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

Contents

1. Objective

The objective of this procedure is to define the process for the development of the Seven Day Forecast of ISO Capacity Margin.

2. Background

The Seven Day forecast of ISO Capacity Margin was developed to provide ISO and the Market Participants with the anticipated capacity state of the New England bulk power system. It is used by ISO to identify capacity deficiencies several days in advance and triggers the commitment of long lead-time Generators (Start times > 24 hours). It also provides similar information to Market Participants.

3. Responsibilities

1. The Forecaster is responsible for executing all aspects of this procedure to include the preparation, review and publication of the Seven Day Forecast of the ISO Capacity Margin by 1100 each day or when a Cold Weather Event has been declared by 0800 the day prior to the Cold Weather Event day.

2. The Manager Control Room Operations is responsible for additional oversight during extreme weather conditions and when capacity problems are determined in the next seven-day period. The Manager Control Room Operations or designee shall ensure:

   - Necessary departments are notified of upcoming capacity problems
   - Necessary transmission and Resource outages are rescheduled
   - Communications with other ISO departments occur in a timely manner

4. Controls

- The Forecaster uses the Seven-Day Ahead forecast spreadsheet as described in this procedure

5. Instructions

5.1 Initial Conditions

1. The Forecaster shall normally perform this procedure during the morning hours in order to publish the Seven-Day-Ahead Forecast by 1100.

2. When a Cold Weather Event has been declared, in accordance with SOP-RTMKTS.0050.0007 - Perform Cold Weather Condition Operations, the Forecaster shall start this procedure in a timely manner in order to publish the Seven-Day-Ahead Forecast by 0800 the day prior to the Cold Weather Event day.

3. The Forecaster shall ensure the following:

   A. Initial load forecast has been developed per SOP-OUTSCH.0040.0010 - Create Load Forecast.

   B. Generator and Dispatchable Asset Related Demand (DARD) outage schedules have been developed per SOP-OUTSCH.0030.0010 - Evaluate Generation and Dispatchable Asset Related Demand Outage Requests.

   C. Interchange Schedules have been developed per SOP-OUTSCH.0030.0020 Perform Outage Coordination.

NOTE

The Forecaster uses an Excel Spreadsheet to carry out the tasks in this procedure.

5.2 Initial Data

1. Import the Forecast Temps and Loads from the Load Forecast Database, the Forced Outages, Short Term Outages, Annual Inspections, and Annual Inspection Overruns from the Sam Db and perform a one day rollover.

2. From the Short Term and Annual Maintenance Schedule, Must Run Application (SAM) database (Db), print out the Event Detail Summary Report for the next seven days and input the Transmission Constrained Down by ≥ 50 MW data.

3. Obtain outage data from the EMS Capacity Analysis.

4. Enter current total generation and DARD unavailable excluding Generators ramping in UCM 3. This quantity shall be equal to the sum of Outages, Offline Reductions, and Online Reductions as obtained from the EMS Capacity Analysis display in real time.

5. Include information such as:

   - Availability notices issued by gas pipeline operators, or Generators
   - Forecasted weather conditions used to determine if Cold Weather Conditions are forecast

6. Based on the information obtained in Steps above, ensure the Afternoon Spreadsheet calculates the Short Term Operable Capacity Margin (STOCM). This is listed as the projected surplus / deficiency on the spreadsheet.

NOTE

When temperatures get down into the 30F and below area the supply of natural gas available to natural gas Generators may be affected. This could affect the capacity available on the system and should be accounted for.

7. Enter a quantity reflecting the total current miscellaneous Generator and DARD outages (including outages due to startup times) into the spreadsheet such that the Day's total Outages matches the known outages from the SAM Db.

5.3 Projected Conditions

1. Check weather data to ensure that it has been correctly imported.

2. Review the Load Forecast data to ensure that it has been correctly imported.

3. Using experience and judgment, make manual adjustments under the following conditions if:

   - Significant sociological impacts are anticipated
   - Forecast weather conditions are such that the Artificial Neural Network (ANN) program is expected to have a significant error based on past experience

4. If necessary, manually derive the individual daily peak load values for Days 3-7 based on the temperature and dew point data provided and override the forecast values in the spreadsheet.

