

***OPERATING PROCEDURE***

***MANUAL***

Day-Ahead Market Desk

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# 1. Introduction

## 1.1 Purpose

* This document provides the ERCOT Day-Ahead Market (DAM) Desk with the detailed procedures required for performing DAM duties. The DAM Desk position is responsible for the oversight of DAM operations in full compliance with Nodal Protocols and ERCOT procedures. Oversight includes all aspects associated with the preparation and execution of the DAM, including monitoring participant submission validations and posting DAM results to participants and the Market Information System (MIS). If the DAM Desk procedures and Nodal protocols conflict, the Nodal Protocols will apply.
* The Day-Ahead Market normally commences at 0600 and concludes at 1330 on the day prior to the Operating Day.

## 1.2 Scope

* The instructions contained in this procedure document are limited to those required for the DAM Desk. Instructions for other ERCOT nodal market positions are contained in separate procedure documents, one for each position. This procedure does not imply that the duties contained herein are the only duties to be performed by this position, nor do these procedures foresee all possible circumstances where the Operators judgment may result in deviations as required to facilitate a market. The individuals assigned to this position will be required to follow other instructions and perform other duties as required, or requested, by appropriate ERCOT supervision.
* DAM support engineers are the reviewers of this document, and the approver is the DAM Manager.

## 1.3 Associated Documents

* ERCOT Nodal Protocols

1.4 Roles/Responsibilities

**DAM Desk Supervisor**

The DAM DeskSupervisor is responsible for the supervision of the DAM Desk position and may at times be responsible for performing the procedures contained in this manual.

**DAM Desk Operator**

The DAM Desk Operator is primarily responsible for carrying out the subsequent tasks that are described in this document. In some instances the DAM Desk activities, as described in this document, may be performed by DAM Support personnel.

## 1.5 General Duties

 Operate the DAM market every day including weekends and ERCOT Holidays from 0500 to 1330 one day prior to the Operating Day.

 Respond to Market Participant questions and issues after being screened internally.

o Receive questions and issues from Market Participants as they are funneled to the DAM Desk. Escalate issues to ERCOT Management as needed to resolve issues prior to market deadlines.

o Respond/provide answers to Market Participant questions and issues when appropriate information is available.

o Maintain record of Market Participant questions, issues, and resolutions.

o Refer any unresolved questions or issues to DAM Support or the DAM Desk Supervisor.

# 2. Tasks

## 

## 2.1 Review ERCOT System Conditions

On a daily basis in the Day-Ahead, the DAM Desk reviews the following ERCOT system conditions:

 Verify that the postings required on the MIS for the next Operating Day are available to Market Participants.

 Monitor / Review External System Data Interface

 Copy EMSI Data forward for all applications

| 2.1.1 Verify the MIS postings for the next Operating Day | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | The postings required on the MIS for the next Operating Day are from different ERCOT sources. The DAM Desk Operator shall verify that the postings required on the MIS for the next Operating Day are available to Market Participants. Recommended start time for this task is 0515. This task should be completed by 0600. |
| 1 | LOG on to MIS. |
| 2 | IF DAM workarounds need to be communicated (ex. DAM disabled contingencies, Generic Constraint Limits), NOTIFY Market Participants by sending out an OCN notice with “Medium” priority and an audience of “All MPs” using Notice Builder via MIS. |
| 3 | NAVIGATE to the applicable MIS displays for the postings and VERIFY the postings required for the next Operating Day are available:   * Transmission network conditions for the DAM period:   o Consolidated Transmission Outage Report (Grid -> Transmission)  o Weather Assumptions (Markets -> Day-Ahead Market)  o Load Forecast Distribution Factors (published when revised) (Markets -> Day-Ahead Market)  o Forecasted Distribution Loss Factors Report (Markets -> Data Aggregation)  o Forecasted Transmission Loss Factors Report (Markets -> Data Aggregation)  o Settlement Points List and Electrical Buses Mapping (Markets -> Day-Ahead Market)  o Weekly RUC Active and Binding Transmission Constraints (Grid -> Generation)   * DAM Ancillary Service Plan (Markets -> Day-Ahead Market) * QSE Ancillary Service Obligations (View using Mimic function in Applications -> Market Manager)    Generic Transmission Limits (Grid -> Transmission)   Peaker Net Margin (Markets -> Real-Time Market) **NOTE:** Posting on Previous Day   System-Wide Offer Cap (Markets -> Real-Time Market)   * QSE Load Ratio Share (View using Mimic function at Reports -> Reports and Extracts Index) * Wind Generation Resource Power Potential Forecast (View using Mimic function in Reports -> Reports and Extracts Index) * Wind Power Production – Hourly averaged actual and forecasted values (Grid -> Forecasts * Seven-Day Load Forecast by Forecast Zone (Grid -> Forecasts) * Seven-Day Load Forecast by Weather Zone (Grid -> Forecasts)   If any postings are missing in MIS, refer to Manage Day-Ahead Issues. |
| 4 | IF any problems with postings are found, NOTIFY Market Participants by sending out an Advisory notice with “Medium” priority and an audience of “All MPs” using Notice Builder via MIS. For resolution of the problem, refer to Manage Day-Ahead Issues.  The recommended message to be sent to Market Participants is as follows:  ERCOT has discovered issues with the following MIS postings for Operating Day Month DD, YYYY  <Enter list of postings here>  These issues are currently under investigation. Please <Enter action you would like MPs to take>. A notice will be sent out once the issue has been resolved. |
| 5 | INFORM DAM Desk Supervisor if any DAM timing deviation must be executed. Refer to Manage DAM Timeline deviations, if a deviation is necessary. |

| 2.1.2 Monitor / Review External System Data Interfaces | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | MMS data interfaces from External Systems shall be monitored and reviewed to resolve any data interface problems as soon as possible. Recommended start time for this task is 0515. This task should be completed by 0600. |
| 1 | Navigate to the MOI Events display for the status of External System Interfaces. |
| 2 | Check for the existence of any Warning or Error messages pointing to potential problems with the following External System interfaces. This includes but is not limited to:   Energy Management System (EMS) – Refer to EMSI Workflow   Congestion Revenue Right (CRR) System – CRR\_TO\_MI Event   Credit System – CMM\_TO\_MI Event   Outage Scheduler (OS) – Refer to EMSI Workflow   Settlement System – STL\_TO\_MI Event   Registration – MF\_TO\_DS Event   * Argus (FIP/FOP)-PLATTS\_TO\_MI (Runs day before)\*   \*Note: If FIP or FOP (Argus) is not available for the particular Operating Day, the most recent valid FIP and FOP will be used. |
| 3 | COMMUNICATE to Helpdesk and ERCOT Production Support group if any transfer problems are identified and inform DAM Supervisor. |
| 4 | Log the actions or workaround measures taken by ERCOT internal groups to ensure the normal operation of External System Interfaces. |

