	© ISO New England Inc. 2012	Procedure: Perform Reserve Adequacy Assessment
	Process Name: Perform Reserve Adequacy Commitment	
	Procedure Number: RTMKTS.0050.0010	Revision Number: 46
	Procedure Owner: Steve Gould	Effective Date: January 17, 2012
	Approved By: Director, Operations	Valid Through: August 17, 2012


SOP-RTMKTS.0050.0010

Perform Reserve Adequacy Assessment

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1. Objective


The intent of this procedure is to define the business process that is performed to ensure sufficient Resources are available to meet Capacity and reserve requirements for the current and next operating day.

2. Background

ISO New England (ISO) will perform a Reserve Adequacy Assessment (RAA) and if necessary commit Generators to meet capacity and reserve requirements. Its primary focus is to review the difference between the ISO forecast of demand and the total demand that was cleared in the Day-Ahead Market. Should insufficient capacity be committed in the DA Market, Generators shall be committed to ensure adequacy of capacity in Real-Time to meet Load, Operating Reserve, and Replacement Reserve Requirements (Replacement Reserve Requirements may be set to zero). The objective function in the RAA is the minimization of the Start-up fees and costs to operate at Economic Minimum (Eco Min) for any additional Generators that are committed.

ISO will normally perform this run after the close of the re-offer period at 1800 each day. ISO will also perform additional RAA runs throughout the Operating Day, based on updated ISO load forecasts and updated Generator and transmission maintenance availability information.

The previous definition of Limited Energy Generator (LEG) in ISO New England Manual for Definitions and Abbreviations Manual M-35 (Manual 35) is identical to the current definition for the Market term Limited Energy Resource (LER) found in the ISO New England Inc. Transmission, Markets and Services Tariff, section I.2.2, Definitions.. Since EMS displays still use the acronym LEG (for Limited Energy Generator) and to prevent confusion and possible human performance errors by the Control Room Staff, LEG will be the term used in place of LER in the remainder of this SOP.


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3. Responsibilities

NOTE


Any North American Electric Reliability Corporation (NERC) Certified System Operator, certified at the RC level, has the authority to take action(s) required to comply with NERC Reliability Standards

1. The Forecaster is responsible for:
 - A. Performing the RAA.
 - B. Determining and declaring a forecasted Minimum Generation Emergency.
 - C. Determining Generator startup cancellations and de-commitments.
 - D. Performing the next operating day Capacity Analysis.
 - E. Committing non-Fast Start Generators in Real-Time.
 - F. Filling out the Unit Start-Up Compensation Form.
 - G. Running the Real Time Price Response program.
 - H. Performing mitigation of Generator bid prices.
 - I. Contacting long lead time Generators and communicating Start-Up orders.
2. The Senior System Operator and the Forecaster are responsible for performing the Real Time Reserve Analysis.
3. The Senior System Operator is responsible for issuing/confirming Start-Up orders.

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4. Controls


- The save-case is time stamped upon completion
- Initial RAA is completed by 2200 hours
- Forecaster uses Attachment A - Forecaster Task and RAA Process Checklist
- The Operating Reserve requirement is met 100% of the time except when all Generators have been committed
- Forecaster completes Attachment C - Unit Start Up Compensation Form and saves the form electronically (located on the RTSMB for Settlements)

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5. Instructions

5.1 Time of RAA

1. The Forecaster shall check off and sign Attachment A - Forecaster Task and RAA Process Checklist while performing the RAA process.
2. The Forecaster shall perform an initial RAA, an initial Security Constrained Reserve Adequacy (SCRA) and an ISO Capacity Analysis after 1800 when the Real-Time (RT) Energy Market Re-Offer Period closes.
3. When a Cold Weather Event has been declared in accordance with SOP-RTMKTS.0050.0007 - Perform Cold Weather Condition Operations, the Forecaster shall perform the initial RAA at 1400 after the RT Energy Market Re-Offer Period closes.
4. The Forecaster shall periodically perform an SCRA and update the ISO Capacity Analysis.
5. The Forecaster shall review all Gas Pipeline notifications periodically.
 - A. In accordance with SOP-RTMKTS.0050.0007 - Perform Cold Weather Condition Operations, Attachment A - Electric/Gas Operations Committee (EGOC) Communications Protocol, the Forecaster will communicate with the regional natural gas pipeline/LDC companies to discuss/determine pertinent gas sector information including but not limited to the following:
 - Weather and temperature conditions
 - Anticipated demand on the regional natural gas pipelines/LDCs and
 - Any posted Critical or Non-Critical Notices, especially those concerning pipeline capacity constraints or Operational Flow Orders (OFOs).
 - B. The Forecaster shall relay information obtained from the regional natural gas companies to the Manager, Control Room Operations (or Designee).
 - C. These communications shall be performed whenever conditions warrant.
6. When gas-fired Generators communicate with the Forecaster that they are experiencing problems with gas supply pressures or obtaining gas supply, or gas transportation services, the Forecaster shall relay this information to the Control Room Operations Shift Supervisor.

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5.2 Setting Up the RAA Case during the Re-Offer Period


NOTE

Under normal conditions the Re-Offer Period is between 1600 and 1800 the day prior to the Operating Day. When a Cold Weather Event is declared the Re-Offer Period is between 1200 (noon) and 1400.

Market Participants that wish to re-offer, normally submit re-offers through eMarket.

For Redeclarations and schedule changes, Designated Entities (DEs) should contact the Forecaster with the changes. This may be performed by phone, email or by fax.

1. The Forecaster shall receive DE re-offers for Generators/Dispatchable Asset Related Demands (DARDs) that wish to re-declare limits, schedules and commitments and perform updates using the “Unit Limits” displays.
2. Forecasters accepting Redeclarations shall request and verify the Asset ID to ensure the Redeclarations are applied to the correct Generator/DARD.
3. The Forecaster shall accept DE requests for the following:
 - Operating limit Redeclarations to reflect physical limitations
 - Self Schedule (SS) changes
 - De-commit requests
 - SS (commit) Requests
 - LEG maximum Daily Offer Redeclarations
 - LEG Hourly limits Redeclarations
 - SS pumping energy

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NOTE

Redeclarations after the close of the Re-Offer period are taken in accordance with SOP-RTMKT.S.0110.0010 - Maintain Real-Time Operational Data.

4. The Forecaster shall review each request and determine whether to accept or reject the request as follows:
 - A. Use the Current Operating Plan Capacity Analysis tool to assist in determining whether to accept or reject the request.
 - B. If the request can be accommodated according to system capacity, reserves and Reliability Control Area/Balancing Authority Area (RCA/BAA) capacity, the Forecaster shall: - enter the requested changes in the “Unit Limits” display.
 - If the requested changes result in any commitment changes, enter the commitment changes in the Market Operator Interface (MOI)
 - If the requested changes affect the initial conditions of the RSC case, enter the commitment changes in the COP using the DA/RAA Import application
 - C. If the request cannot be accommodated, inform the DE of the denial.
 - D. The Forecaster shall log the reason for any SS denial in the Control Room Event Logserver (Logserver) per SOP-RTMKT.S.0125.0040 - Update Control Room Logs.


NOTE

For combined cycle Generators modeled as a single Generator the following should be performed for redeclarations:

- Economic Maximum (Eco Max) redeclared down due to one of the combined cycle Generators taken off-line
- Eco Max redeclared down due to combined cycle released for dispatch with at least one Generator off-line

Combined Cycle Redeclarations will normally be performed by the Control Room System Operators in accordance with SOP-RTMKT.S.0110.0010 - Maintain Real-Time Operational Data.

5. The Forecaster shall not include combined cycle Generator Redeclarations in the initial RAA.
6. The Forecaster shall select a ramp profile (Hot, Intermediate or Cold) for DEs that have a start-up from the Day-Ahead Market.


