



Control Room Operations Window (CROW) User Guide

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CROW User Guide

Preface

Purpose

This user guide will serve as the reference document for the Control Room Operator Window (CROW) for both transmission and generation outage submittal and review.

This user guide is broken into four parts

Part 1: General Information

Part 2: Generation Outage Request Submittal

Part 3: LCC Interaction with GORs

Part 4: Transmission Outage Request Submittal and Review

Change Summary

Revision	Date	Comments
1.0	10/2010	Original published for use in Sandbox

1 CROW Application Access

1.1 General Information

The CROW application is to be used for both generation and transmission outages. This application does not capture outages on demand resources, generators associated with import resources or settlement only resources.

CROW can be accessed through a Web browser and through Web Services. The appropriate application group will be applied in the Customer and Asset Management System (CAMS) by ISO New England (ISO) based on your company’s functions in the markets. There are separate application groups for the production and sandbox environments. The application group names in CAMS are:

CAMS Application Group Name	Company Type	user guide refers to users under these company types as shown below
CROW Gen User Role SBox CROW Gen User Role	Generation Lead Participants	Gen User
CROW Participant Role SBox CROW Participant Role	Transmission Owners (TO)	TO User
CROW LCC Role SBox CROW LCC Role	Local Control Centers (LCC)	LCC User

Note: LCC and TO Users are not required to make any changes in CAMS.

Company Security Administrators (SA) need to apply the desired CROW roles to their persons in CAMS. Under each of the application groups there are three roles; one is for *read only access*, one is for *read/write access* and one is for *web services access*. The role for *web services access* should only be applying to an entity that will be performing computer-to-computer Web Services functions.

This user guide is generally applicable to those users with read/write access. If you have *read only access* you will not be able to perform any actions that create or modify data on the outage requests.

1.1.1 Web Access

Once a company’s SA has assigned a user the rights to CROW and that user has a valid digital certificate issued by the ISO, that user will be able to access the “CROW Outage Scheduler” button at URLs below. The digital certificate will provide direct access to the application, no username/password is required.

Sandbox = <https://sandboxsmd.iso-ne.com/>

Production = <https://smd.iso-ne.com/>

1.1.2 Web Services Access

This user guide focuses on the Web based user interface. If you require information on Web Services access to CROW please contact ISO Customer Service at custserv@iso-ne.com

1.1.3 Setting up CROW Users

When the SA is assigning access to persons in CAMS the SA must be aware that each user in the CROW application is uniquely identified by their email address in CAMS. Therefore, every person granted CROW access in CAMS must have a unique email address. Below are scenarios addressing the possible conflicts that can occur:

- If a person is being assigned a CROW role in CAMS and another CROW user already has the same email address, that new user will not be created in CROW.
- If a person that is a CROW user changes their email address in CAMS to an email address that exists for another CROW user that email address change **will not** be applied in CROW.

1.1.4 User Access to CROW Equipment

Generation

Access to a generator and its associated outage requests in CROW is based on the company in CAMS that is assigned as Lead Participant for that generator. All CAMS users under that Lead Participant company will have access to all generators for which that company is Lead Participant. A change in a Lead Participant of a generator in CAMS will result in all current and historic outage requests being visible only to the 'new' Lead Participant, and no longer visible to the 'old' Lead Participant, based on the effective date of the change as defined in CAMS.

While LCCs must review some generation outage requests and can see all generation outage requests they do not operate any generation and therefore cannot create a generation outage request nor can they modify data associated with any generation outage request. Transmission Owners will not have any access to any generation outage requests.

Transmission

Access to transmission equipment is based on the ISO Energy Management System (EMS) model and managed by the ISO and is unchanged from the current version of CROW.

2 Initial Login and Setting Options

Upon initial login the Outage Requests tab will appear. The screen, which will look different for different users and those differences are addressed in the generation and transmission sections. The Options tab is common to all users.

The screenshot displays the 'Options' configuration page in the CROW Web 5.1.1.188 application. The page is titled 'CROW Web 5.1.1.188 - Options' and features a navigation bar with 'Outage Requests' and 'Options' tabs. The main content area is organized into several sections:

- Date/Time Options:** Includes a 'Time Zone' dropdown menu set to 'Eastern Time (UTC - 05:00)', 'Daylight Savings' options with 'Use Daylight Savings Time' selected (radio button) and 'Use Standard Time' unselected, and a 'Date Format' dropdown menu set to 'MM/DD/YYYY'.
- Asset Naming Options:** Includes an 'Asset Naming Options' dropdown menu set to '1-Line Designation'.
- Outage Request Notification Options:** Includes a checkbox for 'Send Me Outage Request Approval/Denial Notifications', which is currently unchecked.
- Outage Request Form Options:** Includes a checkbox for 'Close Outage Request Form After Saving', which is currently unchecked.

An 'Update' button is located at the bottom center of the form area.

Users can select the desired Time Zone from the dropdown list. It is recommended that the 'Use Daylight Savings Time' option is selected which automatically adjusts the displays for Daylight Saving Time.

The user can select the desired Date Format from the options in the dropdown list.

2.1 Asset Naming Options

There are three options available from the dropdown. This allows the user to control which 'version' of the name of the equipment they want used in the CROW displays. For generation, all three options will all provide the same data. For transmission, these provide the user additional options, as shown below:

1-Line Designation	Name as defined in the EMS model
External Name	Name as defined by TO or LCC, where TO/LCC must request ISO to modify the data. If none provided, will be the same as the 1-Line Designation.
Asset Long Name	Name as presented in the posted transmission outage reports

2.2 Outage Request Notification Options

This feature is not currently supported in the ISO CROW application; leave this box unchecked.

2.3 Outage Request Form Options

This checkbox allows the user to select whether the active outage request form should remain open or be closed once the data is saved.

2.4 Outage Request Form Options

This checkbox allows the user to select whether the active outage request form should remain open or be closed once the data is saved.

3 Generation Outage Request Types

Data required to be submitted for each outage request is dependent on the outage request type, identified by the Priority field in CROW.

3.1 OP-5 Outages

OP-5 outage types are reflected in CROW as shown below:

- Planned Outage (PO)
 - Must be submitted through CROW unless software is unavailable
 - Option is only available in dropdown if Start Date is greater than or equal to 15 calendar days in future
- Overrun Planned Outage (OPO)
 - May be submitted through CROW
 - May continue to be called in
- Maintenance Outage (Short Term, STO)
 - May be submitted through CROW
 - May continue to be called in
 - After 9:00 a.m. day-before, must be called-in
- Forced Outage (FO)
 - May be submitted through CROW
 - May continue to be called in
 - After 9:00 a.m. day-before, must be called-in

3.2 Other types of Outage Requests

There are other options in the Priority field that do not necessarily reflect a reduction in operating capability on a generator but are still referred to in the software and this user guide as a Generation Outage Request (GOR). Some of these options have sub-categories that will be identified by the Constraint/Commitment field.

