Outage Coordination and Scheduling System (OCSS) CROW Web Client User Guide

GDE-259

Issue: 3.0

Issue Date: September 15, 2021

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This training manual has been prepared to assist in the IESO training of market participants and has been compiled from extracts from the market rules or documents posted on the web site of Ontario's Independent Electricity System Operator. Users of this training manual are reminded that they remain responsible for complying with all of their obligations under the market rules and associated policies, standards and procedures relating to the subject matter of this training manual, even if such obligations are not specifically referred to herein. While every effort has been made to ensure the provisions of this training manual are accurate and up to date, users must be aware that the specific provisions of the market rules or particular document shall govern.

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1. Introduction

This guide is intended to provide information with respect to usage of the CROW Web Client with the goal of introducing features and functionality. Any specific business processes and rules are beyond the scope of this guide.

Equipment for the CROW Web Client is populated from the registered equipment for your organization in Online IESO (online.ieso.ca). Outage Management Attributes for your equipment, such as the Outage Reporting Required flag and Outage Criticality Level, are available through Online IESO under the equipment details for your facility.

Refer to the IESO Supported Client Platforms webpage for details on web browser compatibility for the CROW Web Client. You may check your browser settings by clicking F12 Developer Tool > Emulation Tab > Mode > Document Mode. If the default setting is other than the IESO-supported web browser, contact your IT department.

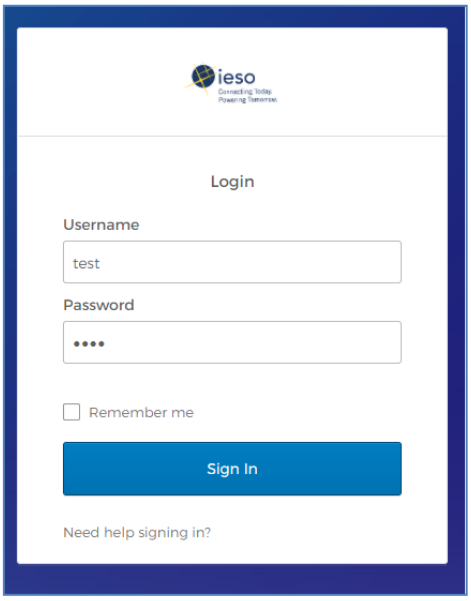
- End of Section -

2. User Access

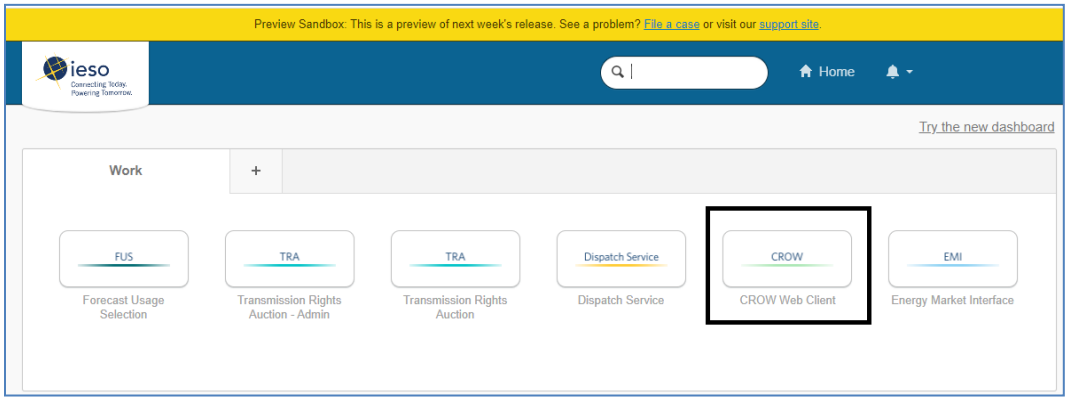
2.1. Logging into CROW Web Client

CROW Web Client shares the same log in mechanism as the IESO Gateway. Once you have logged in, you will be automatically authenticated to all IESO applications within the IESO Gateway. Similarly, once you are logged in to the IESO Gateway, you may access the CROW Web Client.

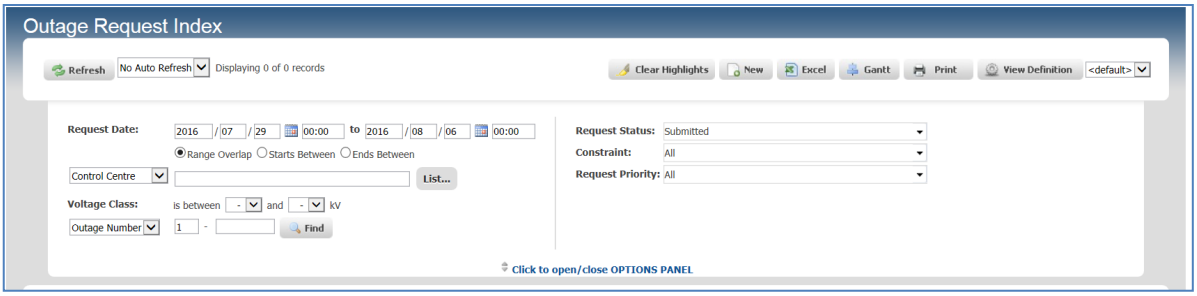
- Log into the CROW Web Client



- Enter your IESO Gateway Username and Password, then click Sign In
- Alternatively, if you are logged into the IESO Gateway, click the CROW Web Client hyperlink under IESO related web links.



- Once authenticated, the user will be directed to the CROW Web Client.



NOTE: If authentication fails, you may not have the rights to access the system. Contact your organization's Applicant Representative to grant you access as Equipment Outage Submitter/Viewer in IESO Online Registration Tool.

- End of Section -

3. User Permissions and Roles

3.1. Overview

For access to the Outage Management tool, there are one of two new contact roles required: “Equipment Outage Submitter” or “Equipment Outage Viewer”.

- The Equipment Outage Submitter contact role: Users will be able to submit outages as well as view previously submitted outages.
- The Equipment Outage Viewer contact role: Users will only be able to view outage without the ability to submit.
- Equipment Outage Late Notification contact role: Users will receive email notifications for outages that are late to start for that organization

For staff that does not have access to the Outage Management tool, your organization’s Applicant Representative will need to request access to one of the above contact roles in Online IESO (https://online.ieso.ca).

- Select “Update Organization/Update Contact Roles” under the ACTIONS tab to get started.
  NOTE: A user cannot have both “Equipment Outage Viewer” and “Equipment Outage Submitter” contact roles.

A CROW user profile will be set up with Roles and Permissions which dictate the actions and the data that is available to the user in CROW. Permissions are used to limit which interfaces the user may access, what general actions a user may take, and to enforce which business unit privileges they have (to determine which equipment in the database is made available to the user).

Equipment in the database will have configured relationships to business units, such as power utilities and control centers. These equipment relationships are used to determine the availability of an equipment item to a user. For example, a user profile may have “Equipment Outage Viewer” contact role to View outage requests that contain equipment which is operated by ‘Control Center A’, giving the user the access to view any outages requests for equipment that is operated by ‘Control Center A’. But that user would not be able to view outages requests for equipment that is operated by ‘Control Center B’. If the user profile had “Equipment Outage Submitter” contact role to Submit/Update outage requests on equipment that is operated by ‘Control Center A’ then they would be able to create or edit (where business rules allow) outage requests for that equipment.

NOTE: Equipment in the database may also have a Third Party Viewer relationship to a Third Party Viewer Group. Those relationships are also used to establish viewing privileges for the user on equipment items and their associated outage requests. Third Party Viewership is managed through Online IESO (online.ieso.ca), which allows you to share outage information with other market participants by granting third party viewership of your equipment. After creating a Third Party Viewership group, the selected organization will be able to view outage details for the selected equipment in the Outage Management System. A single outage request may contain both,

equipment with and without third party viewership access. In such cases, third party viewers will only see the equipment to which they have access. Roles are used in CROW to determine user access to features and data as well as possibly being used in some business rules for your specific CROW configuration.

NOTE: Outage Management Attributes for your equipment, such as the Outage Reporting Required flag and Outage Criticality Level, are available through Online IESO (online.ieso.ca) under the equipment details for your facility.

NOTE: Control Centre facilities represent the location of an organization's real-time operations. This facilitates the submission of outages that are not associated to a particular station, e.g. SCADA systems. The creation and update of Control Centre facilities is managed through Online IESO (online.ieso.ca) by updating the organization.

3.2. CROW Web Site Areas

The CROW Web site application contains the following areas:

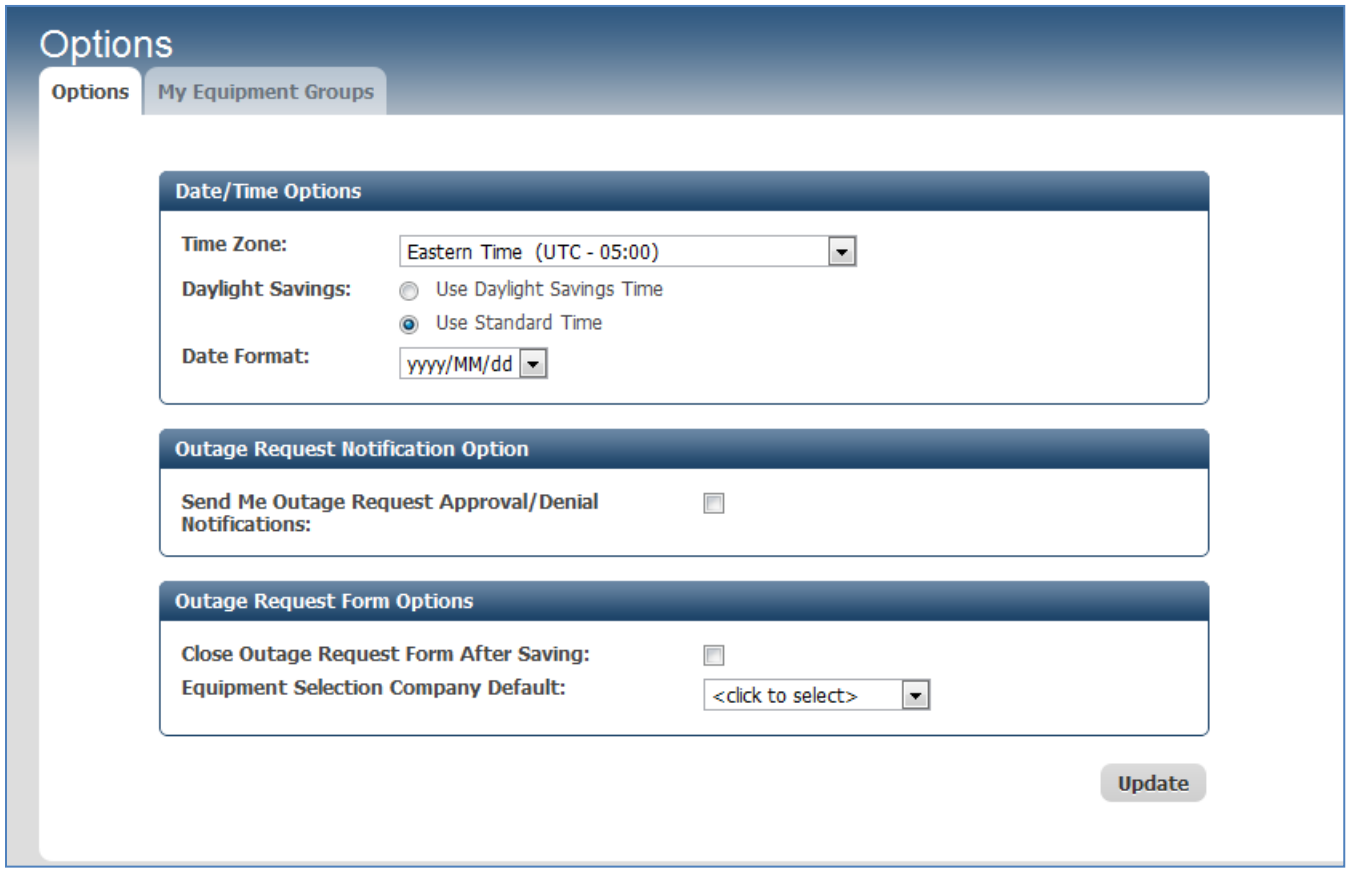
- Outage Requests – contains a summary listing of Outage Requests and the create/edit Outage Request form. There are also a couple of methods to generate an Excel or Word report of an Outage Request.
- Reports – contains filtering and subscription features for outage request reporting.
- Options – contains settings for some basic user preferences as well as a password reset function. In some configurations there is also a listing of Equipment Groups available to the user.
- Logout – this functions simply as a logout button to kill the user's web session.

- End of Section -

4. Options Area

The user has the ability to change their preferences by way of the Options form available in this area. As well there is a read-only listing of Equipment Groups available to the user.

To open the Options area, the user must click the Options menu button at the top of the web page.



4.1. Options

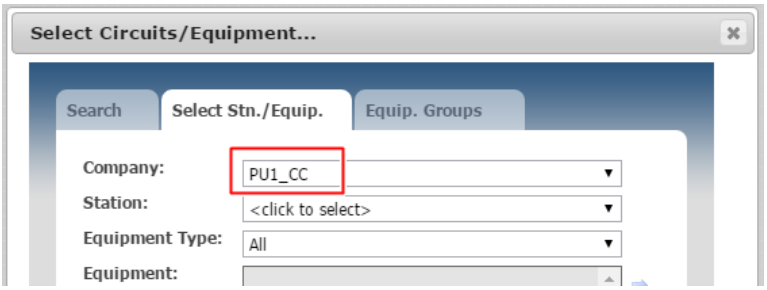
4.1.1. Date/Time Options

Form Field	Description
Time Zone	Select the local time zone. This time zone will be used when displaying date/time values to the user in the CROW Web.
Daylight Savings	Choose the selection that you wish the CROW to use. This will apply to date/time values in the CROW Web.
Date Format	The default date format is yyyy/MM/dd. If desired, select a different format. It will be applied to date/time values in the CROW Client and CROW Web.

4.1.2. Outage Request Notification Option

Form Field	Description
Send Me Outage Request Approval/Denial Notifications	To be able to receive Outage Request Approvals notifications the user must tick this box to enable the preference.

4.1.3. Outage Request Form Options

Form Field	Description
Close Outage Request Form After Saving	Ticking this checkbox causes the Outage Request form to close after it has changes saved. Upon successfully saving changes the CROW Web Index summary page will be displayed.
Equipment Selection Company Default	This setting allows the user to choose the preferred control center displayed in the Choose Equipment dialog. 

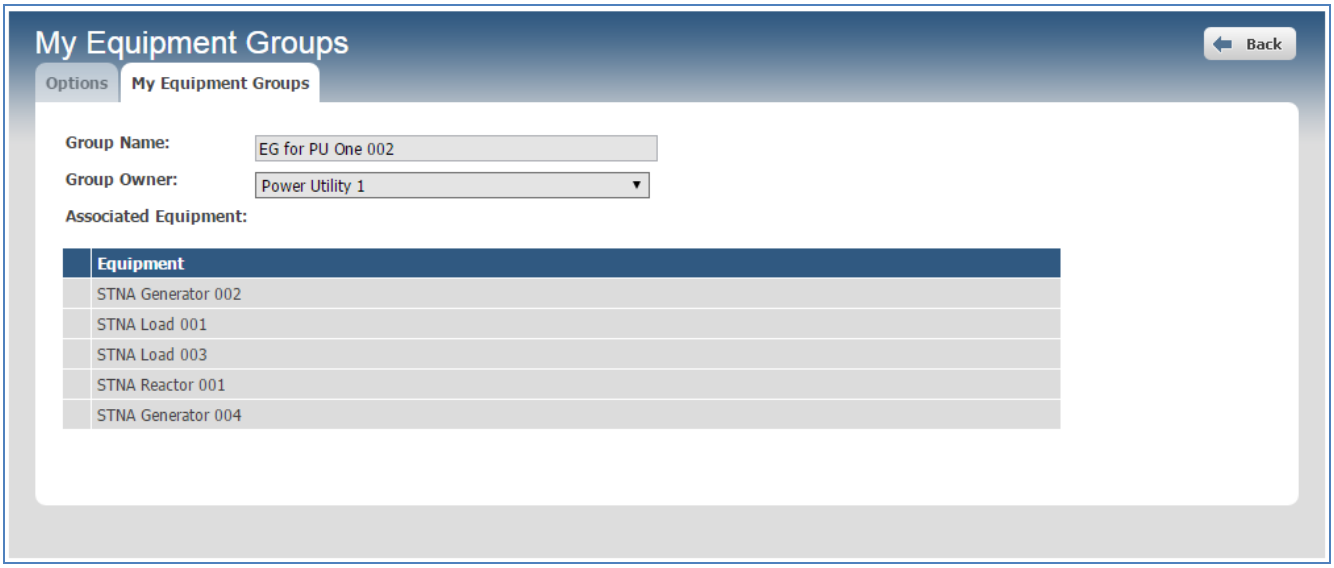
After all desired Options settings have been entered the user must click the “Update” button to save the changes. A confirmation message will appear above the Options form.

4.2. Equipment Groups

The “My Equipment Groups” tab in the Options area provides a listing (if any available) of equipment groups that have been set up for the users company.

Abiding by organizational permissions and roles, a user can also create their own Equipment Groups. This is done by clicking on the “Add…” command button.

The user may double click on any of the listed Equipment Group names to bring up a read-only details page. The details page displays the name of the Equipment Group, the name of the company that owns the Equipment Group, and the equipment listed in the Equipment Group. The Equipment Group is used to add equipment to an outage request. One or more equipment items from the group may be added to an Outage Request from an Equipment Group selection list.



- End of Section -

5. Outage Requests

5.1. Outage Request State Transition

There are a number of varied paths the lifecycle of an outage request may take. The State Transition Model configured for the CROW system defines the available paths and also the limitations. Some actions configured in the model will be governed by specific business rules or will have limited access based on the current overall condition of the outage request and/or the users profile roles and permissions.

When viewing an outage request form there will be a row of state transition "action buttons" displayed across the bottom of the outage request form. The form will only display an action button if that particular action is available to the user given the current overall condition of the outage request.

An example of a simple state transition path an outage request may follow over the course of its lifecycle is:

New -> **Draft** -> **Submitted** -> **Study** -> **Approved** -> **Implemented** -> **Completed**

The current Outage Status along with the user name of the person that initiated the action resulting in the status will be displayed on the outage request.

NOTE: In some circumstances a user may perform a Submit action on an outage request that ends up with the outage request being automatically approved and ends up in the "Adv Approved" status rather than the "Submitted" status. As always the users name will appear on the outage request form along with the Outage Status. This only indicates that the user initiated the state transition action that led to the outage status – it does not mean that the user granted an approval for the outage request. The Approvals information (Approver, Approval Type, Approval Date) can only be found in the Approvals grid at the bottom of the "Details" tab of the outage request form.

It is important to note that when saving changes or initiating a state transition action for an outage request the CROW employs a first-save-wins method. CROW will not lock an outage request from others if a user has opened it before them. The first user to fully conclude their changes will successfully finish their action. For example, if James has concluded an update to an outage request in the time since Carol has opened that same outage request form (and before Carol has saved any of her updates), then Carol will not be able to save her changes without first closing and reopening the outage request and re-entering her changes on the latest revision of the outage request. CROW will not attempt a merge in of data for an outage request in these situations.

5.1.1. Business Rules and Validations

Some state transition actions carry with them specific business rules and/or validations. Generally, when an outage request has changes saved on it validations are performed to ensure that required fields have valid values. In addition, other more specific validations take place to ensure a business process is adhered to - for example some outage requests (depending on their characteristics) may require submission further in advance of their Planned

Start date than other outage requests. If rules or validations are violated, then an error message is presented to the user whereby the user can make required edits and try the state transition action again.

5.2. Outage Request Revisions

From the very first save, through all subsequent updates in the lifecycle of an outage request, a new revision is created for each saved change. This results in a revision history, tracking changes made to the outage request, along with who made the change and when. A user may refer back to any revision to see the state of the outage at that time.

5.3. Outage Request and Outage Period Information

An outage request in CROW has a basic structure that is used to organize information about it.

There is summary information which has data relevant to the overall outage request including:

- Planned Start date/time – overall Planned Start of the outage request.
- Planned End date/time - overall Planned End of the outage request.
- Actual Start date/time – first Actual Start on the outage request. Derived from the first implemented/completed outage period.
- Actual End date/time – last Actual End on the outage request. Derived from the last completed outage period.
- Outage Status – overall Status of the outage request.
- Recurrence – the type of Recurrence the outage request is structured with.
- Requested Equipment Collection – the list of equipment items for the outage request. Each equipment item contains its own overall constraint information as well as some other attribute values.
- Max Recall – information about recall time requirements.
- Approvals – information about who approve the outage request and when.
- Various other information about the overall outage request.

There is information which provides detail about the individual time periods that the outage request is broken down into. These time periods are referred to as Outage Periods. An outage request will always have one or more non-overlapping Outage Periods all falling within the timeframe of the overall Outage Request. Each Outage Period contains the following information:

- Planned Start date/time –Planned Start of the individual Outage Period.
- Planned End date/time - Planned End of the individual Outage Period.
- Actual Start date/time –Actual Start of the individual Outage Period.
- Actual End date/time –Actual End of the individual Outage Period.
- Period Status –Status of the individual Outage Period and when it entered that status.
- Equipment – the equipment items on the Outage Period. Each equipment item contains its own constraint information.

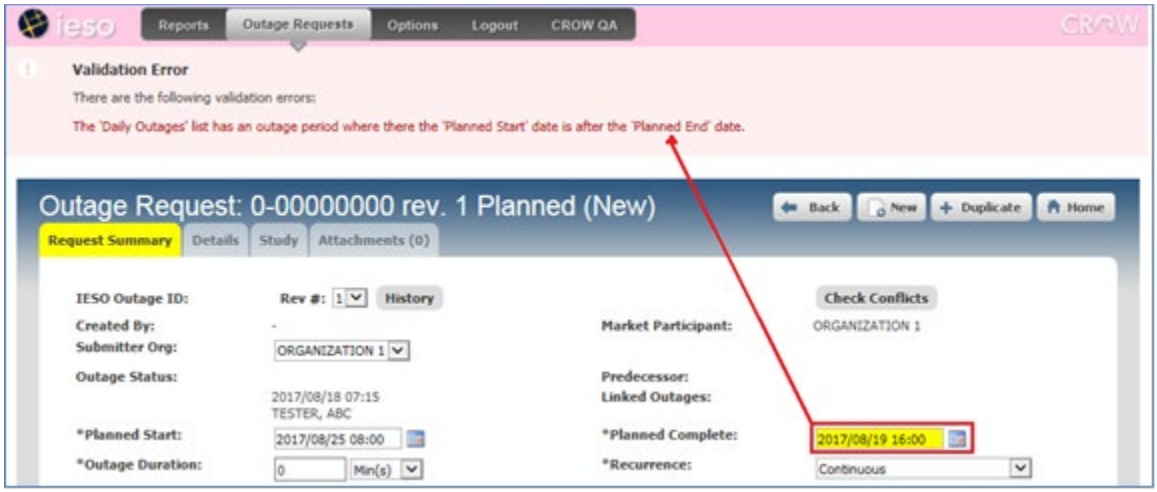
NOTE: For an outage with multiple periods, the actual times cannot overlap. The actual end date/time of the first period must be equal to or earlier than the actual start date/time of the next period. An Error Message will be generated, preventing submission.

Example A - Incorrect outage request:

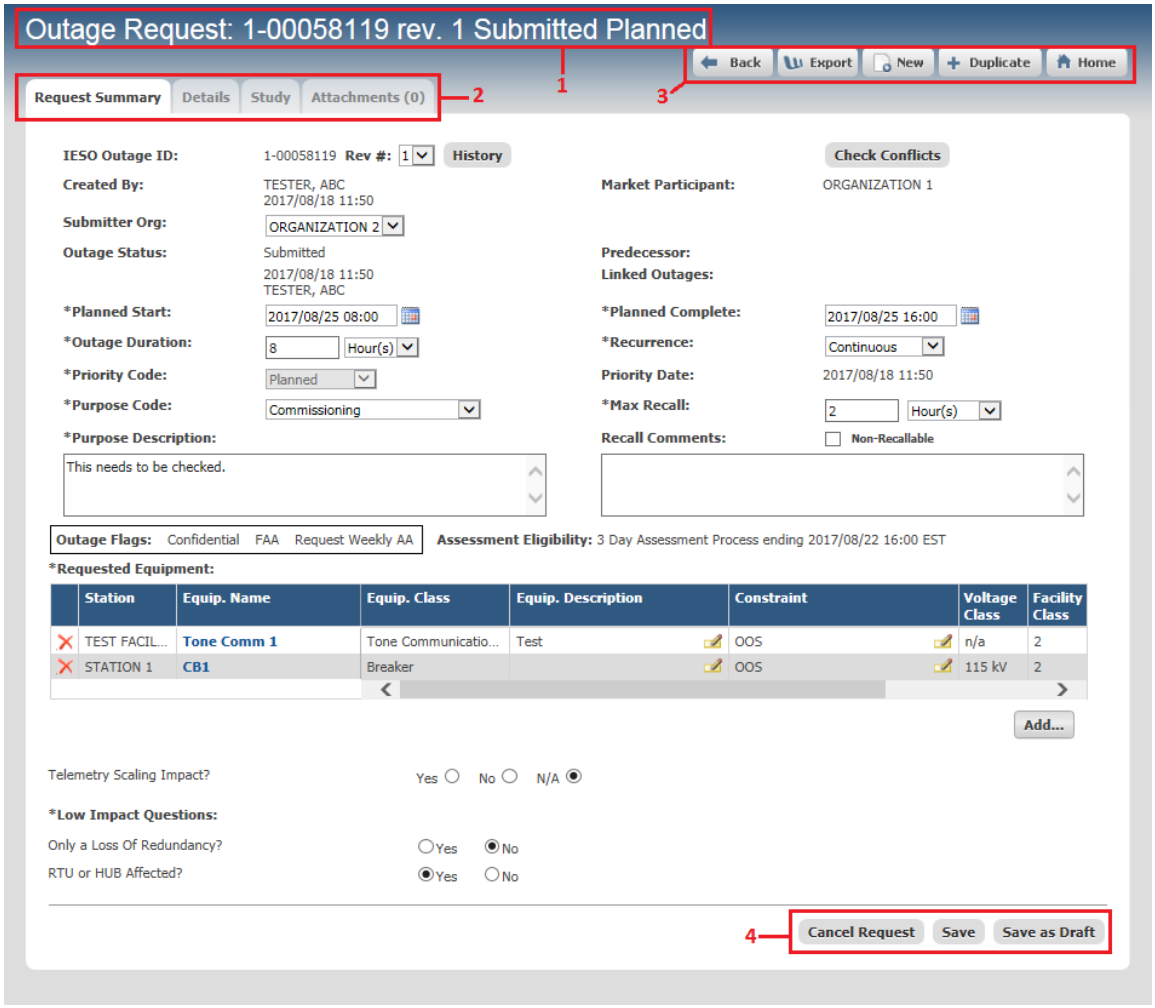
	Equipment	Constraint	Actual Start	Actual End	
Outage Request 1	Generator G1	Derate to 10 MW	Mon 2016/11/14 13:51	Mon 2016/11/14 14:05	**Incorrect Outage Request. The actual start of the second period must be after 14:05.**
	Generator G1	Derate to 50 MW	Mon 2016/11/14 13:53	Mon 2016/11/14 14:20	

Example B – Correct outage request:

	Equipment	Constraint	Actual Start	Actual End	
Outage Request 2	Generator G2	Derate to 10 MW	Mon 2016/11/14 13:51	Mon 2016/11/14 14:05	**Correct Outage Request.**
	Generator G2	Derate to 50 MW	Mon 2016/11/14 14:05	Mon 2016/11/14 14:20	



5.4. The Outage Request Form



The Outage Request Form has a few general areas to be aware of:

Area #	Description
1	Basic Outage Request information including the outage request number, revision number, overall outage status, and priority code.
2	Outage Request form tabs. • Request Summary • Details • Study • Attachments
3	Outage Request function and navigation buttons. • Back • Export • New • Duplicate • Home
4	Outage Request Save and State Transition action buttons.

5.4.1. Open an Outage Request Form

The user can open a new Outage Request form in any of the following ways:

- From the Outage Request Index summary, click on the "New" button near the top of the page.

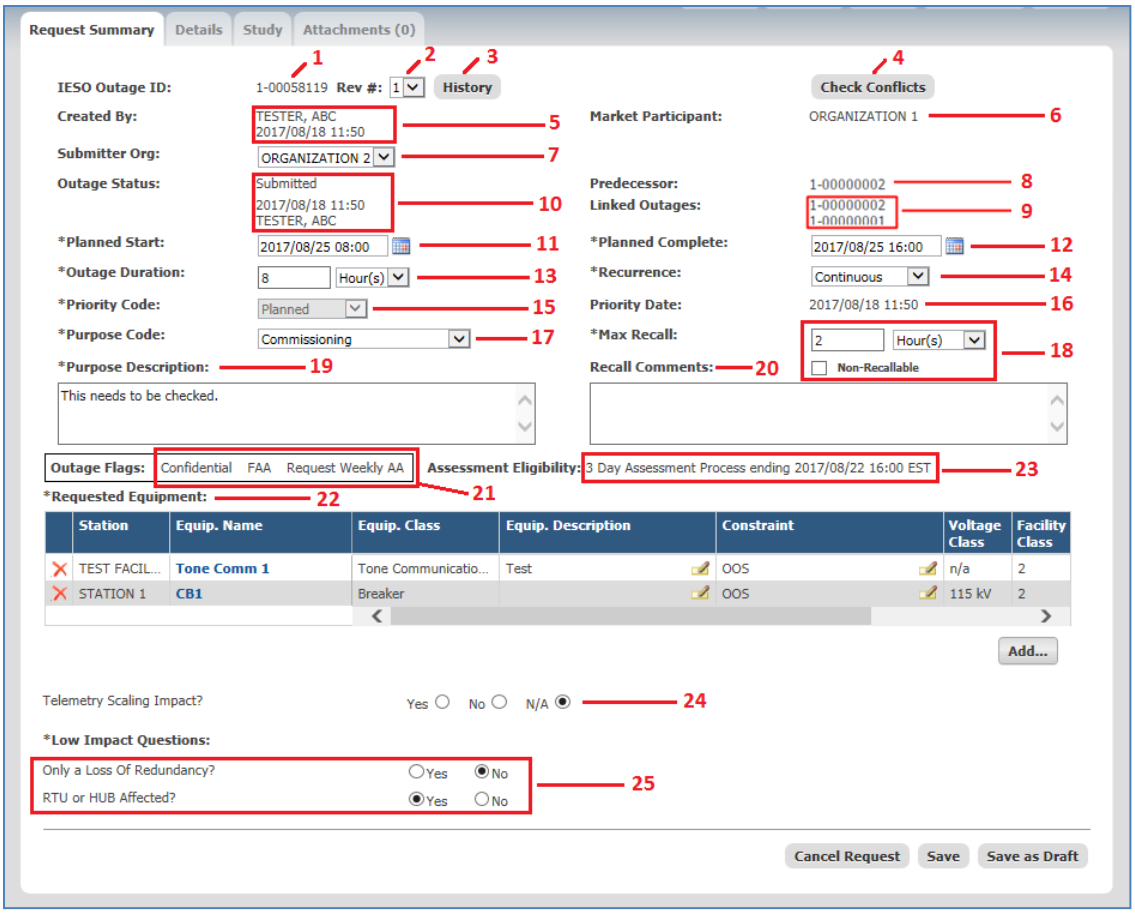
- From an Outage Request form, click on the New button near the top of the page.