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7. If the DE requests a ramp profile different from the bid-in profiles to meet their commitment:
 - A. The Forecaster shall redeclare the Generators Eco Min and Eco Max as requested by the DE for the hours needed in the start-up profile, using the ISO imposed columns in the “Unit Limits” display.
 - B. The Forecaster shall ensure the Generators are committed in the RAA/SCRA for the extended hours required for the startup profile as follows:
 - (1) Enter the ramping schedule in the:
 - MOI
 - “Unit Limits” display
 - (2) If the Generator was a Must Run (SS) in the DA, the Forecaster shall designate the additional hours requested by the Generator as Must Run.
 - (3) If the Generator was scheduled economically in the DA, the Forecaster shall designate the additional hours as pool scheduled.
 - (4) If a known Minimum Generation Emergency exists and ramp schedule or run through causes or contributes to the Minimum Generation Emergency, the Forecaster can deny the ramping request.

NOTE

SCRA solution will overwrite the DA Schedule or any prior SCRA schedule in the “Planned MW” column of the “LEG Units” display. When a Designated Entity (DE) requests a Generator be run as a LEG, the UDS will use the schedule in the “LEG Limit” column on the “LEG Units” display. When a value is placed in the LEG Limit column the LEG flag will automatically be set and the UDS will run the Generator as a LEG.


8. For DEs with a LEG the Forecaster shall perform the following:
 - A. Upon DE request to be run as a LEG (follow LEG schedule), redeclare their hourly Limited Energy Maximums with the DA, SCRA or Generator requested schedule in the “LEG Limit” column of the “LEG Units” display.
 - B. When redeclaring a Generator LEG Hourly Max Limit (Schedule), the Forecaster shall ensure the LEG Hourly Max Limit is at least 1 MW greater than the Eco Min in each hour (Unless the Redeclaration is for 0 MW).
 - C. Upon DE request, redeclare their Daily Energy available.

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5.3 Running the RAA case

5.3.1 Run the RAA case.

1. Determine the status of the Day-Ahead case:
 - A. If there is an approved Day Ahead case go to step 5.3.1.2
 - B. If there is no approved Day-Ahead case go to step 5.3.1.3
2. The Forecaster shall set up the RAA case as follows:
 - A. Copy APPROVED Day-Ahead case file, and rename as an RAA case:
 - (1) Set-up case to run a Reserve Adequacy study mode PROV.
 - (2) Set the case end and Resource Scheduling and Commitment (RSC) end hours for Hour 24 of the following day.
 - B. Remove the case ID from the RSC case window.
 - C. The Forecaster shall remove all Generators from the DA case on the MOI “Units” tab
 - D. The Forecaster shall manually enter Generators needed for RT reliability as follows:
 - (1) The Forecaster shall compare Generators from DA case and enter Generators reliability commitments as determined in SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real-Time.
 - (2) The Forecaster shall enter any reliability commitments identified in the ISO Outage Scheduling software as:
 - Special Constraint Resource (SCR)
 - Storm Constraint Up (SCU)
 - Voltage Support Up (High) [VSU(H)]
 - Voltage Support Up (Low) [VSU(L)]
 - Transmission Constraint Up (TCU)
 - Reliability Must Run (RMR)

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3. If there is no approved Day-Ahead case, the Forecaster shall set up the RT-RSC case as follows:
 - A. Copy latest SCRA case file, and rename as an RT-RSC case
 - (1) Set-up case to run a Reserve Adequacy study mode RT-RSC.
 - (2) Set the case start time to the next day for Hour Ending (HE) 01
 - (3) Set the case end and Resource Scheduling and Commitment (RSC) end hours for HE 24 of the following day
 - B. Remove the case ID from the RSC case window.
 - C. Open the Outages tab in the MOI, and enter the transmission outages for the day by clicking on the populate button.
 - (1) Working with Market Admin, set up the topology for the case.
 - D. The Forecaster shall remove all Generators from the original SCRA case on the MOI Units tab
 - E. Enter Generator commitments as determined by SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real-Time.
 - F. The Forecaster shall enter any reliability commitments identified in the ISO Outage Scheduling software as:
 - SCR
 - SCU
 - VSU (H)
 - VSU (L)
 - TCU
 - RMR
4. The Forecaster shall enter pump data per step 5.5 of this procedure.
5. Using the DA/RAA Import application, the Forecaster shall select the newly created RAA or RT-RSC case:

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6. Using the DA/RAA Import application, the Forecaster shall enter the following:
 - A. The Generation Requirements for Transmission (GRT) Constraint file
 - B. The Market Monitoring price schedules
 - C. The anticipated Fixed External Transactions using the transaction schedules provided by the Tariffs, Schedules and Oasis (TSO) Administrator:
 - (1) Review the historical data provided by the TSO to determine adjustments to interchange totals.
 - (2) Adjust interchange totals as necessary to reflect conditions that will impact deliverability of certain External Transactions.
 - D. System wide and Locational Reserve Requirements:
 - (1) Adjust reserve numbers on reserve tab for Mystic 8 and 9 as necessary.
 - (2) Adjust or input reserve numbers for HQ as necessary.
 - (3) Adjust or input reserve numbers for NB as necessary.
 - (4) Adjust or input reserve numbers to reflect Generator status.
 - E. Initialize Load Response.
 - F. Initialize Zonal Demand.
7. The Forecaster shall save the case.

NOTE

Generator's listed in the FCM Compliance Report

- Have **no** Capacity Supply Obligation, CSO = 0 MW.
- Did **not** clear energy in the Day-Ahead Market.
- Did **not** assign a Forward Reserve Market obligation to the unit.
- Did **not** designate the unit for Supplemental Availability.
- **Did** offer the unit as Bid Economic for the Real-time Energy Market.
- Is **not** participating in the Schedule 2 VAR Cost Compensation Program.

8. The Forecaster shall run the "FCM Compliance Report" after 18:00 and perform the following:
 - A. Identify all units listed with hourly "e" values.
 - B. Ensure that any unit listed is redeclared as "OOS ISO

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imposed” for the hours identified with “e”


- C. Provide a copy of the report to the Operations Shift Supervisor, Senior System Operator, and Generation Operator.

NOTE

A Generator listed in the FCM VAR Compliance Report


- Has **no** Capacity Supply Obligation, CSO = 0 MW.
- Did **not** clear energy in the Day-Ahead Market.
- Did **not** assign a Forward Reserve Market obligation to the unit.
- Did **not** designate the unit for Supplemental Availability.
- **Did** offer the unit as Bid Economic for the Real-time Energy Market.
- **Is** participating in the Schedule 2 VAR Cost Compensation Program.

9. The Forecaster shall run the “FCM VAR Compliance Report” after 18:00
- A. Identify all units listed with hourly “e” values.
- B. Units are available for commitment for voltage support of control only in the hours identified with “e”.
- (1) Units that have not been committed for VSUH or VSUL shall be re-declared as “OOS ISO imposed” for the hours identified with “e”.
- C. Provide a copy of the report to the Operations Shift Supervisor, Senior System Operator, and Generation Operator
10. The Forecaster shall run the RAA study case.


