CROW System

Generation Outage Coordination Training

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Supervisor of Short-Term Outage Coordination

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Westborough, MA
Disclaimer for Customer Training

ISO New England (ISO) provides training to enhance participant and stakeholder understanding.

Because not all issues and requirements are addressed by the training, participants and other stakeholders should not rely solely on this training for information but should consult the effective *Transmission, Markets and Services Tariff* (“Tariff”) and the relevant *Market Manuals, Operating Procedures, and Planning Procedures* (“Procedures”).

In case of a discrepancy between training provided by ISO and the Tariff or Procedures, the meaning of the Tariff and Procedures shall govern.
Objectives

At the completion of this training, you will be able to:

• Access and log in to the Control Room Operations Window (CROW)
• Navigate the CROW interface
• Describe the relationship between outage priority and constraint/commitment
• Submit, modify, cancel an outage request using CROW
• Identify information that can and cannot be shared with market participants
Topics

- CROW Application
- Submitting a Request
- Ensuring Application Approval
- Communication
- Information Policy
Acronyms

- **AI**: Annual Inspection
- **AVR**: Automatic Voltage Regulator
- **BA**: Balancing Authority
- **CA**: Contingency Analysis
- **CAMS**: Customer and Asset Management System
- **CMP**: Central Maine Power
- **CONVEX**: Connecticut Valley Electric Exchange
- **CROW**: Control Room Operations Window (ISO Outage Scheduling Software)
- **CSO**: Capacity Supply Obligation
- **DARD**: Dispatchable Asset Related Demands
- **DE**: Designated Entity
- **EMS**: Energy Management System
- **GOR**: Generator Outage Request
- **ISO**: Independent System Operator
- **MLCC**: Master/Local Control Center
- **OP**: Operating Procedure
- **OOS**: Out of Service
- **NSTAR**: NSTAR
Terminology and Acronyms (continued)

- **PSNH**: Public Service of New Hampshire
- **PSS**: Power System Stabilizer
- **REMVEC**: Rhode Island-Eastern Massachusetts-Vermont Energy Control
- **SCADA**: Supervisory Control and Data Acquisition
- **SCC**: Seasonal Claimed Capability
- **SMD**: Standard Market Design
- **TOG**: Transmission Operating Guide
- **TTC**: Total Transfer Capability
- **VELCO**: Vermont Electric Power Company
Control Room Operations Window

• Overview
• Access and login
• Navigation
What is CROW?

- Control Room Operations Window
- Used to submit, review, and approve generation and transmission outage requests
Accessing SMD Applications
## Environments

<table>
<thead>
<tr>
<th>Sandbox</th>
<th>Production</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="https://sandboxsmd.iso-ne.com">https://sandboxsmd.iso-ne.com</a></td>
<td><a href="https://smd.iso-ne.com">https://smd.iso-ne.com</a></td>
</tr>
</tbody>
</table>

**Sandbox**
- Testing code
- Employee training

**Production**
- Accessing CROW
- Use with validated code only
## User Roles

<table>
<thead>
<tr>
<th>Read Only</th>
<th>View/Submit Only</th>
<th>Access Using Web Services</th>
</tr>
</thead>
</table>
| - Read-only access  
  - View outage information  
    - User interface | - Read-write access  
    - Create, edit, view outage info | - This is for Computer to Computer Web Services function |

---

There are separate **Access Using Web Services, Read Only** and **View/Submit Only** roles available for both the sandbox and production.
Roles Available in CAMS

Customer Asset Management System

Roles Available in CAMS

Your role is assigned by your company’s security administrator
Access

Attempt to access CROW

Do you have a digital certificate installed in your browser?

Yes

Do you have a role assigned?

Yes

Access granted

No

Access to SMD denied

No

Access to CROW denied

Contact your company’s Security Admin
Secure Connection Failed

An error occurred during a connection to smd.iso-ne.com. SSL peer was unable to negotiate an acceptable set of security parameters. (Error code: ssl_error_handshake_failure_alert)

- The page you are trying to view cannot be shown because the authenticity of the received data could not be verified.
- Please contact the website owners to inform them of this problem.

Try Again  Report this error ▼
This site has requested that you identify yourself with a certificate:
smd.iso-ne.com:443
Organization: "ISO New England, Inc"
Issued Under: "GeoTrust, Inc."

Choose a certificate to present as identification:

Details of selected certificate:
Issued to: 
Serial Number: 
Valid from 1/23/2015 12:33:14 PM to 1/24/2016 12:33:14 PM
Certificate Key Usage: Signing, Key Encipherment
Email: 
Issued by: CN=NAESB Issuing CA - SHA256 - G2,O=GMO GlobalSign Inc.,L=Portsmouth,ST=New Hampshire,C=US

Remember this decision

OK Cancel
## SMD Applications Home Page

<table>
<thead>
<tr>
<th>Internal Transactions</th>
<th>External Transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bids &amp; Offers (Registered Users)</td>
<td>Customer and Asset Management System</td>
</tr>
<tr>
<td>Financial Transmission Rights (Registered Users)</td>
<td>Forward Reserve Market Auction</td>
</tr>
<tr>
<td>Submit Meter Reading</td>
<td>CROW Outage Scheduler</td>
</tr>
<tr>
<td>Submit Peak Contribution</td>
<td>Forward Reserve Assignment</td>
</tr>
<tr>
<td>Submit Monthly Regional Network Load</td>
<td>Forward Capacity Tracking System</td>
</tr>
<tr>
<td>Financial Assurance Management</td>
<td>Forward Capacity Market Reconfiguration Auction</td>
</tr>
<tr>
<td>Forward Capacity Market CSO Bilateral Contracts</td>
<td>Supplemental Availability Designation</td>
</tr>
<tr>
<td>Demand Resource Market User Interface</td>
<td>DR Audit and Testing Tool</td>
</tr>
<tr>
<td>Claimed Capability Auditing Tool</td>
<td>NX Application (NX-9 and NX-12D)</td>
</tr>
</tbody>
</table>

### CROW Web 5.1.3.87 - Transmission Outage Request Index

<table>
<thead>
<tr>
<th>Outage Request Type:</th>
<th>Transmission</th>
<th>Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outage Request Date:</td>
<td>2015/06/29 to 2015/06/30</td>
<td></td>
</tr>
<tr>
<td>Control Center:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Class:</td>
<td>is between - and - kV</td>
<td></td>
</tr>
<tr>
<td>Requested By:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outage Number:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Request Details
- **Request Status:** All
- **Constraint/Commit:** All
- **Request Priority:** All
- **Pending Approvals:** Ignore Filter
- **Equipment Type(s):** All

Click here for the [CROW Web 5.1.3.87 User Reference](#).

