Procedure Background

In this procedure Guide is an all-inclusive term for: TOG Stability, TOG Text, TOG SPS, and TOG temporary.

The Interface Limits Related Devices-Runbacks/Pre-ctg SCADA display is accessed by: Accessing ILC, Clicking on the "Related Displays" menu, and then selecting "Related Devices-Runbacks/Pre-ctg SCADA" from the menu.

Many of the SPS devices have been incorporated into the RTCA and STCA software. By selecting the “SPS Displays” icon, the System Operator can assess which SPS was incorporated in the RTCA software analysis. SPS Devices in red are Active and have been triggered in the base case or during contingency analysis.

Regardless of the status in the field, the PV20 OMS SPS is deactivated in RTCA and STCA to respect NYISO operating restrictions on the PV20 line.

Nuclear station voltage monitoring is included in RTCA to comply with NPIRs. The following contingencies will be evaluated by the “Non-Field SPS’s” feature of the RTCA software: MIL2, MIL3, PILG, and SBRK. The modeling of these contingencies, in conjunction with the Non-Field SPS programming, provide an indication that post-contingent station voltage limits will be exceeded following a unit trip with the addition of Emergency Core Cooling System (ECCS) loads.

The NPIR voltage setpoints are programmed into the SPS logic and will trigger an “LV” indication if the Low Voltage limit is exceeded. A “WLV” Warning Low Voltage limit, set 2kV above the Low Voltage limit, is provided to alert the Operator of a potential problem. Upon an exceedance of either limit, the applicable CTGY ID will be displayed in the “Special Processed contingencies that triggered an SPS” column of the “Contingency Branch Violation” RTCA EMS display with an indicator for the limit violated (LV or WLV) to the right.

Along with the visual indication, the initial exceedance of a Nuclear Voltage Alarm setting will trigger an audible alarm. No subsequent exceedance will trigger an audible alarm until all associated alarms have returned to normal.

SPS Overview display information:
- When a value is locally manually replaced, a white (R) will appear next to it.
• When a value has bad data, a magenta (S) will appear next to it.
• The “meter” symbol indicates that SCADA points exist for this SPS. Click on it to see the substation and device.
• A yellow value indicates that it is calculated from the ICM.
  ▪ The values that are NOT associated with a SCADA point can be toggled by clicking on them.
  ▪ Any values that are listed on other displays will NOT be changed on those displays when toggled here. Examples include the NEWI, YAR4, and NB Available Statuses.

Common Procedure Information
A. Any ISO-NE qualified Control Room Operator has the authority to take actions required to comply with NERC Reliability Standards. A qualified ISO-NE Control Room Operator has met the following requirements:
   1. Have and maintain a NERC certification at the RC level (per R.1 of PER-003-1)
   2. Applicable Requirements of PER-005-2
   3. Approved to cover a Control Room Operator shift position by the Manager, Control Room Operations
   4. Is proficient at the current qualified level.
B. Real-Time operation is defined as the current hour and the current hour plus one.
C. Future hours are those beyond Real-Time operation.
D. All verbal communications with Local Control Centers (LCC), neighboring Reliability Coordinators/Balancing Authorities (RC/BA), Designated Entities (DE), Demand Designated Entities (DDE) and/or SCADA centers shall be made on recorded phone lines unless otherwise noted.
E. Use the Basic Protocol for All Operational Communications as defined in M/LCC 13
   1. Use 'ISO New England' or 'New England'. Refrain from using 'ISO'.
   2. Use Asset ID's when communicating with DE/DDEs.
F. Primary responsibilities are stated for each step within the procedure, but any ISO Control Room Operator qualified at that position or higher can perform the step.
G. The use of ensure within this document means that a verification has been performed and if the item is not correct, corrective actions will be performed.
CROP.34011 Protection Systems (SPS or ACS)

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Procedure

Condition(s) to perform this section:

- An SPS is required to be monitored in Real Time; Or
- An SPS is no longer required to be monitored in Real Time.

Section 1   Activate or Deactivate an SPS in RTCA and CAJR

Step 1.1   Primary Responsibility: Security Operator
Access RTCA.

Step 1.2   Primary Responsibility: Security Operator
Access the SPS Directory or the Non-Field SPS Directory display as applicable.

Instructions
Access the SPS Directory display by:
- Clicking the "SPS" button.
Access the Non-Field SPS Directory display by:
- Clicking the "SPS" button
- Then click the "Non-Field" tab.

