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	Process Name: Dispatch Regulation	
	Procedure Number: RTMTKS.0080.0050	Revision Number: 10.1
	Procedure Owner: William Henson	Effective Date: November 15, 2022
	Approved By: Director, Operations	Valid Through: November 15, 2024


# SOP-RTMTKS.0080.0050

## Manage Resource and Demand Balancing

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## 1. Objective

The objective of this SOP is to verify that ISO New England (ISO) personnel perform the analysis and reporting requirements specified by the North American Electric Reliability Corporation (NERC) Reliability Standards for Resource and Demand Balancing (BAL) as the Balancing Authority (BA) for the New England Reliability Coordinator Area/Balancing Authority Area (RCA/BAA).

The NERC Reliability Standards for Resource and Demand Balancing are listed below:

- BAL-001 - Real Power Balancing Control Performance
- BAL-002 - Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event
- BAL-003 - Frequency Response and Frequency Bias Setting
- BAL-005 - Balancing Authority Control


The process for developing Compliance Filings and submitting them to the Northeast Power Coordinating Council, Inc. (NPCC) and NERC is detailed in ROCMGT.0010.0010 - Monitor Compliance with Regulatory Requirements.

## 2. Background

The specific areas of concentration in this SOP are Control Performance Standard 2 (CPS2), NERC Balancing Area Ace Limit (BAAL), NERC Control Performance Standard 1 (CPS1), NERC Disturbance Control Standard (DCS), Frequency Response and Bias, Automatic Generation Control (AGC) and Inadvertent Interchange. ISO personnel perform routine analyses in the above areas, as described in this procedure. In addition, and as necessary, various filings and reports are developed and sent to NPCC and NERC by ISO personnel.

ISO is required to continuously monitor its Real Power Balancing Control Performance and report its compliance results at the end of each month. The ISO RCA/BAA Area Control Error (ACE) is used to evaluate Real Power Balancing Control Performance. ISO uses the ACE equation provided with the Energy Management System (EMS) and is in compliance with the ACE equation in the NERC Reliability Standards for Resource and Demand Balancing.

ISO uses interconnection metering points in its calculation of the New England ACE. High-Voltage direct current (HVdc) actual and scheduled values with interconnected non-synchronous Balancing Areas are excluded; and ACE Diversity Interchange (ADI) with New York Independent System Operator (NYISO) and New Brunswick Power-System Operator (NBP-SO) is included by modeling as a Pseudo-Tie. These exceptions have **no** bearing on compliance with the NERC Reliability Standard for Resource and Demand Balancing. In addition, the meter correction sign convention in the ISO EMS ACE equation is the opposite of the industry standard. This anomaly is accounted for in

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the EMS and the ACE equation and is compliant with the NERC Reliability Standards.

NERC Reliability Standard BAL-001 - Real Power Balancing Control Performance sets the limits of an RCA/BAA ACE over specified time periods.

## **CPS2**

Control Performance Standard 2 (CPS2) is a statistical measure of the ten-minute average of ACE that is used to limit unacceptably large net unscheduled power flows. CPS2 provides an oversight function designed to limit excessive unscheduled power flows that could result from large ACEs. CPS2 was retired by NERC effective July 1, 2016, but is still maintained by ISO since it still provides a useful indicator of unacceptable unscheduled power flows.

## **NERC BAAL**

Balancing Area Ace Limit (BAAL) is the NERC successor to CPS2. BAAL sets a Frequency Deviation dependent one-sided limit on the magnitude of the minute averaged ACE and requires that minute averaged ACE be outside of this limit for **no** more than thirty (30) consecutive clock minutes. The one-sided limit depends on the sign of the Frequency Deviation. This is meant to help BAs contribute to the overall frequency performance of the Interconnection.

## **NERC CPS1**

Control Performance Standard 1 (CPS1) is a statistical measure of ACE variability and its anti-correlation with Frequency Deviation, providing a measure of the RCA/BAA performance. The measure is intended to provide the RCA/BAA with a frequency-sensitive evaluation of how well it met its demand requirements.


## **NERC DCS**

The purpose of the DCS, as stated in NERC Reliability Standard BAL-002 - Disturbance Control Standard – Contingency Reserve for Recovery from a Balancing Contingency Event, is to ensure the BA is able to use its Contingency Reserve to balance Resources and demand and return Interconnection frequency within defined limits following a Reportable Disturbance. Because Resource failures are far more common than significant losses of load and because Contingency Reserve activation does **not** typically apply to the loss of load, the application of DCS is limited to the loss of supply and does **not** apply to the loss of load.

## **Frequency Response and Bias**

NERC Reliability Standard BAL-003 provides a consistent method for BAs to calculate the Frequency Bias component of ACE. ISO is required by this Reliability Standard to implement its Frequency Bias Settings by approximately June 1 of each year using the methods provided by NERC.