The user can open an existing Outage Request in any of the following ways:

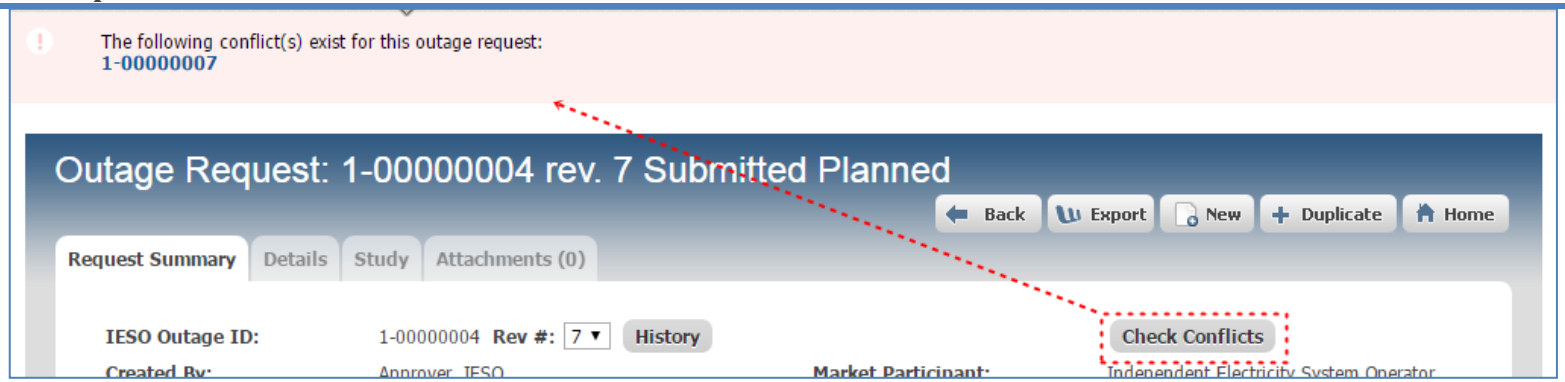
- Double click on the outage request in a row in the Outage Request Index summary listing.
- If the user knows the Outage Request number, use the Find feature on the Outage Request Index summary form.

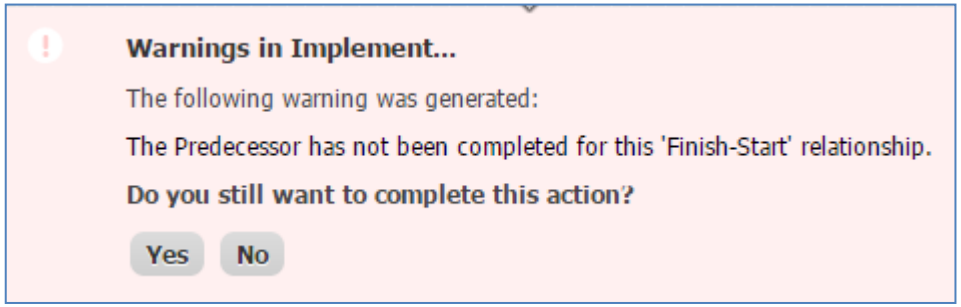
The user must click the "Find" button to open the Outage Request form, if the outage request exists and is available to the user.

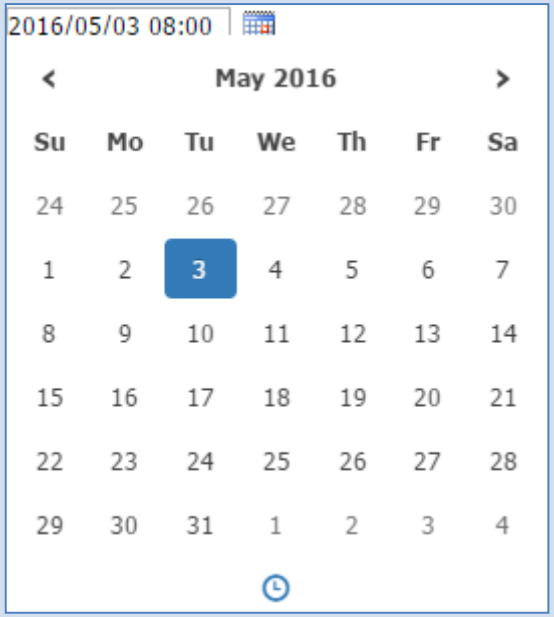
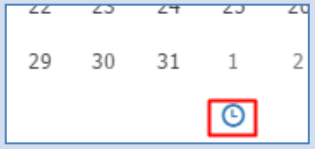
5.4.2. Outage Request Form: Request Summary tab

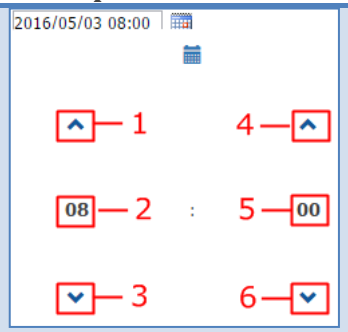


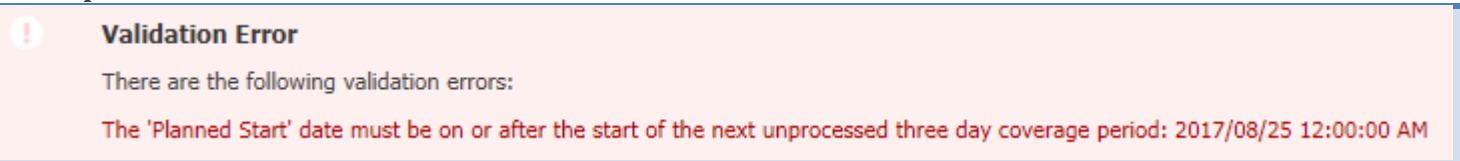
<table>
<tr><th>Field #</th><th>Description</th></tr>
<tr><td>1</td><td>IESO Outage ID
This is a read-only label displaying the Outage Request Number. During the creation of a new Outage Request, initially, it will display as “0-00000000”. Upon Save or Submission of an Outage Request an internally generated number by Crow in the format:
Server ID + “-“ + Outage Request ID (e.g. 1-00000295) will be displayed for this field.</td></tr>
<tr><td>2</td><td>Revision Number
A revision number drop-down selection box is available beside the label “rev. #”. During the creation of a new Outage Request, the default value for the revision number is ‘1’.
Note: For an Outage Request that has gone through some revisions due to actions (state transitions) performed by users of the system, the user may select a value from the “Revision Number” drop-down selection to display the information associated to a particular revision of an Outage Request that the user wants to view. Past revisions are read-only.</td></tr>
<tr><td>3</td><td>History button
Displayed beside the Revision Number drop-down selection box is the “History” button which when clicked, will generate a revision history report in Excel. The Revision History report will list the changes made to some certain outage request fields, presented as one revision per row in the Excel file. See the following example screen capture:
<table>
<tr><td></td><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td></tr>
<tr><td>1</td><td colspan="11">Revision Summary for Outage Request #1-00000004 rev. 7</td></tr>
<tr><td>2</td><td colspan="11">Created: 2016/04/25 16:44</td></tr>
<tr><td>3</td><td colspan="11"></td></tr>
<tr><td>4</td><td>Rev #</td><td>Revised</td><td>Created</td><td>Revised By</td><td>Priority</td><td>Outage Status</td><td>Purpose</td><td>Station</td><td>Requested Equip.</td><td>Planned Start</td><td>Planned End</td></tr>
<tr><td>5</td><td>1</td><td>2016/04/11 17:15</td><td>2016/04/11 17:15</td><td>Approver, IESO</td><td>Planned</td><td>Submitted</td><td>COM</td><td>STNA</td><td>STNA Breaker 001 IS</td><td>2016/04/18 08:00</td><td>2016/04/19 18:00</td></tr>
<tr><td>6</td><td>2</td><td>2016/04/11 17:17</td><td></td><td>Approver, IESO</td><td></td><td>Draft</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>7</td><td>3</td><td>2016/04/11 17:17</td><td></td><td>Approver, IESO</td><td></td><td></td><td></td><td></td><td></td><td></td><td>2016/04/21 18:00</td></tr>
</table>
</td></tr>
<tr><td>4</td><td>Check Conflicts button
This button, when clicked, will perform a conflict check routine for the outage request and then a message appears above the outage request form. If conflicts are identified, this will display a hyperlinked Outage Request Number/s that it is in conflict with.</td></tr>
</table>

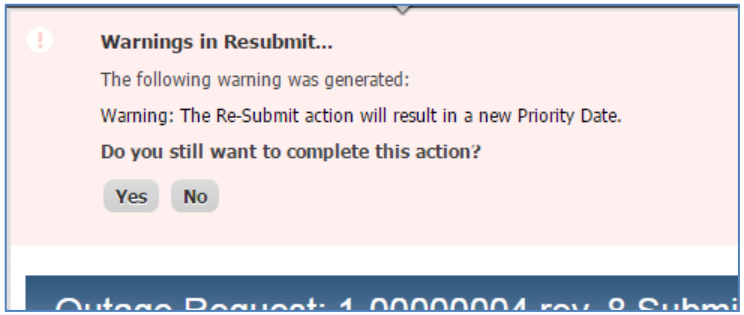
Field #	Description
	 In cases where there are conflicts, the user may click the hyperlinked Outage Request number to open it in a new browser window.
5	**Created By** This is a read-only label displaying the date/time of the original creation of the outage request as well as the name of the user that created the outage request.
6	**Market Participant** This is a read-only label displaying the name of the company that employs the user that created the outage request.
7	**Submitter Organization** This drop down selection box provides the user with a list of organizations for which they are permitted to submit an outage request on behalf of. This value defaults to the employer of the user upon creation of an outage request. Upon addition of equipment, the list will be updated to reflect organizations that own or operate any equipment added and the employer of the user's organization. Upon outage request submission, a check will be performed to validate that the equipment selected is owned by the selected organization. If there is a mismatch, a warning will be displayed, but it will not prevent submission. 
8	**Predecessor/Successor** When populated this control displays the outage request number that is related to the current outage request as a predecessor or successor (whichever the label indicates).

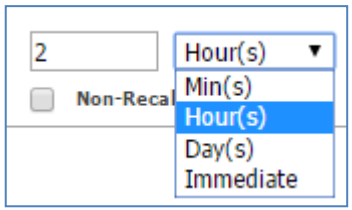
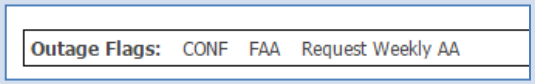
Field #	Description
	The predecessor type can be either “Finish-Start” or “Run Within”. “Finish-Start” indicates that the outage identified as the predecessor must first finish before the current outage (the successor) can be Implemented. “Run Within” indicates that the current outage must be Implemented and Completed while the outage identified as the predecessor has been Implemented but is not yet Completed. A warning message will prompt the user if a predecessor rule is being violated during Implementation or Completion of the current outage request. The user has the option to continue on or not. 
9	**Linked Outages** The Linked Outages label displays a read-only list of the numbers of any outage requests that are linked to the current outage request.
10	**Outage Status** This is a read-only label displaying the following information: • The current status of the outage request • The date/time the outage request entered the status • The name of the user that initiated the action resulting in the status. NOTE: In some cases, a user will Submit an outage request which, due to its current characteristics, will get automatically approved and the status will become ‘Adv Approved’ instead of ‘Submitted’. It is worth noting that the person listed along with the Outage Status is simply the person that initiated the original state transition action and should not be assumed to be the approver. The approver of the outage request is listed on the ‘Details’ tab in the ‘Approvals’ grid.
11	**Planned Start** The Planned Start Date is a date/time selection control in which the user may edit the date as necessary. It is a read-only label in situations where the user does not have permission to edit the date/time value. The following options can be use by the user to adjust the date:

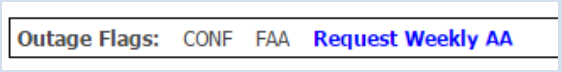
Field #	Description
	• Selecting the Date by using the calendar control. Click the calendar icon next to the Planned Start date field.  • Alternatively, user can highlight the year, month or day and type in the value. The Planned Start Time is a time selection control which uses a 24-Hour format (e.g. 1 PM is 13:00). The user may edit the time by highlighting the hour or minute and typing in the value or by using the time icon button at the bottom of the calendar control.  Clicking on the time icon button (above) brings up the time adjustment form (below)

Field #	Description
	 1 – Increment by the hour button. Clicking will increase the hour value in one hour increments. 2 – Hour selection button. Clicking will allow the user to select the hour number value. 3 – Decrement by the hour button. Clicking will decrease the hour value in one hour decrements. 4 - Increment by the minute button. Clicking will increase the minute value in one minute increments. 5 – Minute selection button. Clicking will allow the user to select the minute number value. (5 minute intervals) 6 - Decrement by the minute button. Clicking will decrease the minute value in one minute decrements. Note that editing the Planned Start Date (Summary Tab) may cause a rebuild of the Outage Period/s (Planned Start and Planned End under the Details Tab) depending on the current selected recurrence of the Outage Request. The overall Planned Start Date (Summary Tab) of the Outage Request is equal to the first Outage Period's Planned Start Date (in the Details Tab). NOTE: Also, Outage Requests that have a Recurrence type of "Noncontinuous" selected will provide the user with the capability to shift the date/times of all outage periods by the same offset amount, keeping the period duration. Any edit of the overall outage Planned Start date/time (forward or backward) will trigger the period date/time shift. Each outage period will shift its Planned Start date/time and Planned End date/time by the same amount of offset created by the edit of the overall outage Planned Start date/time. Each outage period's duration will remain the same but the period Planned Start and period Planned End date/times would all be offset in every outage period. The date shift functionality is available only until the outage request first gets implemented. Upon submisison of an Outage Request, a validation of the Planned Start Date is performed to ensure lead time aligns with IESO market rules. In the event of a validation error, the warning message below will appear and the Planned Start Date field will be highlighted.

Field #	Description
	
12	**Planned End** The Planned End Date is a date selection control in which the user may edit the date as necessary. It is a read-only label in situations where the user does not have permission to edit the date/time value. Options for editing the date/time are the same as that of the Planned Start Date field (noted above). Note that editing the Planned End Date (Summary Tab) will cause a rebuild of the Outage Period Dates (Planned Start and Planned End under the Details Tab) depending on the current selected recurrence of the Outage Request. The overall Planned End Date (Summary Tab) of the Outage Request is equal to the last Outage Period's Planned End Date (in the Details Tab).
13	**Outage Duration** Outage Duration is a calculated/editable field to display the outage duration in number of minutes, hours, or days. Edits to this field re-calculate the Planned End Date/Time. It is a read-only label in situations where edits are not allowed. Changes to the Planned Start Date/Time or Planned End Date/Time re-calculate the Outage Duration.
14	**Recurrence** Recurrence is a drop-down selection box displaying the following options which the user must select from: • Continuous • Noncontinuous • Return Evenings • Return Sat - Sun • Return Sat - Mon • Return Fri - Sun • Return Fri - Mon • Return Evenings and Weekends Note that if the Planned Start and Planned End Dates are on the same day, only Continuous and Noncontinuous will be available in the Recurrence drop-down selection. Also, in some cases, changing the Recurrence may cause a rebuild of the outage periods. Say for example, the user is creating a Noncontinuous Outage Request with three periods and is also changing the Recurrence to Continuous (an Outage with a single period); the outage request will end up with a single outage period.

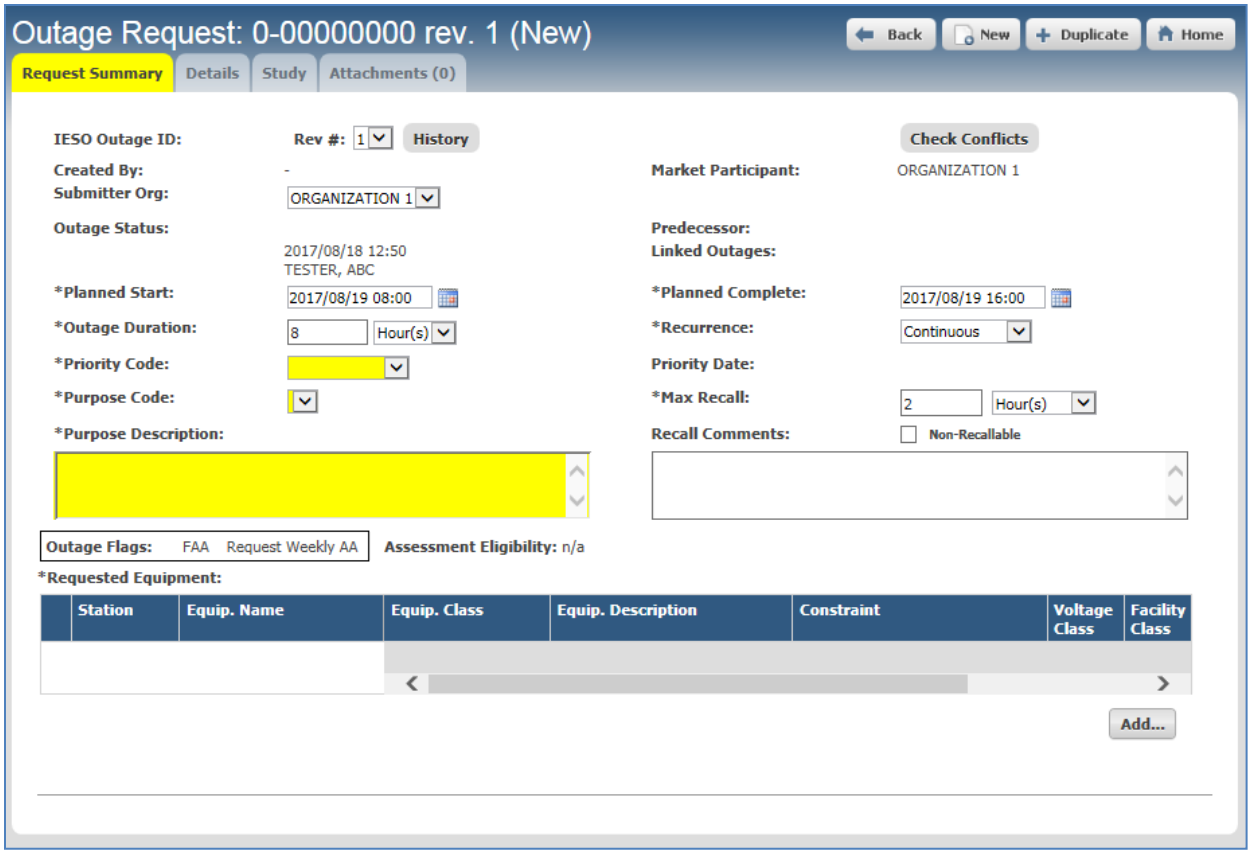
Field #	Description
15	**Priority Code** Priority Code field is a drop-down selection box displaying the following options from which the user must select: • Planned • Opportunity • Urgent • Forced • Informational
16	**Priority Date** This is a date/time selection read-only label displaying the Priority Date. This is set to the current system date/time whenever a user uses Submit, Resubmit (with some exceptions) or Implement (applicable for Outage Requests with a Priority Code of 'Forced') actions on an Outage Request. In the case where a user Resubmits an Outage Request, the user will be warned that the Resubmit action will result in a new Priority Date, and will have the option to cancel out of the action before committing to the Resubmit. 
17	**Purpose Code** The Purpose Code field is a drop-down selection box displaying available purpose codes based on the selected Priority Code. The user must choose a value from the selection as this is a required field for creating an Outage Request. Refer to Market Manual 7.3: Outage Management for a list of Priority Codes with Associated Purpose Codes and Equipment Constraints.
18	**Max Recall** Max Recall Time control includes a field to enter Recall time in number of minutes, hours, or days. A selection option named "Immediate" is also available in the drop-down control and is equivalent to a time value of zero. There is also a "Non-recallable" checkbox available on

Field #	Description
	the control which, when ticked by the user, indicates a time value of NULL for the Max Recall of the outage request. The default value for the Max Recall is 2 Hours.  NOTE: When you blank out the max recall number text field, it will automatically set the recall to non-recallable. If the user only wishes to replace the numeric value, they must first highlight the number and type the new number over it.
19	**Purpose Description** This is a multi-line text field which holds a description of the purpose of the outage request. The user must make a text entry to this field as it is a requirement for creating an outage request.
20	**Recall Comments** This is a multi-line text field which is intended to hold a description of the Recall. The user may enter a text value or leave this field blank.
21	**Outage Flags**  **Visibility**: This is a read-only label indicating how visible (i.e. PUBL, SEMI, CONF) the outage request is to Third Party Viewers: • The flag will display "PUBL" if every equipment item on the outage request has a Third Party Viewer relationship to the "All" Third Party Group. • The flag will display "SEMI" if at least one equipment item on the outage request has a Third Party Viewer relationship to any Third Party Viewer. • The flag will display "CONF" if all equipment items on the outage request have no Third Party Viewer relationships at all.

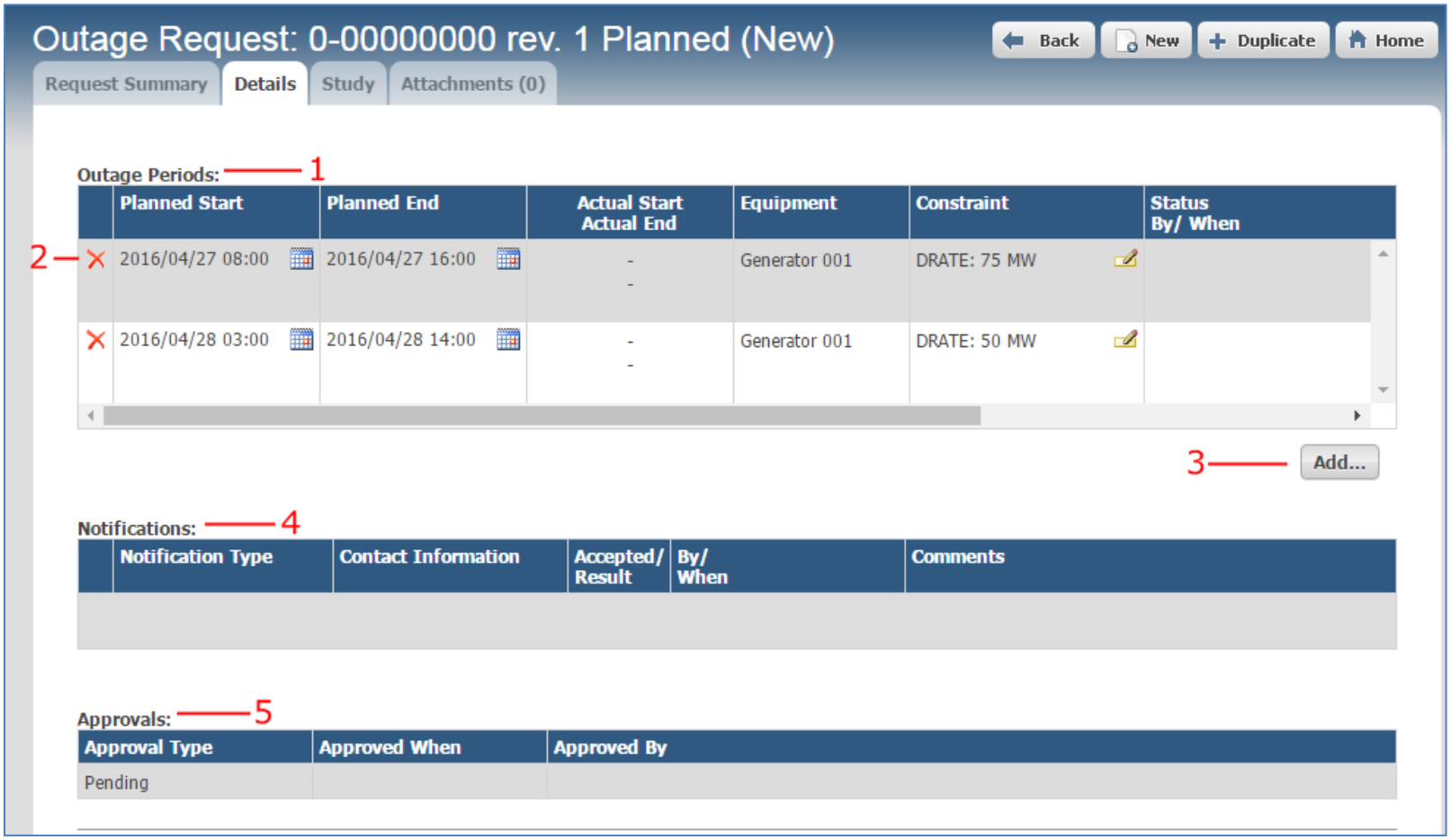
<table>
<tr><th>Field #</th><th>Description</th></tr>
<tr><td></td><td>
<table>
<tr><td>FAA</td><td>This read-only flag acts as an indicator of whether or not to automatically move the outage request into the Final Approved status on the first day that the overall outage request starts. A bold font indicates a value of ‘True’.</td></tr>
<tr><td>Request Weekly AA</td><td>Under certain outage request conditions, the user may edit this Outage Request Flag to ‘True’ (Bold Font) or ‘False’ (not Bold Font) by clicking “Request Weekly AA” label on the Outage Flags Section. A blue font indicates that the flag is editable.
  </td></tr>
</table>
</td></tr>
<tr><td>22</td><td>Requested Equipment
Outage Requests can have one or more requested equipment items listed in a grid on the form. The Requested Equipment grid displays one equipment item per row and has a small number of data columns as follows:
Delete button – used for removing an equipment item from the Requested Equipment grid.
Station – the station/s associated with the equipment item.
Equip. Name – the name of the equipment item.
Equip. Class – the type of equipment item.
Equip. Description – an editable cell to hold a user entered description.
Constraint – a mandatory and editable field to hold constraint information.
Voltage Class – the Voltage Class attribute value of the equipment item.
Facility Class - the Facility Class attribute value of the equipment item.
SOL – a comma delimited list of SOL Groups that the equipment item is associated with.</td></tr>
<tr><td>23</td><td>Assessment Eligibility
This is a read-only to identify what process an outage request has been submitted to as well as its associated process end date. Upon Submit or Re-Submit actions this will also be presented as an informational message.
This will not be provided for outages with Priority Forced, Forced Extended, Urgent, Informational, or Opportunity.</td></tr>
<tr><td>24</td><td>Telemetry Scaling Impact Question
Whenever applicable, the user may select between “Yes”, “No” or “N/A” to answer the Telemetry Scaling Impact question presented right beside the Low Impact Questions just below the Requested Equipment grid. “N/A” is selected by default.</td></tr>
</table>

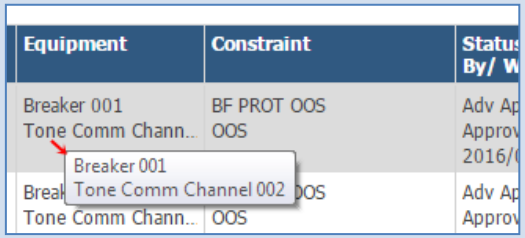
Field #	Description
25	**Low Impact Questions** Depending on the Equipment Type and/or equipment constraint in the outage request, the following low impact questions may be presented in the Outage Request form below the Requested Equipment grid. • Only a Loss of Redundancy? • Adjacent Breakers OOS? • CTs on Both Sides of the Breaker? • Does the SS Supply Transformer Cooling? • RTU or HUB Affected? When Low Impact questions are presented they are mandatory and the user must select “Yes” or “No”.

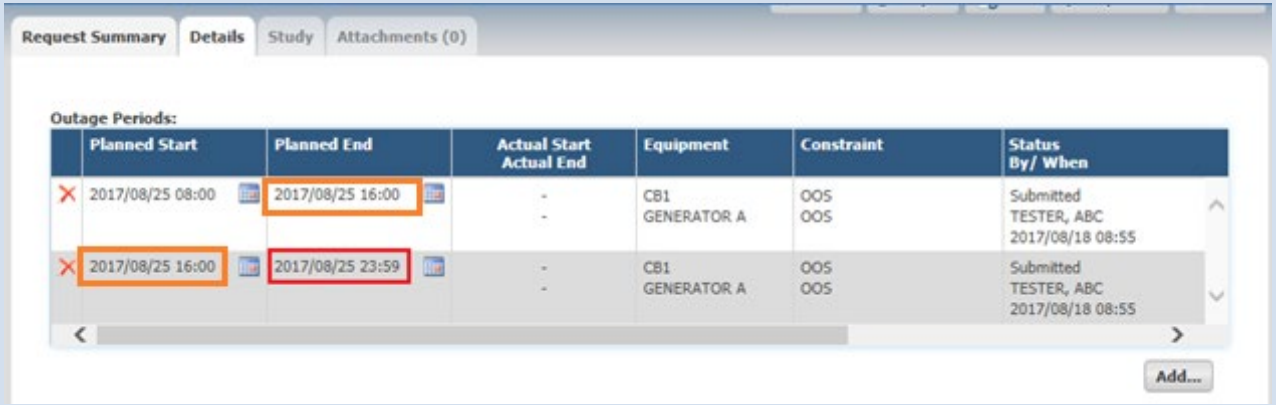
When completing the Outage Request form, all mandatory fields will be highlighted in real-time as data is entered. The user must complete their entry into all highlighted fields before submitting the outage request. If there are any fields left highlighted, an error message will present itself and specify which additional details are required.

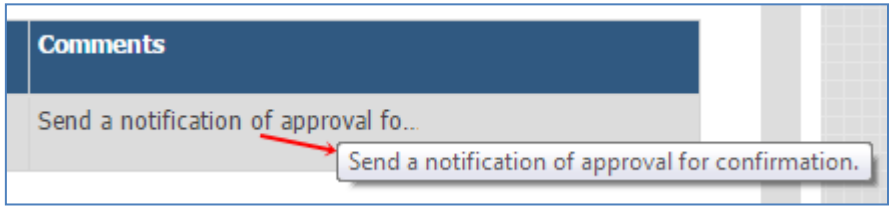


5.4.3. Outage Request Form: Details Tab

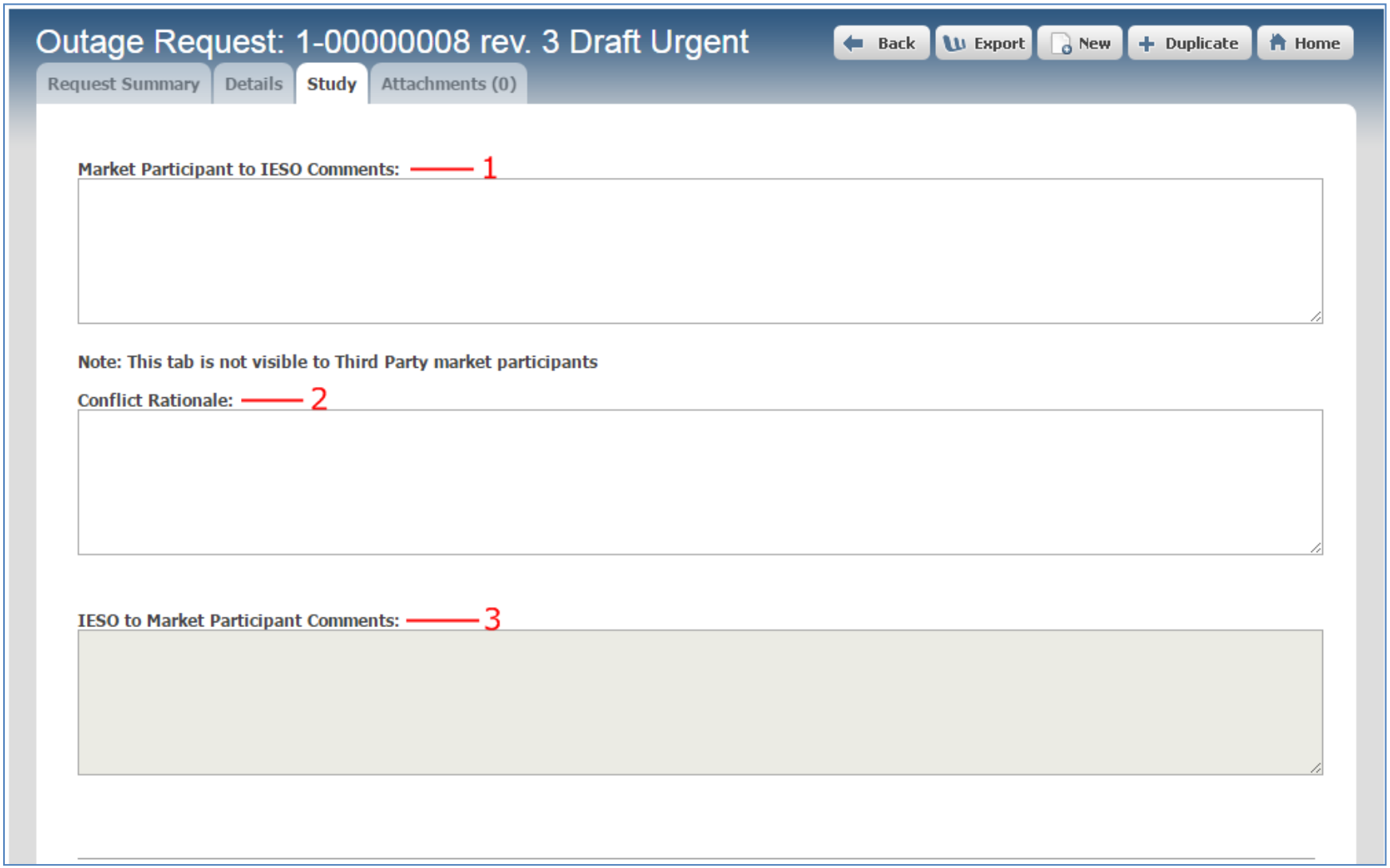


Field #	Description
1	**Outage Periods** An outage request contains one or more outage periods, each detailing the characteristics of the outage for the time frame specified by the outage period. The Outage Periods grid on the Details tab of the outage request form contains the listing of all outage periods for the outage request and includes the following data: • Delete button – used for removing an outage period from the grid. • Planned Start – The planned starting date/time for the outage period. • Planned End – The planned ending date/time for the outage period. • Actual Start – The actual starting date/time for the implementation of the outage period. • Actual End – The actual ending date/time for the completion of the outage period. • Equipment – The equipment that is included for the outage period. • Constraint – The constraint information for each equipment item during the outage period. • Status – The status of the outage period. • By/When – The user that initiated the action resulting in the status and when it occurred. • Reason Code – Holds a selected code in cases where some action (e.g. cancellation, rejection, recall etc…) was taken on the outage period. • Reason Comment – Holds a comment which may accompany a Reason Code as noted in the bullet point above. Space is limited in some of the Outage Periods grid cells. If the text in the cell is truncated from view the user can hover their mouse cursor over the text to get a tooltip view of the entire text.  NOTE: For an outage with multiple periods, the actual times cannot overlap. The actual end date/time of the first period must be equal to or earlier than the actual start date/time of the next period. See Section 5.3 for examples.
2	**X – (remove outage period)** The Remove button icon is only available for outage requests having a recurrence of “Noncontinuous”. It allows the user to remove an outage period from the set of existing outage periods.