Step 1.3   Primary Responsibility: Security Operator
Access the specific SPS Visual definition.

Step 1.4   Primary Responsibility: Security Operator
Modify the status of the SPS.

Instructions
To activate an SPS perform the following:
- Click the Active box (Active: □)
- Click the yes button in the Confirm Action pop up window
- Verify the flag was set

To deactivate an SPS perform the following:
- Click the Active box (Active: ✔)
- Click the yes button in the Confirm Action pop up window
- Verify the flag was removed.

Step 1.5   Primary Responsibility: Security Operator
Transfer the RTCA SPS database to CAJR.

Instructions
To transfer the RTCA SPS database to CAJR:
- Access the SPS Directory or Non-Field SPS Directory display;
- Then click the "Transfer SPS's to RTCAJR" button.

Notes
Failure to perform this step would mean that CAJR would NOT be assessing the same SPS as RTCA.

Step 1.6   Primary Responsibility: Security Operator
Run a Network Sequence.
Step 1.7  Primary Responsibility: Security Operator
Verify the transfer SPS database time and date stamp updated using the SPS Directory display or the Non-Field SPS Directory display in RTCA.

Instructions
The time and date stamp to the right of the "Transfer SPS's to RTCAJR" button indicates when the SCRIPTOR process has been initiated to push the CAJR database update.

Step 1.8  Primary Responsibility: Security Operator
Verify the SPS status has updated using the SPS Directory display.

Instructions
White text indicates that the SPS is Deactivated.
Black text indicates that the SPS is Active.
Red text indicates that the SPS is Active and has been triggered in the base case or during contingency analysis.

Step 1.9  Primary Responsibility: Security Operator
Log the SPS activation or deactivation.

Instructions
For activation, use log entry: > TRANSMISSION > SPS > SPS Activated in CA
For deactivation, use log entry: > TRANSMISSION > SPS > SPS Deactivated in CA

Identify the following items in the entry:
♦ SPS ID;
♦ Reason for the activation or deactivation.

Step 1.10  Primary Responsibility: Security Operator
Modify the status of the SPS on the SPS display using Section 4.
Determine if the SPS needs to be activated or deactivated in STCA. If so, proceed to Section 5.
Section 2  326 Line SPS

Notes
The following steps will allow ILC and RTCA to calculate the effect of arming generation. The actual arming is done by the applicable LCC or New Brunswick Operator and needs to be confirmed prior to doing so in ILC.
Arming YAR4, NEWI, and New Brunswick generation at the same time for the 326 SPS may exceed 1,200 MW and should be evaluated for a Single Source Contingency (SSC).
New Brunswick sources shall NOT be selected unless specifically authorized by ISO-NE Operations Support Services, Technical Studies or Real Time Support personnel.

Step 2.1  Primary Responsibility:  Security Operator

Condition(s) to perform this step:
• The mode of the SPS needs to be changed from thermal to stability or stability to thermal.

Contact the applicable LCC to change the mode of the 326 Line SPS.

Notes
The 326 SPS is normally in thermal mode. Mode change can be completed via SCADA.
Authorization from ISO-NE Operations Support Services, Technical Studies or Real Time Support personnel is required to place the 326 SPS in the stability mode.
If arming the SPS, no further actions can be performed in this section until the SPS has been armed in the field.

Step 2.2  Primary Responsibility:  Security Operator

Condition(s) to perform this step:
• If YAR4, NEWI, and NB generation are all being armed at the same time for the 326 SPS.

Notify the Operations Shift Supervisor that YAR4, NEWI, and NB generation are being armed at the same time for the 326 SPS.

Notes
New Brunswick sources shall NOT be selected unless specifically authorized by ISO-NE Operations Support Services, Technical Studies or Real Time Support personnel.

Step 2.3  Primary Responsibility:  Security Operator

To modify arming status of YAR4 or NEWI:

Step 2.3.1  Primary Responsibility:  Security Operator

Contact the applicable LCC to arm the required generator for rejection.

Step 2.3.2  Primary Responsibility:  Security Operator

Modify the arming status for ISO-NE generation using the Interface Limits Related Devices-Runbacks/Pre-ctg SCADA display.

Instructions
To arm:
- Click the "NOT ARMED" text for the applicable generator.

To disarm:
- Click the "ARMED" text for the applicable generator.
Step 2.4  Primary Responsibility:  Security Operator

Condition(s) to perform this step:
- Arming of NB generations for the 326 SPS has been authorized by ISO-NE Operations Support Services, Technical Studies or Real Time Support personnel.

