


# System Operating Procedures

SOP-RTMKTS.0120.0040

Implement Disturbance Remedial Action

Effective Date: August 2, 2011  
Revision No. 34

	© ISO New England Inc. 2011	<b>Procedure: Implement Disturbance Remedial Action</b>
	Process Name: Implement Emergency Operations	
	Procedure Number: RTMKTS.0120.0040	Revision Number: 34
	Procedure Owner: Steve Gould	Effective Date: August 2, 2011
	Approved By: Director, Operations	Valid Through: December 15, 2012

# SOP- RTMKTS.0120.0040


## Implement Disturbance Remedial Action

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## 1. Objective

The objective of this System Operating Procedure (SOP) is to recover from system disturbances, which include Reportable Events as described in Northeast Power Coordinating Council Inc. Regional Reliability Reference Directory # 5 Reserve (NPCC Directory # 5). It describes how to implement or support the simultaneous activation of ten-minute reserve (SAR). It is also intended that ISO New England (ISO), NPCC and North American Electric Reliability Corporation (NERC) control performance and transmission standards be satisfied. This SOP documents the responsibilities of the ISO staff in requesting SAR and responding to system disturbances.

Compliance with this SOP results in a quick recovery from system disturbances, which maintains a high level of reliability and avoids increases in the reserve requirements of NPCC Directory # 5, and NERC Reliability Standard BAL-002, Disturbance Control Performance.

## 2. Background

A system disturbance is any perturbation to the electric system or an unexpected change in Area Control Error (ACE) that is caused by the sudden loss of a Generator and/or supply or an interruption of load. Generators/Dispatchable Asset Related Demands (DARDs) committed in accordance with SOP-RTMKTS.0050.0010 - Perform Reserve Adequacy Assessment provides for sufficient reserve and assists in recovery from system disturbances. Additionally, Ten-Minute Operating Reserve sufficient to recover from any single event is maintained in real time in accordance with the criteria established in SOP-RTMKTS.0050.0010 - Perform Reserve Adequacy Assessment. The Contingency (CD) Scheduling, Pricing and Dispatch (SPD) software is the primary tool used in recovering from a Reportable Event. ISO will only use the assistance provided by the Interconnection frequency bias for the time needed to implement this SOP. The Senior System Operator initiates the communication for system disturbances required by NPCC and NERC as detailed in this SOP.

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### 3. Responsibilities

#### NOTE

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


1. ISO Control Room System Operators will respond to 100% of NPCC Reportable Events by returning the New England Reliability Coordinator Area/Balancing Authority Area (RCA/BAA) ACE value to zero (0), or to the pre-disturbance ACE value (if the ACE was initially a negative value) within fifteen (15) minutes of the start of the disturbance.
2. The Operations Shift Supervisor is responsible for directing the following actions:
  - The Control Room staff to respond to a system disturbance.

#### NOTE

A deficiency in the ISO RCA/BAA Ten-Minute Spinning Reserve (TMSR) exists when the NPCC minimum synchronized reserve requirement cannot be met and re-establishment of TMSR cannot be accomplished in a period of time not to exceed thirty (30) minutes.

When administrative guidance directs raising TMSR requirement to 50%, as long as the NPCC minimum synchronized reserve requirement is met, ISO will remain able to provide SAR.


- The Generation Operator to notify the SAR Coordinator when ISO is unable to provide SAR due to a deficiency in TMSR
3. The Operations Shift Supervisor, in coordination with the entire Control Room staff, is responsible for initiating actions consistent with NPCC Directory # 5 [based upon the availability of SAR from the New York ISO (NYISO)].
  4. The Senior System Operator is responsible for initiating SAR with New York within 5 minutes from the time of the disturbance.

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5. The Senior System Operator, assisted by Control Room Staff, is responsible for:
  - Identifying the occurrence of a system disturbance
  - Implementing recovery from the system disturbance
  - Performing appropriate notifications listed in SOP-RTMKTS.0125.0020 - Communicate With Internal and External Parties, including the NPCC Simultaneous Activation of Ten-Minute Reserve Response Report spreadsheet
  - Determining the assistance available to or from the ISO RCA/BAA and any other NPCC RCA/BAA
6. The Loader Operator/Generation Operator, assisted by the Senior System Operator, is responsible for:
  - Verifying CD SPD instructions are acknowledged by monitoring “A”, acknowledgement required on the “Unit Status” display
  - Implementing the loading of Reserve.
7. The Security Operator is responsible for:
  - Maintaining area protection requirements as determined by SOP-RTMKTS.0060.0020 - Monitor System Security
  - Monitoring transmission limits to abide by ISO New England Operating Procedure No. 19 - Transmission Operations (OP-19)
8. If the dispatch software fails the Loader Operator and Generation Operator are responsible for manually making phone calls to dispatch Generators/DARDs.