Field #	Description
3	**Add** (outage period button) The Add button is only enabled for outage requests having a recurrence of "Noncontinuous". It allows the user to add a new outage period to the set of existing outage periods. By default, the added outage period's Planned Start will be set to the Planned End of the previous period and the Planned End will be set to 23:59:00 of the same day as its Planned Start. 
4	**Notifications** The Notifications grid is available on the Details tab of the outage request form and includes the following read-only data columns: • Notification Type – The type of notification (e.g. Approval, Telephone) • Notify – The name of the person being notified. • Contact Information – Contact information of the notified if available – for emailed notifications this would be the email address. • Accepted/Result – The results of the notification attempt (if available). • By/When – Indicates who entered the notification record and when for a telephone notification. • Comments –Notes about a non-automated notification (e.g. telephone notification). 

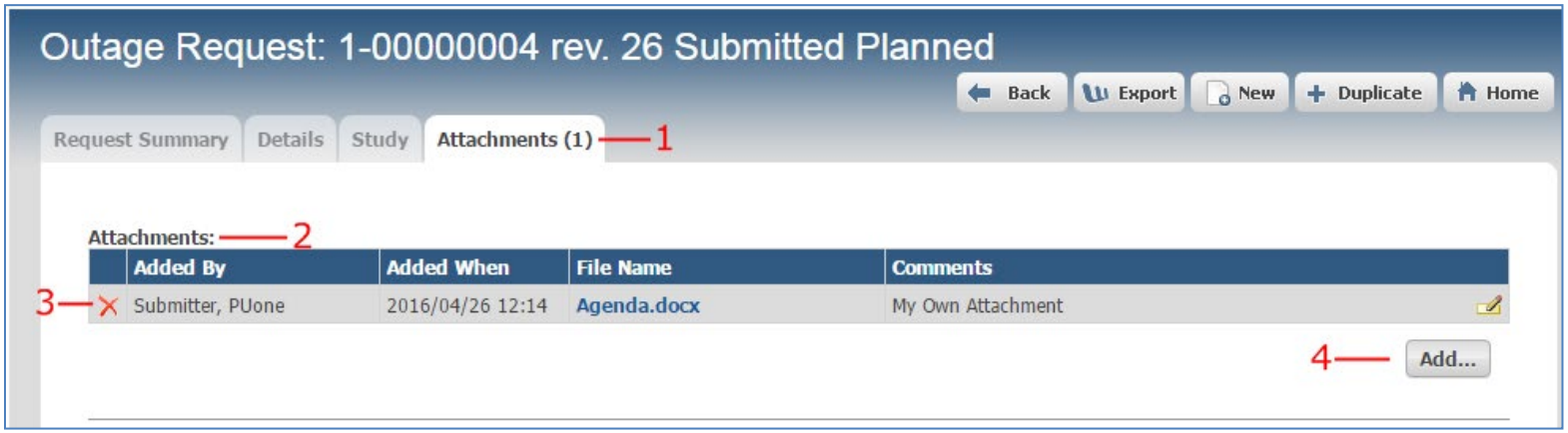
Field #	Description
	Space is limited in some of the Notifications grid cells. If the text in the cell is truncated from view, the user can hover their mouse cursor over the text to get a tooltip view of the entire text. 
5	**Approvals** The Approvals grid on the form displays three read-only columns: • Approval Type – The type of approval applied to the outage request. • Approved When – The date/time of the approval. • Approved By – The user that approved the outage request. A "Pending" indicator record will be added to the outage request approvals grid when the outage request is created. When the outage request is transitioned into the 'Adv Approved' status the indicator will update to show the advance approval type (e.g. Advance Approval, 3 Day AA, etc…), current date/time and the Name of the User who did the approval. The Final Approval information will also be displayed in the Approvals grid. **Approval Type** | **Approved When** | **Approved By** 3 Day AA | 2016/04/26 18:32 | Approver, IESO Final Approval | 2016/04/26 18:32 | Approver, IESO

5.4.4. Outage Request Form: Study tab

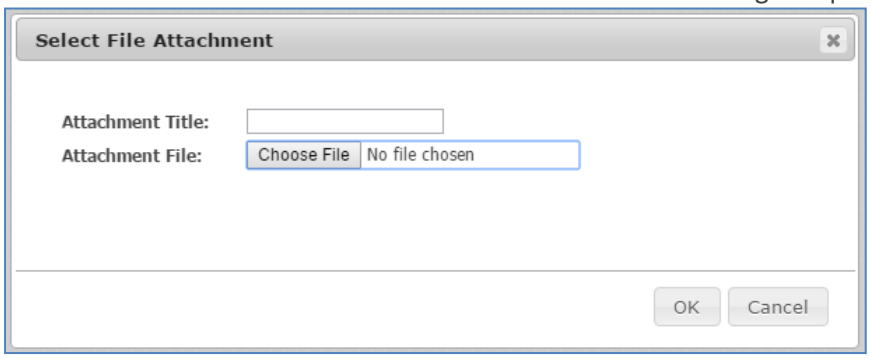


Field #	Description
1	**Market Participant to IESO Comments** This multi-line text field allows Market Participants to enter comments for IESO review.
2	**Conflict Rationale** The Conflict Rationale field is used to hold the reason for entering a conflicting outage request into the system. The user will be prompted to make a text entry to this field if the outage request they are adding or modifying creates a new conflict with other existing outages in the system. The Conflict Rationale field and the Study tab become highlighted in yellow and indicates mandatory entry to the user.  A maximum of 150 characters may be entered in this text field.
3	**IESO to Market Participant Comments** This multi-line text field allows IESO users to comments to the Market Participants to review.

5.4.5. Outage Request Form: Attachments Tab



Field #	Description
1	**Attachments Tab** The tab itself displays the number of attachments currently attached to the outage request.
2	**Attachments** The Attachments grid lists the attachments on the outage request and has the following columns: • Delete button – used for removing an attachment from the grid. • Attached By – The name of the user that added the attachment. • Attached When – The date/time that the attachment was added. • File Name – The name and file type extension of the attachment. • Comments – An editable cell to hold a short description or title for the attachment. Clicking once on the file name in this grid will download the Attachment for the user. Clicking once in the Comments cell allows the user to edit the comment or title of the attachment.

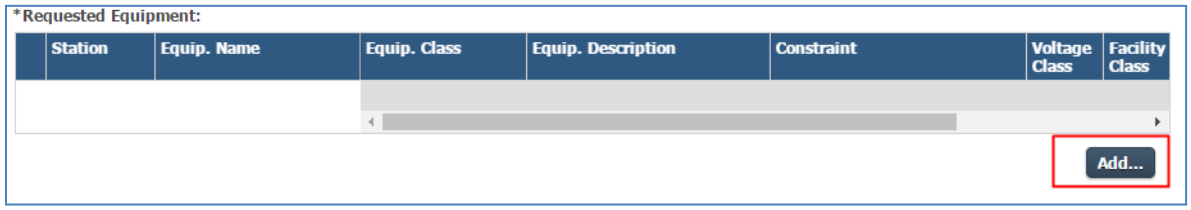
Field #	Description
	
3	**X – (remove attachment)** The Remove button icon allows the user to remove an attachment from the set of existing attachments.
4	**Add…** The Add button, when clicked, will bring up a file selection dialog box will appear where the user can enter an attachment title and select a file from their accessible network to attach to the Outage Request.  After selecting a file to attach a new row will be added in the Attachments grid with attachment details. NOTE: The size of the attachment file must adhere to the limit set for the application otherwise the user will be presented with an error message and unable to attach the file.

5.4.6. Outage Request Control Usage: Requested Equipment

As noted in an earlier section the Requested Equipment grid holds a list of equipment items present on the outage request. Users are able to add/edit/remove data on the grid.

5.4.6.1. Adding Requested Equipment

To add equipment to an Outage Request, the user must click on the “Add” button below the “Requested Equipment” grid.



A “Select Circuits/Equipment” dialog box will appear allowing the user to perform a search for equipment to be added in the outage request.

There are 3 ways to select equipment to be added to the outage request, as follows:

- Text-based search using the Equipment Label (Search tab)
- Combination of Control Center, Station and Equipment Type(Class) filter (Select Stn./Equip tab)
- Using the Equipment Group (Equip. Group tab)

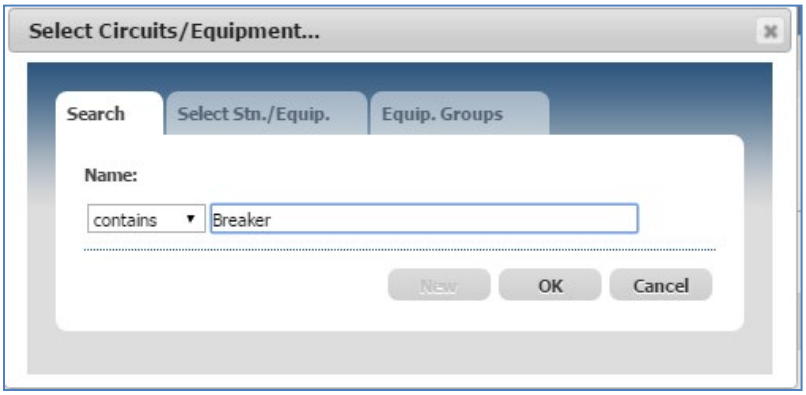
Adding Equipment via Text-based search using the Equipment Label (Search tab)

NOTE: The user must remove all filters prior to using the Search function.

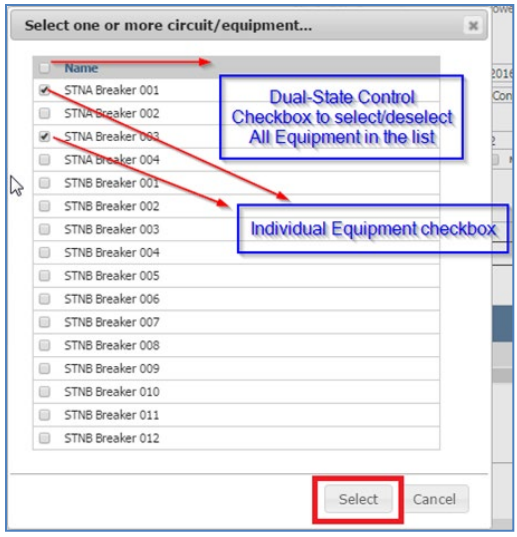
The user must indicate how to use the input text value in the query for the Equipment Label:

- wildcard (*)
- begins with
- is
- contains
- ends with

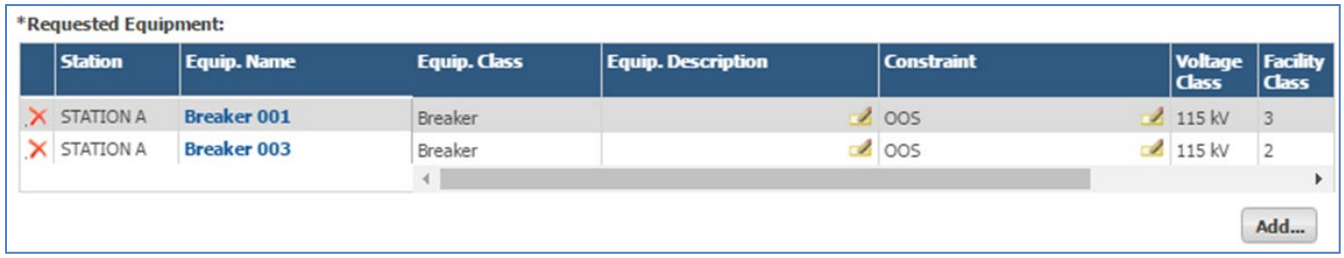
The user must input the text value to use in the query.



The user must click the “OK” button. A list of equipment matching the query will be shown in the resulting dialog box where the user can select one or more equipment items. The user can individually select equipment by ticking the checkbox beside the Equipment listing or the user can use the Dual-State control checkbox in the title bar to select/de-select all equipment in the list.

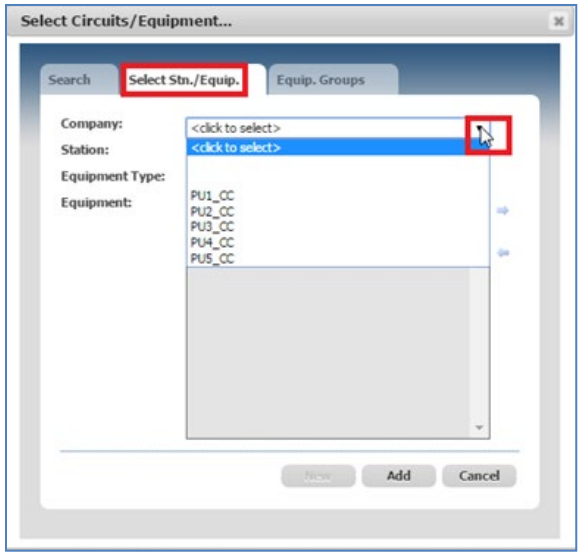


The user then must click the “Select” button and the chosen equipment will be populated in the Requested Equipment Grid.

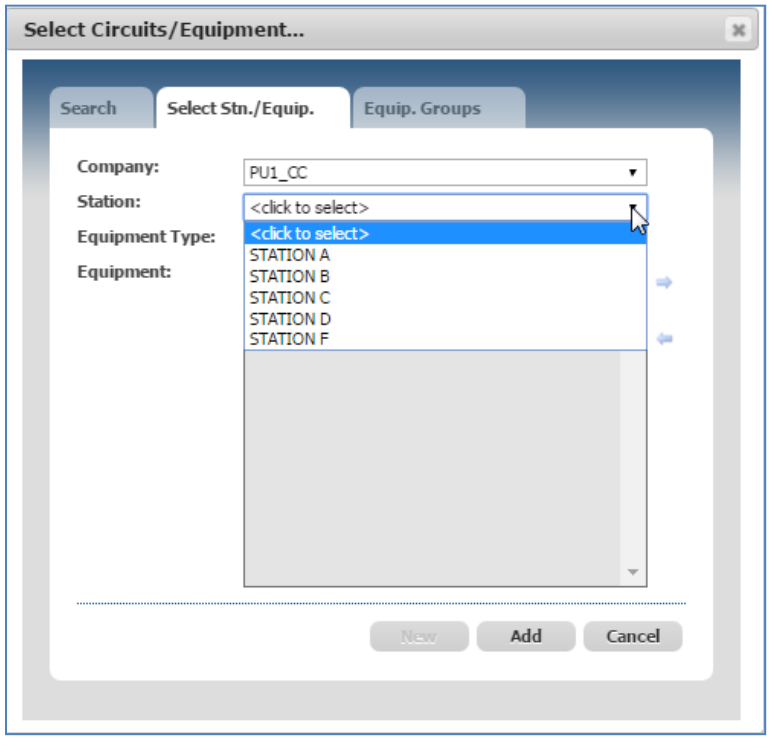


Adding Equipment via Combination of Control Center (Company), Station and Equipment Type (Class) filter (Select Stn./Equip tab)

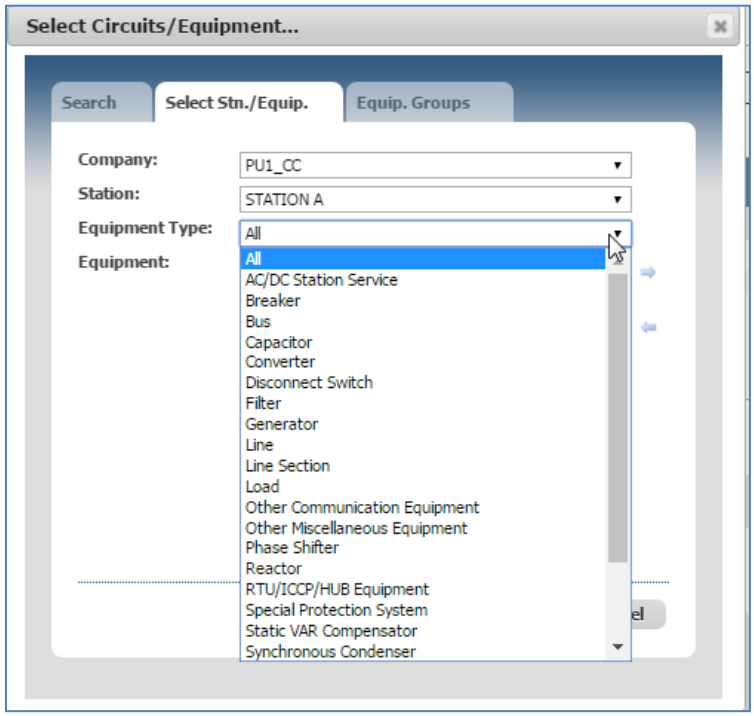
From the “Select Stn./Equip” tab, the user must select the Control Center from the drop-down selection.



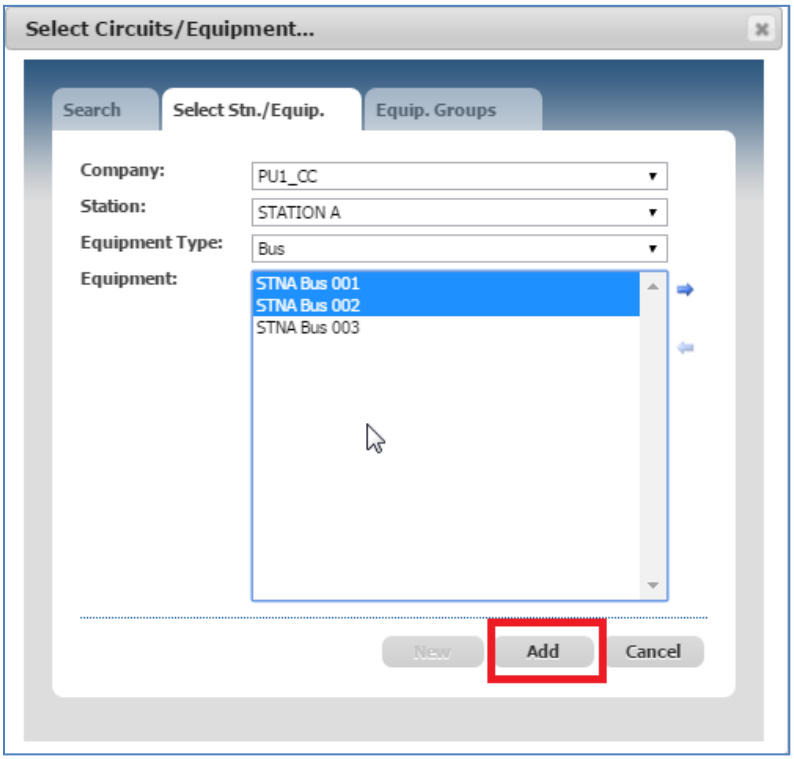
The user must select a Station from the drop-down selection.



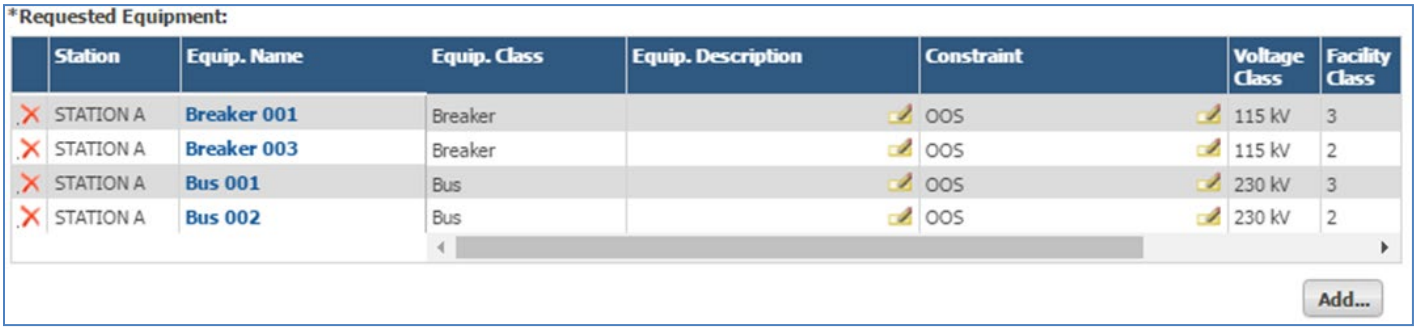
Upon selection of the Station, Equipment will be populated in the list. The user can further trim down the selection by selecting the Equipment Type (Class) from the drop-down selection.



The equipment that matches the filter will be populated in the Circuit/Equipment list.

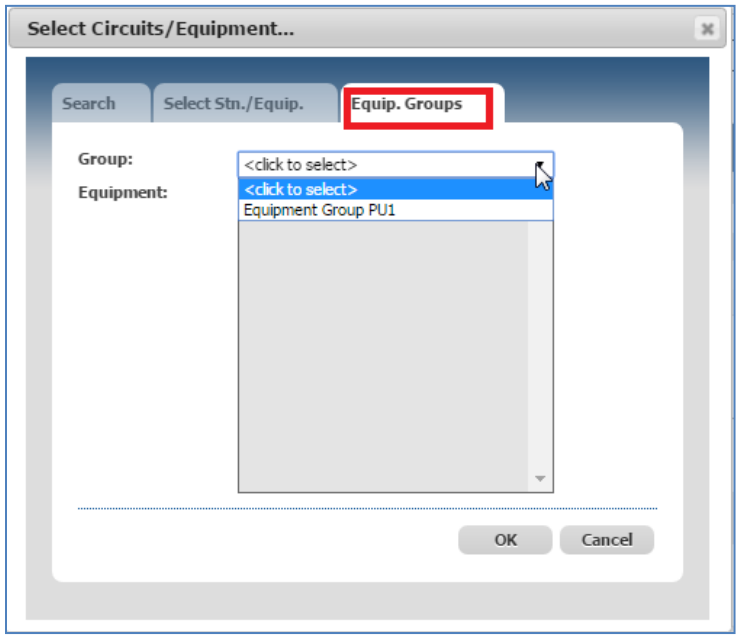


The user selects an equipment item or may use the Control and Shift Keys with mouse clicks to select multiple equipment items. The user then must click the “Add” button and the selected equipment will be populated in the Requested Equipment grid.

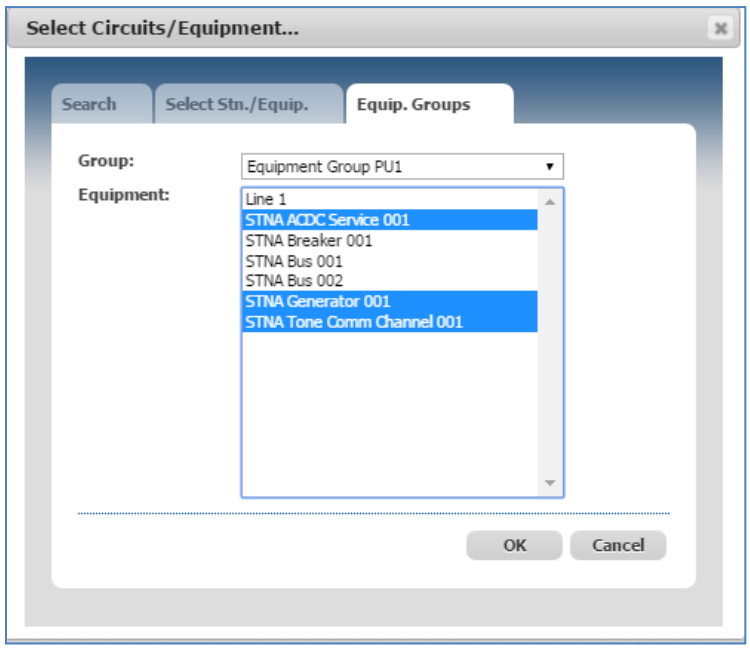


Adding Equipment using the Equipment Groups (Equip. Groups tab)

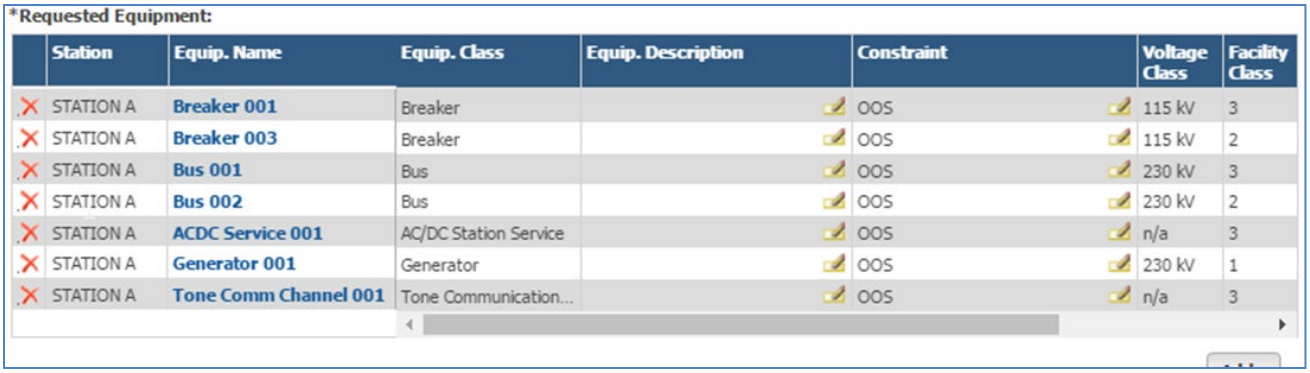
From the Equip. Groups Tab, the user must select an Equipment Group from the drop-down selection. Note that the possible values for the selection will be those Equipment Groups owned by the company of the user creating the outage request. The user must select the Equipment Group from the drop-down selection.



The list of equipment belonging to the Equipment Group selected will be populated where user can select one or more equipment items. Control and Shift Keys along with mouse clicks can be used to select multiple equipment items.



The user then must click the “Add” button and the selected equipment will be populated in the Requested Equipment Grid.

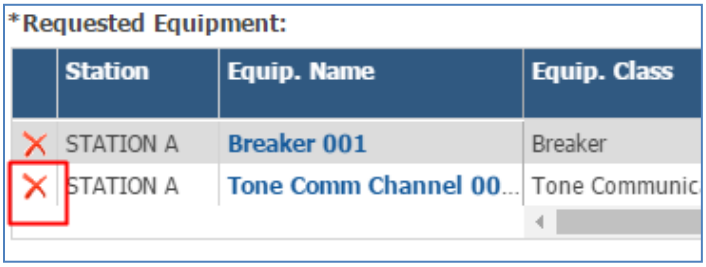


5.4.6.2. Viewing Requested Equipment

The user can view an equipment item on the Requested Equipment list by clicking once on the equipment name hyperlink. An equipment form will be displayed with information about associated station, equipment owner, equipment operator, equipment third party viewers, and equipment attribute values.

5.4.6.3. Removing Requested Equipment

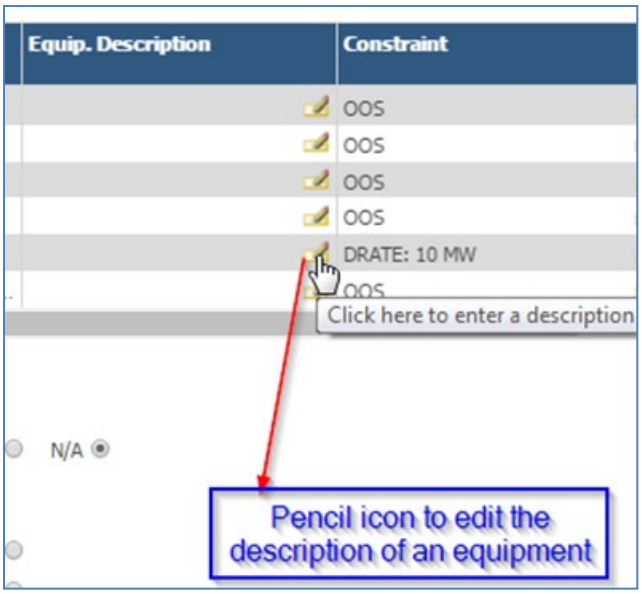
The user can remove equipment from the Requested Equipment list by clicking on the “X” icon in the first column of the corresponding row of the equipment to be deleted in the Requested Equipment grid.



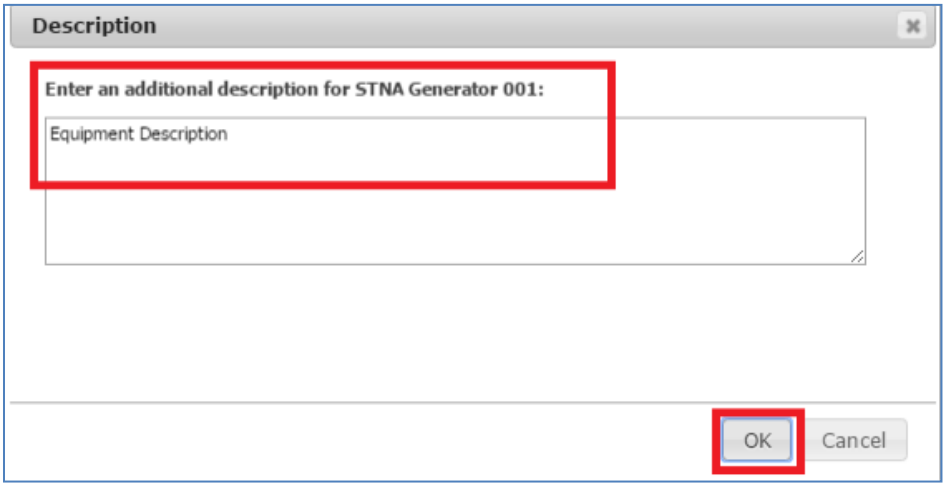
When the user clicks on the “X” icon, the selected equipment is removed from the Requested Equipment grid. The user must save the changes with one of the available state transition action buttons at the bottom of the form.

5.4.6.4. Editing Requested Equipment Description Data

Equipment Description is a free form text entry field for the user to enter information for each equipment item added in the Requested Equipment grid. This can sometimes be a required field depending on the equipment class or equipment constraint. To initiate edit mode, the user must click on the “pencil” icon on the corresponding row of the equipment to be modified under the Equipment Description column.

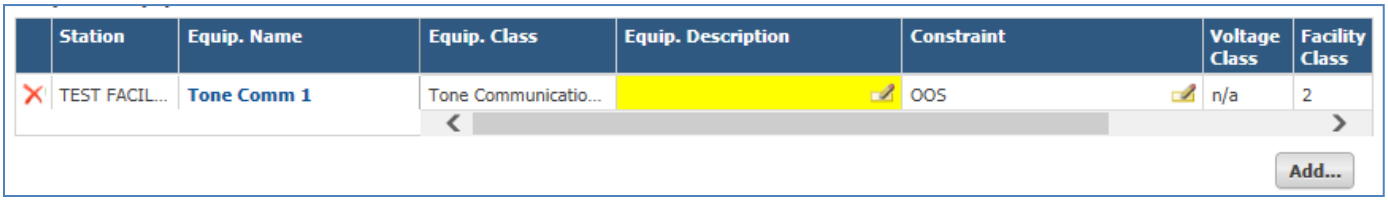


A dialog box will appear where the user may enter the Equipment Description.