- Owner Test
 - Used when generator needs to operate at a predefined schedule to perform testing
 - Sub-categories are: General, Black Start (to be used only as required by Black Start business process)
 - NOT to be used to request audits
- MVAR Test
 - Used, in conjunction with Schedule 2 Business Practices, to request an MVAR test

- Informational
 - Used to capture generator information that would be useful for the LCC and/or the ISO to be aware of
 - Sub-categories are AVR, Communications, Miscellaneous
 - AVR recommended to be used for problems with automatic voltage regulation equipment
 - Communications recommended to be used for problems with RIG or telemetry equipment
 - Miscellaneous recommended to be used for reliable grid requests by nuclear units.
 - Does not replace required verbal communication
 - Verbal communication will result in the Implementation and Completion of the request

4 Generation Outage Request Lifecycle

The lifecycle of a generator outage is dependent on the outage type. The Status field on the outage request will indicate where GOR is in its lifecycle. The ability for different users to modify outage data is dependent on where GOR is in its lifecycle. For example, a Gen User can only modify a GOR while it is in the Preliminary state.

The following diagrams show the lifecycle of the various outage types

Figure 1. Lifecycle of Planned Outage

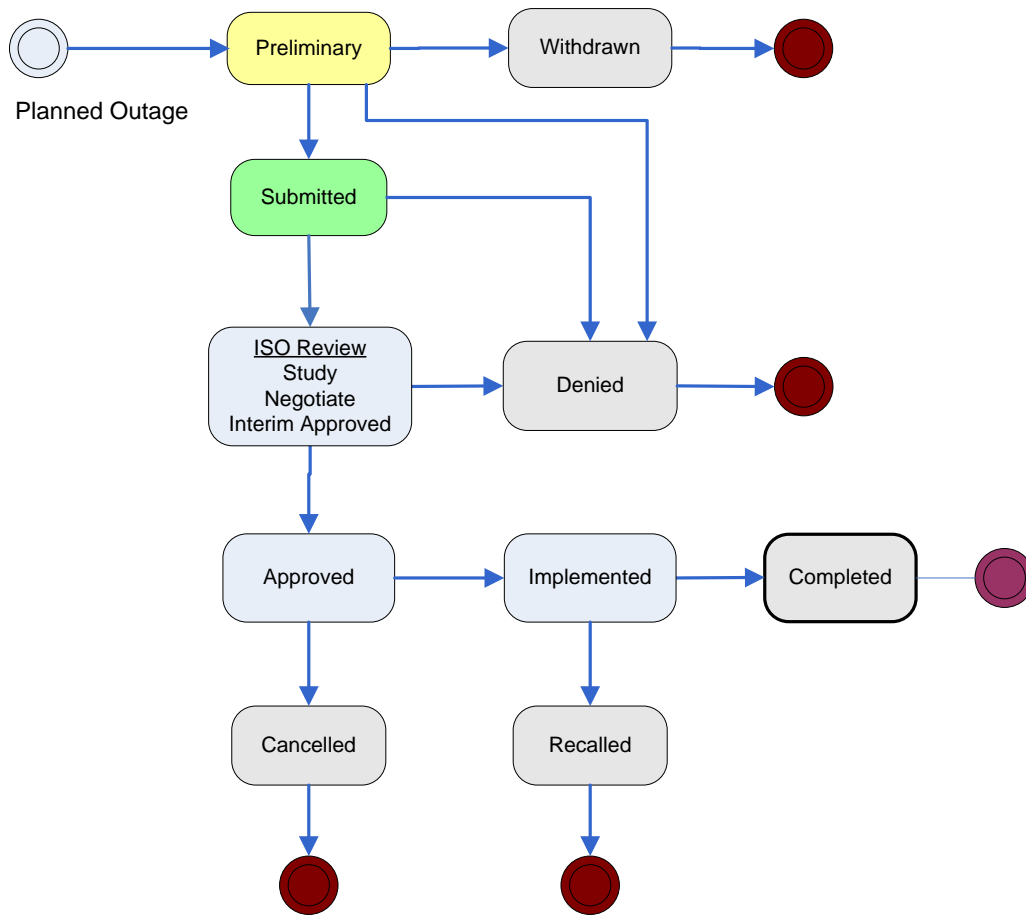
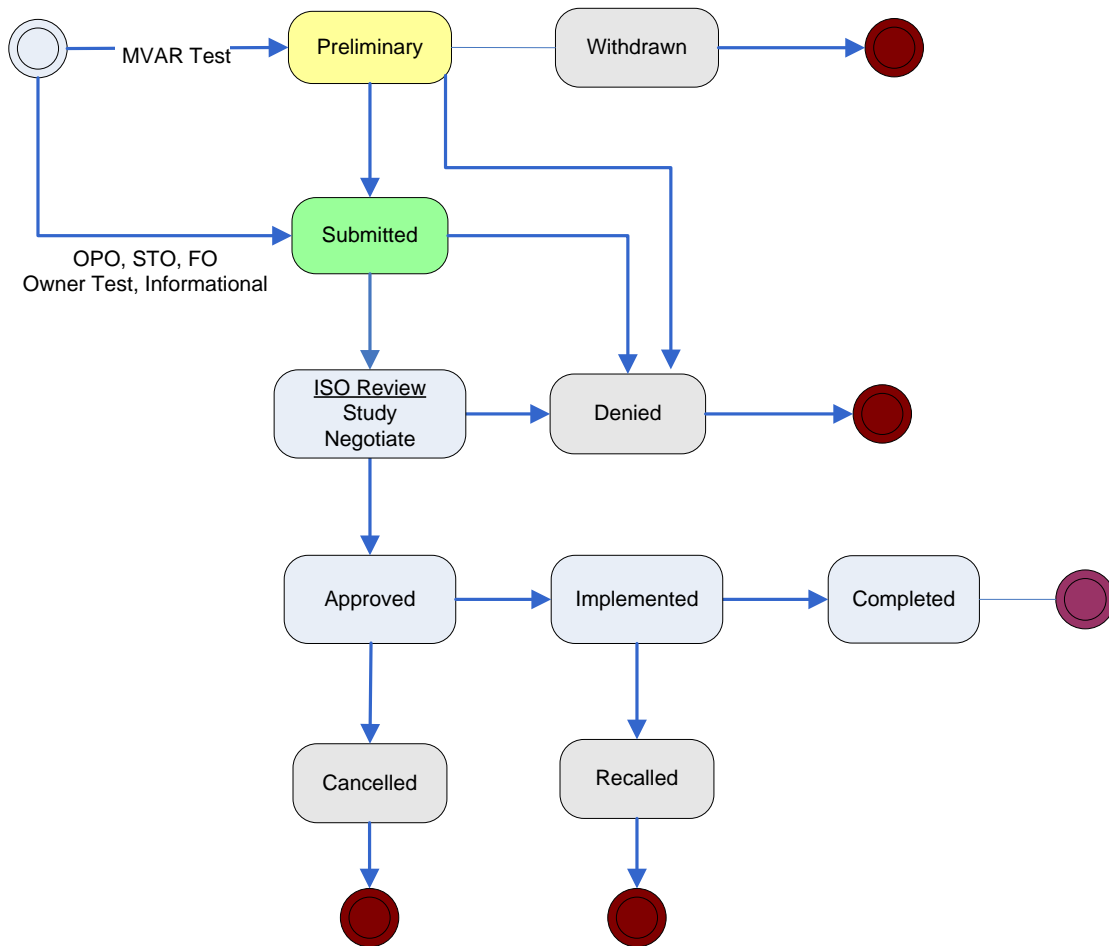