#### 4. Controls

None

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## 5. Instructions

### 5.1 Initiating Event Defined


#### NOTE

Because the loss of a Generator and/or supply is 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 the Disturbance Control Standard (DCS) is limited to the loss of supply and does not apply to the loss of load.

1. The Operations Shift Supervisor, assisted by the entire Control Room staff, shall implement SAR for the following:

#### NPCC Reportable Events:

- Sudden actual net interchange deviations resulting in a supply loss equal to or greater than 500 MW
  - Sudden loss of generation equal to or greater than 500 MW
  - When the Operations Shift Supervisor and Senior System Operator determine if implementing SAR will improve regional reliability
  - When requested by the NYISO Shift Supervisor to provide assistance to another RCA/BAA
2. [Section 5.2](#) and [Section 5.4](#) (using CD SPD and implementing SAR) should be performed in conjunction with one another.

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## 5.2 Recovery From System Disturbances

### 5.2.1 CD SPD Operation

#### NOTE

The CD SPD software shall normally be used to communicate dispatch instructions necessary to recover from a system disturbance.

The CD SPD software will communicate Emergency notices to the RTUs.

The CD SPD software should be immediately implemented (prior to entering SAR) following a system disturbance and should not depend on the status or timing of SAR.

Placing the Contingent Generator into UCM 1 in the “Unit Limits” display will provide accurate information for Generator availability.

Once the contingency dispatch case has been approved, subsequent approval of a dispatch software case will only occur after resolving the disturbance or at the discretion of the Operations Shift Supervisor.

The support from SAR and the dispatch of internal resources shall equal at least 140% of the disturbance loss. When the support from SAR is less than 40% of the disturbance loss, the nonperformance factor in CD SPD will be used to ensure at least 140% of the disturbance loss is dispatched with the use of internal/SAR resources.


1. The Operations Shift Supervisor shall direct the Loader Operator to use available SAR and internal resources to dispatch 140% of the disturbance loss.
2. The Operations Shift Supervisor shall direct the Loader Operator to execute CD SPD.

#### NOTE

CD SPD software lists the probable generation contingencies in the Units section and the loss of supply in the Pnodes section. These areas are to be used as a study tool to evaluate an impending loss and the resultant dispatch. This list is pre-defined and from this list the Loader Operator can select a Generator or manually input the MW amount of the supply that was lost. Each execution of CD SPD develops a new set of DDPs.

During actual contingencies pressing the “CLEAR ALL” buttons above the “UNITS” and “PNODES” column will ensure contingencies are not double counted.

3. To execute CD SPD the Loader Operator shall perform the actions of Attachment A - Steps for Performing CD SPD.


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### 5.2.2 CD SPD Inoperable

#### NOTE


The support from SAR and the dispatch of internal resources shall equal at least 140% of disturbance loss. When the support from SAR is less than 40% of the disturbance loss, the nonperformance factor in CD SPD will be used to ensure at least 140% of the disturbance loss is dispatched with the use of internal/SAR resources.

1. If CD SPD is unavailable, prepare a case by performing the following:
  - A. From the RT Generation dispatch software display:
    - (1) Input the applicable Non Performance Factor MW amount into the “LAF” field as follows:
      - a. Normally equal to 0 MW, if SAR covers at least 40% of the disturbance loss
      - b. If determined to be necessary, an appropriate MW value to ensure the mix of SAR and “LAF” cover at least 40% of the disturbance loss.
    - (2) Ensure the following fields have the appropriate response data:
      - Look Ahead Min (10 minutes)
      - Minimum Run Time (normally 60 minutes)
      - Start Up Time (normally 10 minutes)
  - B. Approve the appropriate case to dispatch generation to alleviate the disturbance.
2. If Electronic Dispatch/individual RTU failures occur, System Operators shall use the telephone system to individually communicate dispatch instructions to the Designated Entity (DE)..

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### 5.2.3 Additional Actions

1. The Operations Shift Supervisor shall determine the need for additional actions to recover from a system disturbance and shall consider the following:
  - A. Using economic priority to the extent possible with the exception of when power system reliability requires it dispatch out of merit order Generators.
  - B. The physical hold point for a Generator that may limit the response of an online Generator to an event.
  - C. Using online Self Schedule (S/S) DARDs:
    - (1) If a S/S DARD is used, the Loader Operator shall restore the owners S/S value as soon as system conditions permit.
  - D. Using online DARDs:
    - (1) These DARDs may also be used to satisfy an event even when they are in economics if needed in an emergency.
2. The Loader Operator/Generation Operator assisted by the Senior System Operator shall implement any additional recovery actions as directed by the Operations Shift Supervisor.
3. When manual dispatch is no longer required and system reliability will allow, remove the “Comm DDP” entry and the applicable Reserve Down flag.