The user must click the “OK” button to reflect the changes in the grid.

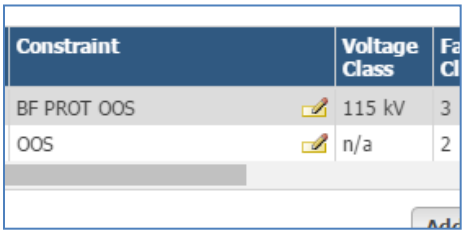
If an Equipment Description is required by nature of the Constraint Code, the field will automatically be highlighted yellow in real-time as data is entered.



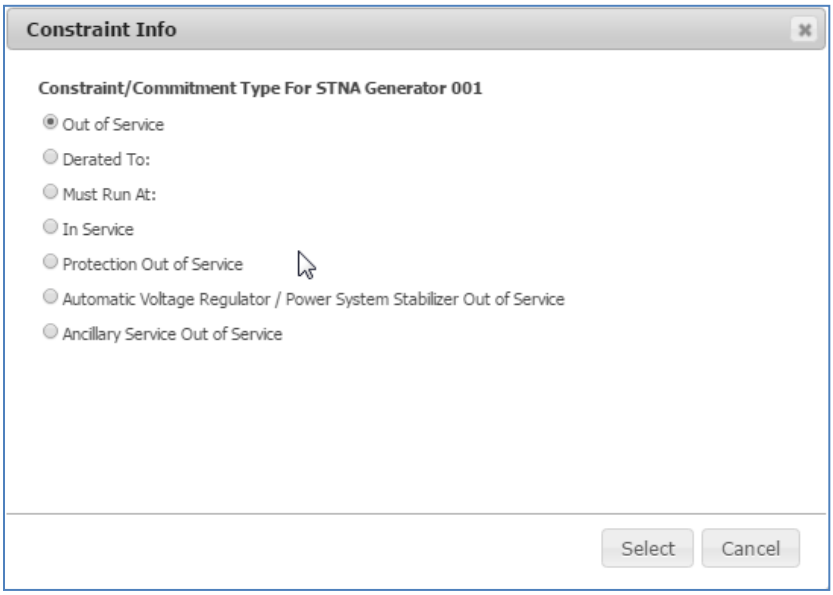
5.4.6.5. Editing Requested Equipment Constraint Data

Constraints available for selection by the user are dependent upon equipment type as well as the selected Priority Code of the Outage Request. Refer to Market Manual 7.3: Outage Management for a list of Priority Codes with Associated Purpose Codes and Equipment Constraints. When an equipment item is added, Outage Requests with Priority Code other than “Informational” will have a default constraint of “OOS”. For Outage Requests having a Priority Code of “Informational”, the default constraint is “INFO”.

To modify the constraint of a particular equipment item, the user must click the “pencil icon” under the constraint column on the corresponding row of the equipment to be modified.



A dialog box will appear where the user can select a constraint applicable to the equipment being modified. Refer to Market Manual 7.3 for a list of Equipment Classes with Associated Constraint Types.

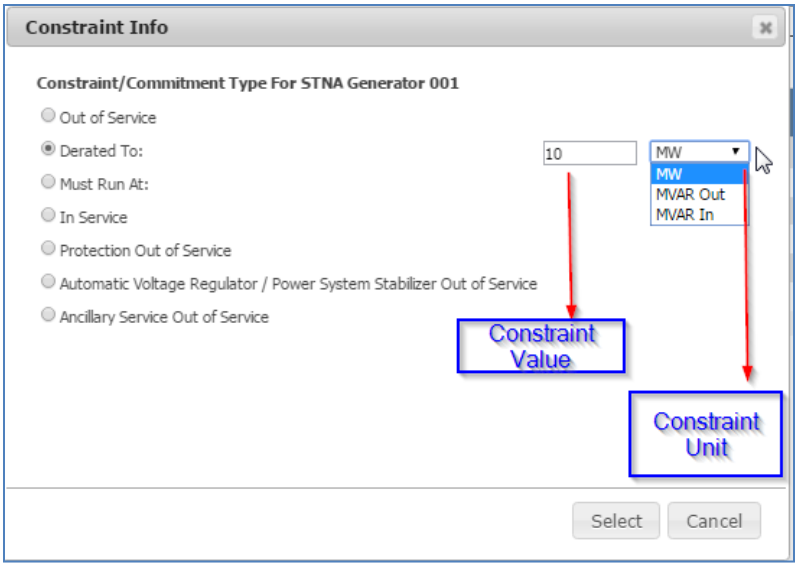


For equipment with 'Derated To' or 'Must Run At' constraints, the user must enter a constraint value and select a constraint unit from the drop-down selection. Note that the available constraint unit is also dependent on the Equipment Type (Class) of the Equipment to be modified.

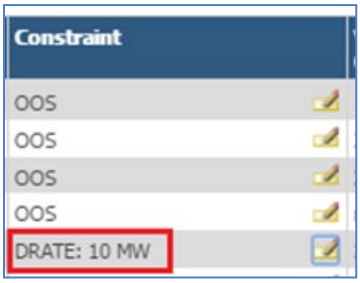
Refer to the following table for DRATE & MUSTRUN Measurement Unit/Equipment Class matrix.

Equipment Class	MW	MVAR In	MVAR Out
Reactor		x	
Capacitor			x
SVC		x	x
Converter	x	x	x
Filter		x	x
Synchronous Condenser		x	x
Generator	x	x	x
Load	x	x	x

As well, validations for the constraint value are in place such that a negative value is not allowed and that it will not allow a value greater than the maximum level noted on the relevant equipment attribute (Rated MW, Rated MVAR In, Rated MVAR Out).



The user must then click the “Select” button and the selected constraint for the equipment being modified will be reflected in the Requested Equipment grid. If the user clicks the “Cancel” button, the action of modifying the constraint will be cancelled.

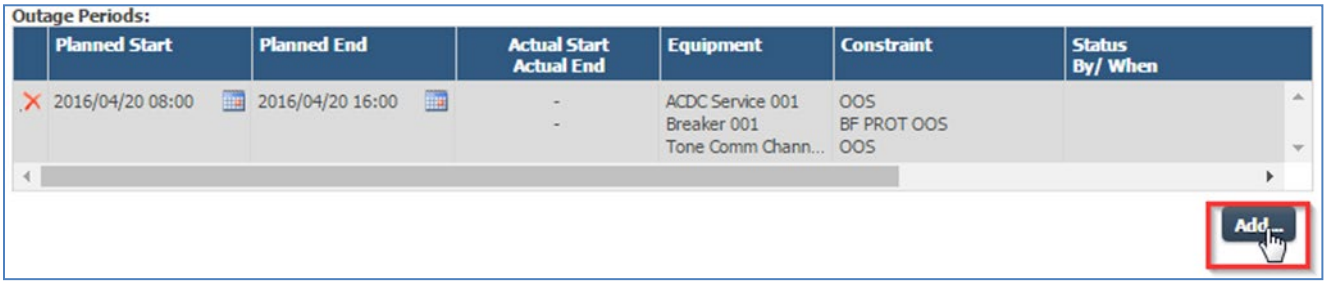


5.4.7. Outage Request Control Usage: Outage Periods

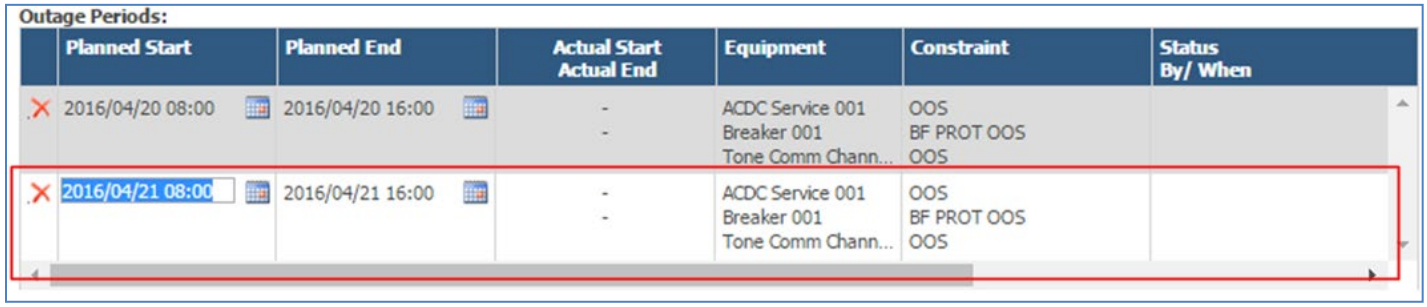
As noted in an earlier section, Outage Requests with a recurrence of “Noncontinuous” can have outage periods added/edited/removed manually.

5.4.7.1. Adding Outage Periods

For Outage Requests with a recurrence of “Noncontinuous”, outage periods can be added manually. In the Details Tab, the user must click on the ‘Add’ button just below the Outage Periods grid, on the right side.



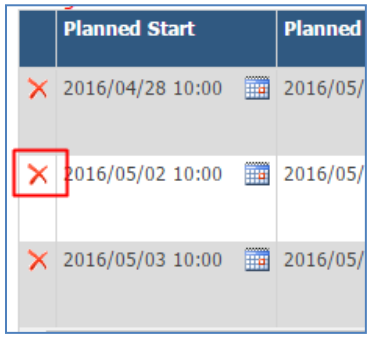
A new Outage Period will be created after any others already existing on the outage request. The user can repeat the steps to add more outage periods.



Note that adding an outage period will cause the overall outage request Planned End Date/Time on the Summary Tab to change. The overall Planned Start Date/Time (Summary Tab) of the Outage Request is equal to the first Outage Period's Planned Start Date/Time (in the Details Tab). Likewise, the overall Planned End Date/Time (Summary Tab) of the Outage Request is equal to the last Outage Period's Planned End Date/Time (in the Details Tab).

5.4.7.2. Removing Outage Periods

For Outage Request with a recurrence of "Noncontinuous", outage periods can also be removed. In the Details tab, the user must click on the "X" icon in the first column on the row of the outage period to be deleted in the Outage Periods grid.

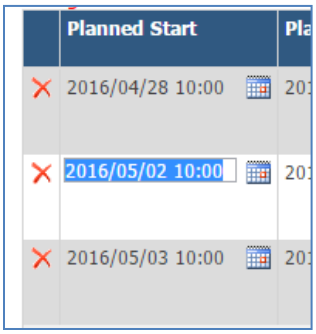


Note that removing an Outage Period will cause the overall outage Planned Start Date/Time and/or Planned End Date/Time under the Summary Tab to change. The overall Planned Start Date/Time (Summary Tab) of the Outage Request is equal to the first Outage Period's Planned Start Date/Time (in the Details Tab). Likewise, the overall Planned End Date/Time (Summary Tab) of the Outage Request is equal to the last Outage Period's Planned End Date/Time (in the Details Tab).

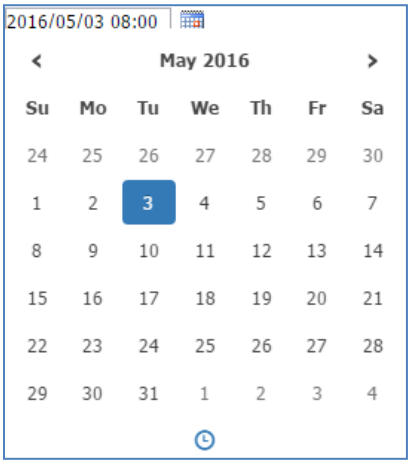
5.4.7.3. Edit Outage Period Planned Start Date and Time

For Outage Requests with a recurrence of “Noncontinuous”, the user can have the ability to modify Planned Start Date and Time of a period. The following options can be used by the user to adjust the date/time value under the Details Tab:

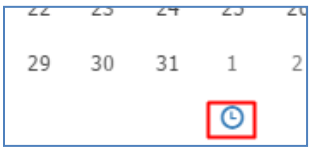
- The user can double click the Planned Start column of the Outage Period row and type in the new desired value.



- Alternatively, instead of typing the Date and Time, the user can open up the calendar control by clicking the calendar icon. To edit the date, the user can select the date from the Calendar.

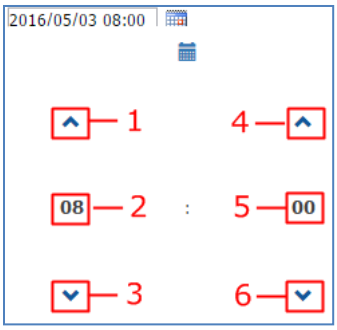


The Planned Start Time is a time selection control which uses a 24-Hour format (e.g. 1 PM is 13:00). The



user may edit the time by highlighting the hour or minute and typing in the value or by using the time icon button at the bottom of the calendar control.

Clicking on the time icon button (above) brings up the time adjustment form (below)



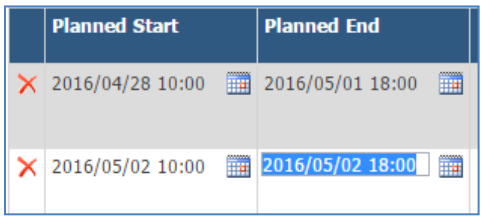
1 – Increment by the hour button. Clicking will increase the hour value in one hour increments.
2 – Hour selection button. Clicking will allow the user to select the hour number value.
3 – Decrement by the hour button. Clicking will decrease the hour value in one hour decrements.
4 - Increment by the minute button. Clicking will increase the minute value in one minute increments.
5 – Minute selection button. Clicking will allow the user to select the minute number value. (5 minute intervals)
6 - Decrement by the minute button. Clicking will decrease the minute value in one minute decrements.

Note that editing the Planned Start Date (Details Tab) of the **first** outage period may cause an update of the overall Outage Requests Planned Start date on the Details Tab depending on the current selected recurrence of the Outage Request. The overall Planned Start Date (Summary Tab) of the Outage Request is equal to the first Outage Period's Planned Start Date (in the Details Tab).

5.4.7.4. Editing the Outage Period Planned End Date and Time

For Outage Requests with a recurrence of "Noncontinuous", the user can have the ability to modify the Planned End Date and Time of an outage period. The following options can be use by the user to adjust the outage period date/time value on the Details Tab:

- The user can double click the Planned End column of the Outage Period row and type in the new desired value.

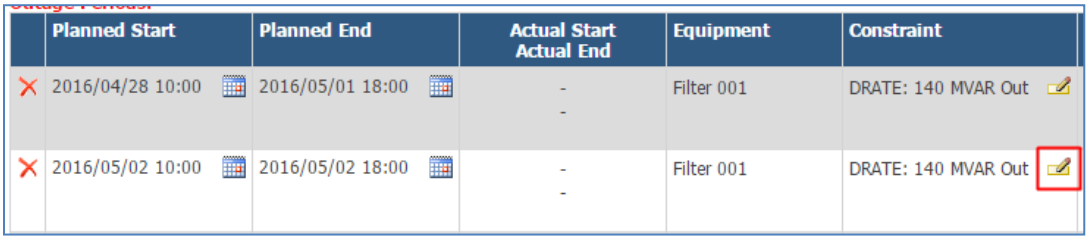


- Alternatively, instead of typing the Date and Time, the user can open up the calendar control by clicking the calendar icon. To edit the date, the user can select the date from the Calendar. (See the calendar usage explanation above in the Planned Start section.)

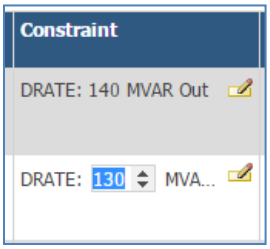
Note that editing the Planned End Date/Time of the **last** outage period of the Outage Request will cause the overall Planned End Date/Time of the Outage Request to change. The overall Planned End Date/Time (Summary Tab) of the Outage Request is equal to the last Outage Period's Planned End Date/Time (in the Details Tab).

5.4.7.5. Editing the Outage Period Constraint Value

Under the Details tab, the Derate or Must Run constraint value is defaulted to the value set in the Requested Equipment entry on the Request Summary tab. However, for Outage Requests with a recurrence of "Noncontinuous", the user has the ability to modify the constraint value for a specific outage period.



To do this, the user must click the pencil icon in the Constraint column for the equipment of the Outage Period. The constraint value for the selected outage period and equipment will be highlighted where the user can either type in the value in the text field or make use of the scroll buttons to move the constraint value up or down.



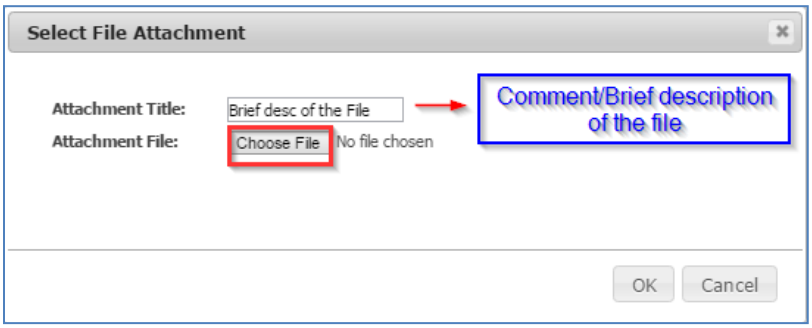
Note that validations for the constraint value are in place when the Outage Request is submitted/saved such that a negative value is not allowed and that it will not allow a value greater than the maximum level noted on the relevant equipment attribute (Rated MW, Rated MVAR In, Rated MVAR Out).

5.4.8. Outage Request Control Usage: Attachments

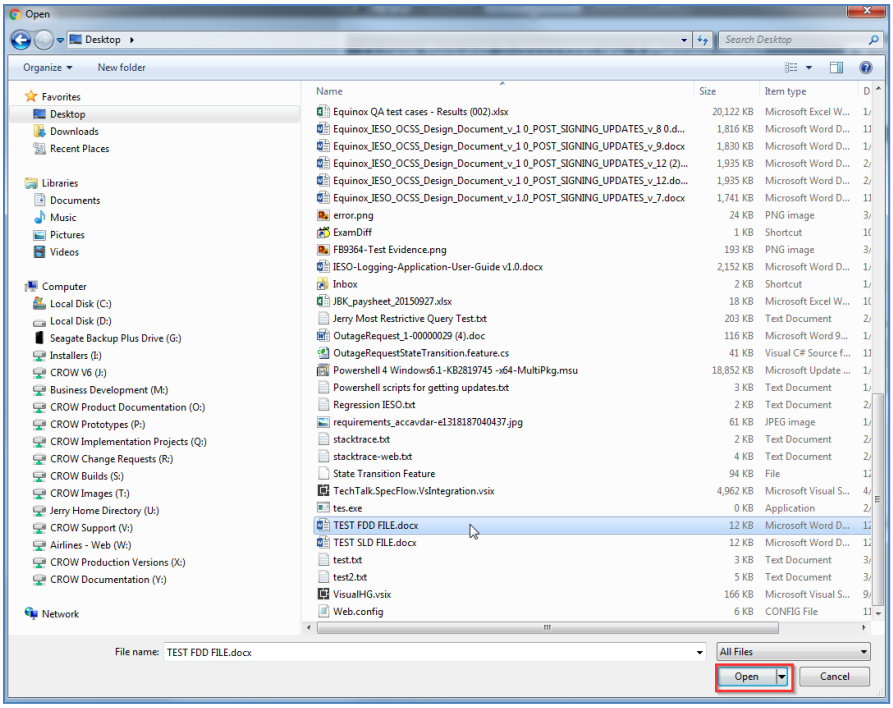
5.4.8.1. Attaching a File to an Outage Request

On the Attachments tab, a user can attach files of valid file types and size limits. The user clicks on the “Add” button just below the Attachments grid on the right side.

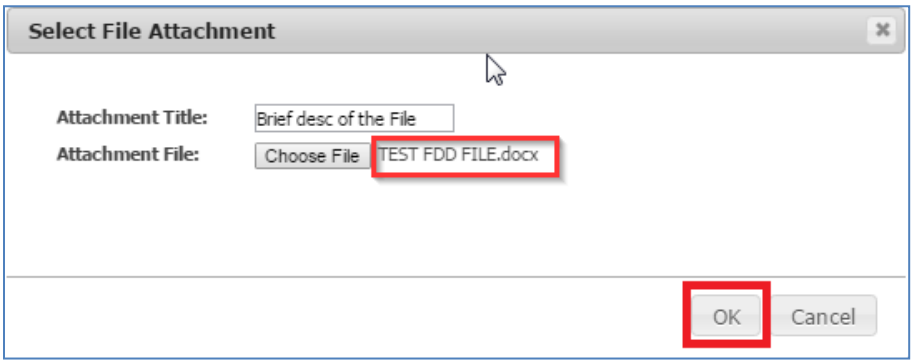
A dialog box will appear where the user may enter a title/comment for the attachment. Note that initially, the text “No file chosen” beside the “Choose File” button indicates that an attachment file has not yet been selected. The user must click on the “Choose File” button.



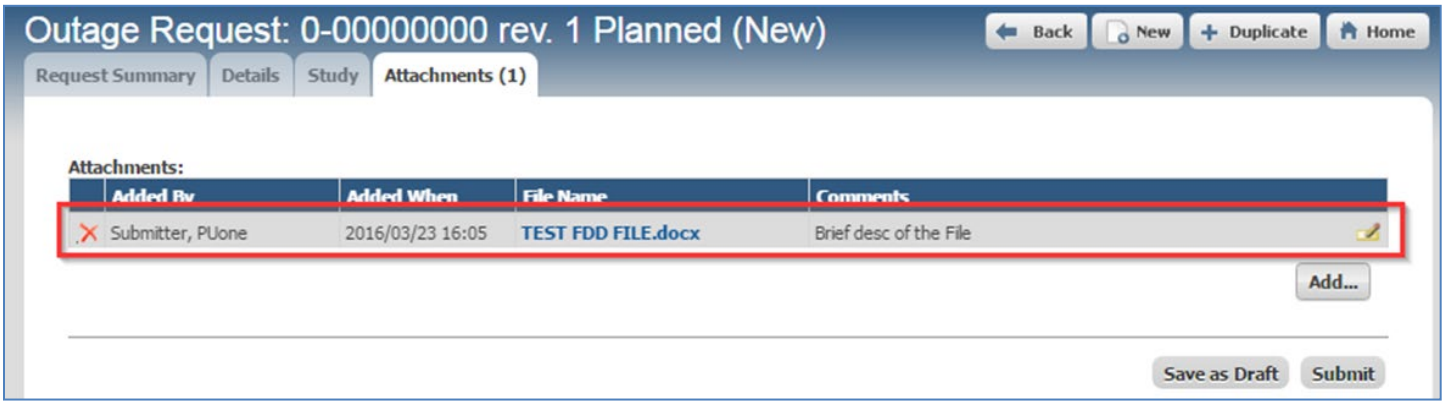
A Windows file selection dialog box will appear where the user can select a file from their accessible network to attach to the Outage Request.



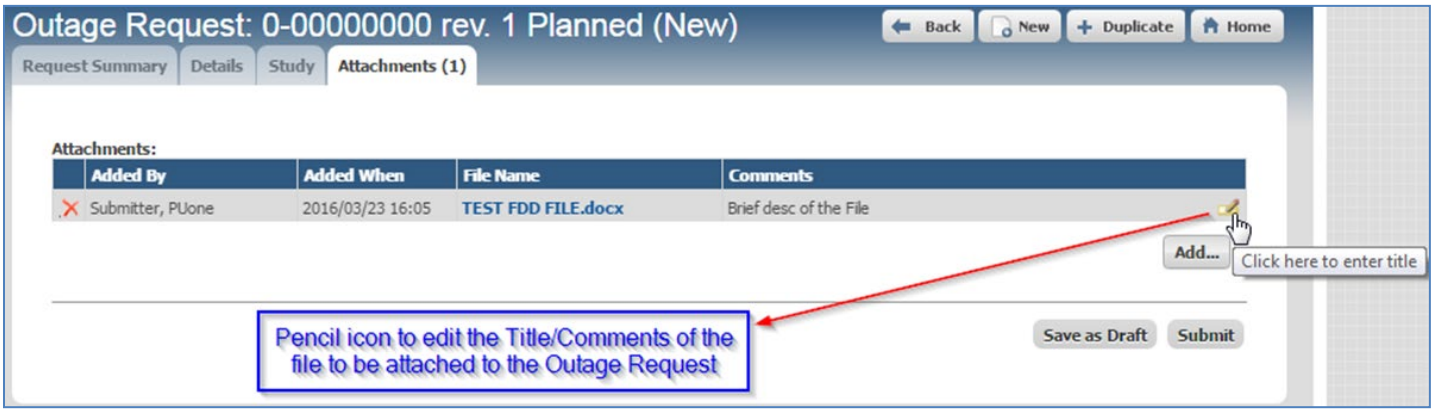
The user selects the file and clicks the “Open” button or simply double clicks the file. The file name of the selected file will be displayed in the previous dialog box (“Select File Attachment”) next to the “Choose File” button indicating that the file is ready to be attached to the Outage Request.



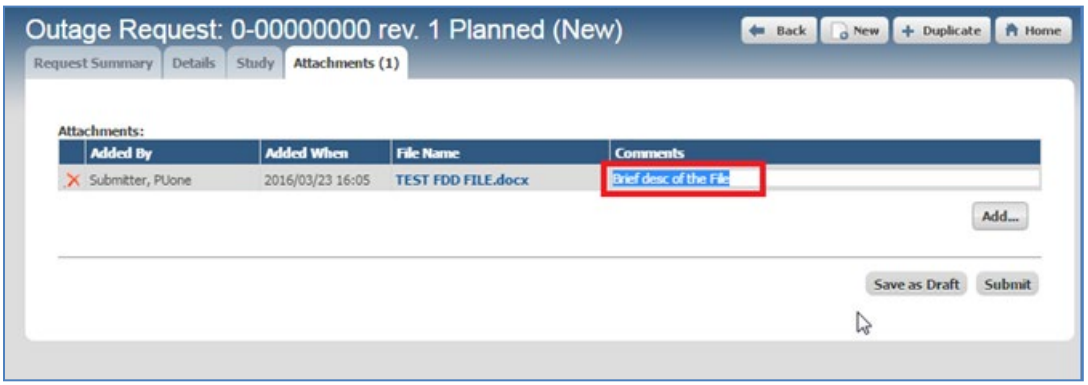
The user must click the “OK” button to proceed. A new row will be added in the Attachments grid which shows the user who attached the file, the date and time when the file was attached, the file name of the document to be attached and the Title/Comments.



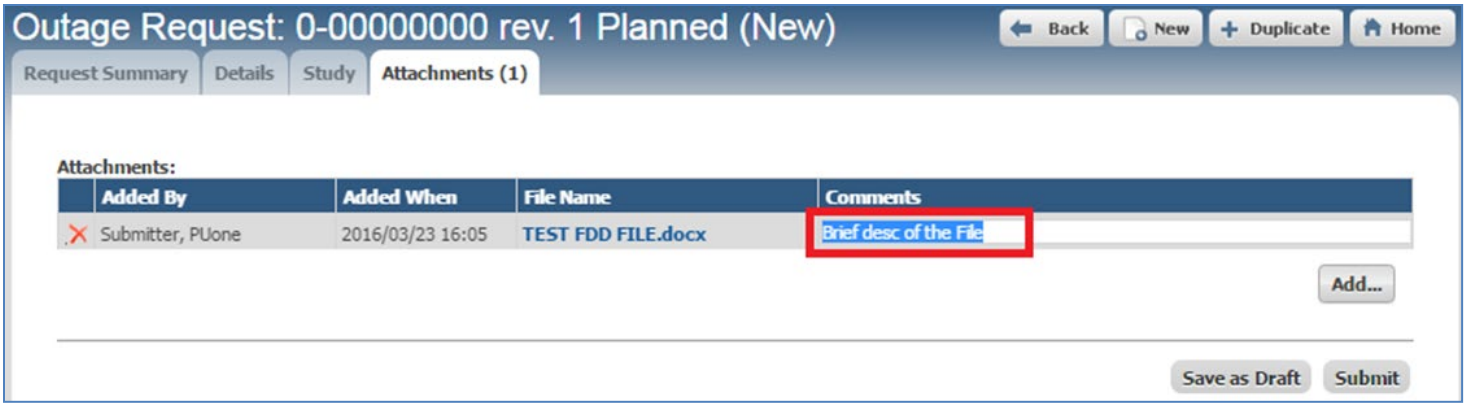
The user may go into edit mode for the Title/Comments of the file by clicking on the “Pencil” icon in the Comments column of the row holding the file.



The Comments field gets highlighted after the click action.



The user may type in the new Title/Comments of the file and must hit the “Enter” or “Tab” key to leave edit mode for the Title/Comments cell.



5.4.8.2. Removing an Attachment from an Outage Request

Under the Attachments tab, user can remove an attached file from an Outage Request. To do so the user must click on the "X" icon in the first column of the row of the file attachment.

When the user clicks on the "X" icon, the file attachment is removed from the Attachments grid.

5.4.9. Outage Request Field Access

The various fields present on the outage request are presented as either editable or read-only based on the current user's role permissions and the current state of the outage request.

5.4.10. Outage Request Significant Field Edits and the Priority Date

A Priority Date date/time value is tracked at the outage request level. The Priority Date will be automatically set to the current date/time anytime a significant edit is made on the outage request that is beyond the outage status of Draft.

5.4.10.1. Rule Exception for Outage Requests in the "At Risk" status

An outage request currently in the "At Risk" status and having its Planned Start date modified in a significant manner will move to the "Submitted" status, and will maintain its Priority Date if all of the following are true:

- The Planned Start date is currently within the first 3 months of the Quarterly coverage period that corresponds to the current Quarterly study period (or, if there is no current quarterly study period, the quarterly coverage period that corresponds to the most recent quarterly study period that has passed).
- AND the Planned Start is changed to be ≥ 00:00:00 of the first day of the quarterly coverage period that corresponds to the next quarterly study period.
- AND the date edit is made prior to the start of the next quarterly study period.

5.4.10.2. Rule Exception for Outage Requests in the "Negotiate" status

The Priority Date will be maintained if the outage request is in the "Negotiate" status and the "Commit" action is used to save any edit (significant or insignificant).

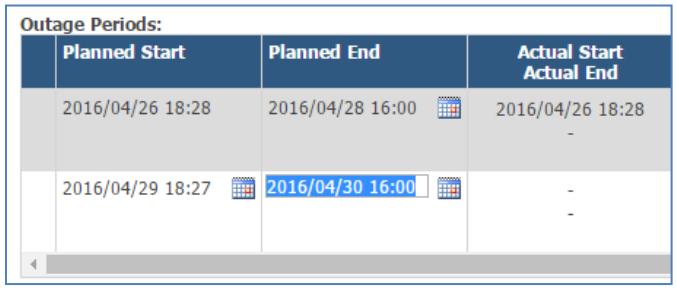
Transitions from "Negotiate" upon "Commit" action:

- If a significant change is not made (as per Market Manual 7.3 Sec 2.2.1), then the outage goes into the previous state;
- If a significant change is made (as per Market Manual 7.3 Sec 2.2.1), and the previous status was Advanced Approved then the outage goes into "Study" state;
- If the Planned Start is changed to be outside the current study period, and the previous status was "Study":
    - If the outage is Planned and there is no lead time rule violation, then the outage goes into Submitted; OR
    - If the outage is Planned and there is a lead-time rule violation, then the outage goes into "Study" state; OR
    - If the outage is not Planned, then the outage goes into "Study" state.

From the "Negotiate" state, users have the ability to cancel an outage request.

5.4.11. Extending an Implemented Outage Request

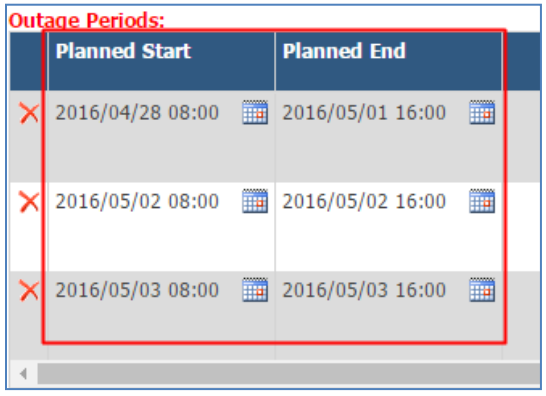
Outage Requests in the "Implemented" status and having a Priority Code of "Forced" or "Urgent", will allow an edit to the Planned End date (i.e. edit the final outage period's Planned End date to extend the period) to extend the outage duration. The Planned End date may also be moved back but cannot be put into the past.