Figure 2. Lifecycle of GORs other than Planned Outage



4.1 Outage States

The table below lists the various states of an outage request. These states indicate where that outage request is with respect to the review, approval and implementation.

State	What state indicates for a GOR
Preliminary	Planned Outage or MVAR Test entered by Gen User, still editable by Gen User
Submitted	LCC has accepted Planned Outage or MVAR Test
Study	ISO is reviewing request
Negotiate	ISO has found potential conflicts with the request and is actively communicating with affected parties

State	What state indicates for a GOR
Interim Approved	ISO has completed capacity assessment for Planned Outage and is performing reliability review
Approved	ISO has accepted request
Implemented	ISO has received notice from Gen User that GOR has begun; Actual Start time will reflect this notice
Completed	ISO has received notice from Gen User that GOR is completed; Actual End time will reflect this notice
Withdrawn	Gen User removed GOR while in Preliminary state
Denied	ISO or LCC denied GOR during approval process Note: If Gen User does not need the requested GOR and it is in the Submitted, Study, Negotiate or Interim Approved state, Gen User may request the ISO to set to a state of Denied on their behalf
Cancelled	ISO or LCC cancelled GOR after it was approved Note: If Gen User does not need the requested GOR and it is in the Approved state, Gen User may request the ISO to set to a state of Cancelled on their behalf
Recalled	ISO has requested that the Gen User return the generator to service prior to Planned End of the outage due to system conditions

5 Creating a GOR

This section describes the process of creating a generation outage request.

5.1 Open a new request

CROW Web 5.1.1.188 - Generation Outage Request Index

Outage Request Index - (13 of 13 records)

Outage Request Date: 09/21/2010 to 12/22/2010

Control Center: [List]

Requested By: [...]

Outage Number: [] - [] [Find]

Request Status: All

Constraint/Commit: All

Request Priority: All

[Export to Excel] [Export to Gantt] [Refresh] [No Auto Refresh] [Gen. Outage Report] **[New Outage Request]**

Outage Requests appearing in red are overdue.

Outage #/ Revision/ Status	Station/ Circuit/Equipment	Required Approvals	Planned Start	Planned End	Priority	Requested By/ Reason/Priority	Asset ID	Asset Name
1-10003602 Revision #1 Submitted	LAKE_RD TRN2 Black Start, TRN1 Black Start	ISONE_CC: Pending CONVEX_CC: Pending	11/08/2010 08:00	11/08/2010 17:30	Owner Test	LP_TRAINING, LP_TRAINING testing the interaction	9990	AST1
1-10003601 Revision #1 Submitted	LAKE_RD TRN2 Communications, TRN1 Communications	ISONE_CC: Pending CONVEX_CC: Pending	10/10/2010 08:00	10/11/2010 17:30	Informational	LP_Employee, lam Proposed maintenance activity. Bridged on 9/20/2010 3:32:31 PM via Mike Gilmore API call.	9990	AST1
1-10003593 Revision #2 Submitted	LAKE_RD TRN2 General, TRN1 General	CONVEX_CC: Approved ISONE_CC: Pending	10/21/2010 08:00	10/21/2010 16:00	MVAR Testing	LP_Employee, lam	9990	AST1
1-10003592 Revision #3 Denied	LAKE_RD TRN2 General, TRN1 General	CONVEX_CC: Approved ISONE_CC: Denied	10/21/2010 08:00	10/21/2010 16:00	MVAR Testing	LP_Employee, lam	9990	AST1
1-10003588	LAKE_RD TRN2 General, TRN1	CONVEX_CC: n/a	10/21/2010	10/21/2010	MVAR Testing	LP_Employee, lam	9990	AST1

5.2 Select Outage Priority

Select an Outage Priority from the dropdown list indicating the outage type. Click Add to open the window to select the generator:

Request Summary | Request Details/Approval | Attachments

Outage #: 0-00000000 rev. 1 (current) [History]

Requested by: LP_TRAINING, LP_TRAINING

Company: LP FOR TRAINING

Outage status:

Planned start: 09/22/2010 08:00

Planned end: 09/22/2010 16:00

First actual start: [] / [] / [] []

Date Requested: [] / [] / []

Outage priority: []

Priority date: [] / [] / []

Continuous/Daily: Continuous

Outage duration: Exactly 8 Hour(s)

Outage Priority must be selected before Add button will be enabled

Asset Id: Summer Scc: []

Asset Name: Winter Scc: []

Equip. Requested:

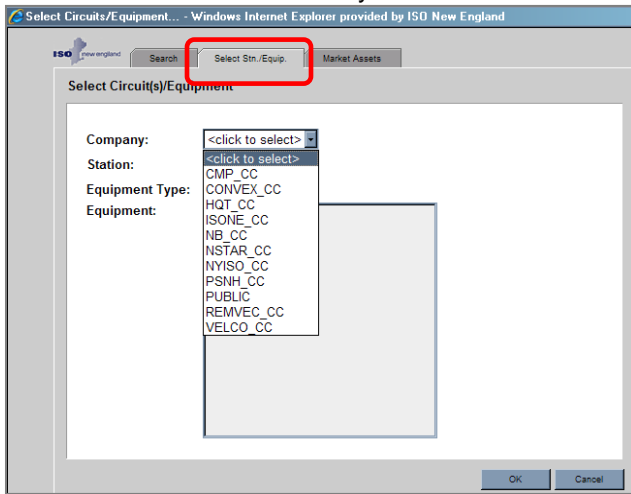
LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
Please click the "Add..." button to add outage equipment.						

[Add...] [Clear...]