ISO uses a fixed Frequency Bias setting. The ISO observed Frequency Bias response is well below the monthly average Frequency Bias Setting of 1% of the yearly peak demand

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per 0.1 Hz change. Therefore, the ISO Frequency Bias setting typically is approximately 1% of the peak demand of the previous year.

### **Automatic Generation Control (AGC)**

NERC Reliability Standard BAL-005 establishes the necessary requirements for the BA AGC system to calculate ACE. This Reliability Standard also requires that all facilities and load electrically synchronized to the Interconnection are included within the metered boundary of a BA so that balancing of Resources and demand can be achieved.

AGC equipment automatically adjusts generation in a BAA from a central location to maintain the BA interchange schedule plus Frequency Bias. When necessary, AGC also accommodates manual inadvertent payback and time error correction.


ISO does **not** supply or receive Overlap Regulation Service, as defined in the Glossary of Terms used in NERC Reliability Standards. However, ACE Diversity Interchange (ADI) is a form of supplementary regulation among some NPCC participants (ISO, NYISO and NBP-SO).

As described in SOP-RTMKTS.0080.0040 - Review and Revise Regulation Parameters, periodic AGC system tuning by ISO personnel helps to prevent over-control or under-control by limiting or enhancing the deployment of Regulation reserve while still meeting system performance requirements.

### **Inadvertent Interchange**

Inadvertent Interchange is the difference between the BA Net Actual Interchange and Net Scheduled Interchange.

The NERC Reliability Guideline: Inadvertent Interchange defines a process for monitoring each BA so that over the long-term, a BAA does **not** excessively depend on any other BAA in the Interconnection for meeting their demand or Interchange obligations.


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### 3. Responsibilities

1. The System Performance and Integration Engineer SPIE (or designee) is responsible for:
  - Reviewing and analyzing data detailed in this SOP
  - ISO reporting to NPCC Control Performance Working Group CO-1 group (NPCC CO-1 group)
  - While Chair of the NPCC CO-1 group, reviewing NPCC data and reporting the NPCC results to NERC
  - Forwarding to NPCC/NERC all reports required by this SOP that are **not** specifically detailed in ROCMGT.0010.0010 - Monitor Compliance with Regulatory Requirements
2. The Reliability & Operations Compliance (ROC) Lead Compliance Analyst (or designee) is responsible for:
  - Receiving the Compliance Filing data from the SPIE (or designee)
  - Assisting in the review of the Compliance Filing data
3. The Lead Analyst, System Operations and Market Administration is responsible for:
  - Providing the SPIE (or designee) with the ISO monthly inadvertent report within 15 calendar days after the end of the month.

### 4. Controls

- Compliance filings shall follow the Controls outlined in ROCMGT.0010.0010 - Monitor Compliance with Regulatory Requirements
- Data shall be archived in accordance with RSKMGT.0020.0010, Appendix 2 – ISO-NE Records Retention Schedule (which for this procedure meets or exceeds NERC/NPCC/ISO record retention requirements).

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## 5. Instructions


### 5.1 Collect, Review, Implement and Retain CPS2

#### NOTE

It is the goal of ISO to operate such that its average ACE for at least 90% of clock-ten-minute periods (6 non-overlapping periods per hour) during a calendar month is within a specific limit, referred to as L<sub>10</sub>.

To support the maintenance of market-based Regulation requirements, the SPIE (or designee) collects and analyzes CPS2 compliance data obtained from the EMS.

1. The SPIE (or designee) shall collect all the EMS data associated with CPS2 from the “NERC CPS/DCS EMS” display pages.
2. The SPIE (or designee) shall analyze the CPS2 data for the preceding month to verify that ISO is fully compliant with the ISO goal of CPS2  $\geq 90\%$ .
3. The SPIE (or designee) shall obtain the sum of the number of CPS2 violations within each hour after processing and complete a review of control performance of Regulation reserve as a function of the following:
  - Month
  - Day Type (Weekday, Saturday, Sunday)
  - Hour
4. The SPIE (or designee) shall perform a monthly count of the number of CPS2 violations due to over-generation and under-generation to check for bias within economic dispatch.
5. The SPIE (or designee) shall evaluate each missing ten-minute CPS2 sample by performing the following:
  - Determine compliance or non-compliance of an unavailable ten-minute interval by inspecting one-minute ACE data available in the EMS for the time periods adjacent to or within the unavailable interval.
  - Make the interval available for use in computation of the final CPS2 score, if it is clearly compliant or non-compliant.
  - When the initial monthly CPS2 score is less than 93% and if the compliance or non-compliance determination **cannot** be made, consult scan rate ACE data to make a determination.
6. By the 10<sup>th</sup> of the month, the SPIE (or designee), when acting as the Chair of the NPCC CO-1 group, shall collect all of the CPS2 data from the other NPCC

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members for the preceding month.