| 2.1.3 Copy EMSI Data forward for all applications | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | In order for the DAM applications to have recent EMS data, data needs to be copied for DAM. Recommended start time for this task is 0500. This task should be completed by 0515. |
| 1 | Navigate to “EMSI Workflow” display. |
| 2 | VERIFY EMSI has completed successfully without errors for the run that begins at about 0450. If there were errors, refer to Manage Day-Ahead Issues. |
| 3 | navigate to the MOI Events display and VERIFY ‘COPY\_EMSI\_FOR\_ESSP’ has completed successfully. If failed or need to run manually go to Step 4. |
| 4 | NAVIGATE to “EMSI Workflow” display.  CLICK on “Copy\_EMSI\_data\_for\_DAM” button.  A pop-up stating that “Wait for few minutes until another message dialog ‘Procedure executed: db\_copycat’ popuped.” should appear.  After no more than ten minutes, another pop-up that contains the wording “Stored Procedure Executed: call DB\_COPYCAT(‘BMSPARMY’,’BMSPARMZ’)” should appear. Data has been copied for DAM applications once this pop-up appears.  If either pop-up does not appear navigate to EMSI Workflow Messages and verify “Copy\_EMSI\_data\_for\_DAM” has started and completed. If EMSI Workflow Messages are not present refer to Manage Day-Ahead Issues. |

## 

## 2.2 Create the Electrically Similar SP List and PSS/E files in the Day-Ahead

The DAM Desk Operator shall create and publish a current list of Electrically Similar Settlement Points (ESSPs) and a Network Operations Model in PSS/E format no later than 0600 in the Day-Ahead.

| 2.2.1 Create the Electrically Similar SP List and PSS/E files in the Day-Ahead | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | The DAM Desk Operator shall create a current list of ESSPs and PSS/E files and publish results into the MMS database and the MIS Secure Area. Recommended start time for this task is 0515. This task shall be completed by 0550.  This task includes performing the following activities:   Check EMSI is completed   Perform/monitor the execution of the ESSP application   Review the ESSP results   Publish the ESSP results to the MMS database   Archive an ESSP save case   Publish PSS/E files to the MIS  NOTE: ESSP will run automatically at 0520. DAM Operator will run ESSP manually on both DST days; short and long day. |
| 1 | VERIFY EMSI has been copied.  IF the ESSP needs to be ran manually proceed to Step 2, else proceed to Step 14. |
| 2 | Navigate to the MOI “ESSP Workflow” display. Verify ESSP Workflow is down and verify “Publish ESSP Results” is set to NO. |
| 3 | START Up the ESSP workflow. |
| 4 | Verify that the ESSP Workflow statuses shown on the MOI for each of ESSP functional modules (DSI, NDP and SAV)) are normal in Green color and “Up” status. |
| 5 | NAVIGATE to “ESSP Execution Control Parameters” of “ESSP Displays” and set:   Retrieve MF Interface Data – “Yes”   Retrieve MI Interface Data – “Yes”   Retrieve EMS Interface Data – “Yes”   Use Save Case – “No”  NAVIGATE to “ESSP Workflow Parameters”, set “Execute SAV” and “Periodic Switch” to ON. |
| 6 | execute ESSP workflow by pressing “Run All”’ button. |
| 7 | MONITOR the “ESSP Workflow Messages” display and the following messages shall be observed:   * Start of the Electrically Similar Settlement Point Determination Run * ESSP publishing is skipped |
| 8 | verify the ESSP application completes successfully by observing the following message:   * End of the Electrically Similar Settlement Point Determination Run |
| 9 | Navigate to the MOI -> ESSP Displays -> “Electrically Similar Settlement Point (ESSP)” display. |
| 10 | verify Electrically Similar Settlement Points have been created successfully. |
| 11 | Navigate to the MOI “ESSP Workflow” display |
| 12 | set the “Publish ESSP Results” flag to “Yes” |
| 13 | Publish ESSP results by pressing “NDP” button. |
| 14 | Navigate to the MOI “ESSP Workflow Message” display. |
| 15 | MONITOR the “ESSP Workflow Messages” display to ensure publishing is successful. |
| 16 | NAVIGATE to the MI MOI “Events” display and verify the event “PSSE\_FILE\_DATA” completed successfully.  If this event is not completed, refer to Manage Day-Ahead Issues. |
| 17 | verify ESSP results are published to MIS.  **NOTE:** ESSP results will not be published until 0555.    If the ESSP results are not posted, verify the ESSP list is in the database and then, contact ERCOT Web Services Support to manually post this report with a Report ID of NP4-158 and the appropriate BATCH\_ID located in the ‘ESSP Workflow Messages’.  If the ESSP results are not in the database or are not correct, refer to Manage Day-Ahead Issues. |
| 18 | verify PSS/E files are published to MIS.  **NOTE:** PSS/E files publication is triggered by the completion of ESSP workflow.    If the PSS/E files are NOT posted within five minutes after the completion of ESSP workflow, check if the PSS/E file creation event, PSS/E files, or publication messages are executed /created successfully in MMS:  If the PSS/E files creation event is NOT executed successfully   * Manually run the PSS/E file creation event and check PSS/E files and posting   If the PSS/E files and messages are created successfully   * Contact EMMS Production Support to get a copy of the PSS/E files * Manually drop them at MIS Drop Off location at   [\\nprodmiddropoff\mIRAdapter\DropOff](file://nprodmiddropoff/mIRAdapter/DropOff)   * If the final posting is after 0600, send a Market Notice * Notify the posting issue to HelpDesk, ERCOT TIBCO On Call, and ERCOT EMMS Production.   If the PSS/E files or messages are NOT created successfully   * Notify EMMS Production Support and HelpDesk * Re run ESSP workflow if time allowed * If PSS/E files are NOT able to be posted by 0600, send a Market Notice and refer to Manage Day-Ahead Issues. * Check and remove any duplicate ESSP reports via HelpDesk and EIS Production Support |
| 19 | VERIFY Electrical Bus Mapping for Heuristic Pricing file is published to MIS. This file will not be published until 0550.  If the Electrical Bus Mapping for Heuristic Pricing results are not on the MIS or not correct, refer to Manage Day-Ahead Issues. |
| 20 | SHUT DOWN ESSP workflow by clicking the “Shut Down” button. |

## 2.3 Phase II Validations of DAM Submissions

The DAM Desk performs the following procedures to prepare required data for Phase II validation of DAM submissions:

 Review Counter-Party’s Credit Limits

 Initiate Phase II Validation Process

 Review Phase II Validation Reports

| 2.3.1 Review QSE Counter-Party’s Credit Limits | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | Counter-Party’s Credit Limits are transferred to MMS from the Credit System every day. The DAM Desk reviews Counter-Party’s credit limits. Recommended start time for this task is 0605. This task should be completed by 0655. |
| 1 | Verify the Counter-Party’s Credit Limits are updated from the Credit System by navigating to the MOI Events display (CMM\_TO\_MI).  If Counter-Party’s Credit Limits are not updated from the Credit System, refer to Manage Day-Ahead Issues and work with Credit Team to manually update credit limit data.  If any of the above data is NOT available, DETERMINE with DAM management to hold the Phase II validation process. If a hold is necessary, refer to Postpone Phase II Validation for steps to follow.  RERUN the CMM\_TO\_MI Event once issues are resolved. |
| 2 | VERIFY that a sampling of Counter-Party’s Credit Limits match with the Counter-Party specific MIS posting titled “Available Credit Limit (ACL) Summary Report”.  **NOTE:** If ACLs sent by Credit team are available, please use the spreadsheet to VERIFY.  If ACL differences are found, refer to Manage Day-Ahead Issues and contact the Credit team. Determine with DAM management to hold the Phase II validation process. If a hold is necessary, refer to Postpone Phase II Validation for steps to follow. |
| 3 | VERIFY Credit percentiles are below 300 for all the Load Zones and Hubs.  IF there are credit percentiles above 300, send to the Credit team. |

| 2.3.2 Initiate Phase II Validation Process | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | Phase II validation of DAM submissions is initiated at 0700 automatically unless the DAM Desk has postponed this validation. Recommended start time for this task is 0655. This task should be completed by 0715. |
| 1 | Verify that SWCAP has been updated for the DAM. The display is located in Market Participation -> Physical Market -> Market Operator Data -> System-Wide Offer Cap. If the SWCAP is not correct, refer to Manage Day-Ahead Issues. |
| 2 | Navigate to the MOI Events display and verify that the Phase II validation events have initiated. |
| 3 | Verify that the Phase II validation events has successfully completed.  If this validation was previously postponed and issues have been resolved, set the “PHASE2\_VALIDATION\_PREP” event to ‘Start Now’ so it will initiate. Verify “PHASE2\_VALIDATION\_PREP” has completed. Then set the “PHASE2\_VALIDATION” event to ‘Start Now’ so it will initiate. Verify that the Phase II validation event has successfully completed. |
| 4 | COMMUNICATE to ERCOT production support group and inform DAM supervisor if any problems are identified. |

| 2.3.3 Review Phase II Validation Report | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | DAM Desk monitors and reviews the Phase II validation reports from its initiation up to the close of DAM submission. |
| 1 | Review rejected submissions that occurred during the execution of the Phase II event using the Mimic Function on the MMS UI (Market Manager). |
| NOTE | When a Counter-Party’s credit limit is reached, DAM submissions shall reject QSE’s individual bids and offers that cause the QSE’s Counter Party’s credit exposure limit to be exceeded. |

## 2.4 Review and update DAM to account for modifications to any temporary operational actions.

| 2.4.1 Update DAM to include modifications to Remedial Action Schemes (RAS) | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | This is only done if a RAS needs to be disabled due to outage topology. Changes may include Transmission Facility equipment. Recommended start time for this task is 0800. This task should be completed by 1000. |
| 1 | VERIFY the action needed with Operations. |
| 2 | Update changes according to the outage notes or other operations communication. |
| 3 | VERIfy that changes requested to be made are reflected in the following EMSI displays as applicable.   * RAS Deactivation Management * Transmission Facility Monitored Secured Flags |

| 2.4.2 Update DAM to include Load Resource outages | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | This is only done if a load resource is truly out due to outage topology. Recommended start time for this task is 0800. This task should be completed by 1000. |
| 1 | RECEIVE email communication from OPS Outage Coordination on disconnected load resource.  The email should state ‘The TO has confirmed that the associated load WILL NOT be picked up’.  Note: Load resources will be considered ‘connected’ where energized status is inconclusive, through email communication. |
| 2 | INSERT outage in DAM DSI Interfaces>Load Resource Connection Status Overwrite Management display |

## 2.5 Perform DAM Input Data Processes

Prior to the close of DAM submissions, the DAM Desk Operator ensures the DAM input data has been received from Market Participants and is verified and ready for the execution of the DAM clearing process. To ensure the scheduled on-time execution of the DAM clearing process, DAM Desk performs the following processes:

 Monitor / Review DAM Submissions and Validations

 Review DAM Configuration Parameter Settings

| 2.5.1 Monitor / Review DAM Submissions and Validations | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | Market Participants may submit bids and offers for the DAM until DAM Close. DAM Desk shall monitor and review the submission validations periodically and resolve any problems in accordance with Section 2.9, Manage Day-Ahead Issues.  This task include the following activities:   Monitor/Review participant submission related processes and messages   Respond to participant inquiries related to data submissions   Take necessary actions to ensure normal processing of data submissions |
| 1 | Navigate to the MOI display showing all participant activities. |
| 2 | Review the submission and validation messages periodically. |
| 3 | Respond to Market Participant inquiries related to data submissions and validation received after being screened internally. |
| 4 | Log actions or workarounds taken by the DAM Desk Operator to ensure normal processing of data submissions and validation. |

| 2.5.2 Verify DAM Configuration Parameter Settings | | |
| --- | --- | --- |
| Step # | Procedural Steps | |
| **NOTE** | Prior to execution of the DAM Clearing process scheduled for 1000, the DAM Desk reviews the DAM Clearing configuration parameter settings. |
| 1 | Navigate to the MOI displays for setting DAM Clearing configuration parameters. |
| 2 | VERIFY the DAM Clearing configuration parameter settings are as follows:   Network Security Monitor configuration parameter settings:  (1) Sensitivity Cutoff Threshold for Individual Resources = 0.0001  (2) Constraint Monitor Margin (%) = 95.00  (3) Constraint Reliability Margin (MW) = 0  (4) Constraint Selection Factor = 0.00001  (5) Absolute Bus Maximum MW Power Mismatch = 0.5  (6) Max Number of Nonlinear Power Flow Iterations = 50   Network Constrained Unit Commitment configuration parameter settings:  (1) Infeasibility MIP Resolve Option = Skip Resolve  (2) Infeasibility MIP Resolve Timeout (sec) = 300   Unit Commitment penalty function cost parameter settings:  (1) Under generation / Over generation penalty = 5,000,000  (2) Transmission base case constraint penalties = 350,000 to 1,050,000  (3) Transmission contingency constraint penalties = 300,000 to 1,000,000  (4) Non-thermal constraint penalty = 1,000,000  (5) Reg-Up deficit penalty = 3,000,000  (6) Reg-Down deficit penalty = 3,000,000  (7) RRS deficit penalty = 2,000,000  (8) Non-Spin deficit penalty = 1,000,000  (9) Power Flow Steady State penalty = 3,000,000   The Workflow configuration parameters for DAM execution mode shall be set to “Constrained” and “DAM Clearing”.   **For values to the remainder of the settings, see Appendix 3.1.** |