To modify arming status of NB generation:

Notes
New Brunswick sources shall NOT be selected unless specifically authorized by ISO-NE Operations Support Services, Technical Studies or Real Time Support personnel.

Step 2.4.1  Primary Responsibility:  Security Operator
Contact NB Operator to arm generation for rejection.

Notes
The amount of NB generation armed to trip on 326 Line SPS activation will NOT be allowed to exceed the total net import schedule from NB.

Step 2.4.2  Primary Responsibility:  Security Operator
Modify RTNET for arming status change to NB generation

Instructions
To arm:
- Access the “EEL_RV” Station in RTNET
  - Close the "PSUN-ELR1" disconnect on the one line, if open.
- Access the “NOVASCOT” Station in RTNET
  - Ensure the “PSUN_B325” disconnect on the one line is closed [this disconnect should always be closed]

To disarm:
- Access the “EEL_RV” Station in RTNET
- Open the "PSUN-ELR1" disconnect on the one line, if closed.

Step 2.4.3  Primary Responsibility:  Security Operator
Modify the arming status of NB generation in ILC.

Instructions
To arm:
- Click the "NOT ARMED" text for NB generation;
- Verify the MW value is consistent with the MW value provided by NB Operator

To disarm:
- Click the "ARMED" text for NB generation.

Notes
The MW amount of NB generation armed to trip on 326 Line SPS activation is automatically populated from NB.

Step 2.5  Primary Responsibility:  Security Operator
Verification of limit increase in ILC.

Step 2.5.1  Primary Responsibility:  Security Operator
Run a Network Sequence.
Step 2.5.2  
**Primary Responsibility:** Security Operator

**Ensure the "North-South Interface Limit" changed by the expected amount as described in the 326 Line SPS document.**

Step 2.6  
**Primary Responsibility:** Security Operator

**Ensure the 326 SPSs in RTCA are active.**

**Notes**  
The "armed" / "disarmed" status on ILC Related Devices-Runbacks/Pre-ctg SCADA display will provide an input into RTCA to identify which SPS should Operate if a condition is met.

Step 2.7  
**Primary Responsibility:** Security Operator

**Log the status change.**

**Instructions**  
Use applicable log entry:
- > TRANSMISSION > SPS > 326 Line SPS Armed
- > TRANSMISSION > SPS > 326 Line SPS Disarmed

Step 2.8  
**Primary Responsibility:** Security Operator

**Notify the applicable adjacent LCCs.**

**Instructions**  
- For YAR4 - notify NGrid and NH
- For NEWI - notify Maine and NGrid
- For NB generation - notify Maine, NGrid, and NH

Step 2.9  
**Primary Responsibility:** Security Operator

**Complete Section 4 - Modify status of an SPS/ACS on the SPS display**
Condition(s) to perform this section:
- Notified that the 396 SPS status has been modified

Section 3       Modify status of the 396 SPS

Step 3.1        Primary Responsibility: Security Operator

Log the 396 SPS status change.

Instructions
Use applicable log entry:
- > TRANSMISSION > SPS > 396 Line SPS Armed
- > TRANSMISSION > SPS > 396 Line SPS Disarmed
Condition(s) to perform this section:
- Notified that an SPS or ACS has changed status; Or
- Notified that an arming amount has been modified.

Section 4 Modify status of an SPS/ACS on the SPS display

Step 4.1 Primary Responsibility: Security Operator
Access the SPS Overview display.

Instructions
Done via ICM display.

Step 4.2 Primary Responsibility: Security Operator
Determine if the SPS Overview information updated.

Step 4.2.1 Primary Responsibility: Security Operator
Update the status or MW amount.

Instructions
If the SPS or ACS has a yellow meter in the far right portion, a SCADA point exists and will need to be modified via the Substation Tabular display if it does NOT update correctly.

To modify an Arming Status or Available Status for an item without a SCADA point:
- Click the applicable status to toggle the indication.

To modify an Arming Status, Available Status, or Armed MW item with a SCADA point:
- Click the yellow meter to determine the point to be modified on the Substation Tabular display;
- Click an item for the applicable SPS/ACS;
- Locate the point to be modified on the Substation Tabular display;
- Set the "Not in Service" flag, if NOT set;
- Toggle to the applicable status.

