SOP-RTMKTS.0080.0030
Determine Regulation Requirements

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1. Objective

This procedure describes the processes for determining the hourly Regulation Requirements, based on historical analysis of seasonal load changes and past Regulation performance.

2. Background

ISO New England (ISO) is required to maintain a portion of the Synchronized Capability on Regulation to satisfy North American Electric Reliability Corporation (NERC) Control Performance Criteria and in accordance with ISO New England Operating Procedure No. 8 - Operating Reserve and Regulation (OP-8). The recommended hourly quantities of Regulation, referred to as Regulation Requirements, are identified under the Operations Forecasting section of the ISO New England external website. The setting of Regulation Requirements is based on ISO forecast of demand and historical analysis of seasonal load changes and past Regulation performance. ISO is given authority to deviate from the recommended quantities of Regulation provided that ISO meets the requirements of NERC Reliability Standard BAL-001 - Real Power Balancing Control Performance and Northeast Power Coordinating Council, Inc. (NPCC) Directory # 5, Reserve.

3. Responsibilities

The Manager, Control Room Operations (or designee) is responsible for reviewing and approving Regulation requirements prior to posting.

The Principal System Performance and Integration Engineer (SPIE) (or designee) is responsible for the following:

- Determining the proper amount of Regulation to meet NERC and NPCC control performance standards.
- Providing notice of updated Regulation Requirements to Participants.

4. Controls

The SPIE (or designee) uses software tools designed to assist in evaluating Regulation Requirements.

5. Instructions

1. At least annually, the SPIE (or designee) shall determine the amount of Regulation needed to satisfy the NPCC and NERC Control Performance Criteria.

2. The SPIE (or designee) shall obtain and copy the previous Regulation Requirements for the same period and perform the following:

NOTE

This process involves a comparison of "seasonal" values, with the seasons being broken into four periods: Winter, Spring, Summer, and Fall (i.e., Nov-Mar, Apr-May, Jun-Aug, and Sep-Oct, respectively).

NOTE

Even though the NERC Control Performance Standard 2 (CPS2) has been retired, ISO still tracks this measure due to its utility in summarizing the performance of Regulation. CPS2 is used as the initial screen for Regulation performance and, for this reason, it is the basis for any adjustments that may be made to the Regulation Requirements.

A. Use the software tool (e.g., Matlab-based Regulation Performance Plot), that displays the following for weekdays, Saturdays, Sundays" (NERC scheduled holidays are treated as Sunday day types.)

(1) The different hourly Regulation requirements

(2) The amount of Regulation capacity actually selected

(3) The Regulation Resources selected

(4) The Resources' Regulation Interval Performance Scores (RIPS)

(5) The minutes assigned to perform Regulation

B. Cross-check the NERC Control Performance Standard 1 (CPS1) and NERC Control Performance Standard 2 (CPS2) scores in the software tool with the CPS1 and CPS2 scores in the EMS to determine and resolve and correct any discrepancies.

C. Using the software tool, analyze previous results based on the percentages of CPS2 results.

(1) If results indicate a pattern of compliance per hour that is less than 90%, Regulation Requirements may be increased.

(2) If results indicate a pattern of compliance per hour that is greater than 95%, Regulation Requirements may be reduced.

(3) Determine if the pattern in scoring is due to either one or the other or both of the following:

- Poor Regulation performance by Resources
- Regulation capacity selection amounts that differ from the hourly Regulation requirements

(4) Compare similar periods if applicable (e.g., Spring and Fall) to determine the success of particular amounts of Regulation as a function of day-type and hour.

(5) Check if a reduction in off-peak Regulation Requirements could result in improved performance because low regulating limits are often higher than low economic limits (Eco Min).

D. Using the software tool, analyze previous results based on the percentages of CPS1 compliance.

(1) If the analysis results indicate a pattern of compliance per hour that is less than 100%, Regulation Requirements may be increased.

(2) If the analysis results indicate a pattern of compliance per hour that is greater than 150%, Regulation Requirements may be reduced.