## 

## 2.6 Execute DAM Clearing Process

When the market window for DAM submissions closes and all offers/bids submitted prior to the window closing are validated, the DAM Clearing process can be started. The DAM Clearing Process includes the following tasks:

 Check DAM Submission Close Event

 Check Creditworthiness of QSEs w/Resources

 Perform Ancillary Service Insufficiency Check

 Notify QSEs of Ancillary Service Insufficiency condition

 Clear Day-Ahead Market

 Notify Market Participants of DAM awards

 Post DAM Results

If DAM needs to be postponed or aborted, refer to Manage DAM Timeline deviations.

| 2.6.1 Check DAM Submission Close Event | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | ERCOT operators shall reject any offers/bids submitted for today’s DAM after the occurrence of the “DAM Close” event, which normally occurs at 1000 unless DAM closing is postponed or aborted. Any offers/bids submitted prior to the “DAM Close” event starting must be subjected to validation and either accepted or rejected for use in the DAM even if the “DAM Close” event has initiated.  This process will check for the DAM close event to be in the “Completed” status. After DAM closes, all offers/bids for DAM will be rejected.  This task includes performing the following activities:   Check the status of “DAM close” event   Manually trigger this event if necessary   Verify that all DAM submissions before DAM close time have been validated. |
| 1 | CHECK the status of “DAM close” event in the MOI event display. Normally, this event shall be automatically executed at 1000. The status should show “Completed”. If the status of this event shows “Completed”, skip to Step 5. |
| 2 | If “DAM\_CLOSE” event is “Normal” or “Hold” after 1000, check whether ERCOT issued any notification of extending DAM close time by looking to see if a notice regarding this was sent on the ‘Sent Notices’ tab in Notice Builder. |
| 3 | If there is not an approved DAM timeline deviation, update the DAM log and then change the “DAM\_CLOSE” event status to “Start now”, which will cause the process to run. |
| 4 | NOTIFY Market participants for DAM close time deviation by sending out an Advisory notice with “Medium” priority and an audience of “All MPs” using Notice Builder via MIS. Monitor the status change for the “DAM\_CLOSE” event to “Completed”.  The recommended message to be sent to Market Participants is as follows:  ERCOT has extended the deadline for DAM submissions for Operating Day Month DD, YYYY until HH:MI due to <Enter Reason Here>. Please <Enter action you would like MPs to take>. |
| 5 | NAVIGATE to Market Participation -> Monitoring -> Event Manager -> Interface Control and VERIFY DAM\_CLOSE’s Process Running Flag is ‘Completed’.  The flag should change to ‘Completed’ no more than 15 minutes after the ‘Process Start Time’.  If the flag does not show ‘Completed’, refer to Manage Day-Ahead Issues. |
| 6 | Navigate to “EMSI Workflow” display. |
| 7 | VERIFY EMSI has completed successfully without errors for the run that begins at about 0950. If there were errors, refer to Manage Day-Ahead Issues. |
| 8 | CLICK on “Copy\_EMSI\_data\_for\_DAM” button.  A pop-up stating that “Wait for few minutes until another message dialog ‘Procedure executed: db\_copycat’ popuped.” should appear.  After no more than ten minutes, another pop-up that contains the wording “Stored Procedure Executed: call DB\_COPYCAT(‘BMSPARMY’,’BMSPARMZ’)” should appear. Data has been copied for DAM applications once this pop-up appears.  If either pop-up does not appear navigate to EMSI Workflow Messages and verify “Copy\_EMSI\_data\_for\_DAM” has started and completed. If EMSI Workflow Messages are not present refer to Manage Day-Ahead Issues. |

| 2.6.2 Check Creditworthiness of QSEs w/Resources | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | Prior to the execution of the Day-Ahead Market process review the creditworthiness of QSEs (w/ Resources), as necessary. |
| 1 | REVIEW creditworthiness status change for QSEs with active Resource relationships from email received from VP of Credit & Enterprise Risk Management, or other member of the Executive Team, if any such status change exists. |
| 2 | COORDINATE with EMMS Production Support to have the following QSEs transactions cancelled:  DAM Energy-Only Offers  DAM Energy Bids  PTP Obligation Bids  PTP Obligation Bids with Links to an Option  Self-Schedules  Capacity, Energy, and AS trades |
| 3 | VERIFY transactions for affected QSEs w/Resources have been cancelled. |