7. The SPIE (or designee) shall review and verify that the CPS2 data is valid and ready to be reported to NPCC in accordance with both ISO and NPCC requirements.

**NOTE**

The data that supports the calculation of CPS2 is retained on a data disc tape drive on the secondary network (ORABCKPRD) and is controlled by the ISO Information Technology (IT) Department. In accordance with RSKMGT.0020.0010, Appendix 2 – ISO-NE Records Retention Schedule, this data is retained for 6 years.

8. If ISO CPS2 is undergoing a review to address a question that has been raised regarding the data and until the question is formally resolved, ISO shall save CPS2 data beyond the normal retention period until the question is formally resolved.



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## 5.2 Collect, Review, Implement and Retain NERC CPS1

### NOTE

The ACE equation is built into the EMS, and compliance data is pulled from the EMS.

1. The SPIE (or designee) shall collect all the EMS data associated with CPS1 via the “NERC CPS/DCS EMS” display pages.
2. The SPIE (or designee) shall analyze the CPS1 data from the preceding month to verify that ISO is fully compliant with the NERC Reliability Standard of CPS1  $\geq$  100% and provide this information to the ROC Lead Compliance Analyst (or designee).

### NOTE

CPS1 scores are taken from the relevant EMS displays. This data is normally available and the CPS1 score from the EMS display is typically used without modification. Should there be a substantial period of data unavailability (or some other unforeseen computational error occurs), data can be retrieved using the PI software and the CPS1 score can be recalculated.


3. The SPIE (or designee) shall review and verify that the CPS1 data is valid and ready to be reported to NPCC and NERC in accordance with both ISO and NPCC requirements.
4. The SPIE (or designee), when acting as the Chair of the NPCC CO-1 group, shall collect all of the CPS1 data from each NPCC RC/BA for the preceding month by the 10<sup>th</sup> of the month.
5. When **not** acting as the chair of the NPCC CO-1 group, the SPIE (or designee) shall report the CPS1 data to the Chair of the NPCC CO-1 group.
  - The SPIE (or designee) shall review and verify that the CPS1 data is valid and ready to be reported (if required) to NPCC and NERC in accordance with both ISO and NPCC requirements.
6. The SPIE (or designee), when acting as the Chair of the NPCC CO-1 group, shall review the data.

### NOTE


The data that supports the calculation of CPS1 is retained on a data disc tape drive on the secondary network (ORABCKPRD) and is controlled by the ISO IT Department. In accordance with RSKMGT.0020.0010, Appendix 2 – ISO-NE Records Retention Schedule, this data is retained for 6 years.

7. If there is a violation of CPS1 (i.e., CPS1 rolling 12 months average is less than 100%) the SPIE (or designee) shall report this violation directly to NERC.



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8. The one-minute average ACE ( $ACE_i$ ) and one-minute average Frequency Error values are retained for 6 years in accordance with RSKMGT.0020.0010, Appendix 2 – ISO-NE Records Retention Schedule.

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### 5.3 Collect, Review, Implement and Retain NERC BAAL

#### NOTE

The ACE equation is built into the EMS, and compliance data is pulled from the EMS.

1. The SPIE (or designee) shall collect all the EMS data associated with BAAL via the “NERC CPS/DCS EMS” display pages.
2. The SPIE (or designee) shall analyze the BAAL data from the preceding month to verify that ISO is fully compliant with the NERC Reliability Standard of BAAL exceedances less than 30 consecutive minutes and provide this information to the ROC Lead Compliance Analyst (or designee).

#### NOTE


BAAL data is taken from the relevant EMS displays. This data is normally available and the BAAL data from the EMS display is typically used without modification. Should there be a substantial period of data unavailability (or some other unforeseen computational error occurs), data can be retrieved using the PI software and the BAAL data can be recalculated.

3. The SPIE (or designee) shall review and verify that the BAAL data is valid and ready to be reported (if required) to NPCC and NERC in accordance with both ISO and NPCC requirements.
4. The SPIE (or designee), when acting as the Chair of the NPCC CO-1 group, shall collect all of the BAAL data from each NPCC RC/BA for the preceding month by the 10<sup>th</sup> of the month.
5. If the SPIE (or designee) is **not** the Chair of the NPCC CO-1 group, the SPIE (or designee) shall report the BAAL data to the Chair of the NPCC CO-1 group.
  - The SPIE (or designee) shall review and verify that the BAAL data is valid and ready to be reported (if required) to NPCC and NERC in accordance with both ISO and NPCC requirements.
6. The SPIE (or designee), when acting as the Chair of the NPCC CO-1 group, shall review the data.


#### NOTE

The data that supports the calculation of BAAL is retained on a data disc tape drive on the secondary network (ORABCKPRD) and is controlled by the ISO IT Department. In accordance with RSKMGT.0020.0010, Appendix 2 – ISO-NE Records Retention Schedule, this data is retained for 6 years.