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5.3.2 *Review the RAA case.*

1. Upon RAA case solution, the Forecaster shall review the following:
 - A. System wide Ten Minute Spinning reserve (TMSR), Ten Minute Non-Spinning Reserve (TMNSR) and Thirty Minute Operating Reserve (TMOR).
 - (1) If deficient in TMSR, TMNSR or TMOR, consult with the Operations Shift Supervisor before committing additional Generators.
 - (2) When it is necessary to commit for reserve:
 - a. Utilize the Reliability Assessment Priority List to determine the least cost capacity to commit
 - b. Consider the minimum run time constraints.
 - c. Consider NY dispatchable ICAP External Transactions as compared to unit commitment for least cost commitment.
 - B. Load the results into Cap Analysis:
 - (1) Ensure that sufficient capacity for both system and reserve zones have been committed.
 - (2) If there is < 200 MW of surplus capacity, refer to Attachment B - Adjustments for Environmental Restrictions.
 - (3) Make additional commitments as necessary based on information from Attachment B - Adjustments for Environmental Restrictions and enter additional commitments in the Logserver per SOP- RTKTS.0125.0040 - Update Control Room Logs.
 - C. Hourly Regulating capability surplus/deficiency:
 - (1) If deficient in Regulation capability consult with Control Room Operations Shift Supervisor to determine if additional commitment for regulation is needed.
 - (2) When generators are committed for regulation:
 - a. First attempt to extend the commitment of the on-line Generators prior to committing additional Generators from offline status.
 - b. Should additional Generators be committed, use the Reliability Assessment Priority List and consider the minimum run time, and regulation MW available.
 - D. Use the Commitment Differences Report to determine which Generators were committed in the RSC or if their DA commitment was extended.

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2. The Forecaster shall run the “Data Validation report” in the “DA/RAA Import” application and take any necessary actions.
3. The Forecaster may commit additional Generators as needed for reliability (anticipated storms, hurricanes or other conditions that affect Bulk Electric System reliability).
4. Approve the case:
 - A. Check the “InitUnitPlan” box.
 - B. Select “Save”.
 - C. Toggle “Approval”.


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5.4 Running an Intraday RSC Case

NOTE


If loads are running over by more than 400 MW, and that trend is expected to last through the peak of the day, or there has been a loss of capacity in excess of 400 MW, and due to either of those reasons the current SCRA case indicates a need for additional commitment, it may warrant running an Intraday RSC case. In addition if unplanned transmission outages occur that could create constraints then consider running an Intraday RSC case.

1. If conditions warrant, consider running an intraday RSC case.
2. Copy the current SCRA case and rename it as an RSC case.
3. Remove the case ID from the RSC case window.
4. Set the case start to the beginning of the next hour
5. Set the study mode to “PROV”.
6. Using the DA/RAA Import application the Forecaster shall enter the following data if it has changed from the last approved SCRA case:
 - A. GRT Constraint File.
 - B. The anticipated External Transaction Data.
 - C. System Wide and Locational Reserve Requirements.
 - D. If the load forecast has been changed, initialize the Zonal Demand in the “DA/RAA” Import application.
7. The Forecaster shall run the RSC case.
8. The Forecaster shall review and approve the Intraday RSC case as described in step 5.3.2 of this procedure.

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5.5 Scheduling Pumping

1. During the Re-Offer period, RAA process and Real-Time, the Forecaster shall be in communications with the DE to receive any Real-Time SS.
2. The Forecaster shall SS pumps if requested by:
 - A. Redeclaring the Minimum Consumption (Min Cons) value in the “Demand Limits” display for the MW value and hours of SS requested.
 - B. Set the Must Run flag for the requested hours.

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5.6 Running the SCRA Case

5.6.1 Run the SCRA case

1. The Forecaster shall make a duplicate of the RAA case and re-name as SCRA case.
2. The Forecaster shall set up the case to run an SCRA study mode.
3. The Forecaster shall input the approved RAA case number into the RSC window.
4. If the re-named SCRA study case has changed from the RSC case or a previously run SCRA case, the Forecaster shall use the DA/RAA Import application to enter the following data:
 - A. GRT Constraint file changes.
 - B. Market Monitoring price schedule changes.
 - C. For Generators mitigated by Market Monitoring in the DA, the Price Schedule changes.

NOTE


If a Generator has been mitigated in DA and requires mitigation in Real-Time, perform actions as described in Step 5.7.2.

- D. The system wide and Locational Reserve Requirements.

NOTE

The Forecaster needs to determine which Generators are running and adjust or input the reserve numbers into the Reserve Requirements to reflect actual Generator status.

- E. The anticipated Fixed External Transactions using the transaction schedules provided by the TSO Administrator.
 - (1) Review the historical data provided by TSO to determine adjustments to interchange totals.
 - (2) Adjust interchange totals as necessary to reflect conditions that will impact deliverability of certain External Transactions.
- F. The hourly Real-Time Demand Response (RTDR) zonal MW schedules:
 - (1) Any time the Forecaster makes changes to the RTDR Forecast, the Forecaster shall initialize the DR Zonal Forecast, edit DR Zonal Forecast and re-run the SCRA case.


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5. The Forecaster shall input requested changes to Pumped Storage SS for Real-time operation as described in Step 5.5.
6. The Forecaster shall enter any reliability commitment identified in the ISO Outage Scheduling software as:
 - SCR
 - SCU
 - VSU (H)
 - VSU (L)
 - TCU
 - RMR

NOTE

Do not put Generators that have a Claim 10/30 demonstration scheduled (Indicated in the ISO Outage Scheduling software) into the SCRA case.

7. The Forecaster shall save the case.
8. The Forecaster shall run SCRA study.


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5.6.2 Review the SCRA solution

NOTE

Running the SCRA case gives a security-constrained dispatch to meet ISO load forecast with Generators committed in the DA and RAA processes. Running the initial SCRA case will normally include the SPD and SFT run.

1. Upon completion of the SCRA case solution, the Forecaster shall review the following Report information:
 - A. Reserve Summary Report for System wide, TMSR, TMNSR and TMOR:
 - (1) If deficient in TMOR, commit additional Generators.
 - (2) If deficient in TMSR or TMNSR with a surplus of TMOR, evaluate converting TMOR to alleviate the deficiency. If there is insufficient TMOR to convert to meet ten minute reserve requirements, commit additional units.
 - (3) When committing for reserve utilize the Reliability Assessment Priority List to determine the least cost capacity to commit and also consider the minimum run time constraints.
 - (4) Consider NY dispatchable ICAP External Transactions as compared to unit commitment for least cost commitment.
 - B. Reserve Zone Summary Report for TMOR:
 - (1) If deficient in Locational TMOR, commit additional Generators.
 - (2) When committing for reserve, utilize the Reliability Assessment Priority List to determine the least cost capacity and refer to SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real-Time to commit generation.
 - C. Unit hourly Report:
 - Review for problems with Generators minimum down times.
 - Review for ramp schedules and commitments outside of DA schedules.
 - D. Hourly Generator violations (Ramping, MW output is < or > limits):
 - If Ramping violations occur on startup or shutdown enter startup/shutdown profile as Redeclared operating limits.

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E. Hourly network violations (Branch flow, Interface flow and Phase angle):

(1) If Branch flow violations exist, manually intervene as necessary by:

- a. Committing additional Generators.
- b. De-committing on-line Generators.
- c. With concurrence from Security Operator, change the limits in the MOI “Branch” tab.

(2) If Interface flow violations exist, perform the following as necessary:

a. For import limited interfaces, commit additional Generators.


b. For export limited interfaces:

(i) If there are insufficient Generators on-line outside the export area to meet demand, commit additional Generators outside of the export area (The magnitude of the interface violation indicates the minimum amount of capacity that must be committed).

(ii) If the Generator MW output is equal to their Emergency Minimum such that there is an excess of generation on-line in the export area:


- Prepare a list of Generators for de-commitment in Real-Time including Generators that have Eco Min Limit and minimum downtime that closely match the magnitude and duration of the interface violation.

c. With concurrence from Security Operator, change the limits in the MOI “Input Constraint” tab.