| 2.6.3 Clear Day-Ahead Market | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE:** | This task includes performing the following activities:   Check DAM clearing market application system status   Check DAM clearing market application configurations   Verify that submission validations, including AS resubmission validations under the condition of Ancillary Service Insufficiency, has completed   Verify the input data   Perform/monitor the executions of the DAM clearing application functions   Take any actions necessary to ensure on-time completion of the DAM clearing process   Review the DAM clearing solutions   Take necessary actions to ensure validity/clarity of the DAM Clearing results   Check for Ancillary Service Insufficiency   Check for Electrically Similar Settlement Point List   Approve the DAM Clearing and Market Participant award solutions   Publish/store the DAM clearing solutions to the MIS database   * Notify Market Participants of awarded energy and AS    Verify that DAM results and data are available to Market Participants on the MIS   Archive the DAM Clearing case  Recommended start time for beginning the clearing of DAM is 1000. This task should be completed by 1300. DAM Clearing results shall be posted by 1330. |
|  |  |
| 1 | NAVIGATE to “DAM Workflow”. |
| 2 | SET Execution Mode to “Constrained” and “DAM Clearing”. |
| 3 | SHUT DOWN system through click “Shut Down” button. |
| 4 | START UP system through click “Start Up” button |
| 5 | NAVIGATE to DAM “DSI Execution Control Parameters” of “DSI Displays” and set:   Retrieve MF Interface Data – “Yes”   Retrieve MI Interface Data – “Yes”   Retrieve EMS Interface Data – “Yes”   Use Save Case – “No”  VERIFY MOI display location is DAM “DSI Execution Control Parameters” |
| 6 | NAVIGATE to DAM “Execution Control Parameters” of “DSP Displays” and set “Publish Data to MI” to “NO”  VERIFY MOI display location is DAM “DSP Execution Control Parameters”  NAVIGATE to “DAM Workflow Parameters” and VERIFY “Execute SAV” is set to “ON” |
| 7 | Secondary Operator should VERIFY the DAM DSI and DSP parameters. |
| 8 | NAVIGATE to UC Displays > DAM UC Execution Control Parameters and change as necessary. |
| 9 | NAVIGATE to “DAM Workflow” and click ‘Run All’ button. |
| 10 | CHECK the details of the execution on the “DAM Workflow Messages” display.  IF an error occurs, refer to Manage Day-Ahead Issues. |
| 11 | IF during the first run AS Insufficiency is observed and the AS Insufficiency Quantity is greater than the MW listed below for that AS Type for any hour, THEN decrease the Phase 1 ‘Maximum Run Time (Sec)’ in DAM UC Execution Control Parameters and ‘Maximum number of overall NSM/NCUC Iterations’ in NSM Execution Control appropriately. IF this is not the first run or there is no AS insufficiency, then proceed to Step 12.  NSPIN – 2 MW  REGDN – 2 MW  REGUP – 2 MW  RRS – 2 MW |
| 12 | CHECK to see if SCUC Convergence is set to ‘Yes’ on the “DAM Workflow” display. If Yes, go to Step 13. If not, ADJUST MIP Relative & Absolute parameters according to UC MIP PHASE 1 Objective Function as needed and go back to Step 10. |
| 13 | Navigate to UC Displays > Output Display Menu > Resource Outputs > “Reduced AS Plan and AS Insufficiency”.  CHECK that AS Insufficiency Status is set to “S” for all AS types for all hours.  IF there is an AS Insufficiency Status of “I” and the AS Insufficiency Quantity is greater than the MW listed below for that AS Type for any hour and this is the first DAM run, go to Step 14. Otherwise, go to Step 22.  NSPIN – 2 MW  REGDN – 2 MW  REGUP – 2 MW  RRS – 2 MW |
| 14 | SET “Publish Data to MI” to “YES” and re-execute the DSP module and verify the DSP execution is completed successfully for each of the DAM hours. |
| 15 | VERIFY a save case for the Day-Ahead AS insufficiency was created. If the save case was not created, manually create the SAVECASE. If this does not run correctly, refer to Manage Day-Ahead Issues. |
| 16 | VERIFY the AS insufficiency notification is sent to QSEs and INFORM the RUC Desk. The notification messages can be viewed by going to “Participant Messages” in the “Monitoring” folder.  If messages are not sent, refer to Manage Day-Ahead Issues.  VERIFY and create a HelpDesk ticket, as needed, to delete any of the following reports which are posted on MIS if a DAM with AS Insufficiency publishes after 1200:   * Total Ancillary Service Offers (NP4-179CD) * Aggregate Ancillary Service Offer Curve (NP4-19CD) * DAM Electrically Similar Settlement Points (NP4-158CD) |
| 17 | CHECK DAM\_RECLOSE time which shall be automatically set by the system to DSP completion time plus 30 minutes. |
| 18 | REVIEW / MONITOR QSE resubmission of AS offers. |
| 19 | AFTER 30 minutes, CHECK the status of “DAM Reclose” event. |
| 20 | MONITOR the status change for this event until the status shows “Completed”. Ensure that all of the recent submissions have completed their validations, before proceeding. |
| 21 | Repeat Steps 1 through 13 of this section. |
| 22 | NAVIGATE to UC Displays > Output Display Menu > System Outputs > “AS MCPC” and verify that there are no penalty costs in the “Shadow Prices” column. Penalty costs will be $1,000,000.00 or higher. If there are penalty costs, go to Step 23 to perform a Pricing Run. Otherwise, go to Step 33. |
| 23 | NAVIGATE to “DAM Workflow”. |
| 24 | SET Execution Mode to “Constrained” and “Pricing Run/Sensitivity Analysis”. |
| 25 | SET the following parameters on the “DAM Workflow” display for this Pricing Run.  “Relax AS Limit” – Yes  “Epsilon Threshold” – 0.500  “Relax Transmission Limit” – No  “Epsilon Threshold” – 0.500 |
| 26 | RUN “QP/PR/SA” and monitor its execution and completion. If this does not run successfully, contact EMMS Production Support. |
| 27 | Run “NSM Post Processing” and monitor its execution. If this does not run successfully, contact EMMS Production Support. Once completed successfully, NAVIGATE to UC Displays > Output Display Menu > System Outputs > “AS MCPC” and verify that there are no penalty costs in the “Shadow Prices” column. |
| 28 | If all DAM processes are successful, check that the results are consistent with DAM inputs at “Output Display Menu” of “UC Displays”. |
| 29 | Run “DSP/DSP2/SAV” by clicking the “DSP/DSP2/SAV” button and monitor its execution. If this does not run successfully, refer to Manage Day-Ahead Issues. |
| 30 | NAVIGATE to DAM PVT Data display and click on “PVT DATA” button. If this does not run correctly, refer to Manage Day-Ahead Issues.  CLICK on the “NSM TAB DATA” button. If this does not run correctly, refer to Manage Day-Ahead Issues.  VALIDATE the DAM solution. Refer to Validate / Correct DAM Prices. |
| 31 | LOG any DAM AS Insufficiency. |
| 32 | SET “Publish Data to MI” to “YES”  RE-RUN “DSP/DSP2/SAV” by clicking the “DSP/DSP2/SAV” button and VERIFY save case was created. If this does not run correctly, refer to Manage Day-Ahead Issues. Then, Shut-DOWN DAM Workflow and proceed to Step 37. |
| 33 | If all DAM processes are successful, check that the results are consistent with DAM inputs at “Output Display Menu” of “UC Displays”.  NAVIGATE to DAM PVT Data display and click on “PVT DATA” button. If this does not run correctly, refer to Manage Day-Ahead Issues.  CLICK on the “NSM TAB DATA” button. If this does not run correctly, refer to Manage Day-Ahead Issues.  VALIDATE the DAM solution. Refer to Validate / Correct DAM Prices.  If any part of the solution appears to be inconsistent from expected results, check the inputs and network data. After data correction and Supervisor approval:    NAVIGATE to DSI Execution Control Parameters  CHANGE “Retrieve MI Interface data” to ‘No’  THEN go back to step#1. |
| 34 | SET “Publish Data to MI” to “YES” |
| 35 | re-execute the DSP module and verify the DSP execution is completed successfully for each of the DAM hours. |
| 36 | VERIFY save case was created (System Administration -> Savecase Management). If the save case was not created, manually create the SAVECASE. If this does not run correctly, refer to Manage Day-Ahead Issues.  Shut-DOWN DAM Workflow. |
| 37 | VERIFY that DAM awards and data are published to the MIDB database.  Notify Market Participants of DAM awards and Verify MIS Posting. |
| 38 | VERIFY CRRSFT\_VIOLATED\_CONSTR\_SB\_OT table in MIDB schema has been populated. |
| 39 | NAVIGATE to ‘Events’ display and manually run the following events:  Note: Events will automatically run by 1500.  DAMINPUT\_TO\_STL  DAMOUTPUT\_TO\_STL  If these events do not run correctly, refer to Manage Day-Ahead Issues. |
| 40 | VERIFY DAM data has been transferred from MIDB to MIINF.  If data is not transferred correctly, refer to Manage Day-Ahead Issues. |