7. If there is a violation of BAAL (i.e. the BAAL is exceeded for more than 30 consecutive clock minutes) then the SPIE (or designee) shall report this violation directly to NERC.

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8. The one-minute average ACE ( $ACE_i$ ) and one-minute average Frequency Error values shall be retained for 6 years in accordance with RSKMGT.0020.0010, Appendix 2 – ISO-NE Records Retention Schedule.

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#### 5.4 Collect, Review, Implement and Retain NERC DCS Data

##### NOTE


The evaluation of DCS compliance for an RCA/BAA uses the NERC Disturbance Recovery Period of fifteen minutes after the start of a Reportable Disturbance and the BAA is required to meet the Disturbance Recovery Criterion within the Disturbance Recovery Period for 100% of Reportable Disturbances.

1. Whenever an NPCC/NERC Reportable Event occurs, the Notification Tracker reads data from Opralog and sends notifications, including the notification of the occurrence of an NPCC Reportable Event.
2. When notified of an NPCC Reportable Event, the SPIE (or designee), shall begin an EMS query of the event data.
3. The SPIE (or designee) shall:
  - A. Analyze the data to determine if the ACE was returned to zero or to its pre-disturbance level within 15 minutes following the start of an NPCC Reportable Event.
  - B. Complete an Area Trouble Report for Reportable Events that do **not** use the Simultaneous Activation of Ten Minute Reserve (SAR) procedure.
  - C. Complete a contingent SAR report for Reportable Events in which the SAR procedure is used and ISO experienced the contingency.
  - D. Complete an assistance SAR report for Reportable Events in which the SAR procedure is used and ISO provided assistance to another BA.
4. The SPIE (or designee) shall review the data for each event for accuracy.
5. The SPIE (or designee) shall:
  - A. Review all events qualifying for DCS evaluations and determine the level of non-compliance, if any.
  - B. Review events above the NPCC Reportable Event threshold but that do not qualify for DCS evaluations and determine the level of non-compliance, if any, and any impact on synchronized reserve requirements per NPCC Regional Reliability Reference Directory #5 – Reserve (Directory 5).

##### NOTE

Reports for all DCS reportable events and NPCC Reportable Events in a month are due by the fifteenth business day of the following month.

6. The SPIE (or designee), when acting as the Chair of the NPCC CO-1 group, shall receive on the appropriate report forms monthly from all NPCC RCAs/BAAs, for each NPCC Reportable Event, by the tenth business day of the following month.


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- The SPIE (or designee) shall review each of the Reportable Events from all NPCC RCAs/BAAs to determine DCS compliance and the possible need for adjusting synchronized reserve requirements per Directory 5.
- The SPIE (or designee) shall archive all report summaries for eventual distribution to the NPCC CO-1 group.
  - (1) Since the NPCC criterion for Resource loss size is less than NERC criterion, the SPIE (or designee) shall, in accordance with the NERC DCS Standard, complete a CR Form-1 to be provided during any NERC audit.
  - (2) The SPIE (or designee), when acting as the Chair of the NPCC CO-1 group, shall email report summaries that list all NPCC Reportable Events to NPCC.

**NOTE**

The data that support the calculation of DCS is retained on a data disc tape drive on the secondary network (ORABCKPRD) and is controlled by the ISO IT Department. In accordance with RSKMGT.0020.0010 - Appendix 2 – ISO-NE Records Retention Schedule, this data is retained for 6 years.

7. If the DCS data is undergoing a review to address a question that has been raised regarding the data, including a SAR event, ISO shall save the data beyond the normal retention period until the question is formally resolved.

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## 5.5 Collect, Review, Implement and Retain Frequency Response and Bias Data


### NOTE

To determine frequency response for the RCA/BAA and the appropriate bias setting, it is necessary to review the reportable Balancing Contingency Events for the year.

1. The SPIE (or designee) shall use the data collection and analysis forms (FORM1 and FORM2) provided by NERC and submit these completed forms to NERC.
2. During the year, the SPIE (or designee) shall analyze the frequency data to determine if there is any need to change the Frequency Bias Settings to reflect any change in the Frequency Response for the next year.
3. After NERC determines and posts the Frequency Response Obligation (FRO) (typically before April 1 of each year) the SPIE (or designee) shall verify that the FRO for ISO is appropriate.
4. When the FRO is determined to be appropriate, the SPIE (or designee) shall notify the M/LCC Heads and the appropriate ISO personnel that the Frequency Bias in the EMS shall be changed to at least match the FRO.

### NOTE

There is **no** data retention specified for these reports.

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## 5.6 Collect, Review, Implement and Retain Automatic Generation Control Data (Miscellaneous)

### NOTE

The BA adjusts the component (e.g., Tie Line meter) of ACE that is in error (if known) or uses the interchange meter error ( $I_{ME}$ ) term of the ACE equation to compensate for any equipment error until repairs can be made.