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#### 5.2.4 Interruption of Firm Load

#### NOTE


If time allows, the Operations Shift Supervisor and System Operators shall discuss efforts to satisfy an event prior to shedding load. If time does not allow discussion, the System Operators shall take individual action(s) required to satisfy the emergency, independent of higher-level approvals in accordance with NERC Reliability Standards.

1. When all other efforts to satisfy the system disturbance event in a timely fashion have been exhausted and the sustained negative New England RCA/BAA ACE is a burden on any other RCA/BAA or the Interconnection frequency, the Operations Shift Supervisor and System Operators shall take actions up to and including the interruption of firm customer load to satisfy a Generator and/or supply loss disturbance in accordance with ISO New England Operating Procedure No. 4 - Action During a Capacity Deficiency (OP-4) and ISO New England Operating Procedure No.7 - Action in an Emergency (OP-7).

#### NOTE

The OP-7 ENS notification serves as a trigger for Settlements to identify an hour as a Forward Capacity Market (FCM) Shortage Hour.

2. The Operation Shift Supervisor shall verify ISO management and staff are notified by email when the OP-7 ENS notification is made.

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### 5.3 System Disturbance Communications


1. The Operations Shift Supervisor or Senior System Operator shall refer to SOP-RTMKTS.0125.0020 - Communicate With Internal and External Parties and perform the following applicable actions:
  - Make any necessary Reliability Coordinator Information System (RCIS), NERC and Department of Energy (DOE) notifications
  - When the ISO RCA/BAA has experienced a generation and/or supply loss equal to or greater than 500 MW, complete SOP-RTMKTS.0125.0020 Attachment C - NPCC Simultaneous Activation of Ten-Minute Reserve Response Report and email results to "Control Rm SAR Report" Distribution List, global address book.
  - Refer to and perform reporting required by the following:
    - ISO New England Operating Procedure No. 10 - Emergency Incident and Disturbance Notifications (OP-10)
    - NERC Reliability Standard EOP-004- Disturbance Reporting
    - NERC Reliability Standard TOP-007- Reporting SOL and IROL Violations

**NOTE**

DOE reporting requirements require some disturbance reports to be made to DOE within one (1) hour. The DOE report is required within one (1) hour regardless of the information available. In certain instances, it will be permissible for entities to make telephone notifications, pending submission of the completed form.

Refer to NERC Standard EOP-004 - Disturbance Reporting for events requiring one (1) hour notifications to the DOE.

2. The Control Room staff shall create a log entry to record the system disturbance occurrence in the Control Room Event Logserver (Logserver) per SOP-RTMKTS.0125.0040 - Update Control Room Logs.
3. The Operations Shift Supervisor should determine if OP-4 should be implemented in accordance with SOP-RTMKTS.0120.0020 - Implement Capacity Remedial Action.

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## 5.4 Implement SAR Procedure (NPCC Directory # 5)

### 5.4.1 SAR Request By ISO

1. If the sudden loss of a Generator and/or an energy purchase that is a Reportable Event occurs in ISO New England, the Senior System Operator shall immediately telephone NYISO within 5 minutes from the time of the disturbance and request immediate SAR assistance.

#### NOTE

If any wheel-through transactions were part of the supply loss, the wheel-through transactions will remain scheduled through the SAR support period. When SAR is scheduled to end, the wheel-through transactions should also be scheduled to end with a standard ramp time.

- A. The Senior System Operator shall provide the following information to the NYISO:
  - Name of Generator and/or supply lost
  - Total number of MW lost
  - Time the contingency occurred
  - If import capability is limited, up to 200 MW may be scheduled across NYN above existing interchange schedules
  - If any wheel-through transactions were part of the supply loss
  - Any transmission or security problems

#### NOTE


Per NERC Reliability Standard COM-002 - Communication and Coordination, all RCs/BAs involved in the SAR will use 3-part communication for the activation.

New Brunswick System Operator (NBSO) may provide up to 50 MW of SAR. The ISO Operations Shift Supervisor and System Operators will determine if NBSO has the ability to provide SAR and communicate this ability to NBSO.

When ISO requests SAR and NBSO can participate, the Senior System Operator will enter the New Brunswick portion into the Interchange Schedule "Reserve" data field and the remaining SAR portion into the New York "Reserve" data field.