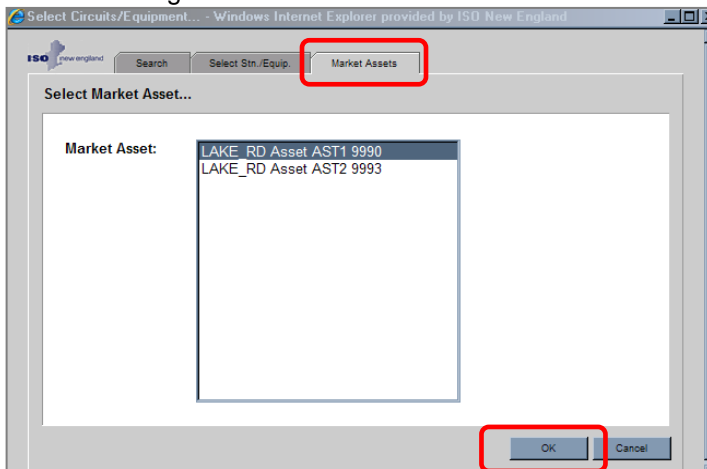
External Comments: []

5.3 Add Equipment

Clicking the **Add** button opens the window shown below, which defaults to tab labeled **Select Stn/Equip.** While this tab can be used to select the generator, it tab requires several separate steps to locate the generator and it is recommended that you select the Market Asset tab.



The Market Asset tab contains all generators registered to the Lead Participant company in CAMS. Select the desired generator and click OK.



The Shift and CTRL key are not active on this display since each GOR is applicable to only one Market Asset.

Clicking Add will return the user to the GOR entry form, populating the **Equip. Requested** section with the physical components (Units) and other information associated with the selected generator. The information model behind CROW is populated from the ISO EMS model and therefore contains the physical components, Units, associated with the generator. The selected generator is reflected by the .Asset ID and Asset Name fields on the GOR form below.

CROW Web 5.1.1.188 - Generation Outage Request: 0-00000000 rev. 1
 (New) by LP_TRAINING, LP_TRAINING 09/22/2010 08:00 -
 09/22/2010 16:00 Continuous Short Term

Request Summary | Request Details/Approval | Attachments

Outage #: 0-00000000 rev. 1 (current) [History](#)

Requested by: LP_TRAINING, LP_TRAINING

Company: LP FOR TRAINING

Outage status:

Planned start: 09 / 22 / 2010 08:00

Planned end: 09 / 22 / 2010 16:00

First actual start: / /

Date Requested:

Outage priority: Short Term

Priority date:

Continuous/Daily: Continuous

Outage duration: Exactly 8 Hour(s)

Last actual end: B / /

Asset Id: [9990](#) Summer Scc: 345.678

Asset Name: [AST1](#) Winter Scc: 356.789

Equip. Requested:

LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN1 9991	21 kV	RI	<Please Choose>
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN2 9992	21 kV	RI	<Please Choose>

Outage Cause: /

Black Start Capable: <Please Select>

Postponable: <Please Select>

External Comments:

Clear

Submit

A points to the Asset ID field.

B points to the Last actual end field.

Equip. Requested contains physical components associated with Market Asset

Clear removes all equipment

Details about the Market Asset can be viewed by selecting the hyperlinks Asset ID or Asset Name and will show the data below.

A

The first screenshot shows the 'Market Asset' tab with the following data:

- Station: LAKE_RD
- 1-Line Designation: AST1
- External Name: LAKE_RD Asset AST1 9990
- Asset Long Name: LAKE_RD Asset AST1 9990
- Equipment Type: - Market Asset
- Owned By 1: LP FOR TRAINING
- Operated By 1: ISO New England Control Center
- Operated By 2: CONVEX Local Control Center Control Center
- Reliability Area 1: Rhode Island

The 'Associated Units' list contains: LAKE_RD Unit TRN1 9991 and LAKE_RD Unit TRN2 9992.

The second screenshot shows the 'Properties' tab with the following data:

- Alert NPCC Member: True False
- Black Start: True False
- Equipment Number: 9990
- Fuel Type: BLACK LIQUOR/WOOD/WOOD WASTE SOLIDS.
- In-Service Date: 09 / 15 / 2010
- Market Long Name: TRAINING ASSET 1
- Seasonal Claimed Capability - Summer: 345.678 MW
- Seasonal Claimed Capability - Winter: 356.789 MW
- State: Active
- Voltage Class: 21

Details about the Units can be viewed by double clicking on the unit in the Equipment Requested section and will show the data below.

B

The first screenshot shows the 'Unit' tab with the following data:

- Station: LAKE_RD
- 1-Line Designation: TRN1
- External Name: LAKE_RD Unit TRN1 9991
- Asset Long Name: LAKE_RD Unit TRN1 9991
- Equipment Type: - Unit
- Owned By 1: LP FOR TRAINING
- Operated By 1: ISO New England Control Center
- Operated By 2: CONVEX Local Control Center Control Center
- Reliability Area 1: Rhode Island

The second screenshot shows the 'Properties' tab with the following data:

- Alert NPCC Member: True False
- Equipment Number: 9992
- In-Service Date: 09 / 15 / 2010
- Major Transmission Element: True False
- Seasonal Claimed Capability - Summer: 12.345 MW
- Seasonal Claimed Capability - Winter: 23.456 MW
- State: Active
- Voltage Class: 21

5.4 Define Constraint/Commitment type

Users must define the Constraint/Commitment for each Unit associated with the generator by selecting the [...] under the Constraint/Commitment column. This provides additional required detail about the outage.

Tip: If you click on one row in the Equipment Requested section and then click on the [...] too quickly it is taken as a double click and will open a new window with the Unit details.

Request Summary | Request Details/Approval | Attachments

Outage #: 0-00000000 rev. 1 (current) [History](#)

Requested by: LP_TRAINING, LP_TRAINING

Company: LP FOR TRAINING

Outage status:

Planned start: 09 / 22 / 2010 08:00

Planned end: 09 / 22 / 2010 16:00

First actual start: / / /

Date Requested:

Outage priority: Short Term

Priority date:

Continuous/Daily: Continuous

Outage duration: Exactly 8 Hour(s)

Last actual end: / / /

Asset Id: [9990](#) Summer Scc: 345.678

Asset Name: [AST1](#) Winter Scc: 356.789

Equip. Requested:

LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN1 9991	21 kV	RI	<Please Choose> [...]
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN2 9992	21 kV	RI	<Please Choose> [...]

Outage Cause: / / /

Black Start Capable: <Please Select>

Postponable: <Please Select>

External Comments:

For an OP-5 outage type the user must define if each physical component is out of service or reduced. This information provides the ISO with the capability of the generator during the outage, which must be constant for the duration of the outage request. If the generator capability is known to vary substantially across the duration of the outage then multiple outage requests must be entered.

http://crwappj2/CROW_WEB/Outages/req equip_constraint_type.aspx?outage_id=0&server_id=05c

Constraint/Commitment Type For LAKE_RD Unit TRN2 9992

Out of Service

Reduction: MW

OK Cancel

When selecting OOS a MW value is sometimes required. When selecting Reduction a MW value is always required. The next sub-sections provide examples of combinations of these selections.

