complete with A/S Q#98Updated step Cancel Watch Q#99Updated step DAM Failure Q#100Updated step Cancel Watch Q#101Updated Title Operating Condition ScriptUpdated Operating Condition Script step Hotline Q#46Updated Operating Condition Script step Hotline Cancellation Q#47All procedures in this manual have been reviewed | December 31, 2015 |
| 2.13.63.63.7 | 1.0 / 31.0 / 01.0 / 61.0 / 4 | Updated System Operator Responsibility and AuthorityAdded new Assigning Ancillary Services procedureChange section number from 3.6 to 3.7Change section number from 3.7 to 3.8Updated Hotline Q#83Updated Cancel Q#84 | February 10, 2016 |
| 1.35.2 | 1.0 / 21.0 / 9 | Removed Interchange CoordinatorAdded step EDI step | March 1, 2016 |
| 2.12.22.43.13.23.33.63.74.35.26.16.2 | 1.0 / 41.0 / 41.0 / 41.0 / 71.0 / 231.0 / 151.0 / 11.0 / 7 1.0 / 251.0 / 101.0 / 181.0 / 3 | Updated for COM-002-4Updated for COM-002-4Added steps Note, Resources, 1, 2, & 3Updated RMR Consideration &Manual Commitment stepsUpdated for COM-002-4Updated for COM-002-4Updated for COM-002-4Updated for COM-002-4 & noteUpdated for COM-002-4Updated for COM-002-4Updated for COM-002-4Updated for COM-002-4 | June 30, 2016 |
| 3.4 | 1.0 / 1 | Added Resources Startup Time Less Than One Hour | September 30, 2016 |
| 6.2 | 1.0 / 5 | Deleted step 2 | November 2, 2016 |
|  |  | All procedures in this manual have been reviewed | December 30, 2016 |
| 1.32.12.53.75.26.16.38.1 | 1.0 / 31.0 / 51.0 / 51.0 / 81.0 / 111.0 / 191.0 / 31.0 / 2 | Deleted section 1.3Updated for IRO-001-4Updated procedure purposeUpdated Monthly MIS PostingUpdated noteUpdated Manual Dispatch to take a Unit Off-Line step 1Updated noteUpdated Title and all 1st stepsUpdated Market Notifications stepsUpdated NoteUpdated Title and QSE Issues step 1 and step 3 | March 31, 2017 |
| 3.23.63.73.84.3 | 1.0 / 241.0 / 21.0 / 91.0 / 51.0 / 26 | Updated step Excess GenerationUpdated step OpsMon Display to Splunk DisplayUpdated Manual Commit of a Resource step 1Updated step Monitor Updated step Excess Generation  | June 1, 2017 |
| 3.23.7 | 1.0 / 251.0 / 10 | Added Manual Commitment to bring a Combined Cycle On LineUpdated 1st Note and Manual Dispatch to bring a Unit of a Combined Cycle On-line | June 30, 2017 |
| 3.7 | 1.0 / 11 | Added Manual Dispatch of an OFFQS Resource | September 29, 2017 |
| 2.47.1 | 1.0 / 51.0 / 5 | All procedures in this manual have been reviewedRemoved Greens Bayou Unit 5Updated Primary Control Center 4th note | December 28, 2017 |
| 3.7 | 1.0 / 12 | Updated Manual Commit of a Resource, Manual Dispatch of an OFFQS Resource and Manual Dispatch to bring a Unit of a Combined Cycle On-line | February 28, 2018 |
| 3.2 | 1.0 / 26 | Added EMR Resources step | March 28, 2018 |
| 2.23.5 | 1.0 / 51.0 / 8 | Updated procedure purposeUpdated REG/RRS - RUC Committed Shortages  | May 1, 2018 |
| 2.34.46.2 | 1.0 / 131.0 / 151.0 / 5 | Added Email to Priority Outages SubsectionUpdated step DRUC DelayAdded SWGR language in procedure  | May 31, 2018 |
| 3.7 | 1.0 / 13 | Updated Manual Dispatch of an OFFQS Resource | August 31, 2018 |
| 3.13.24.14.24.3 | 1.0 / 81.0 / 271.0 / 11.0 / 71.0 / 27 | Moved Deselect Contingencies to Desktop Guide Reliability Unit Commitment DeskClarification for step HRUC Committed UnitsAdded note to clarify when an OFF-LINE study is required Moved Deselect Contingencies to Desktop Guide Reliability Unit Commitment DeskDeleted Bad/Suspect TelemetryClarification for step DRUC Committed UnitsAll procedures in this manual have been reviewed | December 28, 2018 |
| 3.24.3 | 1.0 / 281.0 / 28 | Updated step HRUC Committed UnitsUpdated step Review | March 29, 2019 |
| 3.23.7 | 1.0 / 291.0 / 14 | Added step Post to Canceling RUC CommitmentsAdded step Post to Canceling RUC Commitments | May 16, 2019 |
| 6.2 | 1.0 / 6 | Updated for NPRR901 | May 31, 2019 |
| 3.23.74.36.2 | 1.0 / 301.0 / 151.0 / 291.0 / 7 | Updated step ApprovalUpdated NOTEUpdated step ApprovalUpdated steps and added SWGR Requested by ERCOT released back to SPP or MISO | November 1, 2019 |