CROW Web support is available at ISO New England Customer Support, or by sending email to [CROW Web Support](mailto:).
Navigating CROW
CROW Web 5.1.3.87 - Options

Date/Time Options

- Time Zone: Pacific Time (UTC - 08:00)
- Daylight Savings: Eniwetok, Kwajalein (UTC - 12:00)
- Date Format: Eniwetok, Kwajalein (UTC - 12:00)
- Daylight Savings: Midway Island, Samoa (UTC - 11:00)
- Date Format: Hawaii (UTC - 10:00)
- Daylight Savings: Alaska (UTC - 09:00)
- Date Format: Pacific Time (UTC - 08:00)
- Daylight Savings: Mountain Time (UTC - 07:00)
- Date Format: Central Time (UTC - 06:00)

Asset Naming Options

- Asset Naming Options: Eastern Time (UTC - 05:00)
- Asset Naming Options: Atlantic Time (UTC - 04:00)
- Asset Naming Options: Newfoundland (UTC - 03:30)
- Asset Naming Options: Brasilia, Buenos Aires (UTC - 03:00)
- Asset Naming Options: Mid Atlantic (UTC - 02:00)
- Asset Naming Options: Azores, Cape Verde Island (UTC - 01:00)
- Asset Naming Options: Greenwich Standard Time (UTC + 00:00)
- Asset Naming Options: Amsterdam, Berlin, Bern (UTC + 01:00)
- Asset Naming Options: Athens, Istanbul, Minsk (UTC + 02:00)
- Asset Naming Options: Baghdad, Kuwait, Moscow (UTC + 03:00)
- Asset Naming Options: Tehran (UTC + 03:30)
- Asset Naming Options: Abu Dhabi, Muscat, Baku (UTC + 04:00)
- Asset Naming Options: Kabul (UTC + 04:30)

Update Your Password

Enter your current password and enter your new password, confirm your new password and click the button. It must be at least 8 characters and it must be at least 8 characters.

- Old Password: 
- New Password: 
- Confirm Password: 

Outage Request Notification Options

Send Me Outage Request Approval/Denial: 

- 

Select the checkbox if you would like to receive outage request approvals and denials.
CROW Web 5.1.3.87 - Options

Date/Time Options

Time Zone: Eastern Time (UTC - 05:00)
Daylight Savings: Use Daylight Savings Time, Use Standard Time
Date Format: MM/DD/YYYY, YYYY/MM/DD, MM/DD/YYYY, DD/MM/YYYY

Asset Naming Options

Asset Naming Options: 1-Line Designation

Update Your Password

Enter your current password in the Old Password field. Enter your new password in the New Password and Confirm Password fields and click the Update button below.

Your new password cannot be your first name or last name, and it must be at least three characters in length.

Old Password: ********
New Password: 
Confirm Password: 

Outage Request Notification Options

Send Me Outage Request Approval/Denial
CROW Web 5.1.3.87 - Options

Date/Time Options

- Time Zone: Eastern Time (UTC - 05:00)
- Daylight Savings: Use Daylight Savings Time
- Date Format: YYYY/MM/DD

Asset Naming Options

- Asset Naming Options: 1-Line Designation

Update Your Password

Enter your current password in the Old Password field. Enter your new password in the New Password and Confirm Password fields and click the Update button below.

Your new password cannot be your first name or last name, and it must be at least three characters in length.

Old Password: 
New Password: 
Confirm Password:
Asset Naming Options

Update Your Password

Enter your current password in the Old Password field. Enter your new password in the New Password and Confirm Password fields and click the Update button below.

Your new password cannot be your first name or last name, and it must be at least three characters in length.

Old Password: 
New Password: 
Confirm Password:

Outage Request Notification Options

Send Me Outage Request Approval/Denial Notifications: 

Outage Request Form Options

Close Outage Request Form After Saving: 

Update

Click here for the CROW Web 5.1.3.87 User Reference.
CROW Web support is available at ISO New England Customer Support, or by sending email to CROW Web Support.
Example of Notification Email

CROW Web - Outage Request #1-15004892 Cancelled (VERNON VERN Reduction: 4.84 MW) Short Term

- Outage Request Number: 1-15004892, Rev. #3 (Planned)
- Outage Request Status: Cancelled
- Status Updated By: Kretschmar, Eric R. on 06/10/2015 07:34
- Reason For Cancellation: Weather, LCC
- Requested Equipment: VERNON VERN Reduction: 4.84 MW
- Planned Start: Outage: 06/10/2015 07:00
- Planned End: Outage: 06/11/2015 17:00
- Duration: Exactly 2 Day(s)
- Continuous
- Reason/Priority: inspection on T12 Transformer that will take unit 1 and unit 2 out of service during the period of work
- Notification Comments: Outage Request Priority: Short Term
- Request Updated: 06/10/2015 07:34

Click here for the [CROW Web 5.1.3.87 User Reference](#). CROW Web support is available at ISO New England Customer Support, or by sending email to [CROW Web Support](#).
Outage #: 0-00000000 rev. 1 (current)
Requested by: Sanchez, eduardo A.
Company: ISO New England
Outage status: Continuous
Planned start: 2015/07/01 08:00
Planned end: 2015/07/03 16:00
Outage duration: Exactly 3 Day(s)
Asset Id:
Asset Name:
Equip. Requested:
LCC GO Station Circuit/Equipment Voltage Class Rel Area Constraint/Commitment
Please click the "Add..." button to add outage equipment.
External Comments:

ISO Comments:
CROW Web 5.1.3.87 - Generation Outage Request: 0-00000000 rev. 1
(New) by Sanchez, eduardo A. 2015/08/22 08:00 - 2015/08/26 16:00
Continuous

<table>
<thead>
<tr>
<th>Outage #:</th>
<th>0-00000000 rev. 1 (current)</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requested by:</td>
<td>Sanchez, eduardo A.</td>
<td></td>
</tr>
<tr>
<td>Company:</td>
<td>ISO New England</td>
<td></td>
</tr>
<tr>
<td>Outage status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned start:</td>
<td>2015 / 08 / 22 08:00</td>
<td></td>
</tr>
<tr>
<td>Planned end:</td>
<td>2015 / 08 / 26 16:00</td>
<td></td>
</tr>
<tr>
<td>First actual start:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last actual end:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outage duration:</td>
<td>Exactly 5 Day(s)</td>
<td></td>
</tr>
</tbody>
</table>

| Asset Id:          |                              |         |
| Asset Name:        |                              |         |
| Equip. Requested:  |                              |         |

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
<th>Voltage Class</th>
<th>Rel Area</th>
<th>Constraint/Commitment</th>
</tr>
</thead>
</table>

Please click the "Add..." button to add outage equipment.

External Comments:

ISO Comments:
Add... button is not active until an ‘Outage priority’ is set
‘Planned’ outage is not available unless ‘Planned start’ date/time is ≥ 15 days in the future
## CROW Web 5.1.3.87 - Generation Outage Request: 0-00000000 rev. 1

(New) by Sanchez, eduardo A. 2015/07/30 08:00 - 2015/07/30 16:00

### Continuous

<table>
<thead>
<tr>
<th>Outage #:</th>
<th>0-00000000 rev. 1 (current)</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requested by:</td>
<td>Sanchez, eduardo A.</td>
<td></td>
</tr>
<tr>
<td>Company:</td>
<td>Exelon Generation Company, LLC</td>
<td></td>
</tr>
<tr>
<td>Outage status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned start:</td>
<td>2015/07/30 08:00</td>
<td></td>
</tr>
<tr>
<td>Planned end:</td>
<td>2015/07/30 16:00</td>
<td></td>
</tr>
<tr>
<td>First actual start:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date Requested:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outage priority:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Priority date:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous/Daily:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outage duration:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last actual end:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Asset Id:               |                             |         |
| Asset Name:             |                             |         |
| Summer SCC:             |                             |         |
| Winter SCC:             |                             |         |
| Equip. Requested:       |                             |         |

### Equip. Requested:

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
<th>Voltage Class</th>
<th>Rel Area</th>
<th>Constraint/Commitment</th>
</tr>
</thead>
</table>

Please click the "Add..." button to add outage equipment.

### External Comments:

...
Planned Outage (PO)

- Scheduled in advance (≥ 15 days)
- Predetermined duration
- Example: annual maintenance
Overrun Planned Outage (OPO)

- Overrun of a PO
- Can request up until Thursday before scheduled return of PO
Forced Outage (FO)

• Outage not approved by ISO in the form of a PO or MO
• Requires a notification to the ISO Generation or Forecast Desks
• A FO cannot turn into a scheduled PO
• Examples:
  – Emergency
  – Unanticipated failure
Short Term Outage (STO)

- Submitted through CROW
- Must be called in if after 9:00 a.m. on the day before outage start
MVAR Test

- OP-23
- Used for MVAR testing in conjunction with Schedule 2 business practices
- Leading or lagging
 Owner Test (OT)

- Used for testing at a predefined schedule
- Helps with coordination of system reliability
- OT application ensures testing can be carried out
  - Except in case of emergency
- Examples:
  - General testing
  - Tuning, Emissions
  - Blackstart tests
Informational

- Used for automatic voltage regulator (AVR) or power system stabilizer (PSS) outages
- Communications work
- Still need to contact ISO verbally
## Outage Details

**Outage #:** 0-00000000 rev. 1 (current)  
**Requested by:** Sanchez, eduardo A.  
**Company:** Exelon Generation Company, LLC  
**Outage status:** Planned  
**Planned start:** 2015/08/30 08:00  
**Planned end:** 2015/08/30 16:00  
**First actual start:**  
**Last actual end:**  

**Asset Id:** 611  
**Asset Name:** VTYA  

**Summer SCC:** 612.429  
**Winter SCC:** 615  

**Equip. Requested:**

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
<th>Voltage Class</th>
<th>Rel Area</th>
<th>Constraint/Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>VELCO_CC</td>
<td>Entergy Nuclear Power Marketing</td>
<td>VT_YK</td>
<td>VT_YK Unit VTYA 611</td>
<td>21 kV</td>
<td>Vermont</td>
<td>&lt;Please Choose&gt;</td>
</tr>
</tbody>
</table>

**Outage Cause:**  
**FCM Exempt:** <Please Select>  
**Forced Rescheduling:** No  

**External Comments:**
### CROW Web 5.1.3.87 - Generation Outage Request: 0-00000000 rev. 1

**New** by Sanchez, eduardo A. 2015/08/30 08:00 - 2015/08/30 16:00

**Continuous Planned-Outage**

---

#### Request Summary

- **Outage #:**
- **Requested by:**
- **Company:**
- **Outage status:**
- **Planned start:**
- **Planned end:**
- **First actual start:**