5.4.1 If all physical components are Out of Service (OOS):

- No MW entry required
- Physical Reduction defaults to the SCC that is active based on the Planned Start of the outage. This value will be updated if SCC changes while outage still active

Asset Id: [9990](#) Summer Scc: 345.678 Physical Reduction: 345.678
 Asset Name: [AST1](#) Winter Scc: 356.789 EcoMax: 0

Equip. Requested:

	LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
	CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN1 9991	21 kV	RI	OOS
	CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN2 9992	21 kV	RI	OOS

Add... Clear...

5.4.2 If single physical component and not OOS:

- Must enter how many MW the unit is reduced
- NOT what the unit is *reduced to*
- EcoMax is calculated value, $222.222 - 100 = 122.222$

Asset Id: [9993](#) Summer Scc: 222.222 Physical Reduction: 100
 Asset Name: [AST2](#) Winter Scc: 333.333 EcoMax: 122.222

Equip. Requested:

	LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
	CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN3 9993	21 kV	RI	Reduction: 100 MW

Add... Clear...

5.4.3 If multiple physical components and not all OOS:

- Must enter how many megawatts (MW) each individual Unit is reduced
- If Unit not impacted then Reduction = 0 MW
- If Unit is OOS user must define how many MW that Unit is reduced
 - 0 MW is not a valid entry for OOS

Asset Id: [9990](#) Summer Scc: 345.678 Physical Reduction: 120
 Asset Name: [AST1](#) Winter Scc: 356.789 EcoMax: 225.678

Equip. Requested:

LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN1 9991	21 kV	RI	OOS: 120 MW
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN2 9992	21 kV	RI	Reduction: 0 MW

Add... Clear...

Another variation of the scenario where there are multiple physical components and not all OOS is shown below:

- MW entry field not present if OOS is applied to first Unit selected
- Calculated values will not appear until ALL Units have MW entry

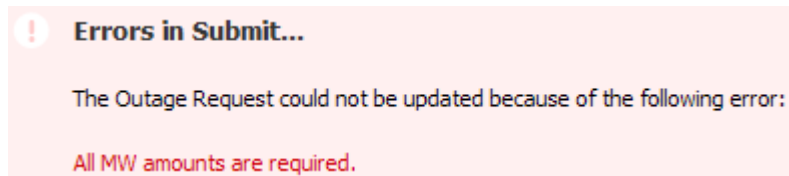
Asset Id: [9990](#) Summer Scc: 345.678 Physical Reduction:
 Asset Name: [AST1](#) Winter Scc: 356.789 EcoMax:

Equip. Requested:

LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN1 9991	21 kV	RI	OOS:
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN2 9992	21 kV	RI	Reduction: 200 MW

Tip: Always enter Constraint/Commitment on units with Reductions BEFORE units that are OOS

- This example would produce an error message upon submit



5.5 Other Fields in GOR

The other fields that will be presented in the GOR form are dependent on the type of outage that is selected.

5.5.1 Fields Planned Outage

The following are the fields presented for a Planned Outage, showing which are required and which are optional.

Outage Cause	Selection of value is optional
Forced Rescheduling	Set by the ISO if OP-5 rescheduling process applied
Black Start Capable	If generator flagged as such in CAMS, user must indicate whether generator will continue to be Black Start Capable during the requested outage

FCM Exempt = "Y"	FCM Exempt = "N"
If approved, physical reduction impacting Capacity Supply Obligation (CSO) considered 'available' during a shortage event	<ul style="list-style-type: none"> • Even if approved, outage does not provide any protection during shortage event. • Recommended selection for generators without any CSO
Outage counted in Equivalent Planned Outage Hours calculation	Outage not counted in Equivalent Planned Outage Hours calculation

5.5.2 Fields for other OP-5 Outages

For other OP-5 outages the following table shows the additional fields that will be presented on the display and which fields must be filled in before the outage request can be submitted. Some Outage Cause selections have a related sub-cause list. Where a sub-cause list is presented an item must be chosen from the list.

	Planned Overrun	Short Term	Forced
Outage Cause	Required	Required	Required
Black Start Capable	Required	Required	Required
Postponable	Not applicable	Required	Not applicable

5.6 Selecting Dates

The dates of the GOR can be entered manually or be using the calendar tool. If the Priority dropdown list does not contain the type Planned, then the selected date does not meet the required 15 calendar day notice; the start time will not influence the presence of the Planned type in the list.

Planned start:	<input type="text" value="09"/> / <input type="text" value="28"/> / <input type="text" value="2010"/>	<input type="text" value="08:00"/>	Continuous/Daily:	Continuous
Planned end:	<input type="text" value="09"/> / <input type="text" value="28"/> / <input type="text" value="2010"/>	<input type="text" value="16:00"/>	Outage duration:	Exactly <input type="text" value="8"/> Hour(s)
First actual start:	<input type="text"/> / <input type="text"/> / <input type="text"/>	<input type="text"/>	Last actual end:	<input type="text"/> / <input type="text"/> / <input type="text"/>

5.6.1 Summer/Winter Boundary

Due to the variation in SCC across the summer/winter boundary, no outage may not cross summer/winter boundary. Since EcoMax is a calculation based on SCC, submitter must notify the ISO of impact of the season change. This OP-5 business rule is a general rule for all outages, so users will find this restriction for all outage types, even if they are not dependent on SCC, i.e. Informational.

Example: Desired outage 9/20-10/15

Result: User must submit two outage requests 9/20 - 9/30 23:59 and 10/1 00:00 -10/15

It is recommended that the user enter text in External Comments to indicate the outage is one of two parts. The ISO will link the outages and study as one complete outage request

Planned start:	<input type="text" value="05"/> / <input type="text" value="20"/> / <input type="text" value="2011"/>	<input type="text" value="00:00"/>	Continuous/Daily:	Continuous			
Planned end:	<input type="text" value="05"/> / <input type="text" value="31"/> / <input type="text" value="2011"/>	<input type="text" value="23:59"/>	Outage duration:	Exactly <input type="text" value="12"/> Day(s)			
First actual start:	<input type="text"/> / <input type="text"/> / <input type="text"/>	<input type="text"/>	Last actual end:	<input type="text"/> / <input type="text"/> / <input type="text"/>			
Asset Id:	9993	Summer Scc:	222.222	Physical Reduction: 171			
Asset Name:	AST2	Winter Scc:	333.333	EcoMax: 162.333			
Equip. Requested:							
<input type="checkbox"/>	LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
<input type="checkbox"/>	CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN3 9993	21 kV	RI	Reduction: 171 MW

Planned start:	<input type="text" value="06"/> / <input type="text" value="01"/> / <input type="text" value="2011"/>	<input type="text" value="00:00"/>					
Planned end:	<input type="text" value="06"/> / <input type="text" value="06"/> / <input type="text" value="2011"/>	<input type="text" value="07:59"/>					
First actual start:	<input type="text"/> / <input type="text"/> / <input type="text"/>	<input type="text"/>					
Asset Id:	9993	Summer Scc:	222.222	Physical Reduction: 60			
Asset Name:	AST2	Winter Scc:	333.333	EcoMax: 162.222			
Equip. Requested:							
<input type="checkbox"/>	LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
<input type="checkbox"/>	CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN3 9993	21 kV	RI	Reduction: 60 MW

For example, Physical Reduction is noticeably different but EcoMax is relatively constant

5.7 External Comments field

The External Comments field is a free form field where the user can provide additional information about the outage request.