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2. The Forecaster shall import the SCRA case results into the Forecast Capacity Analysis tool as follows:
 - A. Load the Market Data
 - B. Load the GRT Data
 - C. If the Forecaster projects the difference between: 1) the sum of Fixed External Transaction purchases and all on-line generating unit Eco Min Limits and 2) the projected load consumption for all of New England is less than 300 MW, the Forecaster shall notify the Operations Shift Supervisor to consider issuing a Minimum Generation Emergency Warning per SOP-RTMKT.S.0120.0015 - Implement Minimum Generation Emergency Remedial Action.

3. Using the Forecast Capacity Analysis Tool, and DA/RAA Import application, the Forecaster shall prepare the DR Zonal Report as follows:
 - A. Click the “RTDR” button in Forecast Capacity Analysis
 - B. In the box that opens, verify that the data is correct.
 - C. Click the “Export RTDR Schedules to MDB” button and verify success.
 - D. In the DA/RAA Import application, click the “Initialize DR Zonal Forecast” button and verify success.
 - E. In the DA/RAA Import application, click the “Edit DR Zonal Forecast” button, verify correct values, and manually upload the RTDR schedules to the MOI.
 - F. In the MOI, run the DR Zonal Report and check for accuracy.

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NOTE

The LEG flag defaults to False for each LEG offered in the DA Market. The DE must request this flag be set to True in order to be operated as a LEG in Real-Time operations.


4. The Forecaster shall perform a LEG review:
 - A. If the SCRA case uses all of the energy available from a LEG utilize the ISO Capacity Analysis to evaluate the effect of the loss of sustainable capacity from the LEG
 - (1) If capacity loss results in a capacity deficiency discuss with the Operations Shift Supervisor to determine if Posturing is required, or if further commitment is necessary.
 - (2) If Posturing is required, go to SOP-RTMKTS.0120.0020 - Implement Capacity Remedial Action and perform required actions.

5. The Forecaster shall use the Reliability Assessment Priority List for any commitments.

6. In order to more closely reflect real-time zonal LMP prices in SCRA cases, the Forecaster shall consult with the Operations Shift Supervisor and consider the following actions in the SCRA cases:
 - A. When prices are greater than \$100 and are keying on Ten Minute Spinning Reserve Penalty Prices, refer to the guidelines stated in SOP-RTMKTS.0070.0010 - Monitor Generators and Dispatchable Asset Related Demands, Attachment E - Spinning Reserve Requirement Lowering Criteria, to determine if the TMSR requirements can be lowered to 25% of the largest New England contingency.
 - B. For the hours that the above conditions are true, the Forecaster may reduce the TMSR requirements in the MOI “Area Hourly Tab” of the “Input Data” screen.
 - C. If conditions do not warrant reducing the TMSR requirement per the above guidelines, the Forecaster should consider bringing on available off-line Fast Start units that the Loader Operator would consider starting in his UDS cases.

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- D. When LMP prices are greater than \$100 due to constraint limits, the Forecaster should consider bringing on Fast Start units in the SCRA case that the Loader Operator would consider starting in UDS cases.
 - E. When prices are greater than \$100 due to constraint limits, the Forecaster should revise limits to reflect available temporary limits.
 - F. When prices are greater than \$100 due to constraint limits and the Forecaster is unable to reflect real-time actions (i.e., SPS operation) that would mitigate the constraint, the Forecaster should exclude the constraint or skip SFT for the hours necessary.
 - G. Anytime the Forecaster takes any of these actions, the Forecaster shall advise the Operations Shift Supervisor of the actions he is taking.
7. If any Zonal prices from the DA case or any SCRA case, with exception of the SCRA HE 18, are \geq \$100 (during week days, Non Holidays), the Forecaster shall go to SOP-RTMKTS.0120.0020 - Implement Capacity Remedial Action and determine if the Price Response Program needs to be initiated.

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5.6.3 Approving SCRA case

NOTE


When a case is approved the Forecast Information (FI) reports for Generators, External Transactions and Real-time Demand Response resources are published to secure sites for review by the Lead Participant(s). This information may be accessed by the LCCs and is available for incorporation into Powerflow.

1. The Forecaster shall update the Capacity Analysis prior to approval of the SCRA case by performing the following:
 - A. Load the Market Data
 - B. Load the (GRT) constraint file.
2. The Forecaster shall review the updated Capacity Analysis:
 - A. Determine if the 300 MW of Simultaneous Activation of Ten-Minute Reserves (SAR) is available from NYISO by contacting the on duty scheduler.
 - B. Compare New York scheduled transactions and the Total Transfer Capability (TTC) to determine if SAR to New England is available.
 - (1) When scheduled transactions are within 300 MW of the TTC, only credit the balance as available SAR.


NOTE

Based on system conditions, the Operations Shift Supervisor determines the amount of capacity margin that is recorded in the Capacity Analysis.

3. Prior to the Operating Day, the Forecaster shall verify that the capacity margin on the updated Capacity Analysis is equal to or greater than the amount directed by the Operations Shift Supervisor.
4. If the updated Capacity Analysis indicates a deficiency of capacity in the ISO-NE System, or ISO-NE Reserve Zone, and all available Generators have been committed, perform the following:
 - A. Review/edit the Real-time Demand Response hourly schedules with the Operations Shift Supervisor prior to approving the SCRA case.
 - B. If approving a 22:00 SCRA case that has Demand Response in it, send an email to “DR Audits” group mailbox to notify the DR group of that fact.

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5. The Forecaster shall run the SCRA Data Validation Report in the DA/RAA Import application and make changes as necessary.
6. The Forecaster shall approve the SCRA case in the DA/RAA Import application.
7. The Forecaster shall contact all long lead-time Generators committed during the RAA process and communicate start-up times.
8. The Forecaster shall print and distribute the following Current Operating Plan (COP), reports using the DA/RAA Import application:
 - System Summary
 - System Reserve Summary
 - LEG Summary
 - Commitment Differences
 - Unit Hourly Report Loading
 - LMP Summary
 - Startup/Shutdown Summary
 - Transaction Hourly
 - Asset Related Demand Hourly Clearing
 - Reserve Zone Summary
 - Constraint Summary
 - Zonal DR Forecast
 - Capacity Analysis
9. If the ISO Outage Scheduling software Must Run report indicates any Generators are scheduled for a Claim 10/30 or MRR demonstration, the Forecaster shall highlight the Generators on a hard copy and deliver to the Senior System Operator.
10. The Forecaster shall provide hard copy reports of COP as requested by Control Room staff.
11. When the COP hard copy is received from the Forecaster, the Senior System Operator shall confirm/issue Generator Start-Up orders.


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5.6.4 Forecaster/
Operations Shift
Supervisor 2200
Meeting

NOTE

The 2200 meeting allows the opportunity to familiarize Control Room System Operators with the upcoming load / Generator expectations.


1. The Forecaster and Operations Shift Supervisor shall meet at 2200 to discuss the SCRA case, including the following items:
 - Current / upcoming weather conditions
 - Current Load Forecast Deviation and if loads are running 400 MW off expectations and whether any remedial actions are needed
 - The latest weather report and if major revisions to weather may require a rerun of the load forecast. If latest weather forecast indicates major changes contact the weather providers to verify forecast
 - If load forecast is running over but revised forecast indicates no changes to the peak, discuss whether to consider increasing surplus equal to or greater than the MW amount that the load is running over
2. If the Forecast Capacity Analysis indicates a deficiency of capacity at the ISO-NE System, or ISO-NE Reserve Zone, and all available Generators have been committed, the Forecaster and Operations Shift Supervisor shall perform the following:
 - A. Review the Real-time Demand Response hourly schedules.
 - B. Discuss the need to call for capacity available when OP-4 Action 7 is declared IAW SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real-Time.