| 2.6.4 Notify Market Participants of DAM awards and Verify MIS Posting | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE** | DAM Desk should verify that the DAM clearing results are posted and ready for participant access.  This task includes the following verification:   DAM Clearing result XML files are ready for MP access |
| 1 | NAVIGATE to “DAM Market Results” display to see the MI MOI results. |
| 2 | VERIFY the DAM solution and data displays in the MI MOI match the DAM Output in the MA MOI:   DAM Energy-Only Awards   Three-Part Supply Awards   CRR Awards (PTP Obligation with Links to an Option Awards)   PTP Obligation Awards   AS Awards   * CPC (Market Clearing Price for Capacity)    LMP Settlement Point  If the results do not match, refer to Manage Day-Ahead Issues. |
| 3 | VERIFY the MI MOI and MIDB results match.  If the results do not match, refer to Manage Day-Ahead Issues. |
| 4 | NAVIGATE to “Participant Messages”. |
| 5 | VERIFY that the notification of DAM results has been sent out and the clearing prices are available on the MIS.  MIS Postings:   * DAM Shift Factors * Aggregated Ancillary Service Offer Curve * DAM Clearing Prices for Capacity * DAM De-Energized Settlement Points in Base Case * DAM Hourly LMPs * DAM Settlement point Prices * DAM Shadow Prices * DAM System Lambda * DAM Total Energy Purchased * DAM Total Energy Sold * DAM PTP Obligation Results by Settlement Point * Total Ancillary Service Offers * DAM Electrically Similar Settlement Points * Day-Ahead Point-to-Point Option Price Report(Settlements Tab)   If the notification was not sent or the clearing prices are not available, refer to Manage Day-Ahead Issues. |
| 6 | VERIFY that the displays for DAM Settlement Point Prices and DAM Clearing Prices for Capacity on Ercot.com are available and complete. |

## 2.7 Manage Post-DAM Processes

After the DAM Clearing and award process, the DAM Desk shall perform the following tasks:

 Complete the Day-Ahead Market Summary Report

 Validate / Correct DAM Prices

| 2.7.1 Prepare the Day-Ahead Market Summary Report (Prior to end of shift) | |
| --- | --- |
| Step # | Procedural Steps |
| Note | Operators assigned to the DAM Desk shall log all actions related to data error corrections, market application execution abnormalities and measures taken, changes to market application configurations, summaries of communications with Market Participants, etc.  After DAM clearing, DAM Operators shall review their actions and complete the DAM Operation Summary Report. |
| 1 | GO TO DAM Operator log. |
| 2 | REVIEW operation actions have been taken. Complete the log. |
| 3 | COMPLETE the Daily DAM Operations Summary report and store it on the Market Operations Support drive. |

| 2.7.2 Validate / Correct DAM Prices | |
| --- | --- |
| Step # | Procedural Steps |
| **Note** | After the DAM Clearing results have been posted to the MIS, any findings, either by market participants or DAM Desk, with incorrect DAM Clearing results shall be reported to the ERCOT Board of Directors. The Board of Directors may request DAM price corrections. |
| 1 | Refer to the DAM PVT procedure document. |
| 2 | VALIDATE flags received from PVT and respond as needed. |

| 2.7.3 Validate / Correct Electrical Bus Mapping for Heuristic Pricing | |
| --- | --- |
| Step # | Procedural Steps |
| **Note** | Operators assigned to the DAM Desk shall validate the topology for all Electrical Bus Mappings for Heuristic Pricing will produce results consistent with the original intent of the mapping. |
| 1 | GO TO DAM De-Energized Topology Mapping tool. |
| 2 | REVIEW the results of the tool. |
| 3 | VALIDATE Electrical Bus Mappings for Heuristic Pricing. |
| 4 | UPDATE Electrical Bus Mappings for Heuristic Pricing if needed. |

## 2.8 Manage Day-Ahead Issues

This section establishes the process for the DAM Desk to take when an error occurs within any of the DAM applications.

Note: Follow steps as they apply to the problem.

| 2.8.1 Manage Day-Ahead Issues | |
| --- | --- |
| Step # | Procedural Steps |
| 1 | REVIEW the steps in the applicable procedure to ensure no mistakes were made. |
| 2 | INVOLVE Market Support team and DAM Supervisor to help identify issue |
| 3 | ESCALATE the issues to EMMS Production Support and Helpdesk for resolution. |
| 4 | WORK with EMMS Production Support and other ERCOT internal groups as necessary to help resolve the issues. |
| 5 | RESOLVE the issue, if necessary, by taking manual action in order to have the DAM application complete prior to 1900. This may involve actions such as removing bids causing error or disabling a subset of contingencies, etc. In the event manual action is necessary, obtain verbal or written Manager approval. Initiate a formal Market Notice describing the actions taken and the causes for such actions, to be sent by 1700 the next Business Day. |
| 5 | Log the actions and/or workaround measures taken by ERCOT internal groups. |
| 6 | VERIFY that issues were resolved. |

## 2.9 Manage DAM Timeline deviations

This section establishes the conditions in which the DAM Desk may deviate from the normally scheduled DAM process timelines in the Nodal Protocols and the procedures to be followed when the DAM timeline deviations occur:

 Postpone Phase II Validation

 Postpone Day-Ahead Market Submission Close Timeline

 Postpone Day-Ahead Market Solutions Posting

 Abort the Day-Ahead Market Clearing

| 2.9.1 Postpone Phase II Validation | |
| --- | --- |
| Step # | Procedural Steps |
| 1 | REVIEW the following Day-Ahead applications for system issues:   ERCOT postings by 0600. (Refer to Verify the MIS postings for the next Operating Day)   External System Data Interface. (Refer to Monitor / Review External System Data Interfaces)   Any application/database/computer issues |
| 2 | INFORM DAM Desk Supervisor with the estimated time of delay. DAM management (supervisor/manager/director) approval of the delay is required. |
| 3 | DETERMINE whether to delay the Phase II Validation event. |
| 4 | If delaying the event is needed, estimate how long is necessary for the delay of Phase II Validation. |
| 5 | COMMUNICATE with EMMS Production Support about the issues discovered. |
| 6 | NAVIGATE to the MOI Events display and change the status to “HOLD” for ‘PHASE2\_VALIDATION\_PREP’ and ‘PHASE2\_VALIDATION’ Events. |
| 7 | NOTIFY Market Participants of the delay by sending out an Advisory notice with a “Medium” priority and an Audience of “All MPs” using Notice Builder via MIS.  The recommended message to be sent to Market Participants is as follows:  ERCOT has postponed Phase II Validation for Operating Day MONTH DD, YYYY <until ETA if applicable> due to <Enter Reason Here>. Please <Enter action you would like MPs to take>. |
| 8 | VERIFY that the message has been sent to QSEs. |
| 9 | REVIEW impact to other Day-ahead processes and incorporate them into the new timeline. |