1. On or before the 15<sup>th</sup> day of each month, the SPIE (or designee) shall compute an average meter correction from the previous month.
  - A. If the new meter correction value differs from that currently in use by 5 MW or more, the SPIE (or designee) shall send an email to the Manager, Control Room Operations requesting that the new value be implemented at the earliest convenience.
2. The Manager, Control Room Operations shall assign Control Room personnel to implement the change in meter correction value.


### NOTE

The sign convention for the meter correction is as follows:

When the sum of the agreed-upon actual MWH exceeds the sum of the integrated instantaneous metered values, there are more MWs leaving the ISO BAA than indicated within the AGC system. The meter correction is a positive value in this scenario and will accordingly increase the value of the ACE. Since the ISO EMS has a sign opposite to that of the industry standard, it is added to ACE while the NERC  $I_{ME}$  term in the ACE equation subtracts it from ACE. This positive value will be entered into the AGC system as a positive value as well.

3. The SPIE (or designee) shall calculate the meter correction value by performing the following actions:
  - Compute the net difference for NYISO and NBP-SO AC ties between agreed-upon and instantaneous integrated actual values on an hourly basis with the desired sign convention.
  - Average these differences for 24 hours per day, for one (1) month, to get the meter correction.
4. The SPIE (or designee) shall check for uncharacteristically large single hourly errors that may be skewing the average meter correction and make the necessary adjustments.
5. The SPIE (or designee) shall retain the ISO interchange meter error ( $I_{ME}$ ) Data (all revisions) and archive it.
6. ISO IT Department shall retain ACE, actual frequency, Scheduled Frequency, Net



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Actual Interchange, Net Scheduled Interchange, Tie Line meter error correction and Frequency Bias Setting data in digital format at the same scan rate at which the data is collected for at least one year.

7. ISO shall retain documentation of the magnitude of each NPCC Reportable Event as well as the ACE data used to calculate BA disturbance recovery values.
8. ISO shall retain the data in accordance with the ISO records retention schedule for one year following the reporting quarter for which the data was recorded and archived in the system performance reports folder on the shared folder:  
\\Isofilpd1\opa\~Reports\System performance.

#### **NOTE**

##### **AGC System Tuning**

The SPIE (or designee) periodically reviews and makes adjustments on the “AGC Area Parameter” display to better tune the AGC algorithm.

The MW transition values and their corresponding gains used for computing a processed ACE can be changed. The processed ACE is ultimately used to develop AGC control signals.


The parameters are:

- Assist
- Emergency Assist
- Minimum permissive
- Static Dead-band
- Maximum ACE Integral
- Normal Gain
- Assist Gain
- Emergency Assist Gain
- Gains on Integral of ACE

When a Resource becomes a provider of Regulation, a default AGC setpoint dead-band is computed by a standard formula to prevent excessive control. When a Resource provides Regulation, the AGC setpoint dead-band is computed as a function of the typical Automatic Response Rate (ARR) and maximum energy capacity of the Resource by the following formula:

The default AGC setpoint dead-band is computed as 2 MW (minimum dead-band is 2 MW) plus an additional 1 MW per 100 MW of capacity above 100 MW, and an additional MW for each 10 MW/minute of ARR.

(NOTE continued on next page)

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(NOTE continued from previous page)

Example:

Unit A = 300 MW capacity & ARR = 21 MW/minute

AGC Setpoint dead-band =  $2 + \text{INT}(\text{ARR}/10) + \text{INT}((\text{Maximum Capacity} - 100)/100)$

AGC Setpoint dead-band =  $2 + \text{INT}(21/10) + \text{INT}((300-100)/100)$

AGC Setpoint dead-band =  $2 + 2 + 2$

AGC Setpoint dead-band = 6 MW

When an Alternative Technology Regulation Resource (ATRR) becomes a provider of Regulation using a continuous Regulation signal (i.e. the Conventional or Energy Neutral Continuous), a default AGC setpoint dead band is computed by a standard formula to prevent excessive control. When an ATRR provides Regulation, the AGC setpoint dead band is computed as a function of the typical ARR by the following formula:

The default AGC setpoint dead-band is computed as 10% of the Regulation Capacity/


Example:

ATRR A = 3 MW capacity

AGC Setpoint dead-band =  $0.1 * 3\text{MW}$

AGC Setpoint dead-band = 0.3MW

An ATRR using Energy Neutral Trinary dispatch does **not** have an AGC setpoint change dead-band due to a different dispatch method


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## 5.7 Collect, Review, Implement and Retain Automatic Generation Control Data (Inadvertent)

### NOTE

This business process recognizes that ISO is dependent upon NBP-SO and NYISO to have their Inadvertent Interchange quantities ready for crosschecking with ISO.