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5.7 Update SCRA during Operating Day

5.7.1 Run an Updated SCRA Case

1. The Forecaster shall update the SCRA periodically to reflect:
 - Generator commitment and de-commitment requests
 - SS changes
 - DE Redeclarations
 - Submittal and cancellation of Real-Time External Transactions
 - Updates to the ISO load forecast
 - Line Outages
 - Line limit changes
 - Hourly Real-time Demand Response MW schedules
2. If the SCRA update is performed following an Intraday RSC case, the Forecaster shall:
 - A. Duplicate the Approved Intraday RSC case
 - B. Set up the case to run an SCRA study mode
 - C. Enter the approved Intraday RSC case number into the RSC window
3. If the SCRA update is not following an Intraday RSC case, make a duplicate of the latest approved SCRA case and rename it for the current case time.
4. If an updated RT mitigation schedule is available, the Forecaster shall upload the updated RT mitigation schedule into the SCRA case at 2300 and use this updated schedule for all subsequent cases.
5. If an updated RT mitigation schedule is not available, the Forecaster shall continue to use the RAA mitigation schedule until notified by Market Monitoring.
6. The Forecaster shall set the start time of the SCRA case being run to reflect the future hours for that case.
7. The Forecaster shall verify the case is set to study mode SCRA.

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8. Using the DA/RAA Import application the Forecaster shall enter the following data if it has changed from the last SCRA case:

NOTE

Forecasters can only perform this function when on the FCSTPRD1 and the FCSTPRD3 machines.

When making changes in the GRT, **NEVER** over write a calculation. Only make changes to a cell that has a number in the Excel Spreadsheet Formula Bar. Always ensure that the Operations Shift Supervisor, Security Operator and the Forecaster all agree on, and are aware of any changes that are made.

- A. GRT Constraint file: If GRT file needs to be updated, perform the following:
- (1) Click on the GRT Export Icon in the Main Control Center (MCC) Shortcuts Folder or access using `\\:RTSMB/GRT_RW`.
 - (2) Open the GRT Spreadsheet for the appropriate day.
 - (3) Make changes as necessary in the GRT.
 - (4) To save and export the GRT spreadsheet, click the “GRT Export” button.
 - (5) Close GRT spreadsheet.
 - (6) Re-import the GRT data into MOI using DA/RAA Import application (upload constraint file and Locational Reserve Requirements).
 - (7) Re-import the GRT into Cap Analysis using the Load GRT Data button in that application.
- B. Each RCA/BAA External Transactions data:
- (1) Review the historical data provided by the TSO to determine adjustments to interchange totals.
 - (2) Adjust interchange totals as necessary to reflect conditions that will impact deliverability of certain External Transactions.
 - (3) Do not commit any off line Generators (with the exception of Fast Start Generators) to support External Transaction sales.
- C. Updated system wide and locational Reserve Requirements.
- D. Update Units Tab to reflect Generator commitment changes.

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- E. Update Pumped Storage fixed and dispatchable demand.
 - F. If the load forecast has been changed, initialize Zonal Demand in the DA/RAA Import application.
 - G. Hourly Real-time Demand Response MW schedules.
9. Using the DA/RAA Import application, the forecaster shall initialize the DR Zonal Forecast, edit DR Zonal Forecast, and verify DRI Zonal Forecast report in the MOI is correct.

NOTE


In the event of a late HE13 SCRA case approval, the COP needs to be updated so that it is current. The DA Market inputs the status of Generators from the COP and needs the most current data.

10. If there are Generator commitment changes, the Forecaster shall first update the COP and then update the SCRA.
11. The Forecaster shall:
- A. Run an SCRA case.
 - B. Perform SCRA data validation.
 - C. Review the SCRA solution and commit Generators as necessary.

NOTE

It is acceptable for naturally occurring surplus to be present due to the DA clearing and/or Real-Time Self-Scheduling or self-commitment by DEs.

12. The Forecaster shall update the Capacity Analysis prior to approval of the updated SCRA case:
- A. Load the GRT constraint file.
 - C. Run the Capacity Analysis application.
 - B. Review the Capacity Analysis and attempt to maintain as close to 0 MW excess capacity above Operating Reserve and Replacement Reserve requirements.
 - D. If the updated Capacity Analysis indicates a deficiency of capacity in the ISO-NE System, or ISO-NE Reserve Zone, and all available Generators have been committed, review/edit the Real-time Demand Response hourly schedules with the Operations Shift Supervisor prior to approving the SCRA case.
13. The Forecaster shall approve the SCRA case and post the results in accordance with Step 5.6.3.

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5.7.2 Mitigation of Generators/Real-Time

NOTE

Market Monitoring notifies the Forecaster when new mitigation schedule is to be used.


- If able to, Market Monitoring uploads a new mitigation schedule to the RTSMB.
- If unable to upload a new mitigation schedule to the RTSMB, Market Monitoring emails the new schedule to the on-shift Forecaster.

1. When a new mitigation schedule is developed by Market Monitoring, the Forecaster shall perform the following:
 - A. If the schedule is from the RTSMB, upload the new schedule using the DA/RAA Import application.
 - B. If the schedule was emailed from Market Monitoring:
 - (1) Save the schedule to the computer desk top.
 - (2) Using the DA/RAA Import application, upload the schedule from the computer desk top.
2. When notified by Market Monitoring to mitigate a generator in Real Time, the Forecaster shall perform the following:
 - A. Select the “Unit Details” display for the mitigated Generator and print out the existing incremental price curve to use as a reference.
 - B. Select the DA/RAA Import Tool and click on the “Real Time Mitigation” button to open the real-time mitigation display.

NOTE

The Generator Mitigation schedule selection field is populated by numeric schedule ID, not written descriptions of the mitigation schedule.

- C. In the real-time mitigation display, enter the following parameters:
 - (1) Generator to mitigate
 - (2) Generator mitigation schedule
 - (3) Beginning hour of mitigation
 - (4) Ending hour of mitigation
- D. Click the “Upload” button to implement the mitigated schedule.


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- E. After waiting two minutes for the schedule to upload:
 - (1) Re-open the “Unit Details” display
 - (2) Verify the incremental price curve has changed
- F. Open the DMT Scheduling page:
 - (1) Filter on “Pool Scheduled Generators” (P)
 - (2) Check the “Schedule” column and verify the mitigation schedule was uploaded
- G. Notify the Loader Operator of the mitigated Generator and enter the details of the mitigation action in the Logserver per RTMKTS.0125.0040 - Update Control Room Logs.
- H. Using a telephone, notify the Market Monitoring On Call Representative the mitigation actions are complete.

NOTE

When running the next SCRA case, the mitigation schedule for the unit that was mitigated in real-time must be selected and ran. If this is not done, the price schedule will default back to the unit original price offer.

- 3. To use the mitigated schedule determined by Market Monitoring in the next SCRA case, the Forecaster shall perform the following:
 - A. Using the MOI, select “Units” page and add the mitigated unit to the page for all hours it is to be mitigated
 - B. After clicking the “Commit” box, carefully select the mitigated schedule that was used for Real Time mitigation,
 - C. Save the changes and run the case
 - D. When this case is exported, verify the Generator is on the correct mitigated schedule.

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5.8 Startups, Cancellation and De-Commitment of Generators

5.8.1 Decision to Cancel S/Us or De-Commit Generators

1. When conditions have changed from the original commitment, the Forecaster shall determine whether Generators committed, as part of the RAA, should be de-committed. Examples of such conditions are:
 - Actual load less than originally forecast
 - Unexpected availability of Generators (for example, a Generator coming online from a forced outage)
 - Unexpected availability of contract energy via inter-tie (for example, due to restoration of transmission capability)
 - Excessive Real-Time Generator SSs
2. The Forecaster shall select the highest cost Generators from the DMT Scheduling Tab MOI Priority List, for startup cancellation or De-commitment based on the following:
 - Operating Rate
 - Generator energy offers from 0 - Eco Min
 - Generator No Load cost
 - Generator minimum run time
 - Generator minimum down time
 - Future startup schedule
 - Ability to maintain system reliability


5.8.2 Communications

1. When a decision to cancel a startup or de-commit an on-line Generator has been made, the Forecaster/Generation Operator shall promptly notify the Generator.
2. If a decision is made to cancel a startup for a Fast Start Generator, the Generation Operator shall inform the Forecaster.