| 2.9.2 Postpone Day-Ahead Market Submission Close Timeline | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE:** | DAM offers/bids submissions are normally closed at 1000 Day-Ahead. If situations which are anticipated or have occurred that may require ERCOT to postpone the DAM close time, Market Participants must be notified as soon as practical.  This Task includes the following activities:   Study the identified Day-ahead application and computer issues   Identify the conditions which require extending the submission timeline   Estimate new DAM close time   DAM Desk Supervisor approves the delay   Notify QSEs of the delay   Monitor / Review offers/bids submission under the new timeline |
| 1 | REVIEW the following Day-ahead applications for system issues:   ERCOT postings by 0600. (Refer to Verify the MIS postings for the next Operating Day)   External System Data Interface. (Refer to Monitor / Review External System Data Interfaces)   Phase II validations. (Refer to Phase II Validations of DAM Submissions )   DAM submissions. (Refer to Perform DAM Input Data Processes)   Any application/database/computer issues |
| 2 | INFORM DAM Desk Supervisor about the estimated delay. DAM management (supervisor/manager/director) approval of the delay is required. |
| 3 | ESTIMATE how long is necessary for the submission extension. Adjust DAM\_CLOSE based on MMS down time. A down time greater than one hour shall result in a one hour delay. |
| 4 | COMMUNICATE with EMMS Production Support about the issues discovered. |
| 5 | SET the start time of the “DAM\_CLOSE” event to the extended time.  If the Start Time is unknown set the “DAM\_CLOSE” event to “HOLD” |
| 6 | NOTIFY Market Participants of the delay by sending out an Advisory notice with a “Medium” priority and an audience of “All MPs” using Notice Builder via MIS.  The recommended message to be sent to Market Participants is as follows:  ERCOT has extended the deadline for DAM submissions for Operating Day MONTH DD, YYYY until HH:MI due to <Enter Reason Here>. Please <Enter action you would like MPs to take>. |
| 7 | VERIFY that DAM close time extension message has been sent to the QSEs. |
| 8 | MONITOR / REVIEW offers/bids submissions under the new timeline. (Refer to Perform DAM Input Data Processes) |

| 2.9.3 Postpone of Day-Ahead Market Solutions Posting | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE:** | ERCOT shall notify Market Participants and post the DAM solution by 1330. Any situations which are anticipated or have occurred that impact ERCOT’s ability to solve DAM, notify the Market Participants of DAM awards, or post the DAM solution by 1330 shall be communicated to all Market Participants as soon as practical.  The DAM awards and MIS postings should occur no later than 1800. This Task includes the following activities:   Study the identified Day-ahead application and computer issues   Identify the conditions which requires extending posting DAM solution timeline   Estimate new DAM posting time   DAM Desk Supervisor approves the delay   Notify QSEs of the delay   Inform System Operations of the need to Delay DRUC  If the DAM solution is delayed, ERCOT shall take all actions necessary to produce a solution, as documented in the Operator Guide to DAM Solution Delay, and as approved by ERCOT management. |
| 1 | REVIEW the following Day-ahead applications for system issues:   DAM clearing process. (Refer to Clear Day-Ahead Market)   DAM solutions   DAM Result Posting. (Refer to Notify Market Participants of DAM awards and Verify MIS Posting)   Any application/database/computer issues |
| 2 | INFORM DAM Supervisor about the estimated delay. DAM management (supervisor/manager/director) approval of the delay is required. |
| 3 | ESTIMATE how much time is necessary to extend DAM clearing, award notices, and posting times. |
| 4 | COMMUNICATE with EMMS Production Support for any software/hardware issues discovered. |
| 5 | NOTIFY Market Participants of the delay by sending out an Advisory notice with a “Medium” priority and an Audience of “Public” using Notice Builder via MIS. (Refer process - “Notify Participants of DAM Posting Timeline Deviations” )  The recommended message to be sent publicly is as follows:  ERCOT has postponed the deadline for the posting of the DAM Solution for Operating Day MONTH DD, YYYY until HH:MI due to <Enter Reason Here>. Please <Enter action you would like MPs to take>. |
| 6 | VERIFY that the DAM clearing, award, and posting time extension message has been sent to the Market Participants. |
| 7 | NAVIGATE to Events display and change the ‘Status’ to ‘HOLD’ for the following events:  COP\_UPDATE\_AS\_CHECK  DRUC\_CLOSE  AS\_RESP\_CHECK\_1430  DAMOUTPUT\_TO\_STL  DAMINPUT\_TO\_STL |
| 8 | INFORM System Operations of DRUC delay. DRUC should be delayed at least one hour after DAM results posting. |
| 9 | COMMUNICATE with System Operations, upon DAM completion, regarding the start time for DRUC. |
| 10 | NAVIGATE to Events display and change the ‘Start Time’ to the agreed upon DRUC start time THEN change the Status to ‘NORMAL’. for the following events:  COP\_UPDATE\_AS\_CHECK  DRUC\_CLOSE  AS\_RESP\_CHECK\_1430  Note: When DAM publishes and CRRSFT\_VIOLATED\_CONSTR\_SB\_OT is populated manually run DAMOUTPUT\_TO\_STL and DAMINPUT\_TO\_STL. |
| 11 | VERIFY the following reports are posted correctly.  NP8-142: Resource AS Supply Insufficiency at 1430  NP7-464: Day Ahead Point-to-Point Option Price Report  NP6-552: Group 1 and Group 2 Load Resources for RRS  Note:  Report NP8-142 is triggered to post with DRUC publishing, if DRUC is skipped it will trigger to post at 1800.  Report NP7-464 is triggered to post with DRUC\_CLOSE event completion.  Report NP6-552 is triggered to post with DRUC\_CLOSE event completion.  If any of the postings above are inaccurate/missing, coordinate with EMMS Production Support and Web Services Support to correct the posting. |