#### Asset Information

- **Asset Id:** 611
- **Asset Name:** NUCLEAR URANIUM, PLUTONIUM, THORIUM

#### Station Equipment Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert NPCC Member</td>
<td>False</td>
</tr>
<tr>
<td>Basic Minimum Power System (BMPS)</td>
<td>False</td>
</tr>
<tr>
<td>Black Start</td>
<td>False</td>
</tr>
<tr>
<td>EMS Key</td>
<td>611</td>
</tr>
<tr>
<td>Equipment Number</td>
<td>611</td>
</tr>
<tr>
<td>Fuel Type</td>
<td>NUCLEAR URANIUM, PLUTONIUM, THORIUM</td>
</tr>
<tr>
<td>In-Service Date</td>
<td>2000-01-01</td>
</tr>
<tr>
<td>Intermittent</td>
<td>False</td>
</tr>
<tr>
<td>Market Long Name</td>
<td>VT YANKEE NUCLEAR PWR STATION</td>
</tr>
<tr>
<td>Retirement Date</td>
<td>2014-12-30</td>
</tr>
<tr>
<td>Seasonal Claimed Capability - Summer</td>
<td>612.429 MW</td>
</tr>
<tr>
<td>Seasonal Claimed Capability - Winter</td>
<td>615 MW</td>
</tr>
<tr>
<td>State</td>
<td>Active</td>
</tr>
<tr>
<td>Voltage Class</td>
<td>20.9</td>
</tr>
</tbody>
</table>

---

**External Comments:**

---

**Options**

- **Back**
- **Export**
- **Duplicate**
- **Home**
Constraint/Commitment Type For VT_YK Unit VTYA 611

- Out of Service
- Reduction:

Forced Rescheduling: No
### Outage #:
0-00000000 rev. 1 (current) [History]

### Requested by:
Sanchez, eduardo A.

### Company:
Exelon Generation Company, LLC

### Date Requested:

### Outage priority:
Planned

### Priority date:

### Outage status:

### Planned start:
2015/08/30 08:00

### Planned end:
2015/08/30 16:00

### First actual start:

### Continuous/Daily:
Continuous

### Outage duration:
Exactly 8 Hour(s)

### Last actual end:

### Asset Id:
611

### Asset Name:
VTYA

### Equip. Requested:

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
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<td>VT_YK Unit VTYA 611</td>
<td>21 kV</td>
<td>Vermont</td>
<td>OOS</td>
</tr>
</tbody>
</table>

### Summer SCC:
612.429

### Winter SCC:
615

### Physical Reduction:
612.429

### EcoMax:
0

### Outage Cause:

### FCM Exempt:
<Please Select>

### Forced Rescheduling:
No

### External Comments:
**Constraint/Commitment Type For VT_YK Unit VTYA 611**

- **Out of Service**
- **Reduction:** 100 MW

**Outage Cause:**

**External Comments:**
Outage #: 0-00000000 rev. 1 (current)  
Requested by: Sanchez, eduardo A.  
Company: Exelon Generation Company, LLC  
Outage status:  
Planned start: 2015/08/30 08:00  
Planned end: 2015/08/30 16:00  
First actual start:  
Date Requested:  
Outage priority: Planned  
Priority date:  
Continuous/Daily: Continuous  
Outage duration: Exactly 8 Hour(s)  
Last actual end:  
Asset Id: 611  
Asset Name: VTYA  
Equipment Requested:  
<table>
<thead>
<tr>
<th></th>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
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<td>VT_YK</td>
<td>VT_YK Unit VTYA 611</td>
<td>21 kV</td>
<td>Vermont</td>
<td>Reduction: 100 MW</td>
</tr>
</tbody>
</table>

Outage Cause:  
FCM Exempt: <Please Select>  
Forced Rescheduling: No  
Physical Reduction: 100  
EcoMax: 512.429
CROW Web 5.1.3.87 - Generation Outage Request: 0-00000000 rev. 1
(New) by Sanchez, eduardo A. 2015/08/30 08:00 - 2015/08/30 16:00
Continuous MVAR Testing

Constraint/Commitment Type For VT_YK Unit VTYA 611

- Leading
- Lagging

External Comments:
Outage #: 0-00000000 rev. 1 (current)
Requested by: 
Company: 
Outage status: 
Planned start: 
Planned end: 
First actual start: 
Asset Id: 
Asset Name: 
Equip. Requested: 
Outage Cause: 
External Comments: 

Constraint/Commitment Type For VT_YK Unit VTYA 611
- General
- Black Start
Constraint/Commitment Type For VT_YK Unit VTYA 611

- AVR
- Miscellaneous
- Communications
- PSS
Spanning Seasons

Don’t do it

Outage may not cross summer-winter boundary

• Economic maximum is based on SCC
• Submitter must notify ISO of impact of season change

**Summer**
June 1st to September 30

**Winter**
October 1st to May 31
Spanning Seasons

Example

Problem

• Desired outage 9/20-10/15
  – Spans two SCC periods (summer and winter)

Solution

• User must submit two outage requests 9/20-9/30 and 10/1-10/15
• Add a note in the ‘External Comment’ section
  – Part 1 of 2
  – Part 2 of 2
  – Include outage request number of other request
• ISO links the two outages and studies both as one outage
### Spanning

*Why you can’t do it*

---

**EcoMax** is the same (162)  
**Physical Reduction** is very different (171 vs 60)

---

<table>
<thead>
<tr>
<th>Asset Id</th>
<th>9993</th>
<th>Summer Scc</th>
<th>222.222</th>
<th>Winter Scc</th>
<th>333.333</th>
<th>Physical Reduction</th>
<th>171</th>
<th>EcoMax</th>
<th>162.333</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asset Name</td>
<td>AST2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equip. Requested</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
<th>Voltage Class</th>
<th>Rel Area</th>
<th>Constraint/Commitment</th>
<th>Physical Reduction</th>
<th>EcoMax</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONVEX_CC</td>
<td>TRAINLP</td>
<td>LAKE_RD</td>
<td>LAKE_RD Unit TRN3 9993</td>
<td>21 kV</td>
<td>RI</td>
<td>Reduction: 171 MW</td>
<td>171</td>
<td>162.333</td>
</tr>
</tbody>
</table>

---

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
<th>Voltage Class</th>
<th>Rel Area</th>
<th>Constraint/Commitment</th>
<th>Physical Reduction</th>
<th>EcoMax</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONVEX_CC</td>
<td>TRAINLP</td>
<td>LAKE_RD</td>
<td>LAKE_RD Unit TRN3 9993</td>
<td>21 kV</td>
<td>RI</td>
<td>Reduction: 60 MW</td>
<td>60</td>
<td>162.222</td>
</tr>
</tbody>
</table>
Example 1
Combined cycle 100% OOS