1. When the accumulated on or off-peak inadvertent accounts increase in magnitude (subjective evaluation presently), the SPIE (or designee) shall review the inadvertent accounts of each NPCC RC/BA that participates in the ACE Diversity Interchange (ADI) project.
2. If an NPCC RCA/BAA has an on- or off-peak accumulated inadvertent balance that is opposite to the ISO inadvertent balance and the NPCC RC/BA is willing to limit ADI values in that peak period to a direction that mutually reduces inadvertent accounts while also assisting CPS2 compliance, the SPIE (or designee) may initiate arrangements with the NYISO software personnel to implement this mutually benefiting process.
3. The Manager, Control Room Operations, upon advice of the SPIE (or designee) may instead of, or additionally perform, a unilateral inadvertent payback, limiting its magnitude to avoid causing excessive unscheduled flows into or out of the ISO BAA/CA.
4. The Lead Analyst, System Operations and Market Administration (or designee) shall deliver to the SPIE (or designee) the ISO monthly inadvertent data report **no** later than the 15th of every month that contains:
  - A cover sheet that contains:
    - Revision number
    - Date for each revision number
    - Comment field to explain revision
    - Check boxes to verify that ISO monthly inadvertent data has been confirmed with NYISO and NBP-SO
5. The SPIE (or designee) shall retain the ISO monthly inadvertent data (all revisions) and archive the data.

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#### **NOTE**

Each Regional Reliability Organization shall prepare a monthly Inadvertent Interchange summary for NERC, to monitor the Balancing Authorities monthly Inadvertent Interchange and all-time accumulated Inadvertent Interchange.


6. By the 22nd day following the end of the month being summarized, the SPIE (or designee), when acting as the NPCC Regional Representative to NERC, shall maintain the NPCC Monthly Inadvertent Report.

#### **NOTE**

Each NPCC RC/BA, except Hydro-Québec TransÉnergie (HQTÉ) is required to make monthly inadvertent entries into the NERC/Consortium for Electric Reliability Technology Solutions (CERTS) Inadvertent Tool.

There is **no** data retention specified for these reports.

7. The SPIE (or designee), when acting as the NPCC Regional Representative to NERC, shall check monthly submittals into the NERC/CERTS Inadvertent Tool for timeliness and for mismatches.
8. The SPIE (or designee) shall make monthly inadvertent entries into the NERC/CERTS Inadvertent Tool for ISO.

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## 6. Performance Measures

This SOP is properly followed as evidenced by the following (including the applicable data retention requirements):

- CPS 1 and CPS 2 values are determined and submitted within fifteen (15) days after the completion of a month.
- Area Trouble Reports, Contingent SAR reports, and Assist SAR reports are submitted within fifteen (15) days after the completion of a month.
- Changes in synchronized reserve requirements are implemented as specified in Directory 5.
- The SPIE (or designee), when acting as the Chair of the NPCC CO-1 group, shall determine synchronized reserve adjustments for all NPCC Balancing Authorities for the previous month by the 20<sup>th</sup> day of the subsequent month.
- The SPIE (or designee), when acting as the Chair of the NPCC CO-1 group, shall assure that balanced monthly inadvertent data for all NPCC BAs for the previous month has been submitted by the 22<sup>nd</sup> day of the subsequent month.
- On or after the first Business Day at the start of the month, the SPIE (or designee) shall review the ISO interchange meter error (I<sub>ME</sub>).
- By the 15th calendar day of the following month, the SPIE (or designee) shall submit the ISO monthly Inadvertent Interchange summary report to its Regional Reliability Organization Survey Contact as well as the NERC/CERTS Inadvertent Tool.


## 7. References

### NERC Reliability Standards

- BAL-001 - Real Power Balancing Control Performance
- BAL-002 - Disturbance Control Standard - Contingency Reserve for Recovery from a Balancing Contingency Event
- BAL-003 - Frequency Response and Frequency Bias Setting
- BAL-005 - Balancing Authority Control

### NERC Operating Manual

- NERC Performance Standards Reference Document
- NERC Frequency Response Characteristic Survey Training Document

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- NERC Interchange Reference Document
- Glossary of Terms Used in NERC Reliability Standards

NERC Reliability Guideline: Inadvertent Interchange

NPCC Glossary of Terms (used in Directories)

NPCC Regional Reliability Reference Directory # 5 Reserve (Directory 5)

NPCC Criteria Compliance and Enforcement Program (CCEP-1 Process Document)

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

ISO New England Manual for Regulation Market Manual M-REG


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

ISO New England Operating Procedure No 14 - Technical Requirements for Generators,  
Demand Response Resources, Asset Related Demands and Alternative Technology  
Regulation Resources (OP-14)

ISO New England Operating Procedure No.18 - Metering and Telemetry Criteria  
(OP-18)