5. Enter anticipated peak hour external interchange for each day based on Enhanced Energy Scheduler Market Operator Interface (EES-MOI) information and current interchange scheduling trends.

6. Enter the anticipated Required Reserve for each day in accordance with the requirements of ISO New England Operating Procedure No. 8 – Operating Reserve and Regulation (OP 8).

7. When a capacity deficiency or a surplus of less than 300 MW is forecast for the next day, the Forecaster on duty, shall notify the Manager, Control Room Operations or designee.

8. When on-peak temperatures in New England are forecasted to be 30 degrees Fahrenheit or less then notify the Manager, Control Room Operations (or designee) to communicate with natural gas pipeline operators per SOP-RTMKTS.0050.0007 - Perform Cold Weather Condition Operations.

5.4 Forecast Calculations

NOTE

The program will automatically calculate the following quantities for each of the forecast days in accordance with Attachment A - Seven-Day-Ahead Forecast Calculations:

- Total Generation Outages
- Total Generation Available
- Total DARD Available (If applicable)
- Total Generation and DARD Available and Imports
- Total Load Plus Required Reserve
- Projected Surplus/(Deficiency)

5.5 Communications

1. Post the Seven-Day-Ahead Forecast, by selecting the Upload button, to the ISO Web site by1100 hours at:

   http://www.iso-ne.com/sys_ops/op_frcstng/7day_frcst/index.html

2. When a Cold Weather Event has been declared in accordance with SOP-RTMKTS.0050.0007 - Perform Cold Weather Condition Operations, post the Seven-Day-Ahead Forecast by 0800 the day prior to the Cold Weather Event day.

6. Performance Measures

None.

7. References

SOP-OUTSCH.0030.0010 - Evaluate Generation and Dispatchable Asset Related Demand Outage Requests

SOP-OUTSCH.0040.0010 - Create Load Forecast

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

SOP- OUTSCH.0030.0020 Perform Outage Coordination

SOP-RTMKTS.0050.0007 - Perform Cold Weather Condition Operations

8. Revision History

Rev. No.	Date	Reason	Contact
0	03/01/03	Original	Joe Mercer
1	07/07/03	Revised to reflect changes since implementation of SMD	Joe Mercer
2	01/07/04	Changes to the Controls and Performance Measures sections	Joe Mercer
3	02/01/05	Updated SOP for RTO terminology	Seamus McGovern
4	09/30/05	Revised to address Forecast Audit. Added steps for using natural gas data.	Seamus McGovern
5	11/28/05	Revised to incorporate Changes to MR 1 App H (Cold Weather) and new OP-21	Seamus McGovern

6	05/05/06	Updated for Control Room Forecaster Split, removed Cold Weather Condition actions (MR1 App H retired)	Steve Weaver
7	10/01/06	Revised for ASM Phase II	Steve Weaver
8	11/30/06	Revised to incorporate Changes to MR 1 App H (Cold Weather)	Steve Weaver
9	05/04/07	Minor clerical changes resulting from annual review	Steve Weaver
10	06/18/07	Incorporate the new separated tie 1385 from the NY Northern AC ties	Steve Weaver
11	08/14/08	Annual Review by Procedure Owner – no changes requied	Steve Weaver

9. Attachments

Attachment A - Seven-Day Ahead Forecast Calculations

Attachment A - Seven-Day-Ahead Forecast Calculations

Total Installed Capacity (IC) = SCC + CA

Total Generation Outages (GO) = DO + MR

Total Generation Available (GA) = IC – GO

Total Generation Available Plus Purchases (GA&PUR) = GA + PUR)

Total Load Plus Reserve (REQ) = EL + OR

Capacity Margin = GA&PUR – REQ

Where

SCC = Seasonal Claimed Capacity
CA = Capacity Additions from Eco Max that are greater than SCC
DO = Discreet Generating Unit Outages and Reductions
MR = Miscellaneous Generating Unit Outages and Reductions
PUR = New York Northern AC New York Cross Sound Cable (CSC), 1385 Cable, NBEPC, and HQ Capacity Backed Purchases (net of external purchases and sales)
EL = Expected Load
OR = Operating Reserve Requirement

NOTE: DARDs do not currently pertain to this calculation.