Outage Requests in the "Implemented" status and having a Priority Code of "Planned", "Informational" or "Opportunity" will allow an edit to the Planned End date to extend the outage duration. When the outage request level Planned End date extension occurs (i.e. when the final outage period's Planned End date is extended), the outage Priority Code will change to indicate 'Forced Extended'. The Planned End date may also be moved back but cannot be put into the past.

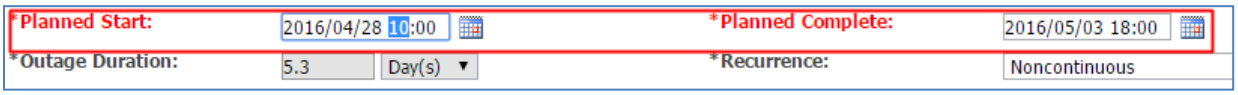
5.4.12. Outage Period Date Shift

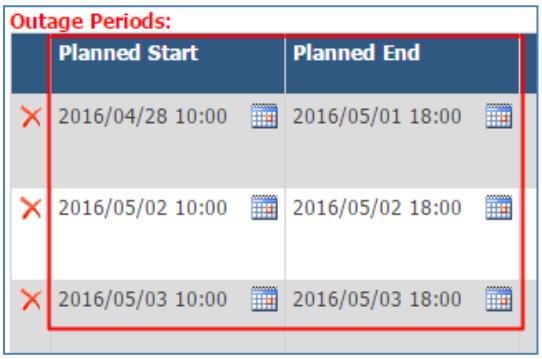
Outage requests that have a Recurrence type of "Noncontinuous" provide the user with the capability to shift the date/times of all outage periods by the same offset amount, keeping the period duration. The date shift functionality is available only until the outage request first gets Implemented.



Any edit the user makes to the overall outage Planned Start date/time on the Summary tab (forward or backward) will trigger the period date/time shift.

Each outage period will shift its Planned Start date/time and Planned End date/time by the same amount of offset created by the edit of the overall outage Planned Start date/time. Each outage period's duration will remain the same but the outage period Planned Start and period Planned End date/times will all be offset in every outage period.



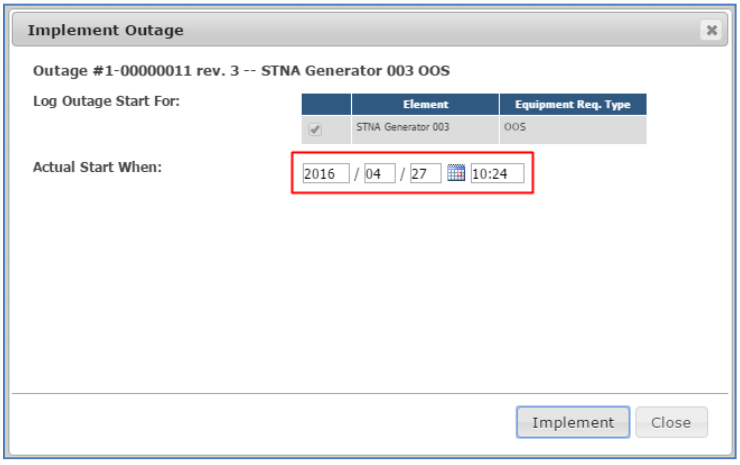


5.4.13. Outage Request Action Dialogs

For some state transition actions extra information is required as input from the user. In these cases, CROW will present the user with a dialog box upon initiating the action.

5.4.13.1. Implement Action

A dialog box is presented to allow the edit of the Actual Start date/time value for the outage period being Implemented (NOTE: only one outage period may be Implemented at any given time). The default Actual Start value is the current date/time.



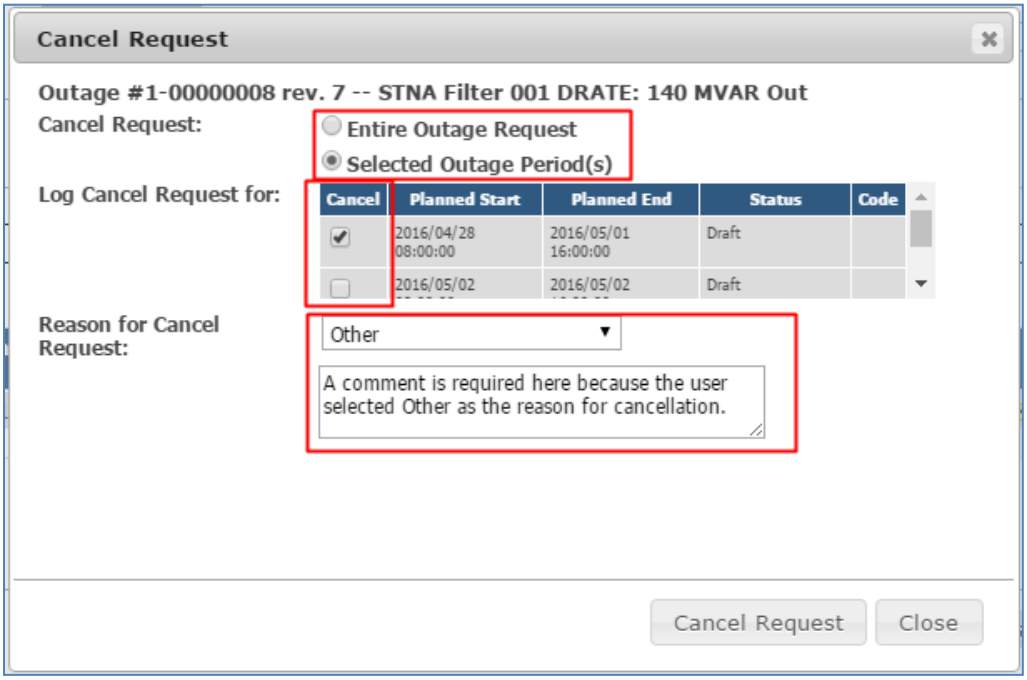
After editing the Actual Start When date/time value the user can either finish the Implement action by clicking the "Implement" button or abort the action by clicking the "Close" button. The outage period that the user has implemented will show its outage period status as "Implemented".

5.4.13.2. Cancel Action

A dialog box is presented to allow the user to choose to either cancel the entire outage request or cancel only some select outage periods. Any outage periods that are available for cancellation are listed in a grid on the dialog for the user to select. The user must also select a reason for the cancellation from a drop down list, and if the selected reason is “Other” the user must enter a text description of the reason.

The two options to Cancel:

- Entire Outage – all outage periods that are not in an end state will become Cancelled. All affected outage periods will display the cancel code and cancel comment if one is available.
- Selected Outage Periods - the selected outage period/s will become Cancelled. These outage period/s will display the reason for cancellation code and comment if one is available. There is no effect on any other outage periods.



After selecting a reason for cancellation and editing the date/time value the user can either finish the Cancel action by clicking the “Cancel Request” button or abort the action by clicking the “Close” button.

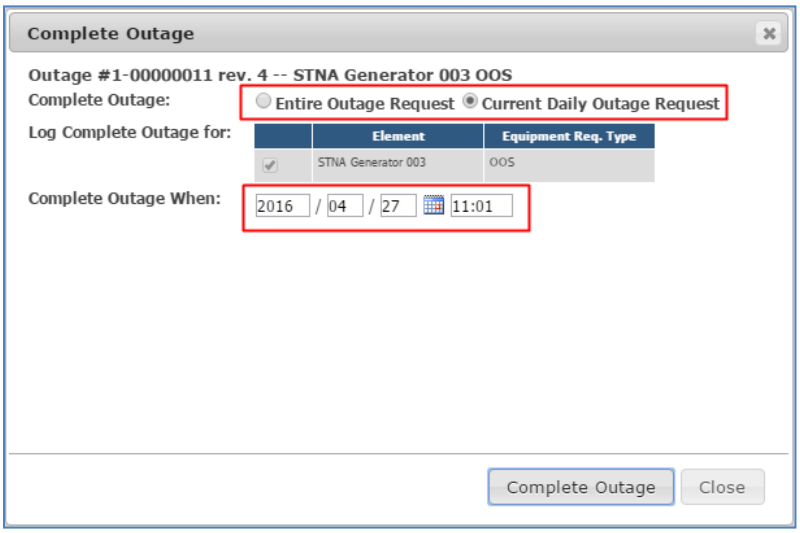
5.4.13.3. Complete Outage Action

A dialog box is presented to allow the edit of the Actual End Date/Time value for outage period Completion. The default value is the current date/time.

The user may select one of two options to Complete:

- Entire Outage – the currently Implemented outage period will become Completed. Any other outage periods that remain after the completed outage period become Cancelled.

- Current Daily Outage - the currently Implemented outage period will become Completed. This has no effect on any other outage periods.



After selecting a completion type and editing the date/time value the user can either finish the Complete action by clicking the “Complete Outage” button or abort the action by clicking the “Cancel” button.

5.4.14. Outage Request Duplication

The outage request duplicate feature is available to users as a button near the top-right of the outage request form.

The outage request duplicate feature copies the following data fields from the source to the new outage request:

- The collection of Requested Equipment
- The Requested Equipment Constraint type, Constraint value
- Planned Start (overall and period level)
- Planned End (overall and period level)
- Profiles (with the exception of Actual Start, Actual End, Status, Reason Code, and Reason Description)
- Recurrence
- Duration
- Max Recall Time
- Max Recall Unit
- Requested Equipment Description column

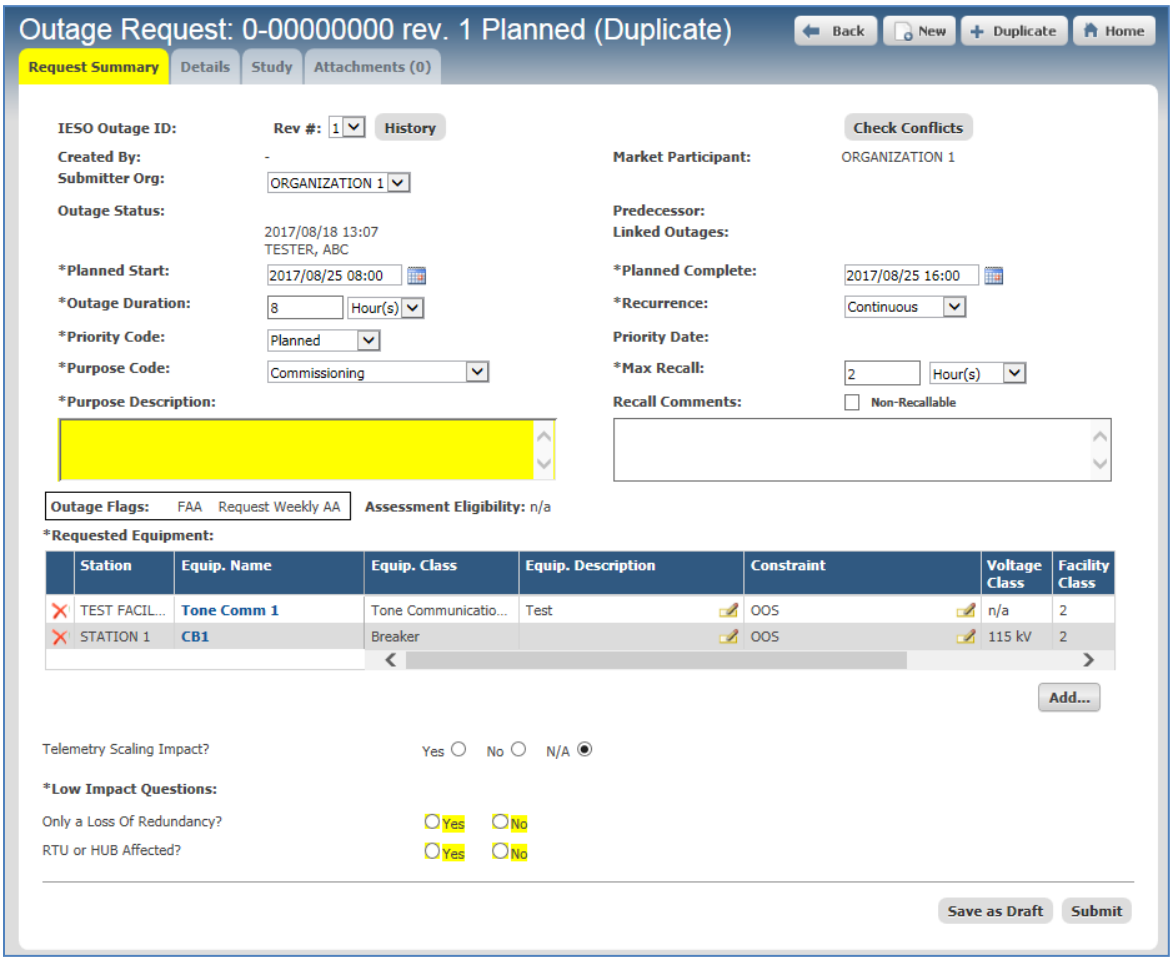
- Recall Comments
- Priority Code
- Purpose Code

The following fields will be reset during duplication:

- The Requested Equipment XFR To MKT will be cleared out (and therefore the calculated MKT XFR flag will be cleared as a result)

The following will not be duplicated:

- Priority Date
- Outage Description
- Answers to Low-Impact questions
- Market Participant to IESO Comments (Study tab)
- Conflict Rationale (Study tab)



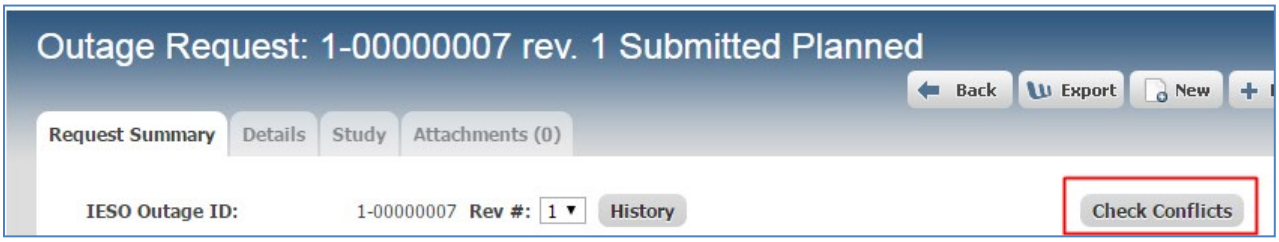
The user may edit the duplicated outage request and save it or initiate a state transition action.

5.4.15. Outage Request Conflict Checking

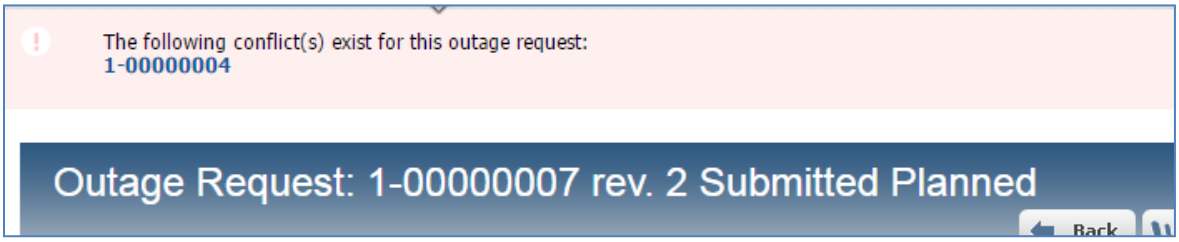
There are built in conflict checking rules to identify when two or more outage requests being entered for the same equipment with conflicting planned date ranges and equipment constraints along with other outage request characteristics.

NOTE: In addition to the basic conflict checking routine there is also conflict checking done against lists of Undesirable Equipment Combinations.

CROW will warn the user of conflicting outage requests at the time he/she is saving or state transitioning the entered data. As well the user can perform a conflict check by clicking on the “Check Conflicts” button available on the outage request form “Request Summary” tab.

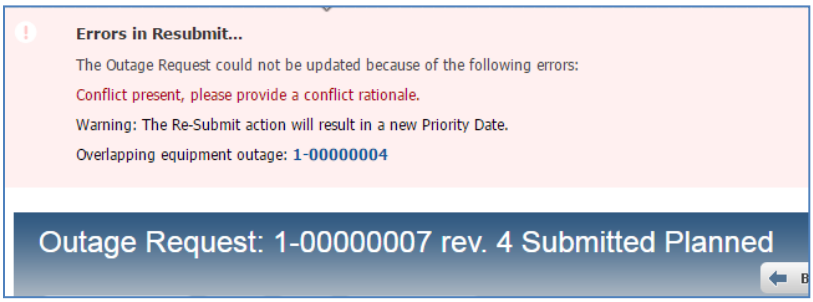


The outage request number that is in conflict is displayed as a clickable hyperlink.



NOTE: When an outage conflict is created during a save or state transition action or a conflict is present when the Priority Date has changed, the user will be asked to provide a Conflict Rationale comment (if none exists) before being able to complete the action. This requirement will be foregone for the following outage Priorities:

- Forced
- Forced Extended
- Urgent



5.4.16. Outage Request Export

The user may create a Word document report of an open outage request form by clicking the "W Export" button near the top-right of the outage request form.

The Word document will be downloaded via the user's web browser.

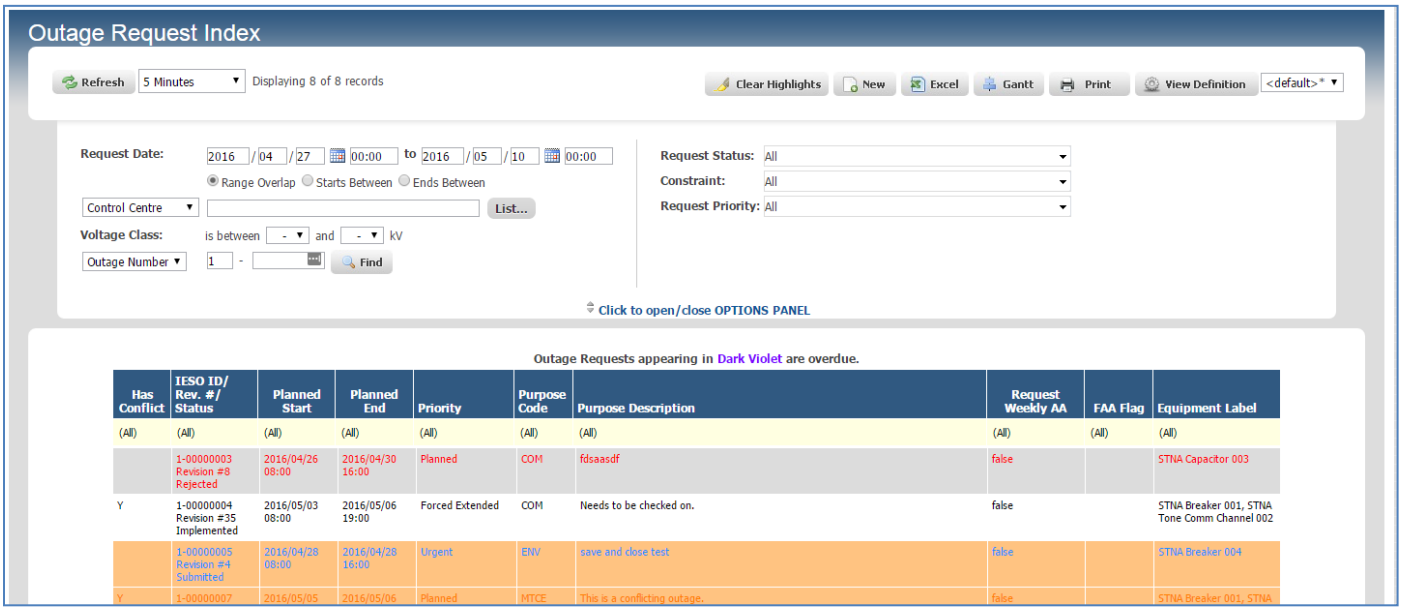
- End of Section -

6. Outage Request Index

The main screen in CROW Web is the Outage Request Index. This is a filtered tabular listing of outage requests in the system. Users may select pre-configured summaries of outage request data to view, or users may create their own views by way of setting up various filters to meet their specific requirements. By way of a polling mechanism the data displayed in the Outage Request Index remains up-to-date as new information is added or updated in the underlying database.

NOTE: The user must remove all filters prior to using the Search function.

Each row in the Outage Request Index grid represents one Outage Request which can be opened into its own Outage Request form to view all the details.



6.1. Server Filters vs. Client Filters

There are two types of filters present on the Outage Request Index screen – Server Filters and Client Filters. These two filter types serve different purposes and the distinction is important to take note of.

Server Filters are used to form the query that is applied to the outage request records in the database. The resulting set of data from that query is returned to the user's local machine. To avoid using up large amounts of a local machine's memory and for better performance it is strongly advised that the user employ Server Filters to limit the set of data as much as possible. Note that there is a display limit built into Outage Request Index page of 300 visible records.

Client Filters (column header filters) are used to further filter the set of data that has already been returned to the user's local machine by the server filter query (as noted in the paragraph above). The client filters are a string matching search to narrow the view of the set of outage request data.

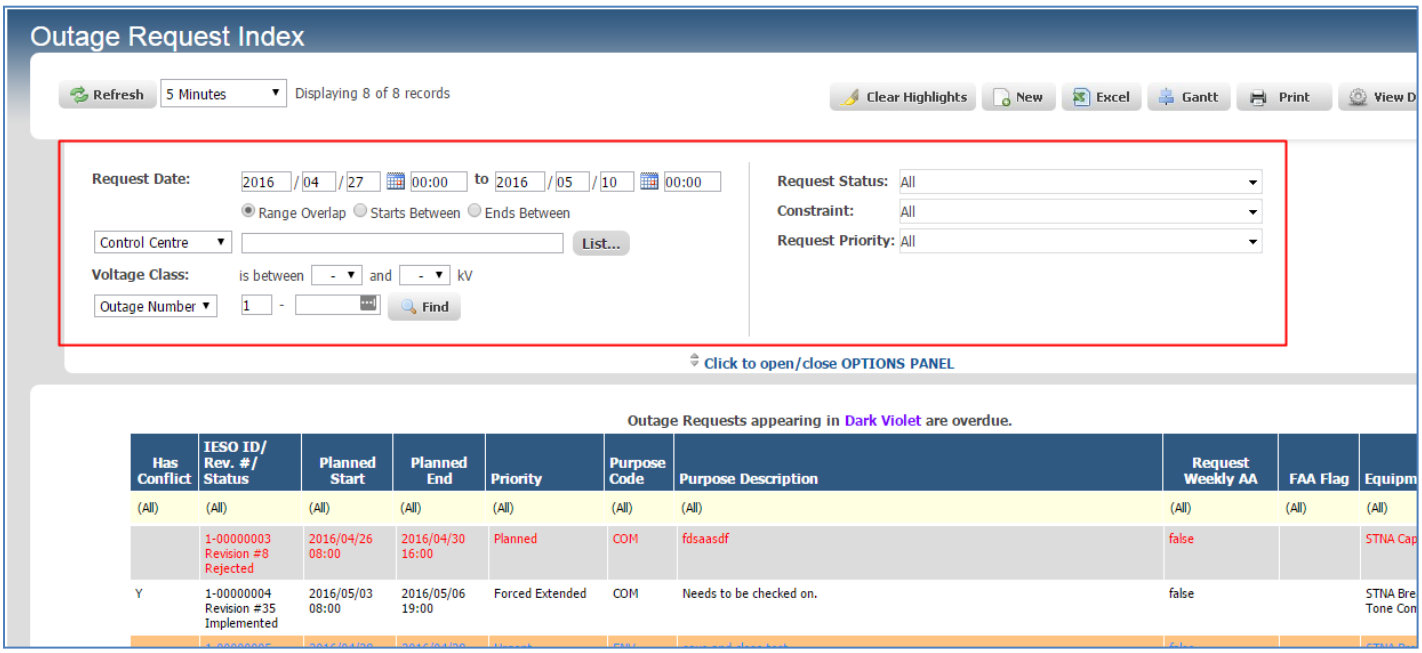
Best results and performance are achieved by using the following method of filtering:

1) First filter as much as possible with **Server Filters** to reduce unnecessary data overhead.
2) Then apply **Client Filters** to target a smaller subset of outage request data.

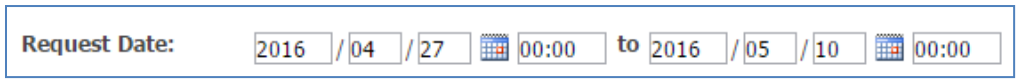
6.2. Server Filters

The **Server Filter** controls are located in the collapsible "Options Panel" on the Outage Request Index screen, just above the data results grid. It displays a number of controls the user may set to configure outage request start date range, outage request constraints, outage request status, outage request priority, and more. These inputs are used inclusively in a query against the database to return a general set of data records.

Server Filters outlined in red



6.2.1. Dates Filter

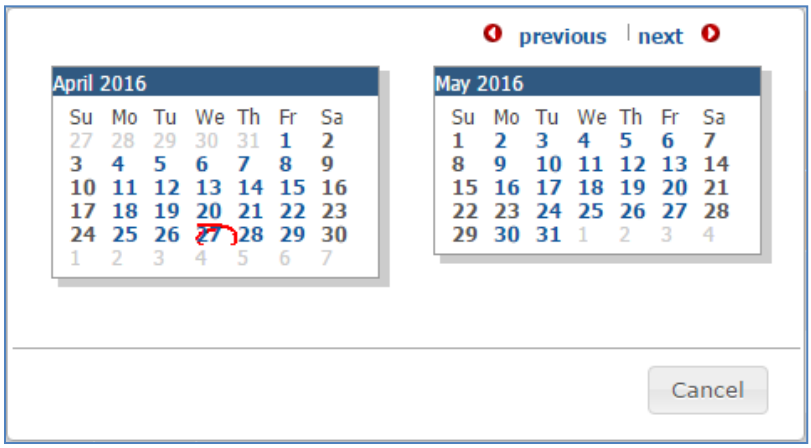


The **Dates** filter is used to set the "From" date/time and "To" date/time of the date range to consider in the query for outage request records.

There are a couple ways to edit the values:

1) Directly typing into the "From" or the "To" date/time fields.
   Just select the portion of the date or time to edit and type in a valid number.

2) Use the pop-up calendar control to select a “From” or a “To” date.
Click on the calendar icon at the right side of the date field and select a date from the calendar dialog that appears.



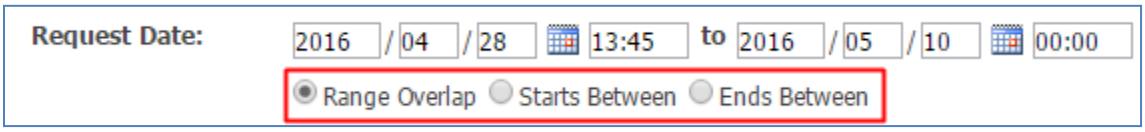
The user may click on the “previous” and “next” links to move to adjacent months. The user must click on a date link to select the date to populate the control with. The user may cancel the date selection action by clicking on the “Cancel” button at the bottom of the calendar dialog.

a. After entering a new date, the user should click on the “Refresh” button at the top-left of the page if they wish to apply the new date/s to the query immediately and refresh the outage request listings.

The user must click on the “Refresh” button near the top-left of the index page to have the new filter settings take effect.

6.2.2. Dates Filter Options

Along with the “From/To” date range controls there is a date range overlap comparison option that is applied to the date filtering to modify the query.



6.2.2.1. Date Range Overlap Comparison

The radio button set for the date range comparison type has four options:

- Range Overlap – any overlap of the Outage Request Index “From/To” date range with the outage date range.
- Starts Between – the outage must have a starting date within the Outage Request Index “From/To” date range.
- Ends Between - the outage must have an ending date within the Outage Request Index “From/To” date range.

6.2.2.2. Query Uses Overall Outage Request Level Planned Dates

	Query Date Logic
Range Overlap	Returns outage requests that have any overlap between the overall Outage Request level Planned dates and the query “From/To” date range.
Starts Between	Returns outage requests that have an overall Outage Request level Planned Start date within the query “From/To” date range.
Ends Between	Returns outage requests that have an overall Outage Request level Planned End date within the query “From/To” date range.

The user must click on the “Refresh” button near the top-left of the index page to have the new filter settings take effect.

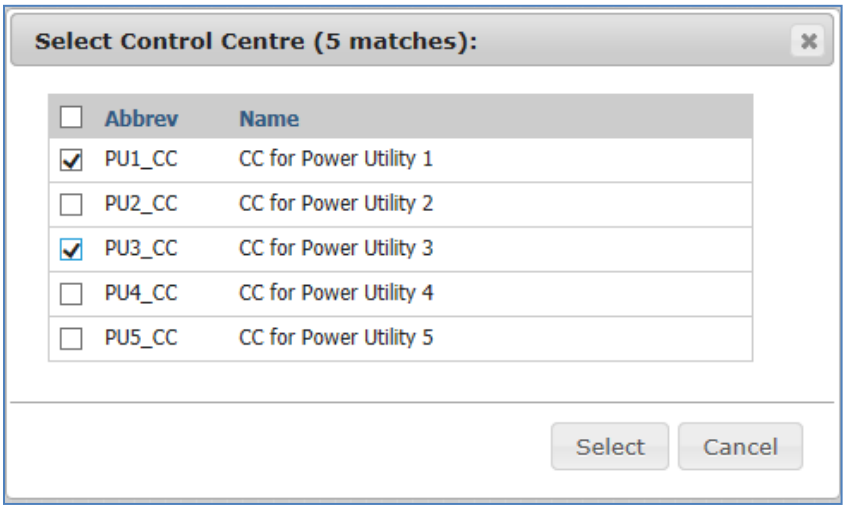
6.2.3. Control Centre Filter

The Control Centre filter is used to narrow the search query down to only those outage requests that contain equipment that is operated by the selected control centre/s.

To set this filter the user must select “Control Centre” from the drop down box (if it is not already selected).

Then the user must enter the beginning characters of the name or abbreviation of the Control Center to use in the filter and click the “List…” button or hit the tab key to move out of the text field.

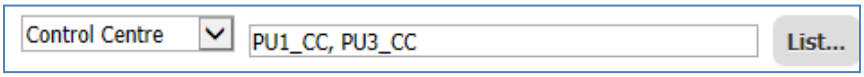
This will open up a selection dialog box which lists the matching control centres to choose from.



The user must click on the checkboxes to tick the control centres to include as the filter.

To cancel out of the setting the filter and leave it as it was, the user can click the “Cancel” button. The user can complete the setting of the filter by clicking the “Select” button.

The filter field will be populated with a comma delimited list of abbreviations of the selected control centers.



If the user wishes to add to the list, he can do so by adding a comma to the end of the list in the text field and then typing the beginning of the name or abbreviation of another control center. The user must then click the “List…” button or hit the tab key to move out of the text field and bring up the Control Center selection dialog.

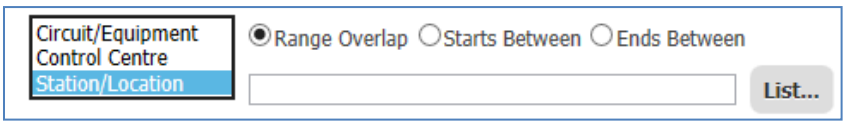
If the user wishes to remove one or more control centers from the filter list, he can simply highlight them in the text field and hit the delete key on the keyboard.

The user must click on the “Refresh” button near the top-left of the index page to have the new filter settings take effect.

6.2.4. Station Filter

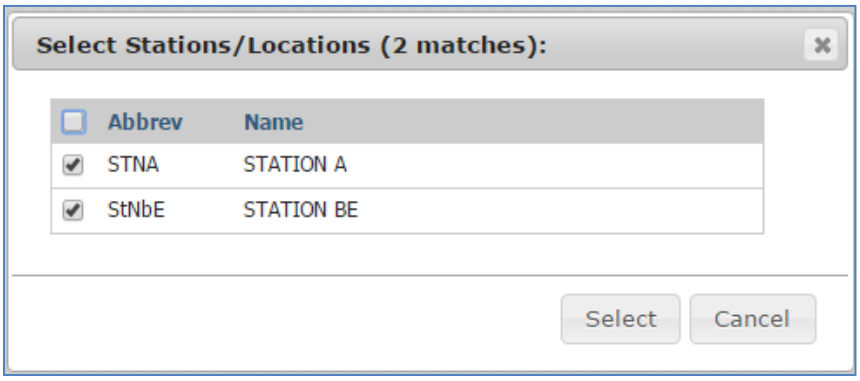
The Station filter is used to narrow the search query down to only those outage requests that contain equipment that is associated with the selected stations.