## 8. Revision History

Rev. No.	Date	Reason	Contact
0	06/30/05	Original	John Norden
1	02/13/06	Revise for clarity	Mike Potishnak
2	07/31/06	Revised SOP title referenced in this SOP	Mike Potishnak
3	04/12/07	Minor changes resulting from annual review to conform with current process	Mike Potishnak


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4	02/24/09	<p>Annual Review by Procedure Owner;</p> <p>Global changed header “Review Due Date “to “Valid Through”;</p> <p>Global: deleted ESCA replaced with AREVA;</p> <p>Step 1. Objective; added Balancing Authority Area, defined acronym BAA/CA, corrected titles of referenced SOPs;</p> <p>Global: deleted Maritimes replaced with NBSO;</p> <p>2 .Background: Added IESO and NBSO as participants in ADI;</p> <p>3. Responsibilities: Corrected referenced SOP titles, added responsibilities for Senior Operations Engineer;</p> <p>4. Controls; Corrected referenced SOP titles;</p> <p>5.1.3.A deleted section;</p> <p>5.1.3.B Changed format from letter to bullet;</p> <p>5.1.7 added “and” after (ACEi);</p> <p>5.2.3 added “...as a function of” and “...This will be done by summing...”;</p> <p>5.2.8 deleted “1” and added “2”;</p> <p>5.2.10 deleted “the” and added “CPS2”;</p> <p>5.2.11 deleted section;</p> <p>5.5.3.A Corrected title consistent with org chart;</p> <p>5.6 First NOTE; deleted: “...in order to apply an end of the month meter correction.”;</p> <p>5.6.4 Deleted “Transmission, Scheduling and Oasis (RSO) Supervisor of Scheduling”, replaced with “ Senior Operations Training Engineer”;</p> <p>5.6.5 Added: “...using the NPCC Monthly Inadvertent Report”;</p> <p>5.6.6 deleted; “...submit a monthly accounting to NERC...” and added “...maintain the NPCC Monthly Inadvertent Report...”;</p> <p>5.6.7 New section detailing Inadvertent reporting to NERC;</p> <p>References: Corrected titles to referenced sources</p>	Mike Potishnak