NOTE

An electronic version of Attachment C - the Unit Start-Up Compensation Form is available on the RTSMB for Settlements.

3. When a Generator start up has been cancelled (including Fast Start Generators), the Forecaster shall fill out the electronic version of Attachment C - Unit Start-Up Compensation Form on the RTSMB:
 - Subsequent cancelled start-ups on the same day shall be filled out on the electronic version of Attachment C - Unit Start-Up Compensation Form already created for that day


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4. The Forecaster shall save the electronic version of Attachment C - Unit Start-Up Compensation Form on the RTSMB.
5. If the ISO requests a start prior to the Generator satisfying its Minimum Down Time and the Generator agrees to waive its Minimum Down Time, the Forecaster shall fill out the electronic version of Attachment C - Unit Start-Up Compensation Form.

NOTE

When a Generator agrees to shutdown economically and waive their Minimum Down Time at the request of ISO, they are entitled to be compensated for the additional startup. If this is not documented on the electronic version of Attachment C - Unit Start-Up Compensation Form, the Generator may not receive the correct compensation for the start up.

6. When a Generator has been de-committed or a start-up has been cancelled, the Forecaster shall make an entry in the Logserver per SOP-RTMKTS.0125.0040 - Update Control Room Logs.

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6. Performance Measures

None.

7. References

NPCC Directory # 5 Reserve

ISO New England Inc. Transmission, Markets and Services Tariff, Section I.2.2, Definitions

ISO New England - ISO New England Inc. Transmission, Markets and Services Tariff Section III, ISO New England Market Rule 1 - Standard Market Design (Market Rule 1)

ISO New England Manual for Market Operations Manual M-11

- Section 5 - Scheduling and Dispatch Philosophy and Tools
- Section 6 - Scheduling Strategy and Methods

ISO New England Manual for Definitions and Abbreviations Manual M-35 (Manual 35)

ISO New England Operating Procedure No. 4 - Action During a Capacity Deficiency (OP-4)

ISO New England Operating Procedure No. 8 - Operating Reserve and Regulation (OP-8)

SOP-DAMKTS.0040.0010 - Create Day Ahead Market Schedule

SOP-OUTSCH.0040.0010 - Create Load Forecast

SOP-OUTSCH.0040.0020 - Create Seven-Day Capacity Margin Forecast

SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real-Time

SOP-RTMKTS.0050.0007 - Perform Cold Weather Condition Operations

SOP-RTMKTS.0050.0030 - Produce Forecast Daily Report

SOP-RTMKTS.0070.0010 - Monitor Generators and Dispatchable Asset Related Demands


SOP-RTMKTS.0110.0010 - Maintain Real-Time Operational Data

SOP-RTMKTS.0110.0015 - Flagging for RT Market Settlements

SOP-RTMKTS.0120.0015 - Implement Minimum Generation Emergency Remedial Action


SOP-RTMKTS.0120.0020 - Implement Capacity Remedial Actions

SOP-RTMKTS.0125.0040 - Update Control Room Logs.


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8. Revision History


Rev. No.	Date	Reason	Contact
0	3/1/03	Original	Joe Mercer
1	03/01/03	Revised based on changes to RAA/SCRA software	Joe Mercer
2	03/24/03	Revised to incorporate startup profiles	Joe Mercer
3	06/20/03	Revised to incorporate changes to RAA process to include Capacity Analysis and Emergency Minimum Emergency.	Joe Mercer
4	10/25/03	Revised to incorporate changes based on new business processes and commitments for External Transaction sales	Joe Mercer
5	01/01/04	Revised to incorporate changes to Reserve Requirement commitment and commitments for extreme reliability conditions	Joe Mercer
6	2/21/04	Revised to include NOTE explaining the rule that units may not S/S Regulation after the close of re-offer period. Revised to clarify RMR inclusion.	Joe Mercer
7	04/01/04	Revised to include changes in redeclaring combined cycle units. Added step for requesting Asset ID for Redec	Joe Mercer
8	10/20/04	Revised Capacity surplus required in Day Ahead run, revised for changes in LEG software	Joe Mercer
9	11/09/04	Revised Att. B redec Log sheet, steps for redeclaring REG units Avail/SS status	Joe Mercer
10	12/08/04	Revised to add information on RAA during Cold Weather conditions, changed procedure owner.	Seamus McGovern
11	02/01/05	Updated SOP for RTO terminology	Seamus McGovern
12	02/22/05	Revised NOTE concerning Reserve percentages commitment, SCRA copy for Evac Packs	Seamus McGovern
13	06/02/05	Revise to reflect the changes in the Flagging process, addition of Load Response input and changes in the Cancelled Start-Up process	Seamus McGovern
14	09/30/05	Revised for ASM Phase I Regulation changes – removed reference to Retired SOP.0080.0010	Seamus McGovern
15	11/28/05	Revised to include changes to MR1 App H (Cold Weather) and changes in ramp scheduling. Changes to inputting Gen commitment changes into COP and SCRA	Seamus McGovern
16	5/5/06	Updated for Control Room Forecaster Split, add in step for SAR in Cap Analysis, Deleted Att A Removed references to Cold Weather Conditions Ops	Steve Weaver
17	10/01/06	Revised for ASM Phase II	Steve Weaver
18	10/23/06	Revised to include information on importing/changing GRT spreadsheet	Steve Weaver
19	12/04/06	Revised to include changes to MR1 App H (Cold Weather)	Steve Weaver
20	02/02/07	Revised to remove Committed for Reg flag and Committed for Spin flag, revised to include notification of DAM for changes to COP. Added Att A RAA checklist	Steve Weaver

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21	04/30/07	Revised procedure for minor editorial and process clarifications and revised Attachment A	Steve Weaver
22	05/17/07	Added detail to mitigation actions	Steve Weaver
23	08/15/07	Added Steps and Attachment B for dealing with environmental restrictions	Steve Weaver
24	09/17/07	Added alternate method for incorporating MMM schedules	Steve Weaver
25	10/04/07	Clarified the tool for incorporating MMM schedules	Steve Weaver
26	10/23/07	Added 2200 meeting for Forecaster and Shift Supervisor	Steve Weaver
27	12/10/07	Added step 5.1.5 directing Forecaster to periodically review all gas pipeline notifications, communicate with gas pipeline companies, and relay info to Mgr, Control Room. Added two steps in Att A checklist for Forecaster to review gas pipeline notifications. Added step 5.1.6 Whenever gas-fired generators communicate they are experiencing gas line problems, the Forecaster will relay this information to the Mgr, Control Room. Based on this information and whenever gas line conditions warrant, the Mgr, Control Room will communicate with regional gas companies to discuss/determine pertinent gas sector conditions and circumstances.	Steve Weaver
28	05/12/08	Annual Review by Procedure Owner changed the following steps: modified 5.1.5; 5.1.6; 5.2.3; 5.2.7.A; deleted 5.2.7.B. (4); added 5.3.2; reworded 5.3.4. a. & b.; added 5.3.5; deleted 5.3.7.F. & G.; modified 5.3.2.1.C.(1), (2), & b.; modified 5.3.2.2; added new section 5.4; modified 5.6.1.3 & 6; deleted 5.6.1.8; added 5.6.2.1.A.(2); modified 5.6.2.3.A. & (1); modified 5.6.4.3 & 6; added 5.7.1.3; modified NOTE after 5.7.2.1.I; Added step 5.5.2.1.A.(2) to help clarify commitment for TMSR. Defined acronyms for frequently used terms.	Steve Weaver
29	07/23/08	Revised Att A to add steps to fill out Forecast Report for Shift Sup Daily Report and email Market Ops for units committed for high voltage.	Steve Weaver
30	11/25/08	Changed "Review Due Date" to "Valid Through: mm/dd/yyyy (24 months from effective date) per Mgr, Operations direction Attachment A: in the "Create and Export Load Forecast by 10:00" item, added additional sub-item for the period Dec 1 to Mar 1	Steve Weaver
31	03/27/09	Globally where appropriate, replaced Resources with Generator; Deleted steps 5.6.2.1.E.(2) b.(ii) (a) & (b) Modified step 5.6.2.2. Added to Attachment A "Check, review, finalize & bridge flags (00:30)"; and "Review night Forecaster flagging finalizations and documents;	Steve Weaver
32	04/02/09	Added items which may require an update for SCRA; Clarified conversions of TMOR	Steve Weaver
33	05/26/09	Minor editorial changes; Added SOP-RTMKTS.0110.0015 to References; Modified Attachment A to add the above SOP where applicable and to direct day Forecaster review of night Forecaster emails;	Steve Weaver