Step 4.3 Primary Responsibility: Security Operator

Condition(s) to perform this step:
- Notified that an SPS or ACS is out of service.

Check the SPS document for required actions.
**Condition(s) to perform this section:**

- The effects of an SPS need to be evaluated; Or
- The effects of an SPS are no longer required to be evaluated.

**Section 5  Activate or Deactivate an SPS in STCA**

**Step 5.1**  Primary Responsibility: Any Control Room Operator

**Access STCA.**

**Step 5.2**  Primary Responsibility: Any Control Room Operator

**Access the SPS Directory or the Non-Field SPS Directory display as applicable.**

**Instructions**

Access the SPS Directory display by:
- Clicking the "SPS" button.

Access the Non-Field SPS Directory display by:
- Clicking the "SPS" button
- Then click the "Non-Field" tab.

**Step 5.3**  Primary Responsibility: Any Control Room Operator

**Access the specific SPS Visual definition.**

**Step 5.4**  Primary Responsibility: Any Control Room Operator

**Modify the status of the SPS.**

**Instructions**

To activate an SPS perform the following:
- Click the Active box (Active: □)
- Click the yes button in the Confirm Action pop up window
- Verify the flag was set

To deactivate an SPS perform the following:
- Click the Active box (Active: ✔)
- Click the yes button in the Confirm Action pop up window
- Verify the flag was removed.

**Step 5.5**  Primary Responsibility: Any Control Room Operator

**Run STCA.**

**Step 5.6**  Primary Responsibility: Any Control Room Operator

**Verify the SPS status has updated.**

**Instructions**

White text indicates that the SPS is Deactivated.
Black text indicates that the SPS is Active.
Red text indicates that the SPS is Active and has been triggered in the base case or during contingency analysis.

**Step 5.7**  Primary Responsibility: Any Control Room Operator

**Determine if the SPS needs to be activated in RTCA. If so, proceed to Section 1.**
Condition(s) to perform this section:

- The actual SPS logic has been modified in the field and needs to be updated in EMS.

**Section 6  Modify the logic of an SPS**

**Step 6.1**  Primary Responsibility: Security Operator

**Contact the IT On Call Technician**
Condition(s) to perform this section:

- An SPS has Operated.

Section 7  Operation of an SPS

**Step 7.1**  Primary Responsibility: Security Operator

Condition(s) to perform this step:

- An SPS has Operated as designed.

**Log SPS Operation.**

**Instructions**
Use log entry: > TRANSMISSION > SPS > SPS Operation

**Step 7.2**  Primary Responsibility: Security Operator

Condition(s) to perform this step:

- An SPS has Mis-operated.

**Log the SPS Misoperation.**

**Instructions**
Use log entry: > TRANSMISSION > SPS > SPS Misoperation
Condition(s) to perform this section:
- Notified of a status change for the Podick Load Throwover Scheme.

Section 8  Modify the status of Podick Load Throwover Scheme

Notes
This status item is used by the modeled SPSs within CA.

Step 8.1  Primary Responsibility: Security Operator
Access the ILC Related Devices - Runbacks/Pre-ctg Scada display.

Instructions
From ILC Transmission or Generation:
- Click on the "Related Displays" menu;
- Select "Related Devices - Runbacks/Pre-ctg Scada" from the menu.

Step 8.2  Primary Responsibility: Security Operator
Click on the status text.

Instructions
Clicking on the status text will open the applicable Station Tabular display for modifying the status item.

Step 8.3  Primary Responsibility: Security Operator
Modify the status.

Step 8.4
Complete Section 4 - Modify status of an SPS/ACS on the SPS display
# Revision History

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<td>0</td>
<td>03/23/15</td>
<td>Initial Draft of this Procedure</td>
<td>Steven Gould</td>
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<tr>
<td>1</td>
<td>05/18/15</td>
<td>Add language to Background</td>
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<td>2</td>
<td>01/12/16</td>
<td>Change in NB arming of the 326 SPS</td>
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<td>3</td>
<td>02/23/16</td>
<td>Update for changes to 326 SPS arming in ILC and RTCA</td>
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<td>4</td>
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<td>Name change of Related Devices display</td>
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<td>04/29/16</td>
<td>Added Section 6 - Operation of an SPS</td>
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<td>6</td>
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<td>7</td>
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<td>Addition of a Step to Section 1; Addition of a Note to a Step in Section 2</td>
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<td>Added note at beginning of section 2, in steps 2.2 and 2.4</td>
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