The screenshot shows the 'Request Details/Approval' tab in the CROW Web application. The form contains the following fields and data:

- Outage #:** 0-00000000 rev. 1 (current) [History](#)
- Requested by:** LP_TRAINING, LP_TRAINING
- Company:** LP FOR TRAINING
- Outage status:** (empty)
- Planned start:** 09 / 22 / 2010 08:00
- Planned end:** 09 / 22 / 2010 16:00
- First actual start:** (empty)
- Date Requested:** (empty)
- Outage priority:** Short Term
- Priority date:** (empty)
- Continuous/Daily:** Continuous
- Outage duration:** Exactly 8 Hour(s)
- Last actual end:** (empty)

Asset information:

- Asset Id:** 9990 **Summer Sc:** 345.678
- Asset Name:** AST1 **Winter Sc:** 356.789

Equip. Requested:

LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN1 9991	21 kV	RI	<Please Choose>
CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN2 9992	21 kV	RI	<Please Choose>

Outage Cause: (empty) **Black Start Capable:** <Please Select> **Responsible:** <Please Select>

External Comments: (Empty text area highlighted with a red rectangle)

[Submit](#)

5.8 Attachments

Attachments can be added/removed when outage is being created or anytime the outage is in the Preliminary state. Attachments that have been added can be viewed by the Gen User even when the outage cannot be modified.

The screenshot shows the 'Attachments (1)' tab in the CROW Web application. The page title is 'CROW Web 5.1.1.188 - Generation Outage Request: 0-00000000 rev. 1 (New) by LP_TRAINING, LP_TRAINING 11/10/2010 08:00 - 11/10/2010 16:00 Continuous Planned'. The 'Attachments (1)' tab is highlighted with a red rectangle.

Attached By	Attached When	File Name	Title
LP_TRAINING, LP_TRAINING	09/30/2010 11:53:34	Timing of Generator data updates.docx	name for example

[Add...](#) [Submit](#)

5.9 Request Details/Approval tab

The Information shown on this tab is for information purposes only. The Notifications section may indicate communications that have occurred between the ISO and the Gen User. If the ISO has entered the outage request based on a phone call from a Gen User, the person requesting the outage will likely be captured in this Notifications section.

Request Summary
Request Details/Approval
Attachments

Outage Profiles										
Planned Start/ Planned End				Actual Start	Actual Complete	Circuit/Equipment	Constraint/ Commitment	Overrun	Reason/ Sub Code/Com	Status/ By/ When/ Code
10	10	2010	08:00	-	-	<input checked="" type="checkbox"/> LAKE_RD Unit TRN1 9991	Out of Service	<input type="checkbox"/>		Submitted LP_Employee, Iam 09/17/2010 12:56:51
10	11	2010	17:30	-	-	<input checked="" type="checkbox"/> LAKE_RD Unit TRN2 9992	Out of Service			

Range: 10 / 10 / 2010 To 10 / 11 / 2010

Notifications					
Notification Type	Notify	Contact Information	Accepted/ Result	By/ When	Comments
Requested By	Iam Training	413-555-5000	Success	Mendrala, Cheryl - VSA 09/27/2010 11:36	

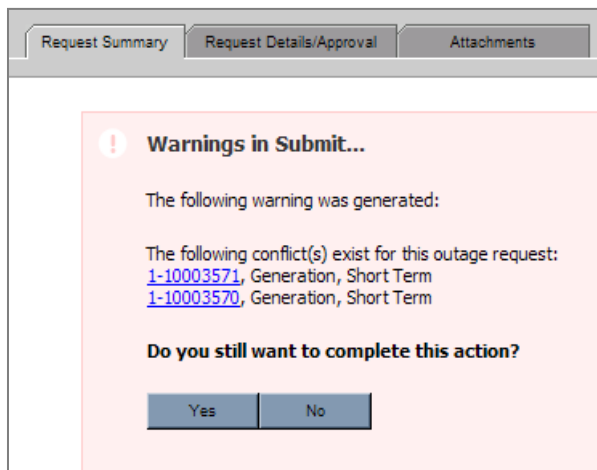
Approvals			
Required Approval	Status	Status Update By/ When	Scheduler's Comments
CONVEX_CC	Pending		
ISONE_CC	Pending		

5.10 Submitting Outage Request

Once all required fields and desired optional fields have been entered, user will click 'Submit' to enter the outage request. If the outage is of type Planned or MVAR Test, the status will go to Preliminary. For other outage types the status will go Submitted and no additional changes will be able to be made by the Gen User.

5.10.1 Conflicts

After clicking "Submit" a warning box will appear if another outage exists in the same time period for the same generator. Outages in the Preliminary state will NOT be considered to produce a conflict. Therefore, a Planned Outage being submitted will never present this message since it will be in the Preliminary state.



- Selecting "Yes" will complete the submittal.
- Selecting "No" will return you to the GOR form.
- Clicking on the hyperlink(s) provided in the warning will open a new window with the selected outage displayed

5.10.2 After Submittal

Upon submittal the Outage ID, Requested By, Priority Date and Outage Status will all be filled in.

Requested by and **Company** reflect 'who' created GOR.
If called in by Gen User, will reflect ISO person and company

Priority Date reflects when outage was last submitted or saved by Gen User

Outage status will always reflect current status, when it reached that status and which user moved it to that status

Requested by:	LP_TRAINING, LP_TRAINING 09/27/2010 11:53:26	Company:	LP FOR TRAINING	Priority date:	09/27/2010 11:53
Outage status:	Submitted 09/27/2010 11:53:26 by LP_TRAINING, LP_TRAINING	Continuous/Daily:	Continuous	Outage duration:	Exactly 2 Day(s)
		Start actual end:			

Asset Id: 9990	Summer Sc: 345.678	Physical Reduction: 356.789
Asset Name: AST1	Winter Sc: 356.789	EcoMax: 0

Equip. Requested:

	LCC	GO	Station	Circuit/Equipment	Voltage Class	Rel Area	Constraint/Commitment
	CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN1 9991	21 kV	RI	OOS
	CONVEX_CC	TRAINLP	LAKE_RD	LAKE_RD Unit TRN2 9992	21 kV	RI	OOS