SAR should be immediately implemented following a system disturbance and should not depend on the status or timing of the CD SPD software.

The Northport to Norwalk Harbor Cable (NNC) cannot be used for SAR.

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**5.4.2 Allocation of Reserve Pickup**

1. The Senior System Operator shall notify the remaining Control Room staff of the SAR MW allocation being received and the MW amount ISO is responsible for (normally 50% of the ISO loss).
2. The Loader Operator shall activate CD SPD per [Section 5.2](#) prior to SAR being entered into the Interchange Schedule.
3. The Senior System Operator shall enter the agreed upon MW value of SAR with a zero ramp rate into the Interchange Schedule “RESERV” data field and implement the schedule change.

**NOTE**

If any wheel-through transactions were part of the supply loss, the wheel-through transactions will remain scheduled through the SAR support period. When SAR is scheduled to end, the wheel-through transactions should also be scheduled to end with a standard ramp time.


**NOTE**

SAR should be held for at least 10 minutes.

SAR should **not** be held longer than 15 minutes if SAR contributes to an exceedance of any OP-19 criteria.

SAR will not be scheduled longer than 30 minutes.

4. After conferring with the Operations Shift Supervisor, the Senior System Operator shall notify NYISO that ISO is prepared to end the SAR and schedule the ramp over ten minutes.

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5.4.3 SAR  
Request from  
Outside ISO

**NOTE**

NBSO may request SAR equal to 50% of their largest contingency. The ISO Operations Shift Supervisor and System Operators determine the NBSO ability to receive SAR and communicate this ability to NBSO.

When NBSO requests SAR, the Senior System Operator shall only enter the ISO portion of SAR into the New Brunswick Interchange Schedule “RESERV” data field.

When a RCA/BAA other than NBSO requests SAR and NBSO can participate, the Senior System Operator shall only enter the ISO portion of SAR into the New York Interchange Schedule ‘RESERV’ data field.

If SAR cannot be provided by other NPCC members and ISO is capable of providing SAR, ISO may be requested to provide up to 50% of NBSO largest contingency.

SAR shall be entered on a zero ramp.


If any wheel-through transactions were part of the supply loss, the wheel-through transactions will remain scheduled through the SAR support period. When SAR is scheduled to end, the wheel-through transactions should also be scheduled to end with a standard ramp time.

1. When SAR is requested and the Senior System Operator and NYISO agree upon the MW value of SAR with a zero ramp rate, ISO shall enter the agreed upon values into the Interchange Schedule “RESERV” data field and implement the schedule change.

**NOTE**


The Loader Operator is to treat the SAR obligation as a Reportable Event within New England. The sum of currently scheduled MW plus SAR shall not exceed the applicable TTC.

2. The Loader Operator shall perform [Section 5.2](#) (CD SPD) when either of the following conditions exist:
  - The SAR request is greater than or equal to 200 MW
  - It is necessary to meet the SAR obligation
3. No later than thirty (30) minutes after the start of the Reportable Event, the NYISO Shift Supervisor shall notify ISO Senior System Operator that NYISO is prepared to end SAR and schedule the ramp over ten (10) minutes.

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## 5.5 SAR Communications

1. If SAR has been requested, the Senior System Operator shall refer to SOP-RTMKTS.0125.0020 - Communicate With Internal and External Parties, Attachment C - NPCC Simultaneous Activation of Ten-Minute Reserve Response Report and:
  - A. Complete the report
  - B. Email the completed report to the distribution listed at the bottom
2. To record the Reportable Event disturbance, the Senior System Operator shall log the following information in the Logserver per SOP-RTMKTS.0125.0040 - Update Control Room Logs:
  - Start time and reason of initiation
  - Listing of Generators manually dispatched in response to the Event
  - Start and end times of SAR
3. System Operators shall ensure reporting requirements are completed per SOP-RTMKTS.0125.0020 - Communicate With Internal and External Parties.

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## 6. Performance Measures

This procedure is deemed to be properly followed as evidenced by the following:

- Goal for Corporate performance in CPS1, CPS2 and DCS (Disturbance Control Standard) compliance met

## 7. References

NERC Reliability Standard BAL-002 - Disturbance Control Performance

NERC Reliability Standard COM-002 - Communication and Coordination

NERC Reliability Standard EOP-004 - Disturbance Reporting

NERC Reliability Standard TOP-007 - Reporting SOL and IROL Violations

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

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

ISO New England Operating Procedure No. 7 - Action in an Emergency (OP-7)

ISO New England Operating Procedure No. 10 - Emergency Incident and Disturbance Notifications (OP-10)

ISO New England Operating Procedure No. 19 - Transmission Operations (OP-19)