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
<th>Voltage Class</th>
<th>Rel Area</th>
<th>Constraint/Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLG1 6438</td>
<td>16 kV</td>
<td>North CT</td>
<td>OOS</td>
</tr>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLG2 6432</td>
<td>16 kV</td>
<td>North CT</td>
<td>OOS</td>
</tr>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLS 6433</td>
<td>18 kV</td>
<td>North CT</td>
<td>OOS</td>
</tr>
</tbody>
</table>

Outage Cause: [ ]
FCM Exempt: [Please Select]
Forced Rescheduling: No
Example 2
combined cycle – reduction affecting all components
Example 3
combined cycle
GT1 OOS
GT2 no change
ST reduction

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
<th>Voltage Class</th>
<th>Rel Area</th>
<th>Constraint/Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLG1 6438</td>
<td>16 kV</td>
<td>North CT</td>
<td>OOS</td>
</tr>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLG2 6432</td>
<td>16 kV</td>
<td>North CT</td>
<td>OOS</td>
</tr>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLST 6433</td>
<td>18 kV</td>
<td>North CT</td>
<td>OOS</td>
</tr>
</tbody>
</table>
### Outage Requests

**Outage #:** 0-00000000 rev. 1 (current)  
**Requested by:**  
**Company:**  
**Outage status:**  
**Planned start:**  
**Planned end:**  
**First actual start:**  
**Asset Id:**  
**Asset Name:**  
**Equip. Requested:**  
**Outage Cause:**  

#### Constraint/Commitment Type For KLEEN Unit KLG2 6432

- **Out of Service**
- **Reduction:** 0 MW

**Forced Rescheduling:** No

**External Comments:**

---

**Gas turbine 2**
Steam turbine
CROW Web 5.1.3.87 - Generation Outage Request: 0-00000000 rev. 1 (New) by Sanchez, Eduardo A. 2015/09/17 08:00 - 2015/09/18 16:00 Continuous Planned

Outage #: 0-00000000 rev. 1 (current)
Requested by: Sanchez, Eduardo A.
Company: Exelon Generation Company, LLC
Outage status:
- Planned start: 2015/09/17 08:00
- Planned end: 2015/09/18 16:00
- First actual start:

Date Requested: [Date]
Outage priority: Planned
Priority date:
Continuous/Daily: Continuous
Outage duration: Exact 2 Day(s)
Last actual end:

Asset Id: 14614
Asset Name: KLEN
Summer SCC: 620
Winter SCC: 620

Equip. Requested:
- [Table]
  - LCC: CONVEX_CC
  - GO: EXGN
  - Station: KLEN
  - Circuit/Equipment: KLEEN Unit KLG1 6438 (16 kV, North CT, OOS)
  - Circuit/Equipment: KLEEN Unit KLG2 6432 (16 kV, North CT, Reduction: 0 MW)
  - Circuit/Equipment: KLEEN Unit KLST 6433 (18 kV, North CT, Reduction: 100 MW)

Outage Cause: [Field]
FCM Exempt: [Please Select]
Forced Rescheduling: No

Physical Reduction: EcoMax:

External Comments: [Text Box]
Constraint/Commitment Type For KLEEN Unit KLG1 6438

- Out of Service: 206 MW

Gas turbine 1
### CROW Web 5.1.3.87 - Generation Outage Request: 0-00000000 rev. 1

(New) by Sanchez, eduardo A. 2015/09/17 08:00 - 2015/09/18 16:00
Continuous Planned

<table>
<thead>
<tr>
<th>Outage #:</th>
<th>0-00000000 rev. 1 (current)</th>
<th>History</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requested by:</td>
<td>Sanchez, eduardo A.</td>
<td></td>
</tr>
<tr>
<td>Company:</td>
<td>Exelon Generation Company, LLC</td>
<td></td>
</tr>
<tr>
<td>Outage status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Planned start:</td>
<td>2015/09/17 08:00</td>
<td></td>
</tr>
<tr>
<td>Planned end:</td>
<td>2015/09/18 16:00</td>
<td></td>
</tr>
<tr>
<td>First actual start:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date Requested:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outage priority:</td>
<td>Planned</td>
<td></td>
</tr>
<tr>
<td>Priority date:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Continuous/Daily:</td>
<td>Continuous</td>
<td></td>
</tr>
<tr>
<td>Outage duration:</td>
<td>Exactly 2 Day(s)</td>
<td></td>
</tr>
<tr>
<td>Last actual end:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asset Id:</td>
<td>14614</td>
<td></td>
</tr>
<tr>
<td>Asset Name:</td>
<td>KLEN</td>
<td></td>
</tr>
<tr>
<td>Summer SCC:</td>
<td>620</td>
<td></td>
</tr>
<tr>
<td>Winter SCC:</td>
<td>620</td>
<td></td>
</tr>
<tr>
<td>Equip. Requested:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
<th>Voltage Class</th>
<th>Rel Area</th>
<th>Constraint/Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLG1 6438</td>
<td>16 kV</td>
<td>North CT</td>
<td>OOS: 206 MW</td>
</tr>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLG2 6432</td>
<td>16 kV</td>
<td>North CT</td>
<td>Reduction: 0 MW</td>
</tr>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLSL 6433</td>
<td>18 kV</td>
<td>North CT</td>
<td>Reduction: 100 MW</td>
</tr>
</tbody>
</table>

| Outage Cause: | | |
| FCM Exempt: | <Please Select> | |
| Forced Rescheduling: | No | |

**Physical Reduction:** 306  
**EcoMax:** 314
CROW Web 5.1.3.87 - Generation Outage Request: 0-00000000 rev. 1 (New) by Sanchez, eduardo A. 2015/09/15 08:00 - 2015/09/25 16:00
Continuous Planned

Outage #:
Requested by:
Company:
Outage status:
Planned start:
Planned end:
First actual start:
Asset Id:
Asset Name:
Equip. Requested:
Outage Cause:

Date Requested:
Outage priority:
Priority date:
Continuous/Daily:
Outage duration:
Last actual end:

Physical Reduction: 620
EcoMax: 0

External Comments:
**Outage #:** 0-00000000 rev. 1 (current)  
**Requested by:** Sanchez, eduardo A.  
**Company:** Exelon Generation Company, LLC  
**Outage status:**  
**Planned start:** 2015 / 09 / 15 08:00  
**Planned end:** 2015 / 09 / 25 16:00  
**Date Requested:**  
**Outage priority:** Planned  
**Priority date:**  
**Continuous/Daily:** Continuous  
**Outage duration:** Exactly 11 Day(s)  
**First actual start:**  
**Last actual end:**  

**Asset Id:** 14614  
**Asset Name:** KLEN  
**Summer SCC:** 620  
**Winter SCC:** 620  
**Physical Reduction:** 620  
**EcoMax:** 0  

**Equip. Requested:**

<table>
<thead>
<tr>
<th>LCC</th>
<th>GO</th>
<th>Station</th>
<th>Circuit/Equipment</th>
<th>Voltage Class</th>
<th>Rel Area</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLG1 6438</td>
<td>16 kV</td>
<td>North CT</td>
<td>OOS</td>
</tr>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLG2 6432</td>
<td>16 kV</td>
<td>North CT</td>
<td>OOS</td>
</tr>
<tr>
<td>CONVEX_CC</td>
<td>EXGN</td>
<td>KLEEN</td>
<td>KLEEN Unit KLT 6433</td>
<td>18 kV</td>
<td>North CT</td>
<td>OOS</td>
</tr>
</tbody>
</table>

**Outage Cause:** 600  600 - Annual Inspection  
**FCM Exempt:** <Please Select>  
**Forced Rescheduling:** Yes  

**External Comments:**
## FCM Exempt

<table>
<thead>
<tr>
<th>FCM Exempt = “Y”</th>
<th>FCM Exempt =“N”</th>
</tr>
</thead>
<tbody>
<tr>
<td>If approved, physical reduction impacting CSO considered ‘available’ during a shortage event</td>
<td>Even if approved, outage does not provide any protection during shortage event</td>
</tr>
<tr>
<td>Outage counted in equivalent planned outage hours calculation</td>
<td>Outage not counted in equivalent planned outage hours calculation</td>
</tr>
</tbody>
</table>
## Other Dropdown Menus

<table>
<thead>
<tr>
<th>Outage Cause</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Forced Rescheduling</td>
<td>Set by ISO-NE if OP-5 rescheduling process applied</td>
</tr>
<tr>
<td>Black Start Capable</td>
<td>If generator flagged as such in CAMS, user must indicate whether generator will continue to be blackstart capable during the requested outage</td>
</tr>
</tbody>
</table>

- **Outage Cause**: Drop down for outage description
- **FCM Exempt**: Select option
- **Forced Rescheduling**: Yes/No
- **Black Start Capable**: Select option
Submit on 1-15003757 rev. 1 was completed successfully.

<table>
<thead>
<tr>
<th>Outage Request Date:</th>
<th>2015/06/29 to 2015/06/30</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control Center</td>
<td></td>
</tr>
<tr>
<td>Voltage Class</td>
<td>is between □ and □ kV</td>
</tr>
<tr>
<td>Requested By:</td>
<td></td>
</tr>
<tr>
<td>Outage Number</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Outage #/Revision/Status</th>
<th>Station/Circuit/Equipment</th>
<th>MTE</th>
<th>Planned Start</th>
<th>Planned End</th>
<th>Required Approvals</th>
<th>Requested By/Reason/Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-15001981 Revision #7 Interim Approved</td>
<td>READ_ST 8448 RLY/COM</td>
<td>isl</td>
<td>2015/06/30 15:31</td>
<td>2015/06/30 16:00</td>
<td>ISONE_CC: Approved</td>
<td>Prive, Edward T15-176358 - 8448 CB @ Read St - Simulated Breaker failure testing on the 8448 CB. No expected tripping.</td>
</tr>
<tr>
<td>1-15001917 Revision #4 Interim Approved</td>
<td>MILSTONE RLY/COM</td>
<td>isl</td>
<td>2015/06/30 14:00</td>
<td>2015/06/30 20:00</td>
<td>CONVEX_CC: Approved</td>
<td>Rose, Dave Millstone Risk-Sensitive Maintenance Activity U2 Emergency Diesel Generator (EDG) Run</td>
</tr>
<tr>
<td>1-15001923 Revision #10 Interim Approved</td>
<td>READ_ST 8448 OOS</td>
<td>isl</td>
<td>2015/06/30 12:30</td>
<td>2015/06/30 13:59</td>
<td>ISONE_CC: Approved</td>
<td>Prive, Edward T15-176360 - F184 Terminal @ Read St - Test trip the F184 Terminal at Read St. See attached test trip report step 8. 69kv devices also trip but not in ISO model. 5 second reclose time</td>
</tr>
</tbody>
</table>
Additional Notifications

Add additional contacts to be informed of status changes

- Prevents a single point of failure
- Enables entering a group email
- Helpful for your vacations

Outage Profiles

<table>
<thead>
<tr>
<th>Planned Start/Planned End</th>
<th>Actual Start</th>
<th>Actual Complete</th>
<th>Circuit/Equipment</th>
<th>Constraint/Commitment</th>
<th>Reason/Sub Code/Com</th>
<th>Status/By/When/Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>2015/07/22 08:00</td>
<td></td>
<td>2015/07/22 16:00</td>
<td>(none)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notifications

<table>
<thead>
<tr>
<th>Notification Type</th>
<th>Notify</th>
<th>Contact Information</th>
<th>Accepted/Result</th>
<th>By/When</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approval Notification</td>
<td>J. Schenck, Horace</td>
<td><a href="mailto:jschene@seare.com">jschene@seare.com</a></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approval Notification</td>
<td>E. Sanchez, Teodoro</td>
<td><a href="mailto:esanche@seare.com">esanche@seare.com</a></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How do I modify?