To set this filter the user must select “Station/Location” from the drop down box (if it is not already selected).



Then the user must enter the beginning characters of the name or abbreviation of the Station to use in the filter and click the “List…” button or hit the tab key to move out of the text field.

This will open up a selection dialog box which lists the matching stations to choose from.



The user must click on the checkboxes to tick the stations to include as the filter.

To cancel out of the setting the filter and leave it as it was, the user can click the “Cancel” button. The user can complete the setting of the filter by clicking the “Select” button.

The filter field will be populated with a comma delimited list of abbreviations of the selected stations.

If the user wishes to add to the list, he can do so by adding a comma to the end of the list in the text field and then typing the beginning of the name or abbreviation of another station. The user must then click the “List…” button or hit the tab key to move out of the text field and bring up the Station/Location selection dialog.

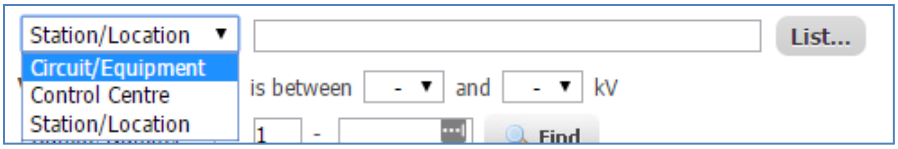
If the user wishes to remove one or more stations from the filter list, he can simply highlight them in the text field and hit the delete key on the keyboard.

The user must click on the “Refresh” button near the top-left of the index page to have the new filter settings take effect.

6.2.5. Circuit/Equipment Filter

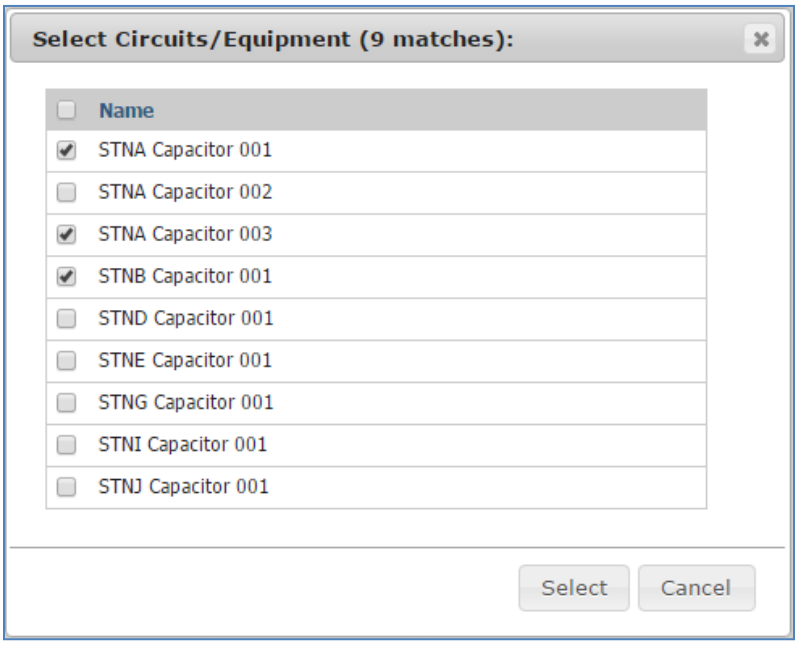
The Circuit/Equipment filter is used to narrow the search query down to only those outage requests that contain the equipment in this filter.

To set this filter the user must select “Circuit/Equipment” from the drop down box (if it is not already selected).



Then the user must enter the beginning characters of the name or label of the equipment to use in the filter and click the “List…” button or hit the tab key to move out of the text field.

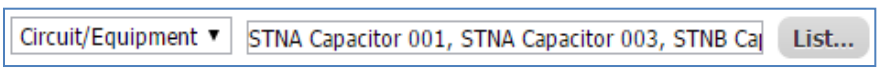
This will open up a selection dialog box which lists the matching equipment items to choose from.



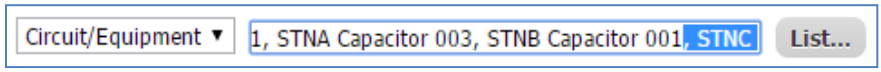
The user must click on the checkboxes to tick the equipment to include in the filter.

To cancel out of the setting the filter and leave it as it was, the user can click the “Cancel” button. The user can complete the setting of the filter by clicking the “Select” button.

The filter field will be populated with a comma delimited list of labels of the selected equipment items.



If the user wishes to add to the list, he can do so by adding a comma to the end of the list in the text field and then typing the beginning of the name or label of another equipment item. The user must then click the “List…” button or hit the tab key to move out of the text field and bring up the Circuit/Equipment selection dialog.



If the user wishes to remove one or more equipment items from the filter list, he can simply highlight them in the text field and hit the delete key on the keyboard.

The user must click on the “Refresh” button near the top-left of the index page to have the new filter settings take effect.

6.2.6. Voltage Class Range Filter

The Voltage Class filter is used to narrow the search query down to only those outage requests that contain equipment having a Voltage Class attribute value within the range entered in the filter. NOTE: The Outage Request Index “Voltage Class” column is designed to display the maximum voltage class attribute value present on the outage request, however this filter will look at all equipment item voltage class values on the outage request rather than only the maximum value. So it is possible to see a displayed “Voltage Class” column data value higher than the upper end of the input range set in this filter, but the associated outage request will contain other equipment items within filtered voltage class range.

To set this filter the user selects a numeric value in one or both fields. The lower number must be in the left field.

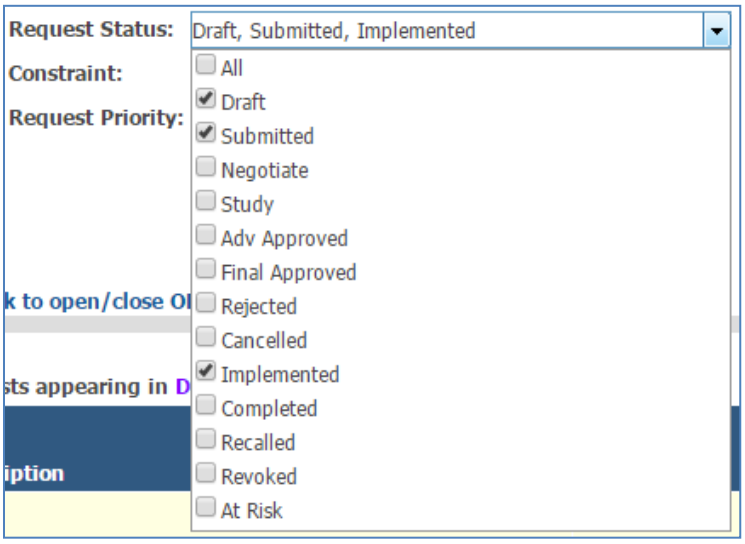
The values entered into the fields are used inclusively in the query parameters. If a field is set to blank (-) it is assumed to have no set limit, so a setting that has the left field set to blank (-) is assumed to be a value of 0. A right field setting of blank (-) is assumed to be infinite.

The user must click on the “Refresh” button near the top-left of the index page to have the new filter settings take effect.

6.2.7. Request Status Filter

The Request Status filter is used to narrow the search query down to only those outage requests that are in the selected request status type/s.

To set this filter the user simply clicks the drop down arrow on the filter control. This will open up a drop down box which lists the Status types to choose from.



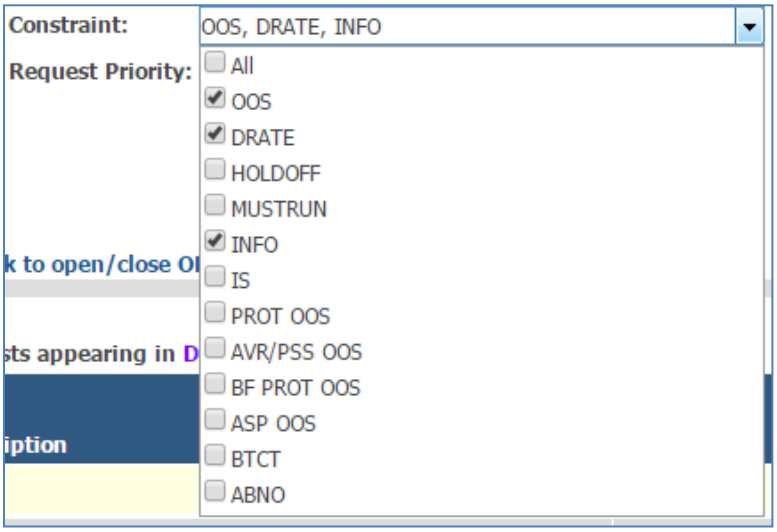
The user must tick the checkboxes of the Status types to include as the filter. The user may untick checkboxes to remove the Status type from the filter.

The user must click on the "Refresh" button near the top-left of the index page to have the new filter settings take effect.

6.2.8. Constraint Filter

The Constraint filter is used to narrow the search query down to only those outage requests that contain equipment that is constrained in the manner of the selected constraint type/s.

To set this filter the user simply clicks the drop down arrow on the filter control. This will open up a drop down box which lists the Constraint Types to choose from.



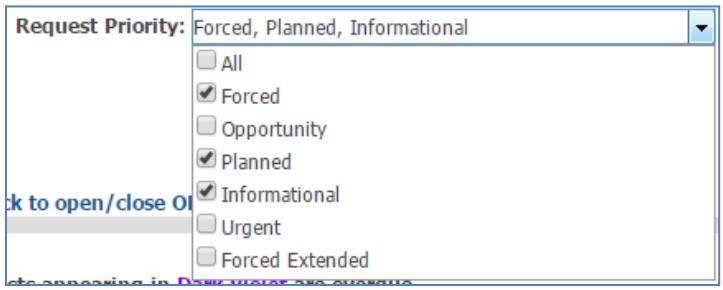
The user must tick the checkboxes of the Constraint types to include as the filter. The user may untick checkboxes to remove the Constraint type from the filter.

The user must click on the “Refresh” button near the top-left of the index page to have the new filter settings take effect.

6.2.9. Priority Filter

The Priority filter is used to narrow the search query down to only those outage requests that are in the selected request status type/s.

To set this filter the user simply clicks the drop down arrow on the filter control. This will open up a drop down box which lists the Priority types to choose from.



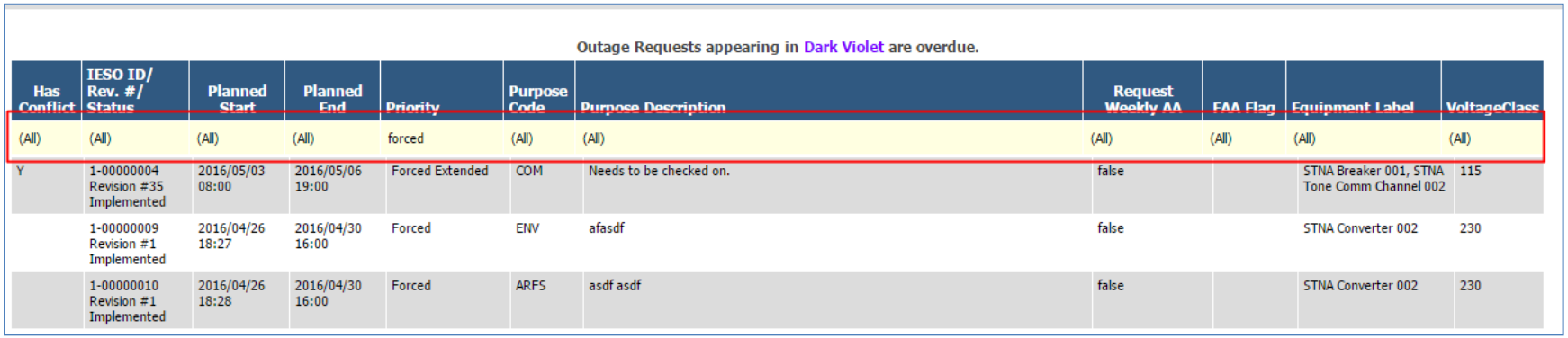
The user must tick the checkboxes of the Priority types to include as the filter. The user may untick checkboxes to remove a Priority type from the filter.

The user must click on the “Refresh” button near the top-left of the index page to have the new filter settings take effect.

6.3. Client Filters

The client-side filtering capabilities are available by clicking on the light-yellow colored row below the column titles. These filters operate on the set of data records that has been returned by the general Server Filter search criteria described above, allowing the user to refine their visible record set using some simple string filtering.

Client Filters row outlined in red

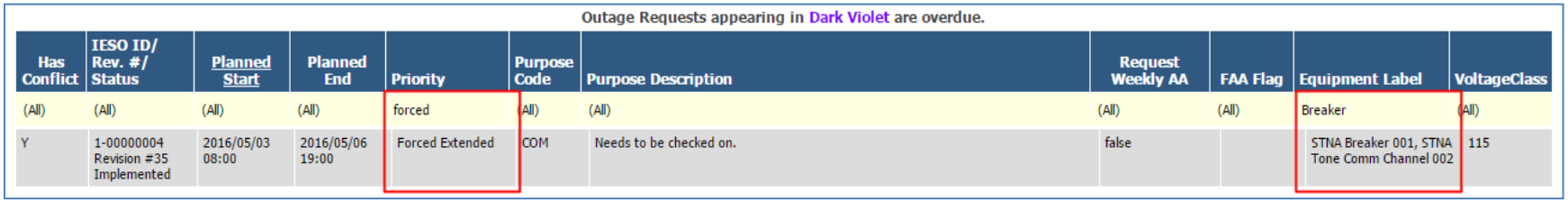


Outage Requests appearing in Dark Violet are overdue.

Has Conflict	IESO ID/ Rev. #/ Status	Planned Start	Planned End	Priority	Purpose Code	Purpose Description	Request Weekly AA	FAA Flag	Equipment Label	VoltageClass
(All)	(All)	(All)	(All)	forced	(All)	(All)	(All)	(All)	(All)	(All)
Y	1-00000004 Revision #35 Implemented	2016/05/03 08:00	2016/05/06 19:00	Forced Extended	COM	Needs to be checked on.	false		STNA Breaker 001, STNA Tone Comm Channel 002	115
	1-00000009 Revision #1 Implemented	2016/04/26 18:27	2016/04/30 16:00	Forced	ENV	afasdf	false		STNA Converter 002	230
	1-00000010 Revision #1 Implemented	2016/04/26 18:28	2016/04/30 16:00	Forced	ARFS	asdf asdf	false		STNA Converter 002	230

The client filters operate on a 'contains string' filter basis. When the user enters a string the list of outage requests will adjust to display only those that contain matches to the filters applied to various columns.

If more than one column is set up with filter criteria, then the different columns' filters are ANDed together.

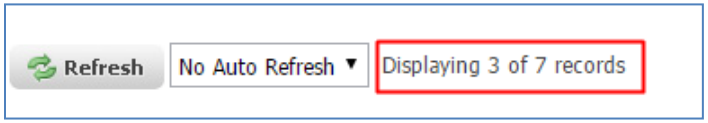


Outage Requests appearing in Dark Violet are overdue.

Has Conflict	IESO ID/ Rev. #/ Status	Planned Start	Planned End	Priority	Purpose Code	Purpose Description	Request Weekly AA	FAA Flag	Equipment Label	VoltageClass
(All)	(All)	(All)	(All)	forced	(All)	(All)	(All)	(All)	Breaker	(All)
Y	1-00000004 Revision #35 Implemented	2016/05/03 08:00	2016/05/06 19:00	Forced Extended	COM	Needs to be checked on.	false		STNA Breaker 001, STNA Tone Comm Channel 002	115

A label near the top-left of the Outage Request Index will indicate how many records of the total set available are being displayed.

To remove the client filter the user must click on the yellow filter cell and delete the text entered into it.

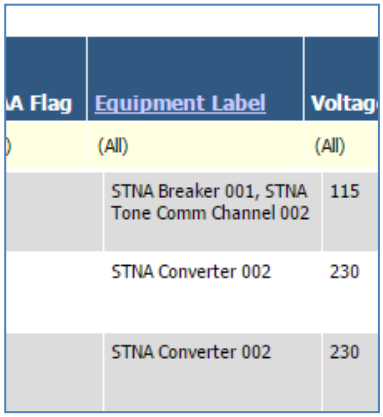


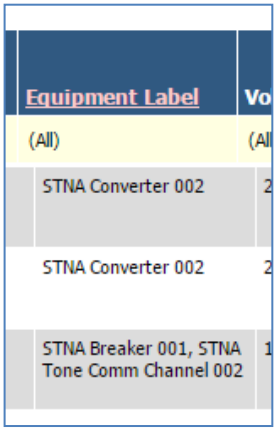
6.4. Outage Request Index Display Settings

In addition to data filtering capabilities, the Outage Request Index is color coded and sortable. As well a data column can be used to sort the order of the outage requests presented in the result set.

6.4.1. Sorting

To sort on a particular Outage Request Index column the user must click the column name heading. The user can click the same column heading again to toggle between ascending and descending order.
If the list of outage requests is sorted in ascending order, the column heading will appear in **blue**. If the list is sorted in descending order, the column heading will appear in **red**. See the screens below.





6.4.2. Outage Request Index Font Colors

The color of the fonts displayed in Outage Request Index is used as a quick indicator of Outage Status or of a late starting or finishing outage request.

Outage Requests appearing in Dark Violet are overdue.

Has Conflict	IESO ID/ Rev. #/ Status	Planned Start	Planned End	Priority	Purpose Code	Purpose Description
(All)	(All)	(All)	(All)	(All)	(All)	(All)
	1-00000003 Revision #8 Rejected	2016/04/26 08:00	2016/04/30 16:00	Planned	COM	fdsaasdf
	1-00000009 Revision #1 Implemented	2016/04/26 18:27	2016/04/30 16:00	Forced	ENV	afasdf
	1-00000010 Revision #1 Implemented	2016/04/26 18:28	2016/04/30 16:00	Forced	ARFS	asdf asdf
	1-00000008 Revision #9 Draft	2016/04/28 08:00	2016/05/03 16:00	Urgent	ENV	asefasdfasdf
	1-00000005 Revision #4 Submitted	2016/04/28 08:00	2016/04/28 16:00	Urgent	ENV	save and close test
Y	1-00000004 Revision #35 Implemented	2016/05/03 08:00	2016/05/06 19:00	Forced Extended	COM	Needs to be checked on.
Y	1-00000007 Revision #4 Study	2016/05/05 08:00	2016/05/06 18:00	Planned	MTCE	This is a conflicting outage.

Mainly, font colors are associated with Outage Status unless an outage is late starting or late finishing. If an outage request is either late to start or late to finish then the outage status font color will be overridden by the “Late To Start” or “Late To Finish” font color. NOTE: This update will only happen when a change to an outage is made, or the F5 button is pressed; the Refresh button will not retrieve this update.

- An outage request is considered “Late to Start” if the Planned Start + grace period is prior to the current time.
- An outage request is considered “Late to Finish” if the Planned End + grace period is prior to the current time.

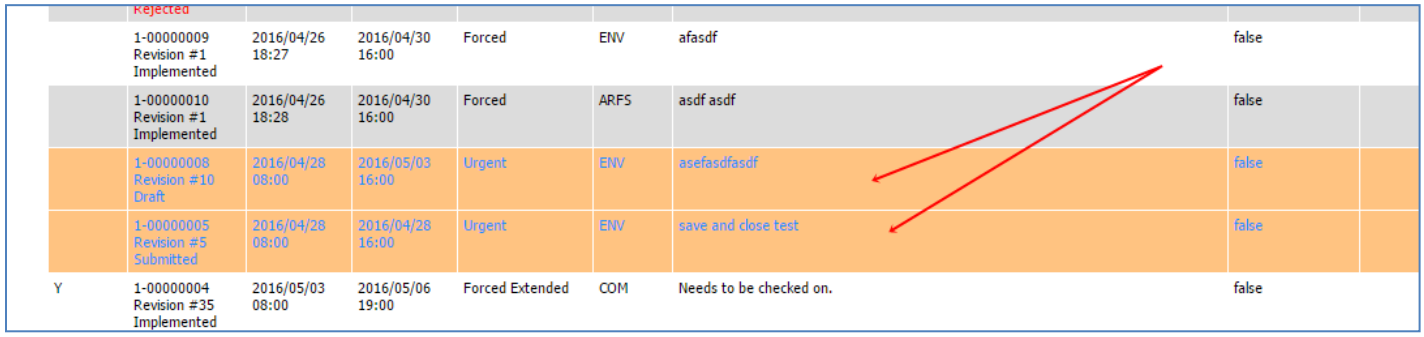
6.4.3. Background Highlighting

Background highlighting in the View Summaries is enabled by default to indicate new/revised outage requests.

Has Conflict	IESO ID/ Rev. #/ Status	Planned Start	Planned End	Priority	Purpos Code
(All)	(All)	(All)	(All)	(All)	(All)
	1-00000003 Revision #8 Rejected	2016/04/26 08:00	2016/04/30 16:00	Planned	COM
Y	1-00000004 Revision #10 Adv Approved	2016/05/03 08:00	2016/05/06 18:00	Planned	COM
	1-00000005 Revision #3 Submitted	2016/04/28 08:00	2016/04/28 16:00	Urgent	ENV
	1-00000008 Revision #3 Draft	2016/04/28 10:00	2016/05/03 18:00	Urgent	ENV

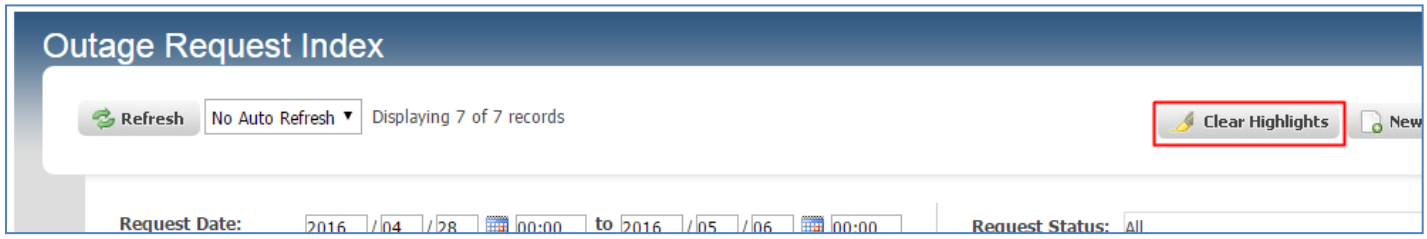
Background highlighting will be displayed when the outage requests' latest revision date/time is more recent than all of the following:

- the users' most recent opening of the outage request.
- the users' most recent "Clear All Highlights" action.



	Rejected						
	1-00000009 Revision #1 Implemented	2016/04/26 18:27	2016/04/30 16:00	Forced	ENV	afasdf	false
	1-00000010 Revision #1 Implemented	2016/04/26 18:28	2016/04/30 16:00	Forced	ARFS	asdf asdf	false
	1-00000008 Revision #10 Draft	2016/04/28 08:00	2016/05/03 16:00	Urgent	ENV	asefasdfasdf	false
	1-00000005 Revision #5 Submitted	2016/04/28 08:00	2016/04/28 16:00	Urgent	ENV	save and close test	false
Y	1-00000004 Revision #35 Implemented	2016/05/03 08:00	2016/05/06 19:00	Forced Extended	COM	Needs to be checked on.	false

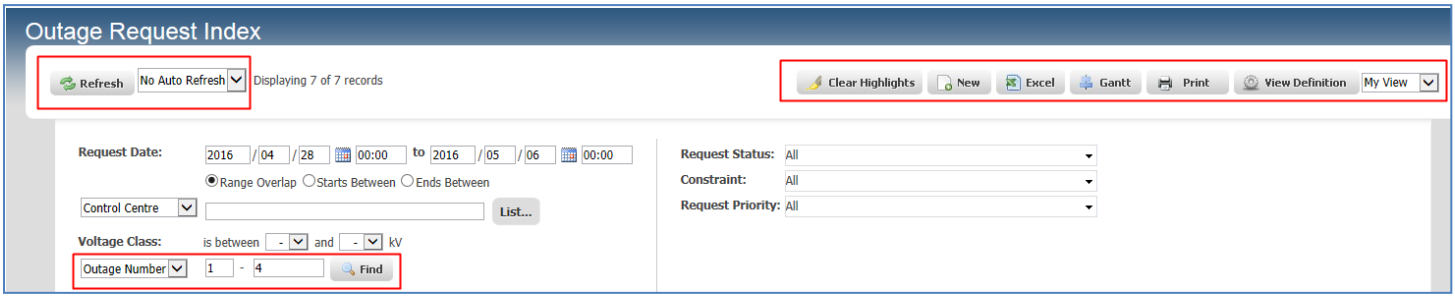
The background highlight will be cleared, only for the individual user, when he/she opens an outage request. Alternatively, the user may click the "Clear Highlights" button located above the server filter area to clear all highlighted outages in the Outage Request Index.



- End of Section -

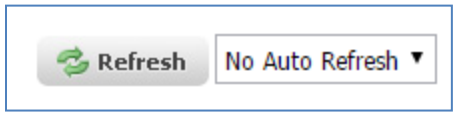
7. Outage Request Index Functions

There are a number of functions available on the Outage Request Index page allowing the user to Print, export to Excel, generate a Gantt chart and more.

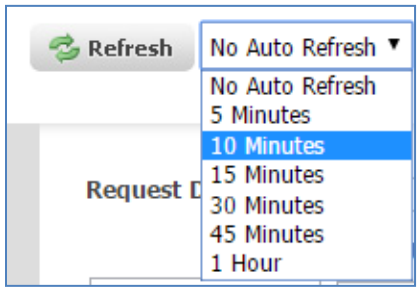


7.1. Refreshing the Outage Request Index

Users may click on the “Refresh” button any time they wish to refresh the set of outage request data from the database.



There is also a setting to auto-refresh the Outage Request Index page every X minutes. To engage the setting, the user simply makes a selection from the drop down control next to the “Refresh” button. The available selections are to refresh every 5, 10, 15, 30, 45, and 60 minutes.



7.2. Find an Outage Request by Number

If the user knows the outage request number of the outage they would like to open the “Find” function can be used. The user can enter the number of the outage request in the text fields and click the “Find” button. NOTE: the prefixed zeroes on the outage request number do not need to be entered (see the screenshot below).

If the outage request is found, and the user has permissions to view it, the page will change to the outage request form.

7.3. Clear Highlighted Rows

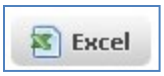
The user may click the “Clear Highlights” button located above the server filter area to clear all highlighted outages in the Outage Request Index.

7.4. Open a New Outage Request Form

The user may click the “New” button located above the server filter area to open up a new outage request form ready for input.

7.5. Excel Export from Outage Request Index

Users can generate an Excel report directly from the listings in Outage Request Index by clicking on the “Excel” button located above the server filter area.



The Excel report will be generated to include all currently visible rows in the Outage Request Index. The report is downloaded to the user’s web browser and made available to the user for opening.

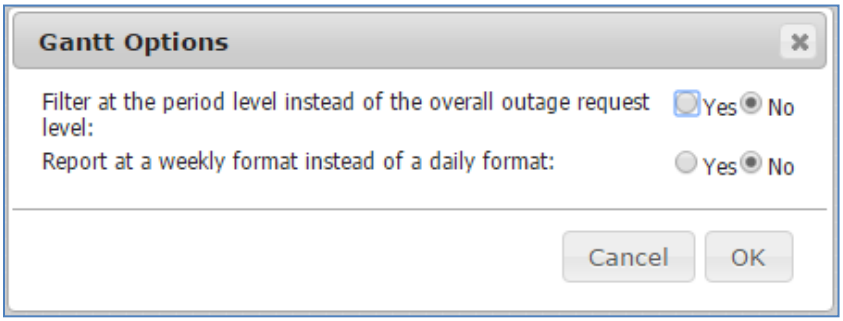
	A	B	C	D	E	F	
1	CROW - Outage Request Listing						
2	2016/04/28 14:20						
3							
4	Has Conflict	IESO ID/ Rev. #/ Status	Planned Start	Planned End	Priority	Purpose Code	Purpose Description
5		1-00000009 Revision #1 Implemented	4/26/2016 18:27	4/30/2016 16:00	Forced	ENV	afasdf
6		1-00000010 Revision #1 Implemented	4/26/2016 18:28	4/30/2016 16:00	Forced	ARFS	asdf asdf
7	Y	1-00000004 Revision #35 Implemented	5/3/2016 8:00	5/6/2016 19:00	Forced Extended	COM	Needs to be checked on

7.6. Gantt Reports from Outage Request Index

A Gantt chart report can be generated in Excel format, containing all of the outage requests currently displayed in the Outage Request Index. Each row will contain some basic information about an outage request along with cell highlighting to indicate days (or weeks) when the outage is in progress.

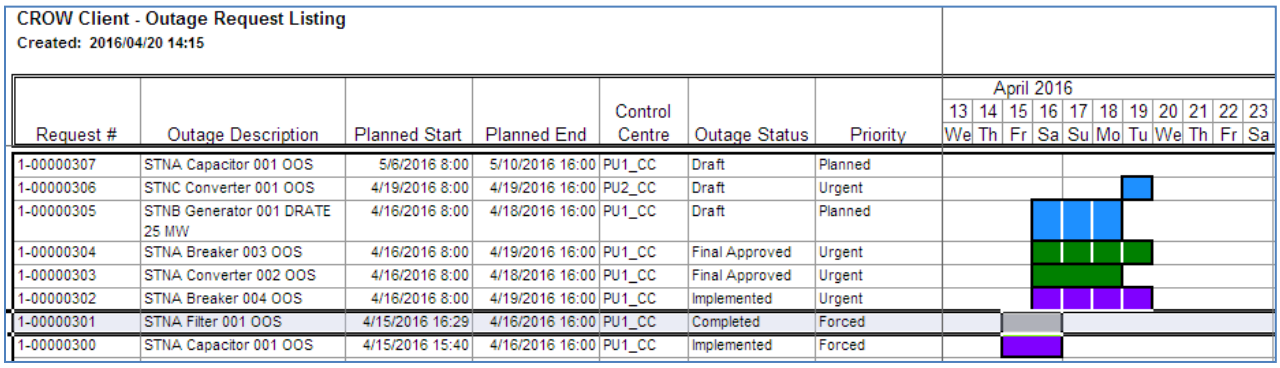
To generate the report, the user simply clicks on the “Gantt” button located above the server filter area.

A dialog displaying two choices appears:



- Filter at the period level instead of overall outage request level – For outages with a “Noncontinuous” recurrence gaps between periods will not be highlighted if the user selects “Yes”. If “No” then the overall outage range will be highlighted without regard for gaps between outage periods.
- Report at a weekly format instead of a daily format – Selecting “Yes” for this option results in a less granular Gantt view of the outage request date ranges. It is used for wider reporting date ranges where daily detail is less important. If there is any outage period in a given week the background will be highlighted with this option. This option may only be set to “Yes” if the “Filter Period” option (above) is set to “No”.