Master Local Control Center Procedure No. 2 - Abnormal Conditions Alert (M/LCC 2)

SOP-RTMKTS.0050.0010 - Perform Reserve Adequacy Assessment

SOP-RTMKTS.0060.0020 - Monitor System Security

SOP-RTMKTS.0120.0010 - Implement Operations During Abnormal Conditions

SOP-RTMKTS.0120.0020 - Implement Capacity Remedial Action


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SOP-RTMKTS.0125.0020 - Communicate With Internal and External Parties


SOP-RTMKTS.0125.0040 - Update Control Room Logs

## 8. Revision History


Rev. No.	Date	Reason	Contact
0	02/13/03	Initial procedure for SMD	Don Gates
1	03/24/03	Revise guidance on the timing and use of Contingency SPD	Don Gates
2	9/11/03	Incorporate Operator comments and enhancements	Don Gates
3	10/03/03	Change sequence of steps leading to use of Contingency SPD	Don Gates
4	11/16/03	Modified Controls and Performance Measures to align with ISO 9001 standards	Don Gates
5	2/25/04	Incorporate un served load reporting and moved the SAR Reporting form to the Communicate With External Parties SOP	Don Gates
6	3/18/04	Clarify disturbance for interchange deviations as supply loss	Don Gates
7	4/24/04	Clarified use of CTG SPD. Removed un served load reporting. This reporting will be performed by the Satellites	Don Gates
8	5/10/04	Updated for new Auto Call software	Don Gates
9	9/27/04	Added additional guidance for new software dealing with manual DDPs	Don Gates
10	10/19/04	Deleted additional guidance for new software dealing with manual DDPs	Don Gates
11	02/01/05	Updated SOP for RTO Terminology and deleted reference to the Loss of Load Report spreadsheet which was terminated in rev 7	Steve Weaver
12	03/29/05	Update to NERC Version 0 Standard	Steve Weaver
13	05/02/05	Include reference to C-9, revise use of LAF when CTG SPD is inoperable, added note about TTC limits and inability to provide SAR	Steve Weaver
14	12/2/05	Added that NB may now provide SAR. Also added steps to clarify use of Regional Reserve Sharing Energy	Steve Weaver
15	2/14/06	Added notes to ensure SAR does not exceed TTC limits	Steve Weaver
16	03/27/06	Added reference to C 38, Clarified use of RRSE	Steve Weaver
17	04/20/06	Added Attachment for specific standardized steps to take using contingency SPD	Steve Weaver
18	05/02/06	Revised to clarify that SAR is input into 'Reserve' Field in Interchange Schedule and that SAR is input after CTG SPD is ran	Steve Weaver
19	07/31/06	Revised SOP title referenced in this SOP	Steve Weaver
20	09/25/06	Revised for ASM Phase 2	Steve Weaver

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21	12/04/06	Added communication of wheel through transactions and negative SAR assistance	Steve Weaver
22	02/08/07	Clarified that RRSE is available in only a block of 100 MW per NPCC C-38	Steve Weaver
23	06/01/07	Added specific wording for implementing agreed upon schedules and info on 1385 cable project	Steve Weaver
24	10/23/07	Added notification of when OP 7 occurs to alert Settlements about a FCM Shortage Hour	Steve Weaver
25	10/27/07	Changed note following step 5.4.2.6 to state Generation Operator will notify NYISO of any limits to SAR during the scheduling update for the next hour. Global change to use NPCC after first use of Northeast Power Coordinating Council Inc (NPCC). Added use of 3-part communications in note after step 5.4.1.2. Added Reliability Standard COM-002 to references.	Steve Weaver
26	02/01/08	Correct typo in second bullet of Note on page 17 should be from vice form. Revised step 5.2.1.1, the Note prior to step 5.2.1.4 and ATT A steps E & F to ensure consistent actions are taken when performing contingency SPD to prevent double counting (also will provide accurate results when perform a study). Revised step 5.2.2.1.A to clarify the MW value to be entered for Ctg SPD.	Steve Weaver
27	07/23/08	Minor editorial and format changes in various locations Changed Att A step 1.D from 30% of unit to 0 MW In the following NOTE: added "Non-Performance Factor in the" before "...contingency response." in 1 <sup>st</sup> paragraph. added additional paragraph "Approval of a Contingency SPD will override any Manual DDPs"	Steve Weaver
28	03/17/09	Added clarification for use of SAR & RRSE. Deleted term 'SAR Compact' and replaced with 'Operating Reserve Assistance procedure'	Steve Weaver