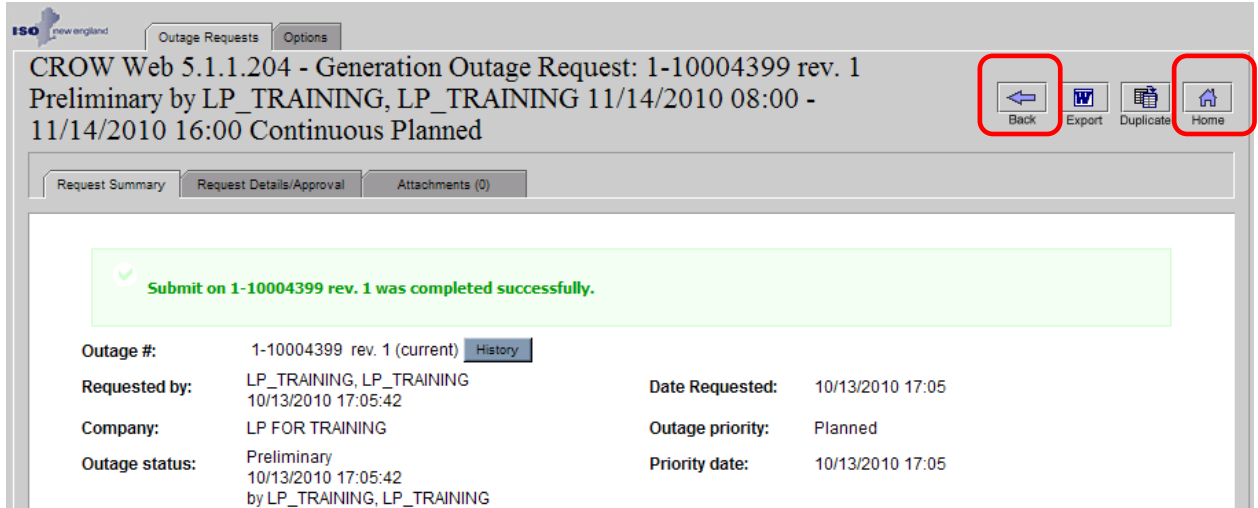
Outage Cause: 928 928 - FLAME FAILURE **Black Start Capable:** Yes

Postponable: Yes

External Comments:
duplicated on same date to see conflict message

5.11 Returning to Web Index

After outage submittal, or after viewing any outage request, use the Back or Home button to return to the Web Index.



The screenshot displays the CROW Web interface for a Generation Outage Request. At the top, the page title reads "CROW Web 5.1.1.204 - Generation Outage Request: 1-10004399 rev. 1 Preliminary by LP_TRAINING, LP_TRAINING 11/14/2010 08:00 - 11/14/2010 16:00 Continuous Planned". In the top right corner, four buttons are visible: "Back", "Export", "Duplicate", and "Home". The "Back" and "Home" buttons are highlighted with red boxes. Below the title bar, there are tabs for "Request Summary", "Request Details/Approval", and "Attachments (0)". A green message box states "Submit on 1-10004399 rev. 1 was completed successfully." Below this, the request details are displayed in a table format:

Outage #:	1-10004399 rev. 1 (current) History	Date Requested:	10/13/2010 17:05
Requested by:	LP_TRAINING, LP_TRAINING 10/13/2010 17:05:42	Outage priority:	Planned
Company:	LP FOR TRAINING	Priority date:	10/13/2010 17:05
Outage status:	Preliminary 10/13/2010 17:05:42 by LP_TRAINING, LP_TRAINING		

5.12 Modifying Previously Submitted Outage Requests

When the GOR is in Preliminary state the following data can be modified.

- Planed Start/End Date/Time
- Constraint/Commitment type and MW
- Outage Cause
- FCM Exempt flag
- Black Start flag
- External Comments

When the GOR is in the Submitted state the Gen User cannot make any changes to GOR. Any changes must be requested through the ISO. Changes that increase the scope or duration of the existing GOR may require a new GOR to be submitted.

5.13 Viewing GOR History

The revision history of an outage request can be downloaded to a spreadsheet using the History button. The previous versions of the GOR can be viewed by selecting the previous version from the dropdown list. In addition, the form will highlight with red text any field that has changed since the previous revision.

The screenshot shows a web form for an outage request. At the top, there is a dropdown menu for 'rev #' with the value '3' selected, and a 'History' button. Three yellow callout boxes with red borders provide instructions: 'User can view previous versions using dropdown' points to the 'rev #' dropdown; 'User can export history using button' points to the 'History' button; and 'Changes from previous version highlighted in red' points to the 'Outage status' and 'Reason Code' fields, which are highlighted in red. The form contains the following data:

Outage #:	1-10003578	rev #:	3	History
Requested by:	Gilmore, Mike P.		Date Requested:	09/17/2010 14:13
	09/17/2010 14:13:25			
Company:	ISO New England		Outage priority:	Planned
Outage status:	Withdrawn		Priority date:	09/17/2010 14:13
	09/20/2010 10:38:57			
	by Gilmore, Mike P.			
Planned start:	10	/	19	/
			2010	08:00
Planned end:	10	/	19	/
			2010	16:00
First actual start:		/		/
Reason Code:	OTHER		Reason Comments:	xxx

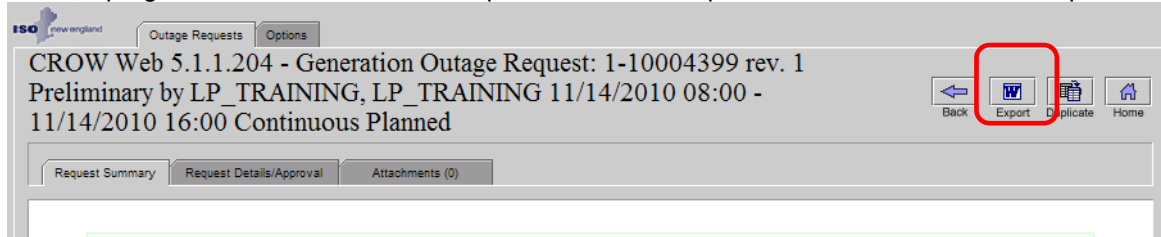
5.14 Duplicating Outage Requests

If there is a previously submitted outage request that you want to duplicate select the Duplicate button at the top right of the GOR form. Selecting this button copies: priority, market asset, dates, and constraint/commitment type. Any remaining information must be entered by the user before submitting.

The screenshot shows the top header of the GOR form. It includes the ISO New England logo, 'Outage Requests' and 'Options' tabs, and the following text: 'CROW Web 5.1.1.204 - Generation Outage Request: 1-10004399 rev. 1 Preliminary by LP_TRAINING, LP_TRAINING 11/14/2010 08:00 - 11/14/2010 16:00 Continuous Planned'. On the right side, there are four buttons: 'Back', 'Export', 'Duplicate', and 'Home'. The 'Duplicate' button is highlighted with a red box.