| 2.9.4 Abort the Day-Ahead Market Clearing | |
| --- | --- |
| Step # | Procedural Steps |
| **NOTE:** | The Day-Ahead Market Clearing process may not execute due to any number of application / database / computer system problems. Once ERCOT makes the decision to abort DAM Market Clearing, Market Participants shall be notified immediately.  This task includes the following activities:   Study the identified Day-ahead application and computer issues   Identify the conditions which requires aborting the DAM clearing   DAM Desk Supervisor/manager/director must approve the aborting of DAM   Notify QSEs of the aborting DAM |
| 1 | REVIEW the following Day-ahead applications for system issues:   ERCOT postings by 0600. (Refer to Verify the MIS postings for the next Operating Day)   External System Data Interface. (Refer to Monitor / Review External System Data Interfaces)   DAM clearing process. (Refer to Clear Day-Ahead Market)   DAM solutions   Any application/database/computer issues |
| 2 | INFORM DAM Supervisor of any issues or conditions found that constitute an abort. DAM management (supervisor/manager/director) approval of the abort is required. |
| 3 | STUDY DAM data issues. Identify data issues preventing DAM from executing successfully. Resolve issues if possible. (refer process: “Day-Ahead Clear”) |
| 4 | IDENTIFY the conditions which may impact the initiation of DAM before 1230. |
| 5 | IDENTIFY the conditions which may impact DAM solution awards and postings before 1400. |
| 6 | COMMUNICATE to EMMS Production Support for any software/hardware issues discovered. |
| 7 | NOTIFY Market Participants of the abort by sending out a WATCH notice with a “High” priority and an audience of “Public” using Notice Builder via MIS.  The recommended message to be sent to Market Participants is as follows:  ERCOT has aborted the DAM for Operating Day MONTH DD, YYYY due to <Enter Reason Here>. Please <Enter action you would like MPs to take>. |
| 8 | VERIFY that the DAM abort message has been sent out. |
| 9 | COORDINATE with EMMS Production Support to make the following changes:  Update Market Status to “DAM\_POST” for affected Operating Day (Table to update is CM\_MARKET\_OT in MIDB Schema).  Truncate/Cancel data in “CAP\_AS\_OFFER\_DLY\_OT” and “CAP\_AS\_OFFER\_INT\_OT” tables in MIDB Schema for affected Operating Day. |
| 10 | COORDINATE with Shift System Operations Engineers to abort DRUC and delay HRUC. |

| 2.9.5 Emergency Operations | |
| --- | --- |
| Step # | Procedural Steps |
| 1 | In the event that the DAM Control Room is unavailable at the Taylor location, please refer to the [Business Continuity Plan](http://ep.ercot.com/hr/Manager%20Tool%20Box/Business%20Continuity%20Plan%20-%20Section%201.doc) on the ERCOT SharePoint site. |

# 3. Attachments/Appendices

## 3.1 Attachment 1: DAM Parameter Settings



## 3.2 Attachment 2: Day-Ahead Market Operational Assumptions and Configurations

Summary:

Certain assumptions and configurations are documented herein for transparency of operations of the DAM in terms of solution configurations and operational considerations. Each item listed below is critical in managing effective execution of the Day-Ahead Market in order to balance performance and quality of solution. Also listed are future studies for consideration that have come forward in the discussions with Market Participants.

ERCOT Implementation:

ERCOT has implemented the following processes and tools for DAM:

1. **Excluding constraints due to Radial Load Pockets from DAM solution:** 
   1. Configuration in the ERCOT software to exclude the radial load pockets- load that cannot be solved by increasing resources (addresses early market trials issue of under-selling of Load Zones in DAM).
      1. Also an enhancement was delivered to exclude Load Resources from solving radial load pockets (since they can only provide Ancillary Services- not energy to resolve constraint).
         1. Technical Background:
            1. Network analysis (NSM) module performs powerflow & contingency analysis based on awards obtained from the unit commitment/dispatch (SCUC) module.
            2. The output of NSM is a list of constraints (contingency-overloaded element pairs) that SCUC needs to consider so that the flow on overloaded element is <= Limit (normal, emergency or generic).
         2. The MMS configuration to ignore radial load pockets suppresses constraints caused by radial load pockets from being sent to SCUC
         3. Radial load pocket constraints are identified by meeting ALL conditions of a), b), c) below:
            1. Determine shift factors of settlement points to constraint – ignore shift factors below cutoff threshold – this cutoff only applicable for resource nodes and hubs.
            2. If the only non-zero shift factors to this constraint are from load zone settlement points (i.e. no other settlement points/resource nodes/ hubs have shift factors to this constraint)
            3. If for each load zone, the magnitude of the shift factor to this constraint is less than 10% (configurable)
   2. No posting requirements
   3. *This has been in since go-live*.
2. **Phase Shifting Transformers (PST) equipment:** 
   1. ERCOT has enabled PST optimization for the DAM application. This functionality allows tap settings for PSTs to be considered and adjusted hourly as part of the DAM solution processes.
   2. No plans to post on daily basis.
   3. *This process was effective for Operating Day July 6, 2011*.
3. **Change management for DAM contingencies:** 
   1. Operational changes and contingencies
      1. Contingencies are studied as part of the model validation process.
      2. If contingency is no longer valid due to operational change, DAM Operator will de-activate for DAM
      3. Functionality was delivered to allow operators to deselect contingencies for DAM only, without affecting RUC.
         1. Posting of de-selected contingencies from HRUC in EMIL Hourly report “NP5-200-CD”
         2. Consider leverage of MIS Notifications if other circumstances require de-selection for day-ahead contingencies, such as TOAPs
      4. *This process has been in effect since go-live*.
   2. Reduced contingency set for performance issues
      1. If significant performance issues are experienced, ERCOT has the ability to reduce contingencies based on real-time operational experience. To the extent possible, ERCOT would prioritize leaving contingencies that are at a higher voltage level, have been recently binding in DAM, SCED, or in the relevant CRR monthly auction. This would be done if significant performance issues experienced and would be noticed through a formal market notice communication.
      2. *An available mitigation strategy can be activated with market notice.*
4. **Daily Operational Alignment based on 2-day System Operations Look-Ahead** 
   1. Pre-Contingency Action Plans (PCAPs)
      1. Forecasted usage of PCAPs and applicable hours for next day from Operations Engineering
      2. Modeled as outages in the DAM
      3. DAM Operator has a display to manage and activate PCAPs
      4. *This process has been in effect since go-live*
   2. Non-Thermal Generic Constraints
      1. Set by system operations and automatically integrated from EMS/MMS
      2. Daily Generic Constraint posting- NP3-766-M, Generic Transmission Limits, that reflects both the Interconnection Reliability Operating Limit (IROL) and the limit being used by DAM, if that number is discounted from the IROL
      3. *This process has been in effect since go-live*
5. **Modeled Mitigation Plans** 
   1. Remedial Action Schemes (RAS) are in the network operations model and automatically triggered in the DAM
   2. Load Rollover Schemes are in the network operations model and provided by TSP
6. **Certain step-up transformers**
   1. When a Resource Node is located on the low side of a step-up transformer, power flow divergence can occur. ERCOT may secure transmission equipment as necessary to solve the power flow.