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29	07/29/09	<p>Section 1 provided correct title and reworded;  Section 2 reworded deleted 2<sup>nd</sup> paragraph;  Globally made consistent use of system disturbance (lower case);  Globally replace Resource with Generator or DARD as applicable;  Reworded steps and/or sub-steps of: 3.2.,3.3., 3.4., 3.5., 3.8.,  Reworded Section 4,;  Reworded step 5.1.1. and 3<sup>rd</sup> bullet;  Replaced DMT with EMS→RTGEN in NOTE 5.2.1.1;  Modified Step 5.2.2.2. &amp; 5.2.2.3.  Step 5.2.2.3 replaced “proceed” with “refer”;  Modified Step 5.2.3.1.B., C., &amp; D.;</p> <p>Modified Step 5.2.3.3., 5.2.3.4.;</p> <p>Reworded NOTE prior to 5.2.4.1.,Steps 5.2.4.1.,5.2.4.2. 5.3.1. &amp; NOTE prior to 5.3.2.;</p> <p>Reworded 5.4.1.1., NOTE after 5.4.1.1.A.,  Reworded 5.4.2.1., 5.4.2.3., 5.4.2.4., 5.4.2.5.;</p> <p>NOTE following Step 5.4.2.5., provided full title for NPCC A-6;  Reworded: 5.4.3 NOTE, Steps 5.4.3.1., 5.4.3.3., 5.4.3.4., 5.4.3.5., 5.5.1., 5.5.2., 5.5.3.;</p> <p>Change title of 5.6., Modified 5.6.1., &amp; NOTE prior to 5.6.1.1.;</p> <p>Deleted 5.6.2 NOTE;  Replaced 5.6.2.1.,  Deleted 5.6.3. NOTE, 5.6.3. &amp; sub-steps, 5.7. &amp; sub-steps;  References added SOP_RTMKTS.0125.0040 and Operating Reserve Assistance Procedure (between NYISO &amp; ISO);  Attachment A step1.E replaced DMT with EMS→RTGEN</p>	Steve Weaver

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30	10/25/10	<p>Header update copyright date;</p> <p>Footer replaced page # with Page X of Y version;</p> <p>Globally minor editorial and grammar improvements;</p> <p>Section 1 corrected NPCC document titles, added BAL-002;</p> <p>Section 2 and globally replaced “generation” with Generator and/or energy purchase” where applicable, defined acronym &amp; used DARD, corrected SOP-RTMKTS.0050.0010 title (replaced Run with Assessment), and modified to add text for using frequency bias;</p> <p>Section 3 NOTE reworded to be consistent with mgmt directions;</p> <p>Added new step 3.1;</p> <p>Replaced step 3.5;</p> <p>Modified step 3.6 and globally replaced CA with RCA;</p> <p>Section 5.1 NOTE and globally replaced “generator failures” with “loss of a Generator and/or energy purchase” as applicable;</p> <p>Step 5.1.1.1 1<sup>st</sup> bullet replace “supply” with “energy purchase”;</p> <p>Section 5.2.1 1<sup>st</sup> bullet and globally replaced “RIG” with “RTU”, deleted “EMS→RTGEN” from “Unit Limits Display” and modified 2<sup>nd</sup> NOTE,</p> <p>Steps 5.2.1.1 and 5.2.1.2 deleted;</p> <p>Modified Steps 5.2.2.1.A.(1), 5.2.2.1.b, &amp; 5.2.2.3;</p> <p>Deleted step 5.2.3.4;</p> <p>Modified step 5.2.4.1;</p> <p>NOTE prior to step 5.2.4.2, modified by adding information removed from step 5.2.4.2;</p> <p>Modified steps 5.3.1.2 2<sup>nd</sup> bullet, 5.4.1.1, 5.4.1 &amp; 5.4.2.4;</p> <p>Deleted step 5.4.2.5;</p> <p>Modified NOTE following step 5.4.2.5.</p> <p>Step 5.4.2.6 and globally replaced “procedure” with “agreement”;</p> <p>Modified NOTE prior to step 5.4.3.1, NOTE prior to step 5.4.3.2 and step 5.4.3.3;</p> <p>Step 5.5.2 deleted 1<sup>st</sup> bullet and modified 2<sup>nd</sup> bullet;</p> <p>Step 5.6.2.1.B.(6) replaced “UDS” with “dispatch software”;</p> <p>Section 7 added BAL-002 title to list of references;</p> <p>Attachment A, totally re-written</p>	Steve Weaver