5.15 Printing Outage Requests

User may print from the File/Print menu on Web Browser but may alternatively select the Word icon on the top right of the GOR form that will produce a Word report than can be saved and/or printed.



Below shows the formatting of the Word export

ISO new england **Outage Request#1-10003567 rev. 2** Requested Date/Time: 09/17/2010 11:15
 Planned Outage Request

LAKE_RD TRN1 Reduction: 25.5 MW, TRN2 Reduction: 25.5 MW

Outage Request Summary			
Outage Number:	1-10003567 rev. 2	Outage Priority:	Planned 09/17/2010 11:15
Company:	LP FOR TRAINING	Requested By:	LP_Employee, lam 09/17/2010 11:15
Outage Status:	Withdrawn	Market Type:	
Planned Start:	10/10/2010 08:00	Planned End:	10/11/2010 17:30
First Actual Start:		Last Actual End:	
Asset ID:	9990	Asset Name:	AST1
Eco Max:	305.789	Summer SCC:	345.678
Physical Reduction:	51	Winter SCC:	356.789
		FCM Exempt:	No
Outage Cause:	945 - MAINTENANCE	Outage Sub-Cause:	-
Postponable:	N/A	Black Start Capable:	No
Forced Rescheduling:	No	For Reliability Area:	
External Comments:	Proposed maintenance activity. Bridged on 9/17/2010 11:15:05 AM via Mike Gilmore API call.		

Equipment Requested							
1-Line	LCC	GO	Station	Equipment	Voltage	Rel. Area	Constraint/Comm.
No	CONVEX_CC	LPFOR TRAINING	LAKE_RD	LAKE_RD Unit TRN1 9991	21 kV	Rhodels	Reduction: 25.5 MW
No	CONVEX_CC	LPFOR TRAINING	LAKE_RD	LAKE_RD Unit TRN2 9992	21 kV	Rhodels	Reduction: 25.5 MW

6 Using Web Index for GORs

This section describes the main CROW display, Web Index, where all generation outage requests are presented to the user.

Outage Request Index - (10 of 10 records)

Indicates total returned by query and total in current filtered view. 300 maximum in view

Outage Request Date: 10/28/2010 to 12/14/2010

Request Status: All

Constraint/Commit: All

Request Priority: All

Control Center: [List...]

Requested By: [...]

Outage Number: [] - [] [Find]

Export to Excel | Export to Gantt | Refresh | No Auto Refresh | Gen. Outage Report | New Outage Request

Outage Requests appearing in red are overdue.

Outage #/ Revision/ Status	Asset Name	Asset ID	Station/ Circuit/Equipment	Planned Start	Planned End	Required Approvals	Requested By/ Reason/Priority	Priority
1-10003602 Revision #3 Cancelled	AST1	9990	LAKE_RD TRN2 Black Start, TRN1 Black Start	11/08/2010 08:00	11/08/2010 17:30	CONVEX_CC: n/a ISONE_CC: Approved	LP_TRAINING, LP_TRAINING testing the interaction	Owner Test 09/21/2010 09:21
1-10003667 Revision #3 Withdrawn	AST2	9993	LAKE_RD TRN3 Reduction: 20 MW	10/28/2010 08:00	10/28/2010 16:00	CONVEX_CC: n/a ISONE_CC: n/a	LP_TRAINING, LP_TRAINING	Planned 09/27/2010 11:25
1-10003668 Revision #2 Denied	AST1	9990	LAKE_RD TRN2 General, TRN1 General	10/28/2010 08:00	10/28/2010 16:00	CONVEX_CC: Denied ISONE_CC: Pending	LP_Employee, lam	MVAR Testing 09/27/2010 11:20
1-10003672 Revision #2 Denied	AST2	9993	LAKE_RD TRN3 OOS	10/28/2010 08:00	10/28/2010 16:00	CONVEX_CC: Pending ISONE_CC: Denied	LP_TRAINING, LP_TRAINING started with 9993,ht submit	Planned 09/27/2010 12:40
1-10003673 Revision #3 Denied	AST1	9990	LAKE_RD TRN1 Black Start, TRN2 Black Start	10/28/2010 08:00	10/28/2010 16:00	CONVEX_CC: Denied ISONE_CC: Pending	LP_Employee, lam	Owner Test 09/27/2010 14:01
1-10003676 Revision #3 Denied	AST1	9990	LAKE_RD TRN1 OOS, TRN2 OOS	10/28/2010 08:00	10/28/2010 16:00	CONVEX_CC: Approved ISONE_CC: Denied	LP_Employee, lam testing mpg	Planned 09/27/2010 17:24
1-10003677 Revision #3 Denied	AST1	9990	LAKE_RD TRN1 OOS, TRN2 OOS	10/28/2010 08:00	10/28/2010 16:00	CONVEX_CC: Pending ISONE_CC: Pending	LP_Employee, lam	Planned 09/27/2010 17:56
1-10003691 Revision #2 Withdrawn	AST1	9990	LAKE_RD TRN1 OOS, TRN2 OOS	10/28/2010 08:00	10/28/2010 16:00	CONVEX_CC: Pending ISONE_CC: Pending	LP_Employee, lam used maintenance activity. Bridged on 9/28/2010 7:02:08 PM via Mike Gilmore API call.	Planned 09/28/2010 19:02
1-10004399 Revision #1 Preliminary	AST2	9993	LAKE_RD TRN3 OOS	11/14/2010 08:00	11/14/2010 16:00	ISONE_CC: Pending CONVEX_CC: Pending	LP_TRAINING, LP_TRAINING	Planned 10/13/2010 17:05
1-10004401 Revision #1 Approved	AST1	9990	LAKE_RD TRN1 OOS, TRN2 OOS	10/28/2010 08:00	10/28/2010 16:00	ISONE_CC: Approved CONVEX_CC: n/a	Administrator, CROW	Forced 10/14/2010 12:08

Yellow highlighting indicates a revision has been made by another user

6.1 Filtering

Each of the fields in the header area allows the user to filter the results presented on the Web Index. Once the data in the filter have been modified, click away from that filter to a blank space on the page to refresh the screen. Clicking on the column title will sort the screen by that column's data

6.2 Export to Excel

The *Export to Excel* button exports all the records currently on the Index into a spreadsheet where each piece of data is in a separate column; whereas the Index has multiple pieces of data in each cell.

PART 3: LCC Interaction with GORs

This section addresses the new features in CROW that relate to generation that the LCC must be aware

RESERVED FOR FUTURE USE

PART 4: Transmission Outage Requests

This section addresses the features changes since the previous release of CROW and is not intended to be a full guide on transmission outage requests.

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