Call these people first

Gen user can only modify an outage request if the application is in the *Preliminary* state.

If modifications are required and the outage request is not in *Preliminary* state, the Gen User must request ISO to make changes on their behalf by calling either:

<table>
<thead>
<tr>
<th>Number</th>
<th>Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>413-535-4378</td>
<td>Generation Coordinator</td>
</tr>
<tr>
<td>413-535-4340</td>
<td>Forecaster</td>
</tr>
</tbody>
</table>
What if I need to cancel?

Call these people first

If the Gen User does not need the outage request and it is in the approved state, the Gen User must request ISO to set request to cancelled state on their behalf by calling either:

<table>
<thead>
<tr>
<th>Number</th>
<th>Office</th>
</tr>
</thead>
<tbody>
<tr>
<td>413-535-4378</td>
<td>Generation Coordinator</td>
</tr>
<tr>
<td>413-535-4340</td>
<td>Forecaster</td>
</tr>
</tbody>
</table>
Possible Outage States

Gen User can only modify an outage request while it is in the Preliminary state.

LCC

All Users = MVAR Test

All Users = AIO, STO, OT
Gen User = Forced, Informational

ISO Users = Forced, ISO Test, Informational

Possible Outage States:

- **Preliminary**
  - All Users = MVAR Test

- **Submitted**
  - All Users = AIO, STO, OT
  - Gen User = Forced, Informational

- **ISO Review**
  - Study
  - Negotiate

- **ISO Users**
  - Forced, ISO Test, Informational

- **Approved**

- **Implement**

- **Completed**

- **Cancelled**

- **Recalled**

- **Withdrawn**
# Description of the Outage States

<table>
<thead>
<tr>
<th>State</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preliminary</td>
<td>Planned Outage or MVAR Test entered by Gen User, <em>still editable by Gen User</em></td>
</tr>
<tr>
<td>Submitted</td>
<td>LCC has accepted Planned Outage or MVAR Test</td>
</tr>
<tr>
<td>Study</td>
<td>ISO is reviewing request</td>
</tr>
<tr>
<td>Negotiate</td>
<td>ISO has found potential conflicts with the request and is actively communicating with affected parties</td>
</tr>
<tr>
<td>Interim Approved</td>
<td>ISO has completed capacity assessment for Planned Outage and is performing reliability review</td>
</tr>
<tr>
<td>Approved</td>
<td>ISO has accepted request</td>
</tr>
<tr>
<td>Implemented</td>
<td>ISO has received notice from Gen User that GOR has begun; Actual Start time will reflect this notice</td>
</tr>
</tbody>
</table>
## Description of the Outage States, continued

<table>
<thead>
<tr>
<th>State</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Completed</td>
<td>ISO has received notice from Gen User that GOR is completed; Actual End time will reflect this notice</td>
</tr>
<tr>
<td>Withdrawn</td>
<td>Gen User removed GOR while in Preliminary state</td>
</tr>
<tr>
<td>Denied</td>
<td>ISO or LCC denied GOR during approval process</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: If Gen User does not need the requested GOR and it is in the <strong>Submitted, Study, Negotiate</strong> or <strong>Interim Approved</strong> state, Gen User may request the ISO to set to a state of Denied on their behalf</td>
</tr>
<tr>
<td>Recalled</td>
<td>ISO has requested that the Gen User return the generator to service prior to Planned End of the outage due to system conditions</td>
</tr>
<tr>
<td>Cancelled</td>
<td>ISO or LCC cancelled GOR after it was approved</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong>: If Gen User does not need the requested GOR and it is in the <strong>Approved state</strong>, Gen User may request the ISO to set to a state of Cancelled on their behalf</td>
</tr>
</tbody>
</table>
Ensuring Application Approval

• Information available
• Communication
• Profile
• Full descriptions
• Owner testing
Check These Before Submitting

- Annual Maintenance Schedule
- Three-Day System Demand Forecast
- Seven-Day Capacity Forecast
- Short-Term Outage Report
- Long-Term Outage Report
Get Your Outage Approved!

*Follow these steps*

- **Provide a full description**
  - Providing additional information of outage request is beneficial for LCC and ISO-NE system risk assessment
  - Once submitted, the ‘External Comments’ field is locked out to submitter, LCC and ISO-NE
  - ISO comments field will be utilized for additional information

- **Submit an outage request for owner testing**
  - It is best to have the Owner Testing submitted through CROW for coordination
  - Advance notice ensures testing can take place. Real-time testing requests can be denied or limited
Get Your Outage Approved!

(continued)

• Communicate with your LCC & ISO
  – Transmission outages with the area
  – Local area generation requirements
  – Full system generation requirements
  – Expertise in outage coordination process
  – Let us know about overruns as soon as you know

• Improper outage request reduction
  – Full asset outage submission when only single generator of a combined generating asset is out of service

• Profile generator outages
  – Submitting a blanket outage request for multiple reductions over time
Information Policy
ISO New England Information Policy

Limits type of information that can be communicated with participants

- **Market impactful information**
  - Specific transmission equipment outage information
  - Specific impacts on generators and system transfer capabilities

- **Currently revising what information can be communicated**

<table>
<thead>
<tr>
<th>Will allow</th>
<th>Will NOT allow</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Communicating:</strong></td>
<td><strong>Communicating:</strong></td>
</tr>
<tr>
<td>- Potentially limiting interfaces to be identified</td>
<td>- Generator specific impacts</td>
</tr>
<tr>
<td>- A range of typical interface limits</td>
<td>- Unless only one generator is impacted</td>
</tr>
<tr>
<td>- Type of limit:</td>
<td>- Discrete dependences on changes to interface limits</td>
</tr>
<tr>
<td>• Thermal</td>
<td>- Specific outage that causes limits</td>
</tr>
<tr>
<td>• Voltage</td>
<td>- Unless it is an outage at the generator point of interconnection</td>
</tr>
<tr>
<td>• Stability</td>
<td>- Limiting contingency</td>
</tr>
</tbody>
</table>

communicating: Generator specific impacts
- Unless only one generator is impacted
- Discrete dependences on changes to interface limits
- Specific outage that causes limits
  - Unless it is an outage at the generator point of interconnection
- Limiting contingency
Transmission Outage Coordination Process