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31	11/22/10	<p>Section 2 and globally, replaced “energy purchases” with “supply”;  Deleted former step 3.4;  Step 3.4 replaced referred to agreement with “Procedure for Shared Activation of Ten Minute Reserve...” and added “within 3 minutes from the time of the disturbance”;  Replaced Section 4 text with “None”;  Section 5.2.1 1<sup>st</sup> NOTE added new 6<sup>th</sup> paragraph, &amp; new 2<sup>nd</sup> NOTE;  New step 5.2, added new step and new step 5.2.2 NOTE, modified step 5.2.2.1.A.(1) a. &amp; b.;</p> <p>Step 5.2.3.1.A replaced “Resources” with “Generators”  Step 5.4.1.1 added “within 3 minutes from the time of the disturbance”;  NOTE prior to step 5.4.1.1.A changed bullet and added new 2<sup>nd</sup> bullet;  5.4.1.1.A 1<sup>st</sup> bullet replaced “energy purchase” with “supply” &amp; added new 5<sup>th</sup> bullet;  Step 5.4.2. (&amp; globally) replaced “...“Reserve”...” with “...RESERV”...”;</p> <p>Prior to 5.4.2.4 added new NOTE, deleted the NOTE after sub-step 5.4.2.4 and the remaining step 5.4.2 sub-steps;  Added new 6<sup>th</sup> paragraph to the NOTE prior to sub-step 5.4.3.1;  Remaining 5.4.3 sub-steps and NOTE prior to 5.4.3.5 replaced “energy purchase” with “supply”;  Step 5.4.3.3 Modified, deleted “...of the following conditions and sub-steps and replaced with “...that NYISO is prepared to end SAR and schedule the ramp over ten (10) minutes.”;</p> <p>Section 5.6.2 added new NOTE and new step 5.6.2.1;  Attachment A Step 1.A. Replaced an energy purchase with supply, prior to step 1.E added new NOTE; added new step 1.E;  deleted 1<sup>st</sup> paragraph in NOTE prior to 1.F.</p>	Steve Weaver


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32	12/15/10	<p>Biennial review by procedure owner;</p> <p>Section 1 and various locations replaced NPCC documents A-6, C-09 &amp; C-12 with new NPCC document Directory # 5;</p> <p>Section 1 and various locations clarified definition of the acronym SAR;</p> <p>Section 3.1 replaced “DCS Reportable Disturbances” with NPCC Reportable Events”;</p> <p>Section 3.2 added new 2<sup>nd</sup> bullet;</p> <p>Section 3.3 replaced NPCC C-12 with Directory # 5;</p> <p>Section 3.4 used acronym SAR to replace definition;</p> <p>Section 3.5 corrected title “NPCC Simultaneous Activation of Ten-Minute Reserve Response Report”</p> <p>Section 3.6 modified added new 1<sup>st</sup> bullet;</p> <p>Step 5.1.1 Replaced “DCS Reportable Disturbances” with “NPCC Reportable Events”;</p> <p>step 5.3.1 2<sup>nd</sup> bullet Corrected SOP-RTMKTS.0125.0020 Appendix C title;</p> <p>Modified Section 5.4 Title, Step 5.4.1.1, Section 5.5 Title;</p> <p>step 5.5.1 bullet corrected SOP Appendix C title;</p> <p>Added new step 5.6.2.2.B.(6);</p> <p>Section 7 replaced NPCC A-6, C-9 7 C-12 documents with Directory # 5;</p> <p>Attachment A added new step 1.S and sub-steps</p>	Steve Weaver
33	01/11/11	<p>Added new NOTE prior to step 3.2 2<sup>nd</sup> bullet;</p> <p>Modified step 5.6.2 NOTE &amp; step 5.6.2.1;</p> <p>Modified Att A step 1.K;</p> <p>Deleted Att A sub-step 1.K.(2);</p> <p>Deleted NOTE prior to Att A step 1.O and deleted step 1.O</p>	Steve Weaver
34	08/02/11	<p>Header updated;</p> <p>Section 3.2, moved the definition of TMSR from last bullet to the NOTE prior to last bullet</p> <p>Modified Section 3.4, replaced 3 minutes with 5 minutes;</p> <p>Deleted Steps 5.2.2.3, 5.2.3.3;</p> <p>Step 5.3.1 3<sup>rd</sup> bullet, 1<sup>st</sup> sub-bullet, corrected the title for OP-10</p> <p>Modified step 5.4.1.1;</p> <p>NOTE prior to step 5.4.1.1.A, deleted 1<sup>st</sup> sentence;</p> <p>Step 5.4.1.2.A 4<sup>th</sup> bullet, modified;</p> <p>NOTE following sub-step 5.4.1.2.A, moved last sentence to be the 1<sup>st</sup> sentence in a new NOTE prior to step 5.4.2.4;</p> <p>Added new NOTE prior to step 5.4.2.4 with sentence formerly in NOTE following sub-step 5.4.1.2.A and added 2 additional sentences;</p> <p>Step 5.5.2 last bullet, deleted “termination”;</p> <p>Deleted entire Section 5.6</p>	Steve Gould

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## 9. Attachments

Attachment A - Steps for Performing CD SPD

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### Attachment A - Steps for Performing CD SPD

#### NOTE

Once the CD SPD case has been approved, subsequent approval of a dispatch software case will only occur after resolving the disturbance or at the discretion of the Operations Shift Supervisor.