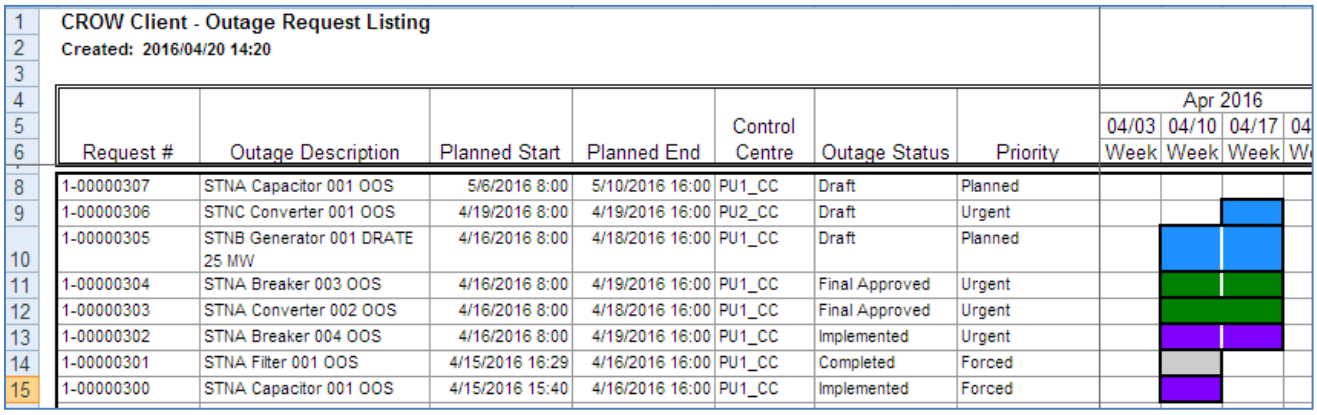
Daily Gantt Option



CROW Client - Outage Request Listing
Created: 2016/04/20 14:15

Request #	Outage Description	Planned Start	Planned End	Control Centre	Outage Status	Priority
1-00000307	STNA Capacitor 001 OOS	5/6/2016 8:00	5/10/2016 16:00	PU1_CC	Draft	Planned
1-00000306	STNC Converter 001 OOS	4/19/2016 8:00	4/19/2016 16:00	PU2_CC	Draft	Urgent
1-00000305	STNB Generator 001 DRATE 25 MW	4/16/2016 8:00	4/18/2016 16:00	PU1_CC	Draft	Planned
1-00000304	STNA Breaker 003 OOS	4/16/2016 8:00	4/19/2016 16:00	PU1_CC	Final Approved	Urgent
1-00000303	STNA Converter 002 OOS	4/16/2016 8:00	4/18/2016 16:00	PU1_CC	Final Approved	Urgent
1-00000302	STNA Breaker 004 OOS	4/16/2016 8:00	4/19/2016 16:00	PU1_CC	Implemented	Urgent
1-00000301	STNA Filter 001 OOS	4/15/2016 16:29	4/16/2016 16:00	PU1_CC	Completed	Forced
1-00000300	STNA Capacitor 001 OOS	4/15/2016 15:40	4/16/2016 16:00	PU1_CC	Implemented	Forced

Weekly Gantt Option



CROW Client - Outage Request Listing
Created: 2016/04/20 14:20

Request #	Outage Description	Planned Start	Planned End	Control Centre	Outage Status	Priority
1-00000307	STNA Capacitor 001 OOS	5/6/2016 8:00	5/10/2016 16:00	PU1_CC	Draft	Planned
1-00000306	STNC Converter 001 OOS	4/19/2016 8:00	4/19/2016 16:00	PU2_CC	Draft	Urgent
1-00000305	STNB Generator 001 DRATE 25 MW	4/16/2016 8:00	4/18/2016 16:00	PU1_CC	Draft	Planned
1-00000304	STNA Breaker 003 OOS	4/16/2016 8:00	4/19/2016 16:00	PU1_CC	Final Approved	Urgent
1-00000303	STNA Converter 002 OOS	4/16/2016 8:00	4/18/2016 16:00	PU1_CC	Final Approved	Urgent
1-00000302	STNA Breaker 004 OOS	4/16/2016 8:00	4/19/2016 16:00	PU1_CC	Implemented	Urgent
1-00000301	STNA Filter 001 OOS	4/15/2016 16:29	4/16/2016 16:00	PU1_CC	Completed	Forced
1-00000300	STNA Capacitor 001 OOS	4/15/2016 15:40	4/16/2016 16:00	PU1_CC	Implemented	Forced

Apr 2016
04/03 Week | 04/10 Week | 04/17 Week | 04 W

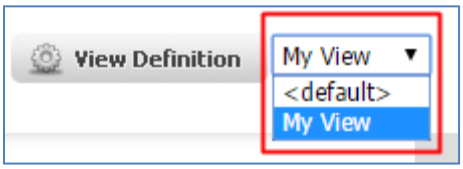
7.7. Print Outage Request Index

The user may print the Outage Request Index grid data by clicking on the “Print” button located above the server filter area.

The user’s web browser will open up in a print set up view to allow printing of the grid data.

7.8. View Definition Selection

View Definitions are intended as a configured set of filters and display criteria applied to the Outage Request Index. There is a pre-configured view definition named “<default>” included in the list. Users may select a View Definition from the drop down selection list located to the right of the “View Definition” button.



- End of Section -

8. Creating/Editing View Definitions

There are two types of View Definitions in CROW; **System** and **Personal**.

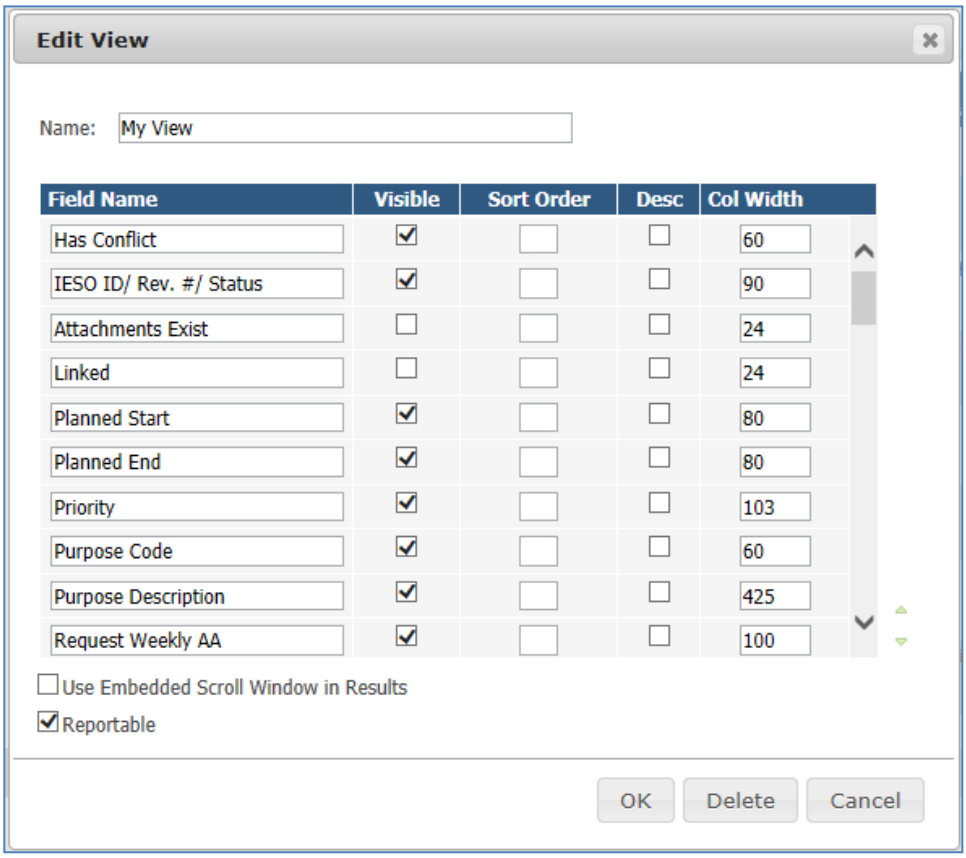
A **System** View Definition is one which can be used by all CROW users, but is defined and editable only by a user with CROW administrator level privileges. An example of a System view definition is the "<Default>" view that is configured into the initial CROW installation.

A **Personal** View Definition is one which can be created by any CROW user and may be viewed only by the creator of the view definition.

8.1. Creating a View Definition

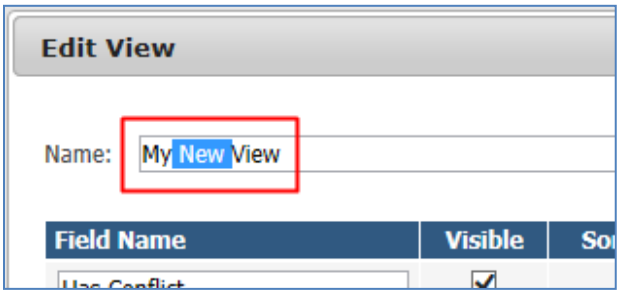
The View Definition dialog is accessed by clicking on the "View Definition" button near the top right of the Outage Request Index.

The View Definition dialog provides users with the ability to set up and save view configurations on CROW data using filtering, sorting, ordering and providing features like show/hide, column sizing and a number of other formatting features, all accessible from a simple Edit View Definition dialog (see screen shot, below):



The Edit View Definition dialog presents a grid with a row for each column that is available for display on the Outage Request Index page. As well it presents a checkbox with a setting that will apply an in-page scrollable grid if the user prefers it.

Once a view definition has been modified the user has the option to type in a new name for it in the “Name” field if the user wishes to create a new View Definition with it. Alternatively, the user may leave the “Name” field unchanged to save the other changes as edits to the existing View Definition of that name.

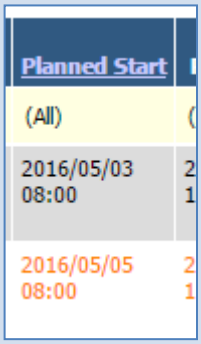
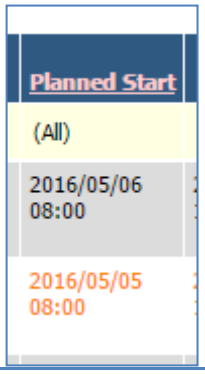


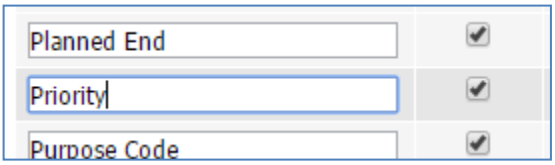
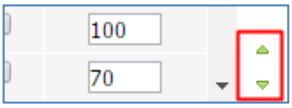
Either way, the user must click the “OK” button to keep the changes.

It is also possible for users to make changes directly to the main Outage Request Index screen (altering date ranges, date query parameters, server filtering on outage attributes, adding sorts, custom filters on columns, moving or resizing columns). If users make any of these changes (and refreshes the page), the name in the View Definition drop down control will have an asterisk (*) appended at the end of its name to signify that a change to the view has been made, but not yet saved.

To save these changes the user must open the Edit View Definition dialog and click the “Save” button.

8.1.1. View Definition Form Fields

Form Field	Description and use
Field Name	The value noted here is what will be displayed in the header of the column in the Outage Request Index screen. The user may change this value to display another name in the column header.
Visible	This determines if the column will be displayed on the Outage Request Index screen. The user may tick the checkbox to make the column visible or un-tick the checkbox to hide the column from the Outage Request Index screen.
Sort Order	This field indicates whether the column is used for sorting the data displayed in the Outage Request Index screen and, if so, in what order compared to other sorted columns. The user may type in an ordered number (e.g. **1**) to indicate the order in which an ascending sort (**lowest to highest** / **A to Z**) will be applied to this columns data. It is possible for the user to add a sort order number to multiple columns, for the second desired column, type in the Number (**2**) and (**3**) for a third sorted column if needed. NOTE: In Outage Request Index screen a column that has an ascending sort direction is indicated by the column heading text color being **light purple**. 
Descending Order	This field is only relevant if the Sort Order column is used. It toggles the sort direction between descending and ascending order. The user can tick the checkbox to have the sort direction be descending (**highest to lowest** / **Z to A**). Likewise, you may un-tick the checkbox to have the sort direction be ascending. NOTE: In the Outage Request Index screen a column that has a descending sort direction is indicated by the column heading text color being **pink**. 

Col Width	Users may set the width of the column here by typing in the number of pixels.
Moving Columns	Users may move a column to a different location in the Outage Request Index screen. To do this, users must click on the field name so that it is highlighted. The green arrow buttons near the bottom right corner of the dialog will become enabled.   Clicking on the up arrow will move the column to the left in the Outage Request Index and clicking on the down arrow will move the column to the right.
Use Embedded Scroll Window in Results	When the checkbox is not ticked the results will be displayed in a tabular view on the page. To scroll the user must scroll the entire page (and potentially lose sight of the header name row). When ticked the results will be displayed inside an embedded, scrollable window within the page. To scroll the user scrolls only the results grid (not the entire page) and that keeps the header name row statically in view. NOTE: when the scroll window option is chosen the header row column widths can get out of alignment with the columns in the results grid depending on the data that has been returned).
Reportable	This is to make the Outage Request Index data available for reporting on in a subscription or generated report. To be able to generate a report based on this Outage Request Index the user must tick this checkbox.

To cancel changes made in the Edit View Definition dialog the user must click on the “Cancel” button.

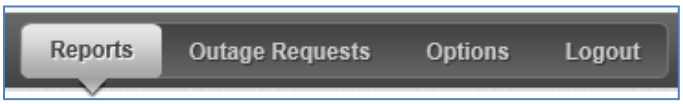
To save changes made in the Edit View Definition dialog to the Outage Request Index screen, the user must click on the “OK” button.

To delete the View Definition the user must click on the “Delete” button.

- End of Section -

9. Reports

The “Reports” section of CROW Web is accessed by clicking on the “Reports” tab in the top main menu.



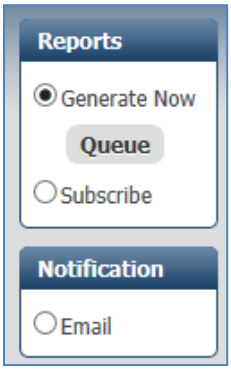
Any saved View Definition can be used as the basis of a report if that View Definition is flagged as “Reportable”. If it is a ‘System’ view it may be used by any CROW user as a subscribed report.

Individually, CROW users can define customized ‘Personal’ View Definitions and flag them as “Reportable” (refer to the “Creating/Editing View Definitions” section of this document for details). CROW users may then generate a report for immediate viewing or subscribe to a report that is based on their own customized ‘Personal’ View Definition.

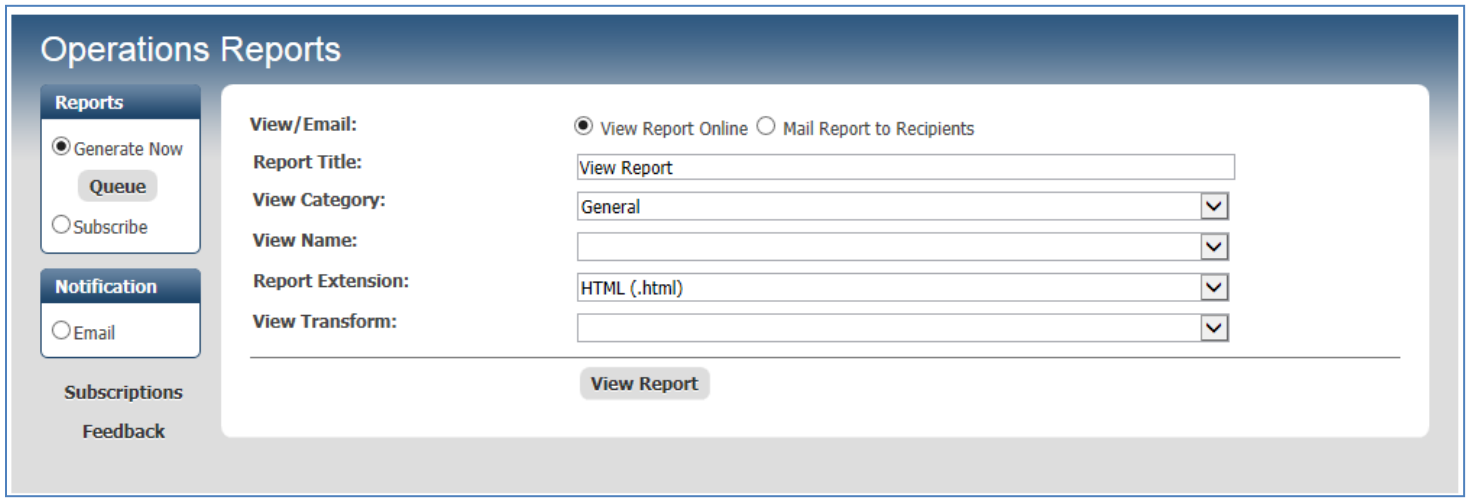
The structure of the report will emulate the columns and rows of the View Definition that it is based on.

9.1. Reports – Generate Now

The Generate Now option gives users the ability to instantly view a report or to send it as an attachment to an email from the Reports page. To open up this page the user must click on the “Generate Now” radio button on the left side margin of the “Reports” section.



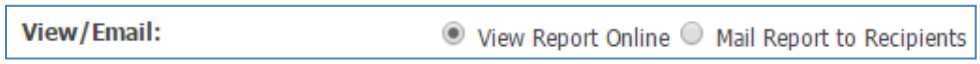
The Generate Now page is opened, ready to set up a Reportable View report.



9.1.1. Generate Now Form Fields

9.1.1.1. View/Email

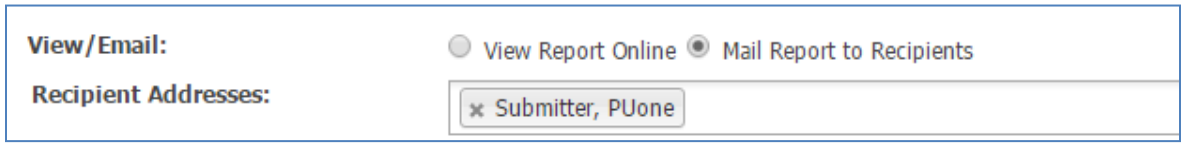
The two options available are to **View Report Online** or **Mail Report to Recipients**.



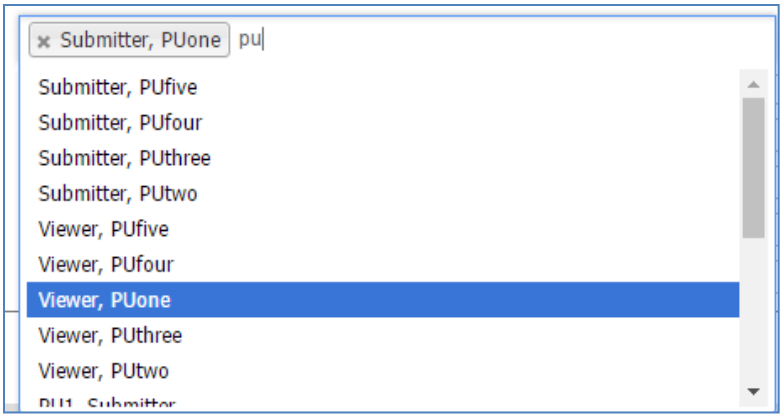
View Report Online will generate a report and download it to the user's web browser.

9.1.1.2. Recipient Addresses

Mail Report to Recipients will generate a report and deliver it via email to a list of recipients. By default, the user will be entered as the recipient but may edit the list of recipients.

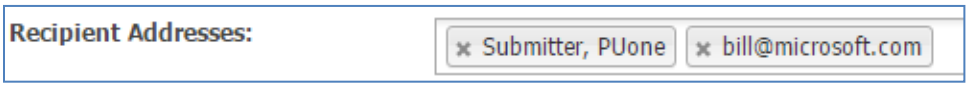


To add another recipient, the user simply types in some characters contained in the recipient's CROW profile name. A selection list of matching CROW profiles will appear.

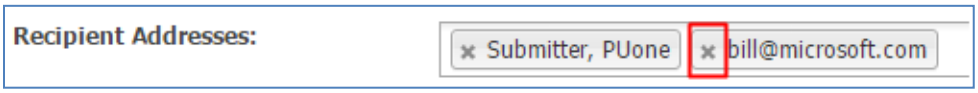


The selected profile listing will be added to the recipient list.

The user may also type any full email address in as a recipient. The recipient does not need to have a CROW profile so the user must keep in mind that the report may contain confidential information.



To remove a recipient from the list the user may simply click on the 'x' next to the recipient's name.

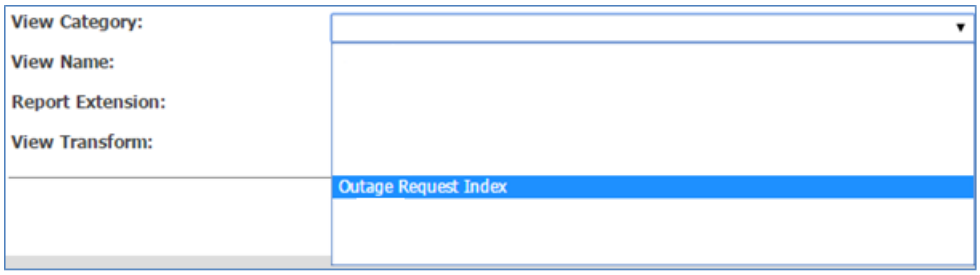


9.1.1.3. Report Title

Note that initially, the "Report Title" has a default value of the current View Definition Name e.g. 'View Name'). The user may enter a new title for the report in the "Report Title" textbox.

9.1.1.4. View Category

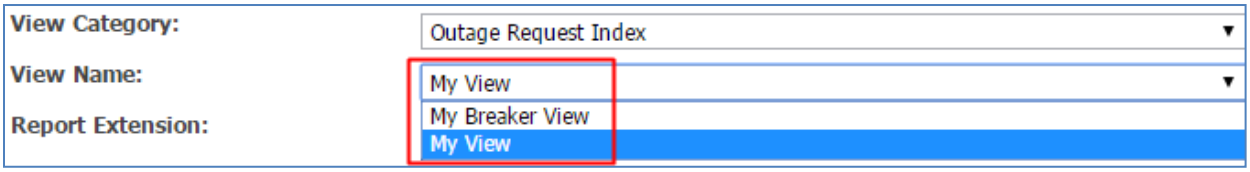
The user must select "Outage Request Index" from the "View Category" to proceed. CROW Web users' own created reportable View Definitions will fall under the "Outage Request Index" View Category.



9.1.1.5. View Name

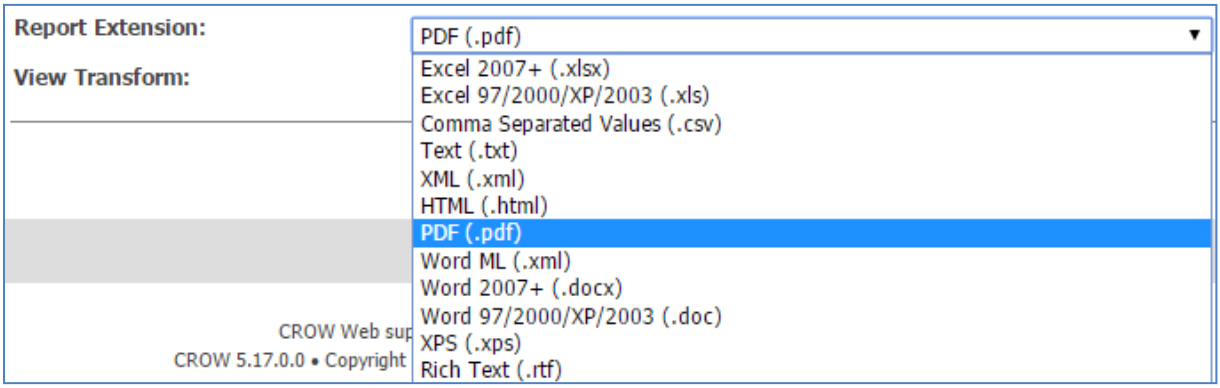
Upon selection of the View Category any reportable view definitions available in that View Category will populate the "View Name" drop-down control. Note that the options displayed here are the "System View Definitions" created by CROW Administrators as well as the "Personal View Definitions" created by the current logged user and are tagged as "Reportable". In the example below, the reportable View Definitions that appeared in the drop-down are created in the "Outage Request Index" View Category.

The user must make a "View Name" selection to proceed.



9.1.1.6. Report Extension

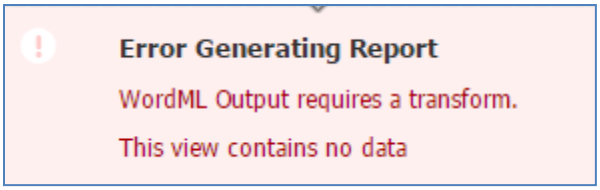
Depending on the file type for the report, the user must select a format (e.g. 'HTML') for the report based on the pre-configured list in the "Report Extension" drop-down selection.



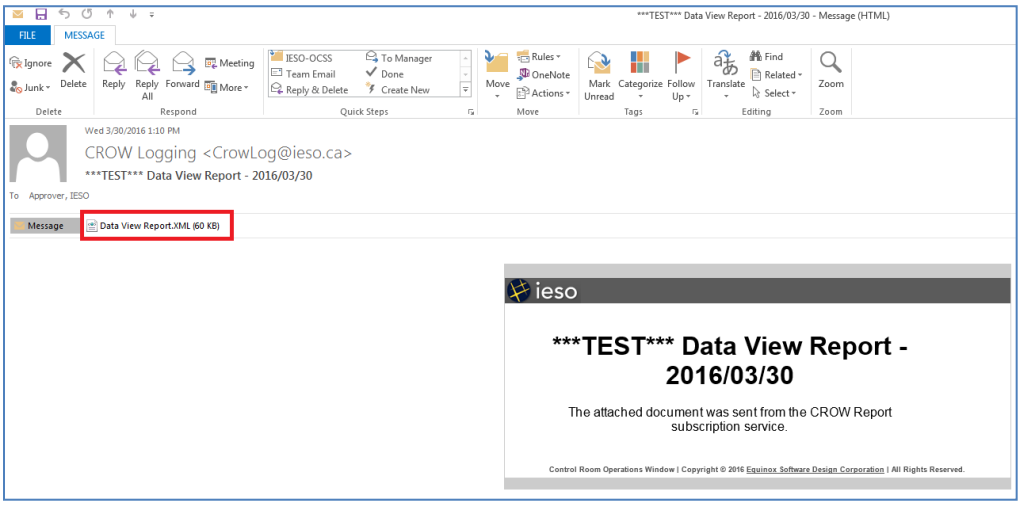
9.1.1.7. View Transform

A "View Transform" is an effect that changes the position, alignment, size, font and properties relating to how the data will be presented to make it more visually appealing in the report for users. In Crow, some output formats (e.g. '.txt') would not require a "Transform" to proceed with the generation of the report but some formats do require it.

If a transform is required for the selected output format, the user must select a value from the pre-configured list in the drop-down selection. Otherwise, a user is prompted with an error.



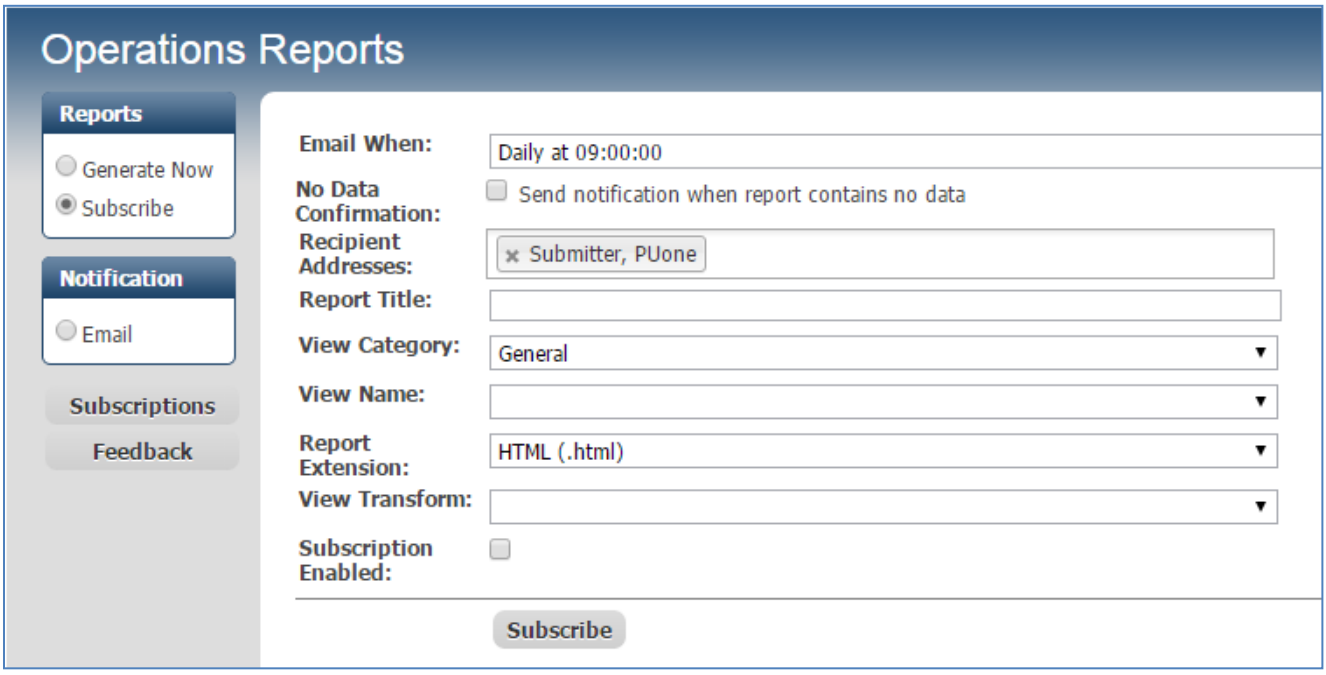
Once the user has selected the required parameters for the report, they can immediately generate the report by clicking the “View Report” button or the “Mail Report” button. If the report is mailed, then the report will be attached to an email and sent to the current user’s email address.



9.2. Reports - Subscribe

In addition to viewing reports immediately users can set up a subscription to a report to receive it via email on a scheduled basis (e.g. ‘Daily at 09:00’). To begin the subscription set up process the user must click on the “Subscribe” radio button on the left side margin of the “Reports” section.

The ‘Subscription’ form will appear allowing the user to define different parameters (delivery schedule, recipients) for the report subscription.



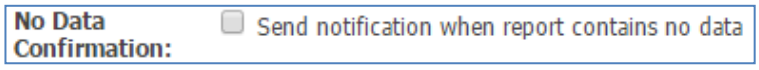
9.2.1. Subscribe Form Fields

9.2.1.1. Email When

The user must select the report delivery schedule from a pre-configured list in the drop-down selection.

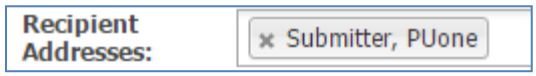
9.2.1.2. No Data Confirmation

The user may tick the "No Data Confirmation" checkbox to receive a notification even if there is no data to report on. If the checkbox is unticked, the report recipients will only receive emails with the report attached to it if there is data available to report on.



9.2.1.3. Recipient Addresses

By default, the user will be entered as the recipient but may edit the list of recipients.



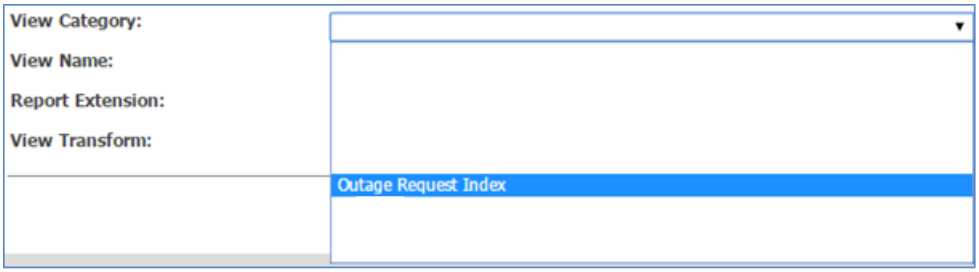
Adding and removing recipients is done in the same manner as described in the previous section of this document named "Reports – Generate Now".

9.2.1.4. Report Title

Note that initially, the “Report Title” has a default value of the current View Definition Name e.g. ‘View Name’). The user may enter a new title for the report in the “Report Title” textbox.

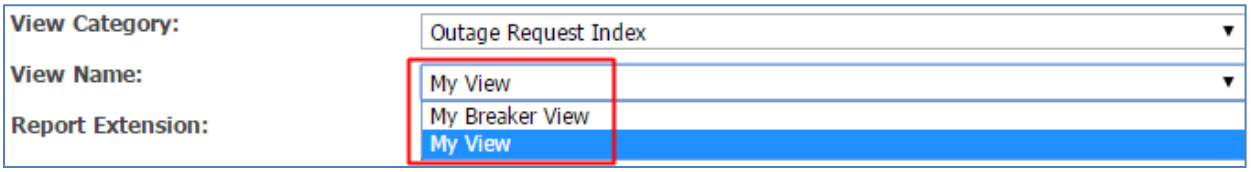
9.2.1.5. View Category

The user must select “Outage Request Index” from the “View Category” to proceed. CROW Web users’ own created reportable View Definitions will fall under the “Outage Request Index” View Category.