*Market Sensitive Information*

<table>
<thead>
<tr>
<th>Market Sensitive</th>
<th>Not Market Sensitive</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transmission outage that removes a generating unit from providing energy to the transmission system is considered “market sensitive”</td>
<td>Outage requests which are uploaded to the:</td>
</tr>
<tr>
<td>• Based on the ISO New England Information Policy, these types of outages are not published to the stakeholders</td>
<td>• Long-Term Outage Report which is updated daily</td>
</tr>
<tr>
<td></td>
<td>• Short-Term Outage Report which is updated every 15 minutes</td>
</tr>
</tbody>
</table>
Example 1

Henhouse — Chickencoop — Horsebarn — Beehive

Oinker — Pinky

Foghorn — Leghorn

Mr. Ed — Stinger

Barnyard Interface

Middle line
<table>
<thead>
<tr>
<th>What generators should be contacted, if any?</th>
<th>What information from the guide <em>can</em> be communicated and why?</th>
<th>What information from the guide <em>cannot</em> be communicated and why?</th>
</tr>
</thead>
</table>
| All generator inside the Barnyard interface | All units can be informed of the base limit and max limit  
**Why?** They are behind the interface | • Cannot discuss the discrete adders for each of the generators  
**Why?** This provides market sensitive information on status of units and how it impacts transmission system limits |
Example 2

Barnyard Interface

Henhouse

Chickencoop

Hogbarn

Cowbarn

Horsebarn

Beehive

Leghorn

Oinker

Pinky

Foghorn

Mr. Ed

S

Stinger

Foghorn

Pinky

Leghorn

Oinker

Foghorn

Mr. Ed

Barnyard Interface

Example 2
Example 2: B2 Line OOS

What can/should be communicated to generators and why?

<table>
<thead>
<tr>
<th>What generators should be contacted, if any?</th>
<th>What information can be communicated and why?</th>
<th>What information from the guide cannot be communicated and why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foghorn, Leghorn, Oinker and Pinky</td>
<td>The units will be informed of their restriction and possible further restrictions.</td>
<td>• Cannot discuss other generation limit with other generator owners</td>
</tr>
<tr>
<td></td>
<td><strong>Why?</strong> They are the only generators impacted</td>
<td><strong>Why?</strong> This provides market sensitive information on status of units and how it impacts transmission system limits</td>
</tr>
<tr>
<td></td>
<td><strong>Foghorn and Leghorn</strong> can be told of the B2 Line outage condition is causing the restriction</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Why?</strong> Because it is at their point of interconnection</td>
<td></td>
</tr>
</tbody>
</table>
Example 3
### Example 3: F6 line OOS

**What can/should be communicated to generators and why?**

<table>
<thead>
<tr>
<th>What generators should be contacted, if any?</th>
<th>What information from the guide <em>can</em> be communicated and why?</th>
<th>What information from the guide <em>cannot</em> be communicated and why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. Ed, Oinker and Stinger</td>
<td>Mr. Ed and Stinger can be told of their maximum limit</td>
<td>• Cannot discuss other generation limit with other generator owners</td>
</tr>
<tr>
<td></td>
<td>Oinker will be told to be offline</td>
<td><strong>Why?</strong> This provides market sensitive information on status of units and how it impacts transmission system limits</td>
</tr>
<tr>
<td></td>
<td><strong>Why?</strong> They are the only generators impacted by the guide</td>
<td><strong>Why?</strong> This outage will not show up on external Short Term Outage Report due to being flagged ‘Market Sensitive’</td>
</tr>
<tr>
<td></td>
<td>Mr. Ed and Stinger can be told that F6 Line Out condition is</td>
<td></td>
</tr>
<tr>
<td></td>
<td>causing the restriction</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Why?</strong> Because it is at their point of interconnection</td>
<td></td>
</tr>
</tbody>
</table>
Norm’s Discussion Points

Best Practices & Lessons Learned

• ISO will keep you informed as best as possible
• Work with us and we will work with you
• Call the Outage Coordination office if you have questions
  – Leave us a message if no one is there, we will call back
  – If you have IT-related issues, call Customer Service
• More information about your generator outage can increase reliability
• Keeping your generator in good working order is paramount for system reliability
• Do not hesitate to call
Job Aid

- Forecaster Desk (Control Room) 413-535-4340
- Generation Outage Coordinator (Short Term) 413-535-4378
- Long Term Outage Coordinator (Long Term) 413-535-4346
- [https://smd.iso-ne.com](https://smd.iso-ne.com) (CROW web client link)
- **Summer** SCC June 1\(^{st}\) to September 30\(^{th}\), **Winter** SCC October 1\(^{st}\) to May 31\(^{st}\)
- External Comments Field: Give as much details as possible to help ISO understand the full work scope
- OPO and Forced Outages: Keep ISO updated with details of generator and

<table>
<thead>
<tr>
<th>Outage Priority</th>
<th>Constrain/Commitment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Informational</td>
<td>AVR, Miscellaneous, Communications, PSS</td>
</tr>
<tr>
<td>Owner Test</td>
<td>General, Black start</td>
</tr>
<tr>
<td>MVAR Testing</td>
<td>Leading, Lagging</td>
</tr>
<tr>
<td>Planned</td>
<td>&gt;15 days from current day</td>
</tr>
<tr>
<td>Short Term</td>
<td>&lt;15 days from current day</td>
</tr>
</tbody>
</table>
You are now able to:

- Access and log in to CROW
- Navigate the CROW interface
- Describe the relationship between outage priority and constraint/commitment
- Submit, modify, cancel an outage request using CROW
- Identify information that can and cannot be shared with market participants
References

• Operating Procedure No. 3 – Transmission Outage Scheduling
• Operating Procedure No. 5 Generator and Dispatchable Asset Related Demand Maintenance and Outage Scheduling
• Control Room Operator Window (CROW) User Guide