Once a CD SPD case has been executed and approved, any future dispatch software approval will override CD SPD dispatch.

If SAR was entered into the Interchange Scheduling display prior to CD SPD activation then the SAR amount will be incorporated into the CD SPD solution.

Execution of a CD SPD case for a given amount of energy results in the activation of Operating Reserves. Using the Electronic Dispatch system, CD SPD issues an economic security constrained solution that satisfies the load forecast demand while respecting the active transmission constraints. The solution will utilize all available on-line Resources and off-line Fast Start Generators in merit order.


The CD SPD solution will disregard Regulation limits.

1. To execute a CD SPD case the Loader Operator shall:
  - A. Place the contingent unit in UCM 1 and/or change the schedule in the “Interchange Schedule” display (IFS) for a loss of supply.
  - B. Manually execute an RTNET sequence by either of the following actions:
    - Using the Operator Toolbox, click on the “Run Seq” button
    - Using the “Online Sequence” display, click on the “Run Sequence” button
  - C. Activate CD SPD by clicking on the “CD SPD” button.
  - D. To ensure that previous data has been cleared:
    - (1) Press the “Clear All” button for “Pnodes” column.
    - (2) Press the “Clear All button for “Units” column.

#### NOTE

The support from SAR and the dispatch of internal resources shall equal at least 140% of the disturbance loss. When the support from SAR is less than 40% of the disturbance loss, the nonperformance factor in CD SPD will be used to ensure at least 140% of the disturbance loss is dispatched with the use of internal/SAR resources.

- E. Enter a non-performance factor, if required, to ensure at least 140% of the loss of Generator and/or supply will be dispatched, including internal and external resources.

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**NOTE**

Regulating units selected by CD SPD will automatically change from UCM 6 to UCM 4 and be highlighted in blue.

LEG units selected by CD SPD will be highlighted in green.

Approval of a CD SPD case will override any Manual DDPs.

F. Verify “Look Ahead” = 10 Minutes.

**NOTE**

Executing a case in CD SPD display automatically saves any changes made.

G. Click the “Execute” button. .

H. To continue, click on “OK” when asked.

**NOTE**

In the blue field, “<<CD SPD: Executing>>” will appear while CD SPD is executing.

I. Double click in the blue field to bring up the “Messages” display box.

**NOTE**

Without any case violations, “11 messages” is displayed in the bottom left corner.

J. Review the CD SPD case and verify there are “11 messages”.

K. If there are more than “11 messages” in the CD SPD case, determine the type of violation.


(1) For ramp rate violation(s), determine the unit(s) in violation by performing the following:

- a. Right click on the “Case ID” number
- b. Select “Gen Schedule”.
- c. Look for the units highlighted in RED.

**NOTE**

Operations Shift Supervisor approval is required before a CD SPD case with a violation can be approved.

(2) Inform the supervisor of the violation(s) and the details associated with the violation(s)

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**NOTE**

A positive or negative ACE prior to the disturbance will affect the MW sum total in the CD SPD solution relative to the size of the resource loss.

For example: +200 MW ACE when Phase 2 trips at 1000 MW, without a non-performance factor CD SPD would solve for ~800 MW.

- L. Verify the sum total MW change located directly under the the “MW Delta” column heading is roughly equal to the Resource loss + non-performance factor.
- M. To observe major units moving down, left click on the “MW Delta” column heading to sort ascending.
- N. To observe major units moving up, left click on the “MW Delta” column header to sort descending.
- O. If the desired results are obtained, click the “Approve” button to approve the CD SPD.
- P. To continue, click “OK” when asked.
- Q. Check the “SPD Delta” display to verify DDPs have been transmitted.
- R. Verify RTU acknowledgement from Generators receiving CD SPD instructions by performing the following:
  - (1) Filter on the “Unit Status” display acknowledgement require column “A”
  - (2) Sort the “SPD Dev” column to obtain the largest positive “SPD Dev” value on the top of the list
  - (3) Starting with the largest “SPD Dev”, contact the Generators that have not acknowledged their dispatch instructions and direct each to comply with the RTU acknowledgement requirement.