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5	02/16/11	<p>Biennial review by procedure owner;</p> <p>Globally corrected document titles, defined acronyms for NERC, BAL RCA/BAA &amp; NPCC;</p> <p>Section 2 defined acronyms CPS1, CPS2, DCS &amp; AGC, corrected typos, replaced terms with current NERC terminology made various grammar changes, provided correct titles where applicable;</p> <p>Section 3 corrected title for NPCC Co-1 and added department to position titles;</p> <p>Step 3.3 and step 3.4 modified to reflect organizational changes’</p> <p>Section 4 last bullet deleted “standards”;</p> <p>Section 5.1 title reworded;</p> <p>Section 5.1 NOTE modified;</p> <p>Globally added “NERC Reliability” to “Standards”;</p> <p>Step 5.1.1 and globally replaced “Principal Engineer in System Operations” with “Principal Engineer, Operations”;</p> <p>Step 5.1.3 modified grammar, added complete titles and “when:”</p> <p>Step 5.1.4 deleted;</p> <p>New step 5.1.4 corrected title and added “(or designee)” and “when”;</p> <p>NOTE prior to step 5.1.6 modified;</p> <p>Step 5.1.6 added retention time;</p> <p>Section 5.2 title reworded;</p> <p>Section 5.2 NOTE and globally added “NERC Reliability” to “Standard”, made grammar changes and clarified information;</p> <p>Steps 5.2.1, 5.2.2, 5.2.3, 5.2.4 &amp; 5.2.5 replaced “Principal Engineer in System Operations” with “Principal Engineer, Operations (or designee)”</p> <p>Step 5.2.5 reworded and reformatted to clarify direct action;</p> <p>Steps 5.2.6, 5.2.7, 5.2.8 &amp; 5.2.9 corrected personnel titles and made grammar changes;</p> <p>Step 5.2.10 grammar changes;</p> <p>Section 5.3 Title reworded;</p> <p>Section 5.3 NOTE added “NERC Reliability” to “Standard”, made grammar changes and clarified information; modified information in 3<sup>rd</sup>, 4<sup>th</sup>, &amp; 5<sup>th</sup> paragraphs to reflect changes in NPCC documents;</p> <p>Step 5.3.1 grammar changes;</p> <p>Step 5.3.2 reformatted, deleted sections;</p> <p>Step 5.3.3 and sub-steps &amp; 5.3.4 corrected personnel titles and grammar changes;</p> <p>Step 5.3.5 and sub-steps reworded, corrected personnel titles and grammar changes;</p> <p>Step 5.3.6 and sub-steps corrected personnel titles and grammar changes;</p> <p>Step 5.3.7 modified and corrected personnel titles;</p> <p>Section 5.4 Title modified;</p> <p>Section 5.4 NOTE Added “NERC Reliability” to each applicable use of “Standard”; replaced “Area” with “RCA/BAA”; modified information in 4<sup>th</sup> paragraph to reflect changes in NPCC documents;</p>	Mike Potishnak
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Rev 5 (cont'd from previous page)		<p>Steps 5.4.1, 5.4.2 &amp; 5.4.3 corrected personnel titles;</p> <p>Step 5.4.4 corrected personnel titles and grammar changes;</p> <p>Step 5.4.5 Made use of defined acronym;</p> <p>Section 5.5 title modified;</p> <p>Section 5.5 NOTE Added “NERC Reliability” to each applicable use of “Standard”, corrected personnel titles;</p> <p>NOTE prior to step 5.5.3 grammar changes , information clarified and used defined acronyms;</p> <p>Step 5.5.1 corrected personnel titles;</p> <p>Step 5.5.3.2 2<sup>nd</sup> bullet replaced “14 days” with “10 days”;</p> <p>Steps 5.5.4 &amp; 5.5.5 corrected personnel titles;</p> <p>Step 5.5.7 used correct terminology and defined terms;</p> <p>Step 5.5.8 corrected personnel titles and modified 1<sup>st</sup> two sentences, made 3<sup>rd</sup> sentence a new paragraph;</p> <p>NOTE following 5.5.8 corrected personnel titles;</p> <p>Section 5.6 reworded Title;</p> <p>Section 5.6 NOTE added “NERC Reliability” to each applicable use of “Standard”, added information to reflect changes in NPCC documents;</p> <p>Steps 5.6.1, 5.6.2, 5.6.3, 5.6.4 &amp; 5.6.5 corrected personnel titles &amp; used defined acronyms;</p> <p>Step 5.6.6 grammar changes and corrected personnel titles;</p> <p>Step 5.6.7 and following NOTE deleted and replaced with new NOTE prior to step and modified to make a new step and sub-steps;</p> <p>Section 6 Added “NERC Reliability” to each applicable use of “Standard”; &amp; used acronym BAA as applicable;</p> <p>Section 7 Replaced NPCC A-06, C-09, C-11, C-12, &amp; C-37 with NPCC Directory # 5, deleted B-02 &amp; C-08;</p> <p>added acronym after OPs</p> <p>Relocated location of Manual 11;</p> <p>Update and added new document for RSKMGT procedures</p>	Mike Potishnak
6	02/13/13	<p>Biennial review by procedure owner;</p> <p>Headers, updated copyright date and Procedure Owner;</p> <p>1<sup>st</sup> page Footer, deleted disclaimer 2<sup>nd</sup> paragraph;</p> <p>Minor edits to more accurately reflect responsibilities; reduce stated frequency of tie-line meter correction reporting to align with current and sufficient practice;</p> <p>Section 7, added NERC Glossary of Terms Used in Reliability Standards, replaced NPCC A-07 with NPCC Glossary of Terms (used in Directories), replaced NPCC A-08 with NPCC CCEP-1, added CROP.50001</p>	William Henson
7	02/03/15	<p>Biennial review by procedure owner completed;</p> <p>Reassigned Process Flow and renumbered document title , modified corresponding metadata :</p> <p>Globally made the required grammar changes to comply with ROC group directive to eliminate of the use of the term “ensure”;</p> <p>Globally replaced all instances of “Principal Engineer, Operations (or designee)” with “ OPTI Engineer (or designee)”;</p> <p>Globally replaced “Senior Compliance Coordinator ROC” with “ROC Lead Compliance Analyst (or designee);</p>	William Henson

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8	03/31/15	NOTE following step 5.5.8 was modified describing AGC System Tuning for ATRRs as a result on FERC Order 755 regulation market upgrade implementation.	William Henson
9	01/25/17	Biennial review completed by procedure owner; Added required corporate identity to all footers; Section 1 and globally, replaced “RSKMGT.0170.0010 - Manage Reliability & Operations Compliance” with “ROCMGT.0010.0010 - Monitor Compliance with Regulatory Requirements” and updated the BAL-003 title; Section 2 and Section 5, BAL-001-2 has retired CPS2 and implemented BAAL, this required re-ordering the applicable content to reflect these changes; Section 5 the procedure for determining Frequency Bias Settings required changes in this SOP; Section 7, deleted CROP.51001, not referred to in this document; Globally updated grammar and minor editorial changes to be consistent with current practices and management expectations;	William Henson
9.1	11/27/18	Periodic review performed requiring no changes; Made administrative changes required to publish a Minor Revision (including updating OP-14 title and replacing “SOP-RTMTKS.0120.0040” with “CROP.10003”);	William Henson
10	11/20/20	Periodic review. Conform to changes in NERC and NPCC Standards, update job title and responsibilities	William Henson
10.1	11/15/22	Biennial review completed by procedure owner with no intent changes required; Made administrative changes required to publish a Minor Revision.	William Henson

## 9. Attachments

None.