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34	06/16/09	Modified Step 5.6.2.2;	Steve Weaver
35	06/29/09	Added Steps 5.7.1.3 and 5.7.1.4; Added item for 23:00 to Attachment A	Steve Weaver
36	07/10/09	Added step 5.6.2.5.A-G; Modified step 5.6.5.1 added NOTE and steps 5.6.5.2. & 3.; Added OP-14 Appendix C to Section 7. References; Added new item and sub-items to Attachment A after "Price Response notifications..."	Steve Weaver
37	07/27/09	Modified section 4 added 5 th bullet' Modified Steps 5.2.1., 5.2.5.B. 1 st bullet, 5.2.7.A., 5.2.7.B., NOTE prior to 5.2.8. 5.2.8., 5.5.10.A., 5.6.3.1.H., 5.8.1.2, Modified NOTE after 5.8.2.4.; Attachment A items 13, 14, & 34 to reflect changes due to EMU project; Added Attachment C - <u>Unit Start-Up Compensation Form</u> . Made minor grammatical and editorial changes	Steve Weaver
38	09/21/09	Globally minor editorial and formatting changes; Globally replaced LER with LEG; Globally replaced Market Participant with Designated Entity; Clarified directed actions concerning communications with Market Monitoring; Deleted step 5.2.4 and sub-steps; Moved information in NOTE after former step 5.2.5.B to NOTE box prior to new step 5.2.5; Modified steps 5.3.1.5, and 5.3.1.6; Modified Steps 5.6.1.4. & 5.6.2.2., & NOTE prior to step 5.6.2.3.; Deleted former Section 5.6.5 and moved the directed actions of former step 5.6.5.1 to be the new step 5.6.2.6., & added new step 5.6.2.7 and sub-steps; Deleted all of former step 5.6.3 and sub-steps;; Modified new step 5.6.4.1 and 5.6.4.2.B., NOTE prior to step 5.6.4.5., steps 5.6.4.6., 5.6.4.7., & 5.6.4.8. and sub-steps; Modified Step 5.7.1.-6., added new step 5.7.1.7., modified step 5.7.1.8.(4), Removed 1 st bullet of step 5.7.1.8., & moved 1 st paragraph of NOTE after 5.7.1.12 to be a new NOTE prior to 5.7.1.11, modified step 5.7.1.13.; Replaced Step 5.7.2, all sub-steps & all NOTES Added Manual M-35 to References Section; Modified Attachment A item 8, item 19, and item 32; Added retention time statement at end of Attachment A	Steve Weaver
39	12/01/09	Globally Minor editorial, grammar and format changes; Used acronym S/S after defining for Self-Schedule; Added new step 5.2.4.D; Modified step 5.3.1 and sub-steps; Added new step 5.3.1.3 and sub steps; Added new step 5.3.1.5; Step 5.3.1.6 deleted former sub-step A and added new sub-steps; Modified Step 5.6.2.1.E.(2)b.(ii) hanged "Minimum Generation Emergency" to "interface violation"; Replaced item on Attachment A;	Steve Weaver

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40	04/14/10	Section 3 NOTE replaced text with new standard text verbiage; Global replaced Control Area (CA) with Reliability Coordinator Area (RCA); Deleted Section 5.6.2.7; Deleted Attachment A 20 th item	Steve Weaver
41	06/01/10	Biennial review by procedure owner; 5.3 Run RAA Case - Added step to execute the FCM Compliance report 5.6 Execute SCRA Case - Added step to upload the RTDR MW schedules to case. 5.6.3 Approving SCRA Case - Added step requiring Forecaster to review with the Shift Supervisor any Real-time Demand Response MW that are scheduled in the case. 5.6.4 Forecaster / Shift Supervisor 2200 Mtg - Added step requiring Forecaster to review with the Shift Supervisor any Real-time Demand Response MW that are scheduled in the case. 5.7 Update SCRA during Operating Day - Added step to upload RTDR to case. Added step to review any RTDR MW schedule with Shift Supervisor prior to case approval. Attachment A - Forecaster Task and RAA Checklist - Added / modified steps to conform with the body of the procedure	Steve Weaver
Rev 42	08/17/10	Biennial review by procedure owner; Globally deleted :MSS: from all instances of "MSS-MOI"; Globally added "DA/" to RAA Import application; Section 4, 5 th bullet replaced RTSMDB with RTSMB; Globally deleted "EMS→RTGEN→"; Section 5.2 NOTE deleted; Modified step 5.3.1.8, 5.6.1.4, 5.6.1.4.F(1),; Added steps 5.6.2.1.E(1)c., 5.6.2.1.E(2)c., Deleted steps 5.6.2.1.B & 5.6.2.1.C; Added step 5.6.2.2 & sub-steps, 5.6.2.3 & sub-steps, 5.6.3.1.A; Modified step 5.6.3.10; Added new sub-step 5.6.4.2.B, step 5.7.1.9; Step 5.7.2..A & B.(2) replaced "Export Tool" with "application"; Attachment A modified & added/deleted items to checklist	Steve Weaver
Rev 43	11/10/10	Replaced all page numbers with Page X of Y; Section 5.1 Title and globally, made consistent use of acronym RAA; Section 3 defined NERC acronym; Section 5.3.1.2.D.(2) modified to change directed actions based on replacing the SAM dB with the ISO Outage Scheduling software; Section 5.3.1.2.F. modified to change directed actions based on replacing the SAM dB with the ISO Outage Scheduling software; Step 5.3.2.3 replaced "Power" with "Electric"; Step 5.6.1.6 & following NOTE modified to change directed actions based on replacing SAM dB with the ISO Outage Scheduling software; Step 5.6.3.8 Added and/or re-ordered the report listings; Step 5.6.3.9 replaced "...SAM dB..." with "...ISO Outage Scheduling software..." Globally deleted the colon from all instances of 2400 time; Att A Moved item 17 up to item 8, changed time on item 38;	Steve Weaver