(3) Determine if the pattern in scoring is due to either one or the other or both of the following:

- Poor Regulation performance by Resources
- Regulation capacity selection amounts that differ from the hourly Regulation Requirements

(4) Compare similar periods if applicable (e.g., Spring and Fall) to determine the success of particular amounts of Regulation as a function of day-type and hour

(5) Determine if a reduction in off-peak Regulation Requirements could result in improved performance because low regulating limits are often higher than low economic limits (Eco Min).

E. After evaluating the hourly updated data, establish new Regulation Requirements for all hours that will facilitate the following:

(1) Operating such that its clock-minute average of Reporting ACE does **not** exceed its clock-minute Balancing Authority ACE Limit (BAAL) for more than 30 consecutive clock-minutes in accordance with NERC Reliability Standard BAL-001 - Real Power Balancing Control Performance

(2) Maintaining monthly performance generally above 90% using the NERC CPS2 calculation with the least amount of Regulation (this is the initial screen)

(3) Maintaining monthly performance in the range of 120% to 160% using the NERC CPS1 calculation with the least amount of Regulation (this is the compliance screen)

F. Review these new Regulation Requirements with the Manager, Control Room Operations (or designee) and obtain consensus for the final requirements.

3. The SPIE (or designee) shall determine the estimated service requirements.

4. After the new Regulation Requirements have been established, the SPIE (or designee) shall email, as an Excel spreadsheet, the results to the Real-Time Market Support group for uploading into the EMS.

5. The SPIE (or designee) shall develop comparison spreadsheets to illustrate the old and new values for the months when Regulation Requirements change.

6. The SPIE (or designee) shall inform the ISO representative to the Markets Committee (MC) of the changes.

7. The SPIE (or designee) shall email a copy of the new Regulation Requirements along with the comparison spreadsheets, developed in a prior step, to the ISO MC representative for dissemination to the MC.

8. The SPIE (or designee) shall email a copy of the new Regulation Requirements along with the comparison spreadsheets to the Web Content Manager for posting on the ISO website, along with the effective date of the change.

9. At least annually, the SPIE shall verify if the ISO website requires updating, regardless of whether or **not** the Regulation Requirements have changed.

10. If changes have been made to the Regulation Requirements, the SPIE shall verify that the correct spreadsheets have been posted on the ISO website within ten (10) days of the effective date

6. Performance Measures

ISO achieves compliance with NERC CPS1 by maintaining a NERC CPS1 score of at least 100%.

ISO has **no** BAAL violations.

Regulation Requirements are reviewed at least annually and updated as necessary.

7. References

North American Electric Reliability Corporation (NERC) Reliability Standard BAL-001 - Real Power Balancing Control Performance

Northeast Power Coordinating Council, Inc. (NPCC) Regional Reliability Reference Directory # 5 Reserve (NPCC Directory # 5)

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

8. Revision History

Rev. No.	Date	Reason	Contact
--	06/30/16	For previous Revision History, refer to Rev 7 available through Ask ISO	William Henson
8	06/11/18	Biennial review by procedure owner; Globally made changes to be consistent with current conditions, practices and management expectations; Added a 2nd NOTE prior to Section 5.2.A, Modified 5.2.C; Added new step 5.2.D , sub-steps and re-numbered remaining steps; Modified step 5.2.E.(2); Added new sub-step 5.2.E.(3); Modified step 5.3; Modified step 5.9; Section 6, 1st item, replaced compliance references to CPS2 (retired) with CPS1 and modified 2nd and 3rd items;	William Henson
8.1	03/30/20	Biennial review by procedure owner with no intent changes required; Administrative edit in footer to meet corporate policy to classify documents	William Henson
8.2	03/16/22	Periodic review performed requiring no changes	William Henson
9	05/25/22	Removed five day time requirement for step 5.6	William Henson
9.1	05/09/24	Biennial review performed by procedure owner requiring no changes.	William Henson

9. Attachments

None.