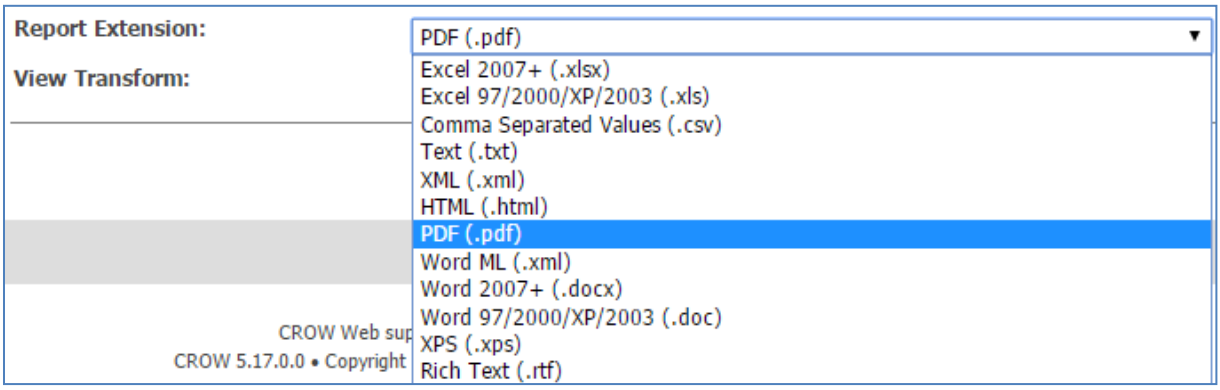
9.2.1.6. View Name

Upon selection of the View Category any reportable view definitions available in that View Category will populate the “View Name” drop-down control. Note that the options displayed here are the “System View Definitions” created by CROW Administrators as well as the “Personal View Definitions” created by the current logged user and are tagged as “Reportable”. In the example below, the reportable View Definitions that appeared in the drop-down are created in the “Outage Request Index” View Category. The user must make a “View Name” selection to proceed.



9.2.1.7. Report Extension

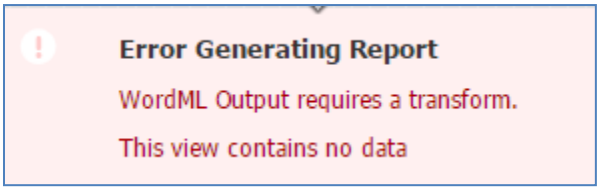
Depending on the file type for the report, the user must select a format (e.g. ’HTML’) for the report based on the pre-configured list in the “Report Extension” drop-down selection.



9.2.1.8. View Transform

A "View Transform" is an effect that changes the position, alignment, size, font and properties relating to how the data will be presented to make it more visually appealing in the report for users. In Crow, some output formats (e.g. '.txt') would not require a "Transform" to proceed with the generation of the report but some formats do require it.

If a transform is required for the selected output format, the user must select a value from the pre-configured list in the drop-down selection. Otherwise, a user is prompted with an error.



9.2.1.9. Subscription Enabled

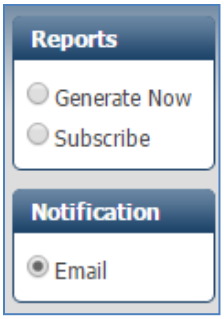
The user must tick the "Subscription Enabled" checkbox to activate the subscription.

9.2.1.10. Subscribe button

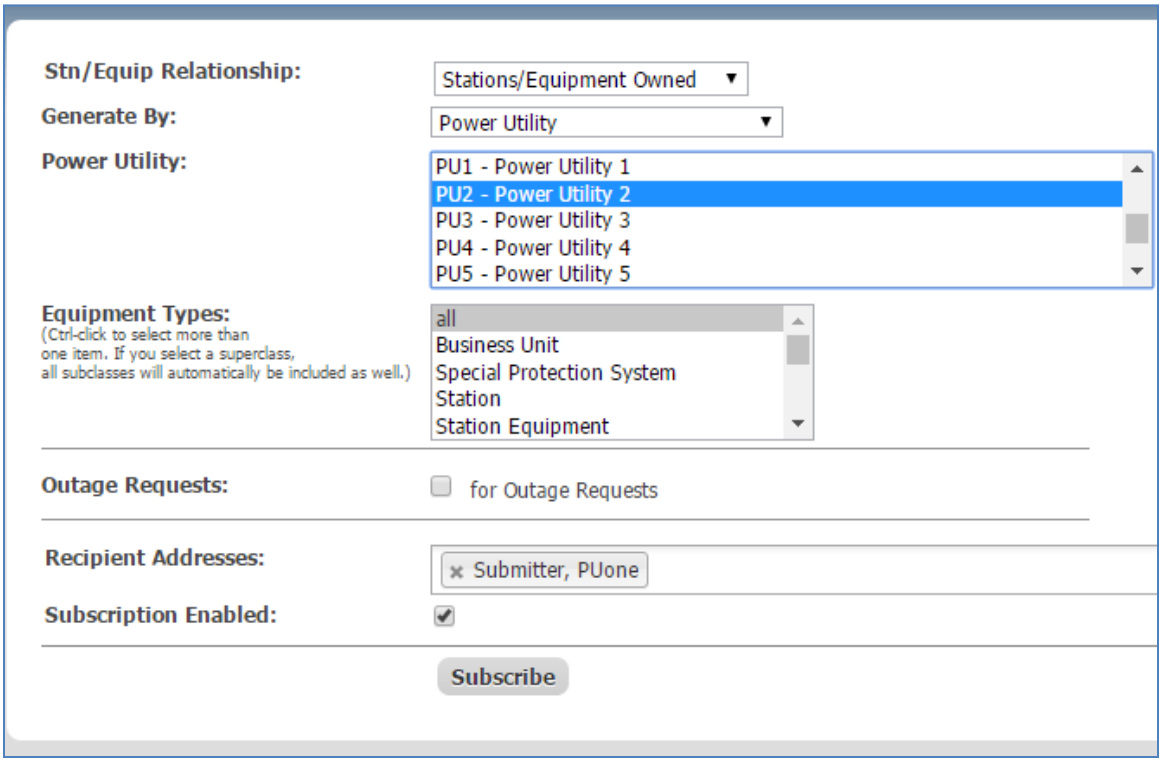
To save the subscription the user must click on the "Subscribe" button at the bottom of the form.

9.3. Reports - Email Notification

CROW can produce an email notification based on outage request status criteria. To begin the email notification set up process the user must click on the "Email" radio button on the left side margin of the "Reports" section.



The 'Subscription' form will appear allowing the user to define different parameters for the notification subscription.



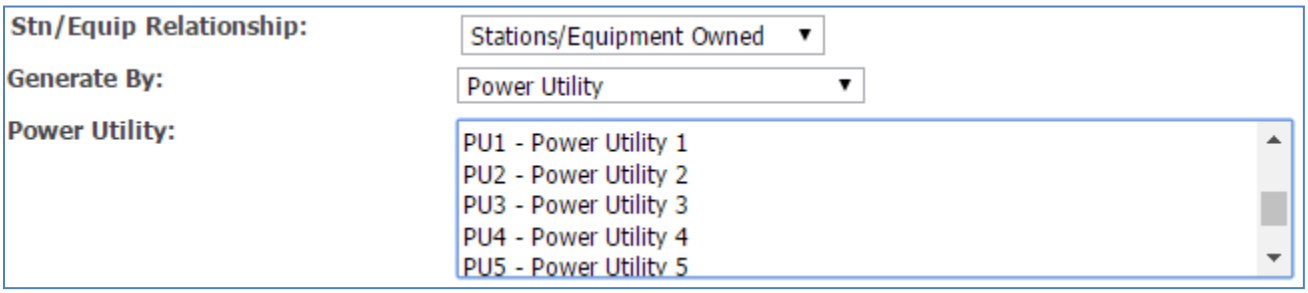
9.3.1. Email Notification Form Fields

9.3.1.1. Stn/Equip Relationship with Generate By:

There are a couple combinations of selections that can be used to filter notifications based on equipment's relationship to its owner or operator.

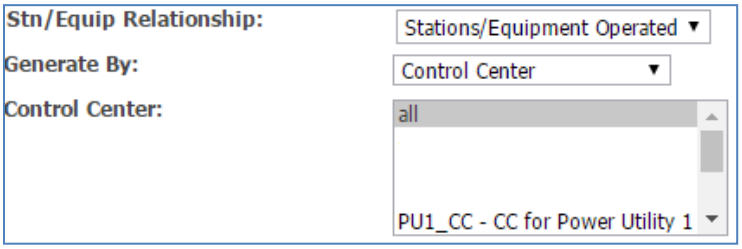
Stations/Equipment Owned – Power Utility

The "Stn/Equip Relationship" filter can be used set up notifications for equipment that is owned by a particular power utility. To do so, the user must select "Stations/Equipment Owned" in the "Stn/Equip Relationship" drop down control and then select "Power Utility" from the "Generate By" drop down control. A "Power Utility" selection box will appear where the user may select one or more power utilities to filter by. These settings will limit notifications to equipment that is owned by the selected power utilities. Users can combine this set of filters with the "Equipment Types" filter to further narrow down the notification criteria.



Stations/Equipment Operated – Control Center

The "Stn/Equip Relationship" filter can be used set up notifications for equipment that is operated by a particular control center. To do so, the user must select "Stations/Equipment Operated" in the "Stn/Equip Relationship" drop down control and then select "Control Center" from the "Generate By" drop down control. A "Control Center" selection box will appear where the user may select one or more control centers to filter by. These settings will limit notifications to equipment that is operated by the selected control centers. Users can combine this set of filters with the "Equipment Types" filter to further narrow down the notification criteria.

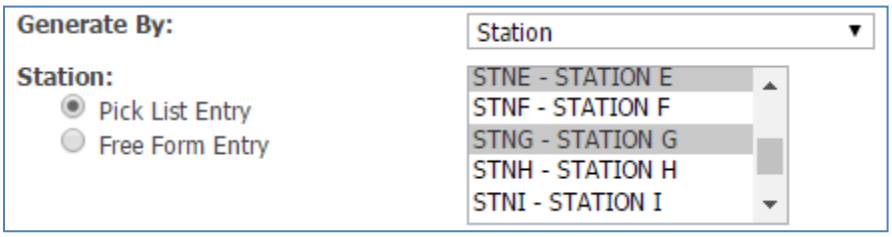


9.3.1.2. Generate By

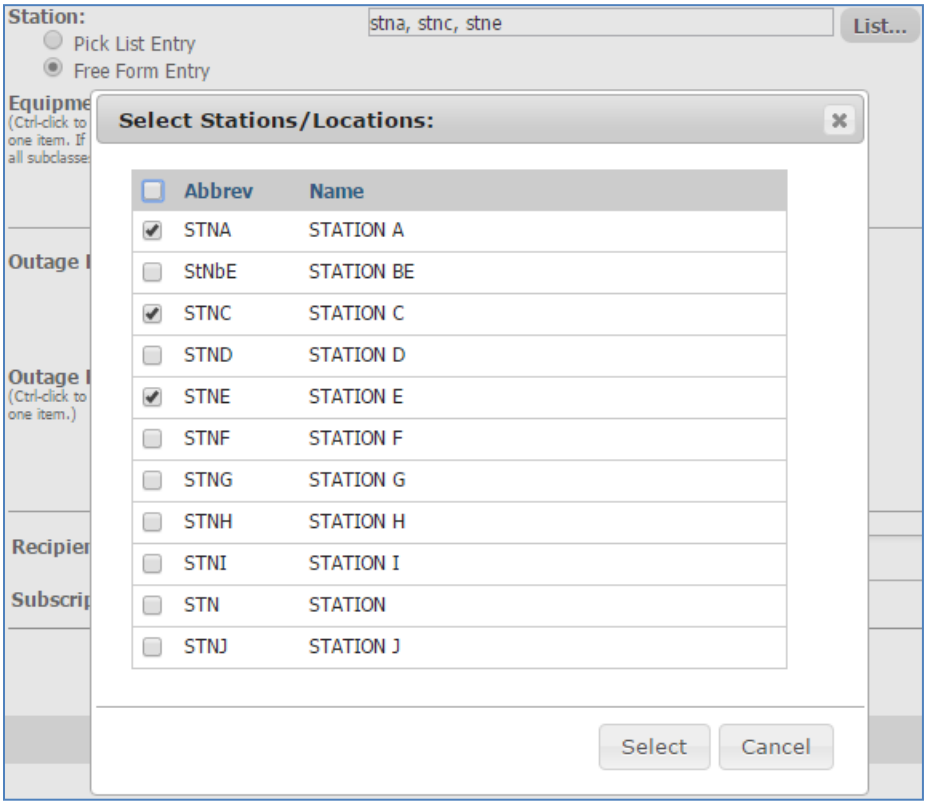
As noted in the section above, the "Generate By" control can be used to filter notifications by equipment relationship to power utility or control center. There are also other options available with the "Generate By" filter; **Station** and **Power System Equipment**. These options are used independantly of the "Stn/Equip Relationship" control.

Station

Users may filter the notifications down to equipment that is associated with a particular station. Selecting the "Station" option in the "Generate By" control will display a station selection box where the user may select one or more stations to filter by.



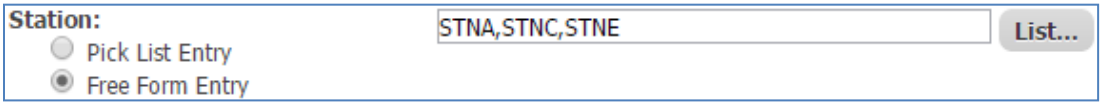
As an alternative to using the station "Pick List Entry" selection box users may manually type in the abbreviations of the station/s they wish to filter on by way of the "Free Form Entry" fields. The user may click the "List…" button to bring up a selection dialog with the full station names listed along with the abbreviations.



The user is able click on the checkboxes to tick the stations to include as the filter or untick any unwanted stations.

To cancel out of the setting the filter and leave it as it was, the user can click the “Cancel” button. The user can complete the setting of the filter by clicking the “Select” button.

The filter field will be populated with a comma delimited list of abbreviations of the selected stations.

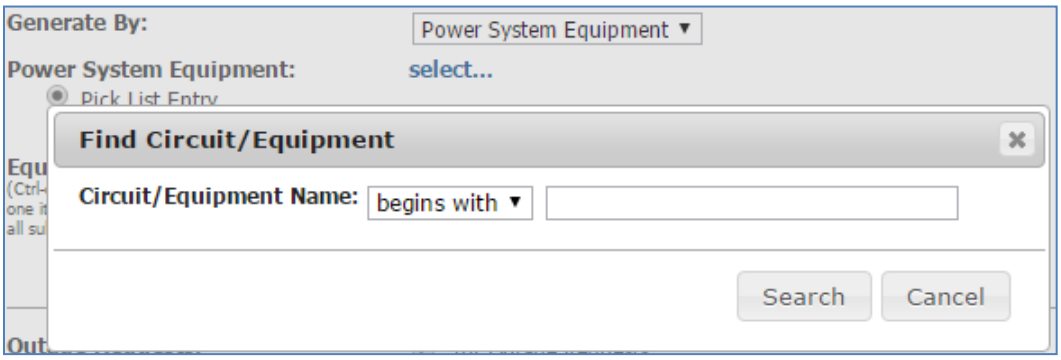


If the user wishes to remove one or more stations from the filter list, he can simply highlight them in the text field and hit the delete key on the keyboard.

Power System Equipment

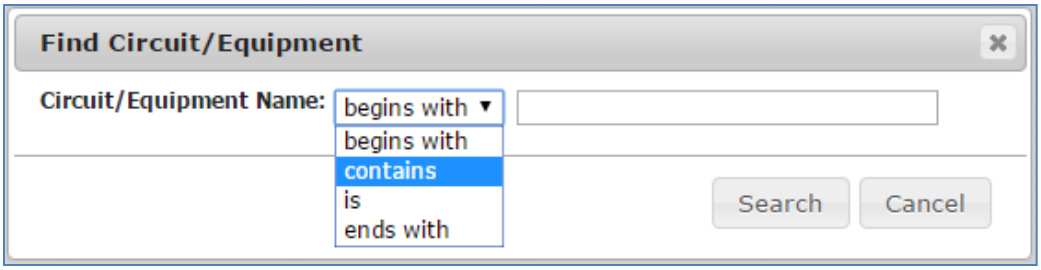
Users may filter the notifications down to specific equipment items. Selecting the “Power System Equipment” option in the “Generate By” control coupled with the “Pick List Entry” option will display a “Select…” hyperlink for the user to click on.

When the user clicks on the hyperlink a “Find Circuit/Equipment” dialog will be displayed to allow an equipment search.

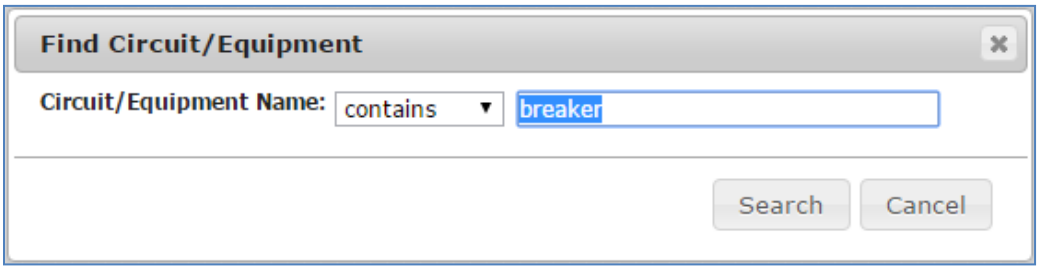


The user must indicate how to use the input text value in the query for the Equipment Label:

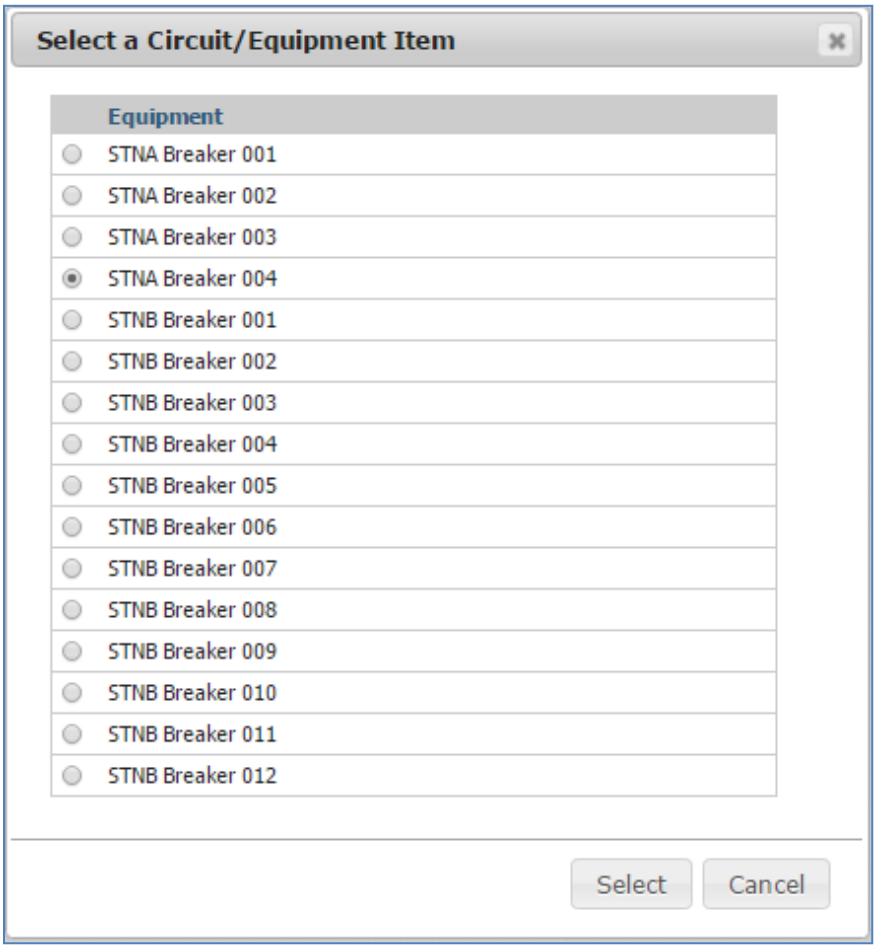
- begins with
- is
- contains
- ends with



The user must input the text value to use in the query and then click the “Search” button.



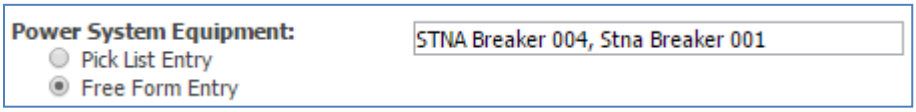
A list of equipment matching the query will be shown in the resulting dialog box where the user can select one or more equipment items. The user can individually select equipment by ticking the checkbox beside the Equipment listing or the user can use the Dual-State control checkbox in the title bar to select/de-select all equipment in the list.



The user then must click the “Select” button and the chosen equipment will be listed in the “Power System Equipment” area. To add another equipment item the user must click on the “Add” link.

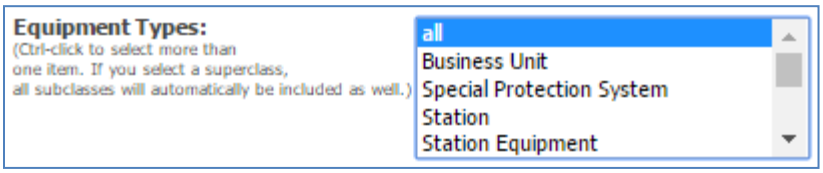
To remove a listed equipment item from the filter the user must click on the “X” (delete icon) next to the equipment label.

As an alternative to using the station “Pick List Entry” selection box users may manually type in the full labels of the equipment items they wish to filter on by way of the “Free Form Entry” field. The labels that are typed in will be validated and if any are not matched an error message will be presented to the user.

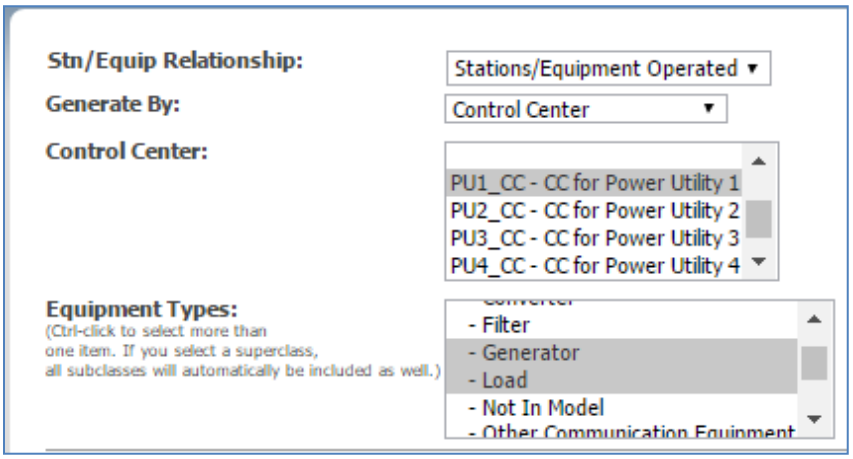


9.3.1.3. Equipment Types

This is a list of equipment and business unit types. The list is used to further define filtering to only email a notification for those outage requests that have Requested Equipment that is of the type selected in this list. If no selection in the list is made then all types will be included, but the user may limit the types to select items by clicking on one or more of them in this list.

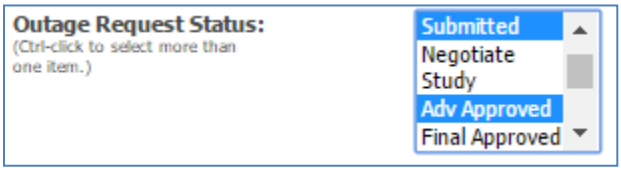


For example, in the following screenshot the email notifications are limited to outage requests that have Generator or Load Requested Equipment that is Operated by "PU1_CC-CC for Power Utility 1".



9.3.1.4. Outage Requests and Outage Request Status

This sets the trigger for an email notification when the overall outage status value changes. The user must tick both checkboxes and then make selections in the "Outage Request Status" list. For example, the following screenshot shows a configuration to trigger an email notification when an outage request, which passes the filters set in the controls above, gets set to a status of Submitted or Adv Approved.



9.3.1.5. Recipient Addresses

By default, the user will be entered as the recipient but may edit the list of recipients.

Adding and removing recipients is done in the same manner as described in the earlier section of this document named “Reports – Generate Now”.

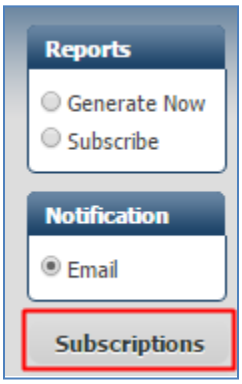
9.3.1.6. Subscription Enabled

The “Subscription Enabled” checkbox must be ticked to make the notification subscription active.

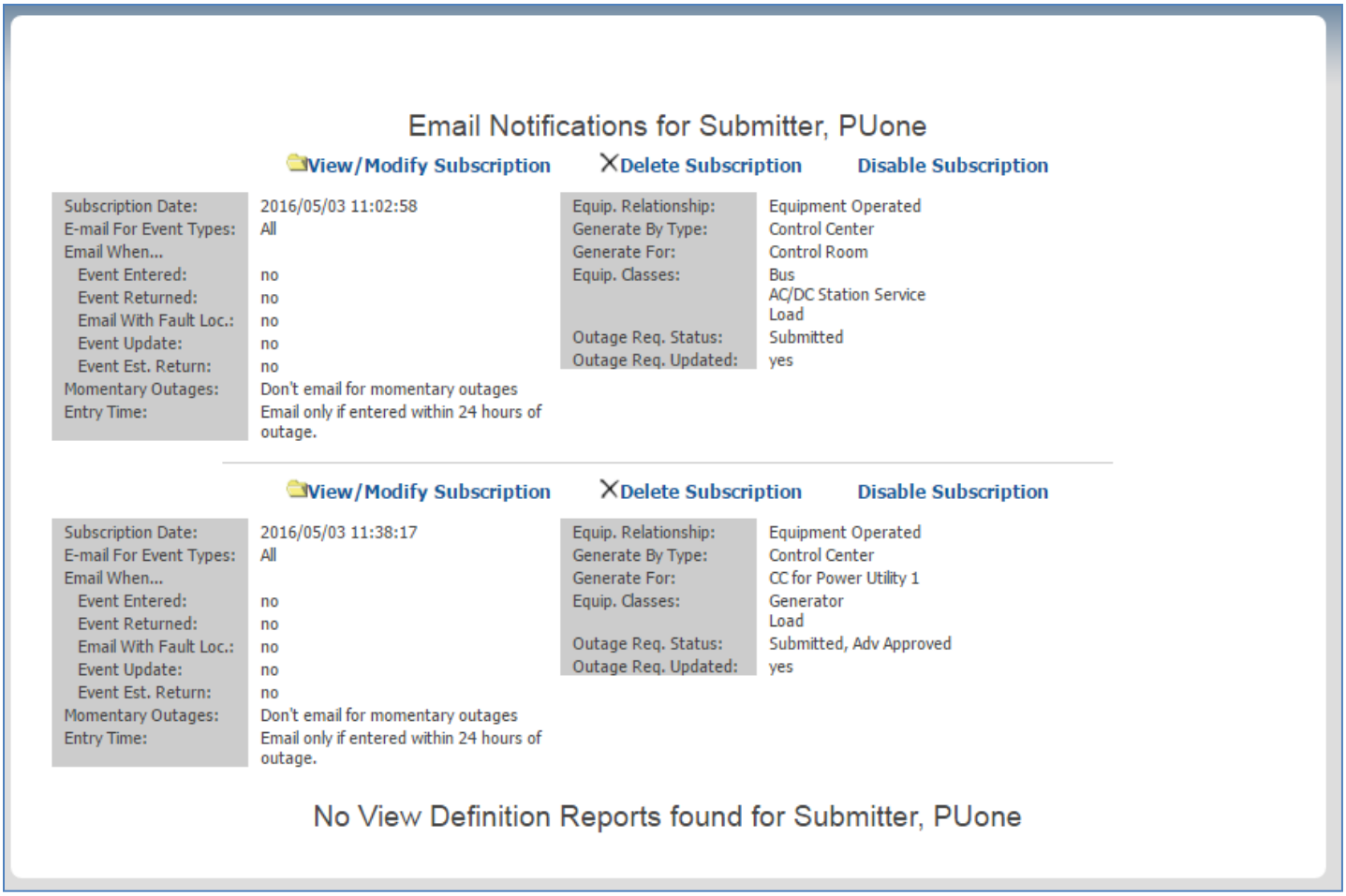
After setting up all filters the user must click on the “Subscribe” button to save the subscription.

9.4. Managing Subscriptions

The subscriptions that have been created are listed on the “Subscriptions Management” page and are reachable by clicking on the “Subscriptions” button in the left margin of the subscription form.



The subscriptions management page displays all of the users existing subscriptions. From this page the user may disable the subscription, delete the subscription or navigate to the subscription form to modify the subscription.



9.4.1.1. Enabling/Disabling Subscriptions

The user may click on the “Disable Subscription” hyperlink to de-activate it. Upon clicking it the user will be prompted with a confirmation message to agree to the action. Once the subscription is disabled it will not be sent out to the user.

The user has the option to re-enable the subscription by clicking on the “Enable Subscription” hyperlink. Upon clicking it the user will be prompted with a confirmation message to agree to the action.

Email Notifications for Submitter, PUone

View/Modify Subscription Delete Subscription **Enable Subscription**

Subscription Date:	2016/05/03 11:02:58
E-mail For Event Types:	All
Email When...	
Event Entered:	no
Event Returned:	no
Email With Fault Loc.:	no
Event Update:	no
Event Est. Return:	no
Momentary Outages:	Don't email for momentary outages
Entry Time:	Email only if entered within 24 hours of outage.

Equip. Relationship:	Equipment Operated
Generate By Type:	Control Center
Generate For:	Control Room
Equip. Classes:	Bus AC/DC Station Service Load
Outage Req. Status:	Submitted
Outage Req. Updated:	yes

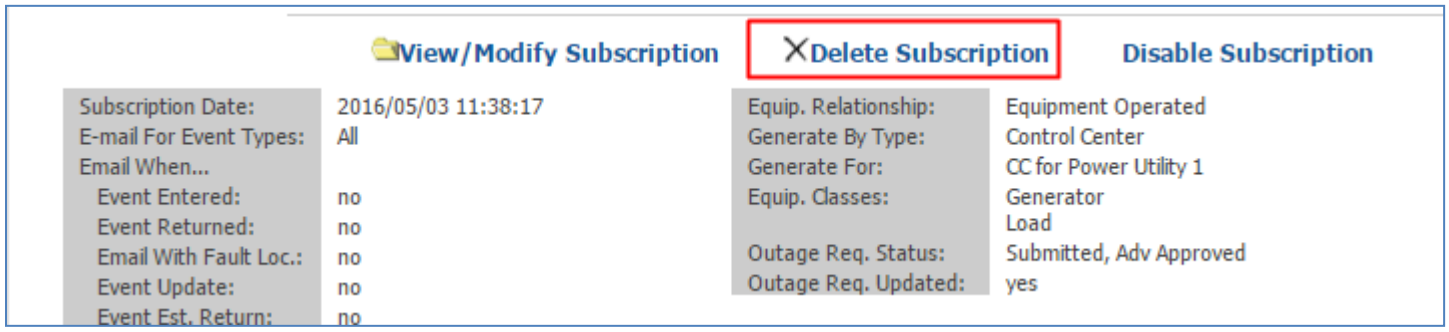
View/Modify Subscription Delete Subscription **Disable Subscription**

Subscription Date:	2016/05/03 11:38:17
E-mail For Event Types:	All
Email When...	
Event Entered:	no
Event Returned:	no
Email With Fault Loc.:	no
Event Update:	no
Event Est. Return:	no
Momentary Outages:	Don't email for momentary outages
Entry Time:	Email only if entered within 24 hours of outage.

Equip. Relationship:	Equipment Operated
Generate By Type:	Control Center
Generate For:	CC for Power Utility 1
Equip. Classes:	Generator Load
Outage Req. Status:	Submitted, Adv Approved
Outage Req. Updated:	yes

9.4.1.2. Deleting Subscriptions

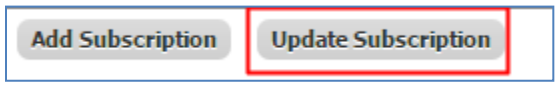
The user may delete subscriptions by clicking on the “Delete Subscription” hyperlink. Upon clicking it the user will be prompted with a confirmation message to agree to the deletion.



9.4.1.3. View/Modify Subscription

The user may view and modify an existing subscription by clicking on the “View/Modify Subscription” hyperlink. Upon clicking it the user will be taken to the subscription form page to make any changes.

After editing the subscription form the user may save the changes as an update to subscription by clicking the “Update Subscription” button.



Alternatively, the user may save the changes as a new subscription by clicking the “Add Subscription” button.

- End of Document -