| 3.24.36.2 | 1.0 / 311.0 / 301.0 / 8 | Updated step MonitorUpdated step ReviewUpdated step VDIAll procedures in this manual have been reviewed | January 1, 2020 |
| 2.33.13.23.33.74.24.35.26.27.1 | 1.0 / 141.0 / 91.0 / 321.0 / 161.0 / 161.0 / 81.0 / 311.0 / 121.0 / 91.0 / 6 | Clarified RUC-commits/decommitsClarified RUC-commits/decommitsClarified RUC-commits/decommitsClarified RUC-commits/decommitsClarified RUC-commits/decommitsClarified RUC-commits/decommitsClarified RUC-commits/decommitsClarified RUC-commits/decommitsClarified RUC-commits/decommitsUpdated Primary Control Center steps 1 & 3 | January 31, 2020 |
| 7.1 | 1.0 / 7 | Updated Title and removed Alternate Control Center | February 28, 2020 |
| 3.76.2 | 1.0 / 171.0 / 10 | Added RUCAC to bring a Unit of a Combined Cycle On-line to a Higher Configuration for Additional CapacityAdded VDI Combined Cycle | May 29, 2020 |
| 2.13.23.86.1 | 1.0 / 61.0 / 331.0 / 61.0 / 20 | Added Advance Action Notice per NPRR930Updated STNET StudyAdded Advance Action Notice section per NPRR930Added Advance Action Notice section per NPRR930 | July 1, 2020 |
| 3.75.2 | 1.0 / 181.0 / 13 | Updated Manual Dispatch to take a Unit of a Combined Cycle Off-lineAdded Do Not Approve step | July 31, 2020 |
| 3.24.3 | 1.0 / 341.0 / 32 | Updated Violated ConstraintsUpdated Violated Constraints | October 31, 2020 |
| 2.32.53.23.33.53.63.73.84.34.44.54.66.18.1 | 1.0 / 151.0 / 61.0 / 351.0 / 171.0 / 91.0 / 31.0 / 191.0 / 71.0 / 331.0 / 161.0 / 81.0 / 121.0 / 211.0 / 3 | Updated for NPRR1039Updated for NPRR1039Updated for NPRR1039Updated for NPRR1039Updated for NPRR1039Updated for NPRR1039Updated for NPRR1039 & added Note for NPRR 1028Updated for NPRR1039Updated for NPRR1039Updated for NPRR1039Updated for NPRR1039Updated for NPRR1039Updated for NPRR1039 & added NoteUpdated for NPRR1039All procedures in this manual have been reviewed | December 31, 2020 |
| 2.33.2 | 1.0 / 161.0 / 36 | Updated Load Forecasting emailUpdated Load Forecasting email | June 16, 2021 |
| 2.33.26.1 | 1.0 / 171.0 / 371.0 / 22 | Updated for OBDRR031Updated for OBDRR031Updated for OBDRR031 | July 12, 2021 |
| 2.3 | 1.0 / 18 | Updated Increasing A/S Requirements before A/S Obligations Publish 3rd NOTE | July 31, 2021 |
| 3.5 | 1.0 / 10 | Updated bullet for REG/RRS - RUC Committed Shortages | September 1, 2021 |
| 3.84.5 | 1.0 / 81.0 / 9 | Updated Advance Action Notice (AAN)Update A/S Still Insufficient | December 1, 2021 |
| 2.22.36.1 | 1. / 6
2. / 19
3. / 23
 | Updated step 1Updated step 3 & Fuel SwitchingUpdated all stepsAll procedures in this manual have been reviewed | December 31, 2021 |
| 2.64.25.1 | 1.0 / 01.0 / 91.0 / 3 | New procedure sectionAdded NoteAdded Note | March 1, 2022 |
| 3.23.33.7 | 1.0 / 381.0 / 181.0 / 20 | Added NoteAdded NoteAdded Note & updated step 1 | April 7, 2022 |
| 3.23.74.3 | 1.0 / 391.0 / 211.0 / 34 | Updated Canceling RUC CommitmentsUpdated Canceling RUC CommitmentsUpdated Canceling RUC Commitments | July 1, 2022 |
| 3.84.4 | 1.0 / 91.0 / 17 | Updated MonitorAdded Note | July 29, 2022 |
| 3.7 | 1.0 / 22 | Added Firm Fuel Supply Service (FFSS)Added FFSS Availability | November 2, 2022 |
| 3.23.7 | 1.0 / 401.0 / 23 | Updated HRUC Committed UnitsUpdated FFSS step 1, added Canceling a FFSS VDI and adding FFSSR Restocking Request All procedures in this manual have been reviewed | December 30, 2022 |
| 3.24.4 | 1.0 / 411.0 / 18 | Updated Capacity Reserve MarginUpdated DRUC Delay step 1 | March 31, 2023 |
| 2.33.63.86.2 | 1.0 / 201.0 / 41.0 / 101.0 / 11 | Updated for NPRR865Updated for NPRR865Updated Advance Action Notice (AAN) postingUpdated for NPRR865 | June 9, 2023 |
| 3.73.8 | 1.0 / 241.0 / 11 | Updated FFSS ProcedureUpdated Advance Action Notice (AAN) posting | December 1, 2023 |
| 3.7 | 1.0 / 25 | Updated FFSS ProcedureAll procedures in this manual have been reviewed | December 29, 2023 |