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Rev 44	02/23/11	Global updated Header copyright date; Section 2 made clarifications in last paragraph; Modified Section 5.3.8.B to re-declare to Unavailable only the hours where the Generator was bid Economic. Added Section 5.3.9 requiring the Forecaster to execute the FCM VAR Compliance Report and perform re-declaration for Generators listed in the report if they have not been committed for VSUH or VSUL. Section 5.6.1.4 NOTE prior to D corrected the step referred to; step 5.6.3.2.A corrected the full name for SAR; Step 5.6.3.3 reworded step, deleted content no longer needed and added a new NOTE prior to this modified step Section 7 added Directory # 5 Reserve, ISO New England Inc. Transmission, Markets and Services Tariff, Section I.2.2, Definitions and corrected the title for Market Rule 1 Modified Attachment A - Forecaster Task and RAA Process Checklist to include the execution of the new FCM VAR Compliance Report	Steve Weaver
Rev 45	04/10/11	Header updated Procedure Owner for OPS organizational changes; Section 3 added 3.1.I & 3/1/3; Added new 5.3.2.1.A.(2) c.; Added new step 5.6.3.11 Added new 5.6.2.1.(4); Deleted former item #s 21 & 26, added sub-steps to former item #38, and deleted former item # 52	Steve Gould
Rev 46	draft	Updated copyright date in Headers; Deleted 2 nd paragraph of disclaimer in 1st page Footer; Globally replaced "S/S" with "SS"; Section 5.6.3: added new sub-steps 4A and 4B; Attachment A: added new actions to reflect additional sub-steps in 5.6.3.4, modified checklist steps to reflect current tasking; Attachment C: added new criteria to Reason for Scheduled Start	

9. Attachments

Attachment A - Forecaster Task and RAA Process Checklist

Attachment B - Adjustments for Environmental Restrictions
(Confidential)

Attachment C - Unit Start Up Compensation Form

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Attachment A - Forecaster Task and RAA Process Checklist

Date: _____ Current Day – Forecast Day (e.g., 1/1-1/2)


Night Shift Forecaster _____

Run Initial RAA/SCRA Cases (1800 - 2200) IAW this procedure

- Review all Gas Pipeline notifications
- In MOI, copy Approved Day Ahead (DA) Case and rename it as an RAA case
- Set up to run a Reserve Adequacy (RAA) Study Mode - PROV
- Set the “Case end” and “RSC end” for HE 24 of the following day
- Remove all DA committed Generators and DA Outages from the Units tab
- Enter RT supplemental Generator (s) committed for reliability
- Using the DA/RAA Import Application, upload the next day GRT constraint file.
- Run the “FCM Compliance Report” and the “FCM VAR Compliance Report” after 1800
- Upload the next day RAA mitigation schedule (after 1810)
- Initialize the anticipated Fixed External Transactions
- Upload System Reserves and Locational Reserve Requirements
- Initialize Load Response (excluding weekend and NERC Holidays)
- Initialize Zonal Demand
- Input SS pump data into the “Demand Limits” display.
Outage pumped storage Generator(s) for scheduled pumping hours
- Manually enter Generator ramp profiles into the “Unit Limits” display
- Perform Data Validation (2100 - 2130)
- Run RAA case, check Reports and Capacity Analysis
- Approve RAA, duplicate, rename as SCRA, and run the case
- From output of Forecast Capacity Analysis, initialize and edit the RTDR values.
- Check Generator schedule synchronization between HE 18 case and next day SCRA
- Check Reports, Capacity Analysis & issue Minimum Generation Warning if necessary

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- Verify accuracy of DR Zonal Report and if there are any positive values, discuss with Operations Shift Supervisor prior to case approval. Email “DR Audits” group mailbox when approving a 22:00 SCRA case with Demand Response in it.
- Approve SCRA Case, inform TSO, fax hard copies of “Unit Hourly Details Report” to LCC’s
- Perform 2200 meeting with Operations Shift Supervisor
- Update SCRA case for HE 02 (2200 - 0100)
IAW this procedure
- Initialize and edit the DR Zonal Forecast
- Perform data validation (0001 - 0030)
- Check, review, finalize & bridge flags and send necessary email
IAW SOP-RTMKTS.0110.0015 - Flagger for RT Market Settlements (0030)
- If in OP-4 the previous day, or if either a RTDR or RTEG audit was performed in the previous day, perform Load Reconstitution IAW SOP-OUTSCH.0040.0010 - Create Demand Forecast.
- Update SCRA case for HE 06 (0100 - 0500)
IAW this procedure
- Initialize and edit the DR Zonal Forecast
- Perform data validation (0400 - 0430)
- Produce Forecast Daily Report
IAW SOP-RTMKTS.0050.0030 – Produce Forecast Daily Report
- Record supplemental commitments in the Logserver
IAW SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real -Time
- If necessary, issue price response notification & email the Operations Shift Supervisor
IAW SOP-RTMKTS.0120.0020 - Implement Capacity Remedial Action.
Verify the following conditions:
 - All List Server emails are received and transferred to the Price Response email folder.
 - The Price Response Event Summary, DR Event Summary Calendar & Notices are populated.
If the above conditions do not exist, notify IT
- After 0400, import the GRT changes from the Security Operator. Update RMR Worksheet & GRT as necessary.
- Estimate post-pumping Max Daily Energy for BSW & NFLD and enter in “LEG Limits” display - 0415
- Compare Capacity Analysis results with Senior Operator (0430)

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- Fill out Forecast Report for Shift Supervisor Daily Report after observed weather from previous day has updated. (0530)
- Update Forecaster Turnover Sheet


Day Shift Forecaster: _____

- Re-enter BSW & NFLD pond elevations with current RT data (0600 - 0715)
- Review all Gas Pipeline notifications
- Update SCRA case for HE 09 IAW this procedure
- Initialize and edit the DR Zonal Forecast
- Perform Data Validation (0700 - 0730)
- Compare Capacity Analysis with Senior Operator (0730)
- Create and Export Load Forecast by 1000
IAW SOP-OUTSCH.0040.0010 - Create Load Forecast Fax to LCCs and e-mail to Outage Coordination groups
During the period Dec 1 to Mar 1: Copy and paste the seven day dry bulb temperatures and wind speeds from the Created Weather Forecast into the Cold Weather Determination Spreadsheet to determine if Cold Weather Conditions will occur over the next six days.
- Perform next day Voltage Reliability Analysis - Enter Generators on DASC as necessary
IAW SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real-Time.
- Export 7 Day Capacity Margin Forecast by 1100
IAW SOP-OUTSCH.0040.0020 - Create Seven-Day Capacity Margin Forecast
- Attend DA meeting with Outage Coordination group - 1100
- Review night Forecaster flagging finalizations, documents and emails
IAW SOP-RTMKTS.0110.0015 - Flagging for RT Market Settlements
- Update SCRA case for HE 13 IAW this procedure
- Initialize and edit the DR Zonal Forecast
- Perform Data Validation (1100 - 11:30)
- Perform Reliability Analysis for next day (1000 - 1700)
IAW SOP-RTMKTS.0050.0005 - Determine Reliability Commitment for Real-Time.
Contact long lead time Generators if necessary prior to close of DAM
- Using the Forecaster View in the Transmission Outages page, perform reviews in Outage Scheduling Software.
- Prepare Look Ahead spreadsheet and attend daily meeting (1400)


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- True Up Bids to ISO Outage Scheduling software (redecs)
IAW SOP-RTMKTS.0110.0010 - Maintain Real-Time Operational Data
- Update SCRA case for HE 18 (1600 - 1700) IAW this procedure
- Initialize and edit the DR Zonal Forecast
- Perform Data Validation (1600 - 1630)
- Fill out Load Summary Worksheet for Shift Supervisor Daily Report (1700)
- Update Forecaster Turnover Sheet (1730)

This checklist should be kept for the current month plus one month in the past.

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Attachment B - Adjustments for Environmental Restrictions (Confidential)

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Attachment C - Unit Start Up Compensation Form

Unit Start Up Compensation Form

Date: _____

Initials: _____

Cancelled Unit Start Ups

		Scheduled Start			Cancelled Start Notification		
Unit	Unit ID	Date	Time	Reason (Include Region if RMR VSUH or VSUL)	Date	Time	Reason

Units Economically Shutdown and have waived Minimum Shutdown Time at ISO request

UNIT	UNIT ID	Requested S/D Time	Requested Restart Time	Reason