California ISO
Your Link to Power

Transmission Register CAISO & PTO
General User Manual

Version 2.0

Table of Contents

1. Introduction

The Transmission Register (TR) is a secure Web-enabled database environment for CAISO internal users and specific Participating Transmission Owners (PTO) to access TR data.

The TR discloses for each transmission line and associated facility the:

- Identity of the PTO responsible for operation and maintenance and its owners (if other than the PTO).
- Dates which the CAISO assumed or relinquished Operational Control.
- Date of any change in the identity of the PTO responsible for its operation and maintenance or in the identity of its owner.
- Transmission equipment's applicable ratings and history.

1.1. Purpose

The TR maintains the official listing of transmission lines, associated facilities, and Entitlements that are subject to the CAISO's Operational Control, as required by the Transmission Control Agreement, Section 4.2.

1.2. Scope

This manual covers the basic TR user functions and steps required for viewing TR data and generating reports. The manual covers the following topics:

- How to access the application
- Understanding the capabilities and views of the different windows
- How to use the Find capability of TR and view data
- Generating, creating, printing, and saving reports

1.3. Definitions

The following defined terms and acronyms are used within this document:

Object	Definition
APS	Arizona Public Service Company
BPA	Bonneville Power Administration
BSCB	Bus Sectionalizing Circuit Breaker
CABLE	Cable
CAP	Shunt Capacitor
CB	Circuit Breaker
CDWR	California Department of Water Resources
CFE	Comision Federal De Electricidad
Component	A single piece or grouping of electrical transmission equipment embedded within the Grid System. Attributes that define a component include the Organization, Owner, Description, Station, Voltages, Ratings, and ISO or Non-ISO.
COND	Conductor

Object	Definition
.csv	Comma Separated Values (Excel format)
CSW	Circuit Switcher
CT	Current Transformer
DISC	Disconnect Switch
Dynamic	A TR search type, which allows the User to select a value as search criteria, and the values of other search criteria are dynamically limited to only applicable values based on the selected value. If a User chooses to perform a dynamic search, the dynamic search fields are limited to the following fields, and values must be selected in the order shown as follows: • Station • High Nominal Voltage • Equipment Type
Equipment	Electrical transmission equipment category created to represent a Component, e.g. Circuit Breaker, Transformer, Leg, Transmission Line Section, etc.
FUSE	Fuse
IID	Imperial Irrigation District
ISO Equipment	Represents Components turned over to the ISO for their Operational Control.
LADWP	Los Angeles Department of Water & Power
LEG	Component typically consisting of CB, DISCs, and COND at a CB position inside a Station
MID	Modesto Irrigation District
MOD	Motor Operated Disconnect Switch
MWD	Metropolitan Water District
NCPA	Northern California Power Agency
NEVP	Nevada Power Company
Nominal Voltage	Represents the voltage class which an Organization decides is the utility industry-wide standard value used to classify a range of voltages. For example, actual Components may operate at 220 or 225 kV, but each would fall into the 230 kV nominal voltage class.
Operating Voltage	Represents the voltage at which an Organization has decided to operate their Components for a specific Nominal Voltage of the Organization.
Organization	A utility entity that either performs the maintenance on and/or physically operates the Components listed under its name.
Owner	A utility entity that has an ownership percentage of or entitlements to the Components listed under its name.
PACE	PacifiCorp East

Object	Definition
PACW	PacifiCorp West
PG&E	Pacific Gas & Electric
PTO	Participating Transmission Owner
Rating Note	An Organization specific note providing additional rating limit detail the operator needs to use when operating the Component.
Rating Type	All rated components have at least four rating types that represent Summer Normal, Summer Emergency, Winter Normal, and Winter Emergency ratings and are used to populate the Detailed Network Model (MVA1, MVA2, MVA3, and MVA4). Additional rating types may be added by the Organization that represents special emergency or planning conditions. Within each rating type is an AMP and/or MVA/MVAR value that provides the user the electrical limits a Component can be operated at or planned for while under normal or emergency conditions.
RCT	Shunt Reactor
REG	Regulator
RLY	Relay
.rtf	Rich Text Format
SCAP	Series Capacitor
SCE	Southern California Edison
SCND	Synchronous Condenser
SDG&E	San Diego Gas and Electric
SMUD	Sacramento Municipal Utility District
SRCT	Series Reactor
SRP	Salt River Project
Static	A TR search type, which allows the User to openly select or enter values as search criteria, and then submit all values at once for searching.
Station Name	Organization specific substation/switching station full name or a special category (Transmission Line) reserved to be the umbrella for all Organization specific transmission circuits and their associated equipment types.
SVC	Static VAR Compensator
SVP	Silicon Valley Power
TERM	A Component representing one terminus of a transmission line typically consisting of a LEG(s) and line drop CONDs
TL	Transmission Line
TLS	Transmission Line Section
TR	Transmission Register
TRCT	Tertiary Reactor

Object	Definition
WALC	Western Area Lower Colorado
WACM	Western Area Colorado Missouri
WASN	Western Area Sierra Nevada
WTRP	Wave Trap
XFMR	Transformer

2. Accessing TR - CAISO and PTO Users

Before accessing the TR for the first time, the user must obtain and install a TR Certificate. Take the following steps to request, install, and access TR:

2.1. CAISO User Request TR Certification

- **Access** the following CAISO URL to obtain the application: http://home.caiso.ecn/scripts/dmcurrent.cgi?id=09003a60803da1c3
- **Fill out** the form following the instructions, as shown in Figure 1.
- **Save** as an Excel file to your drive.
- **E-mail** the completed form to certrequest@caiso.com.

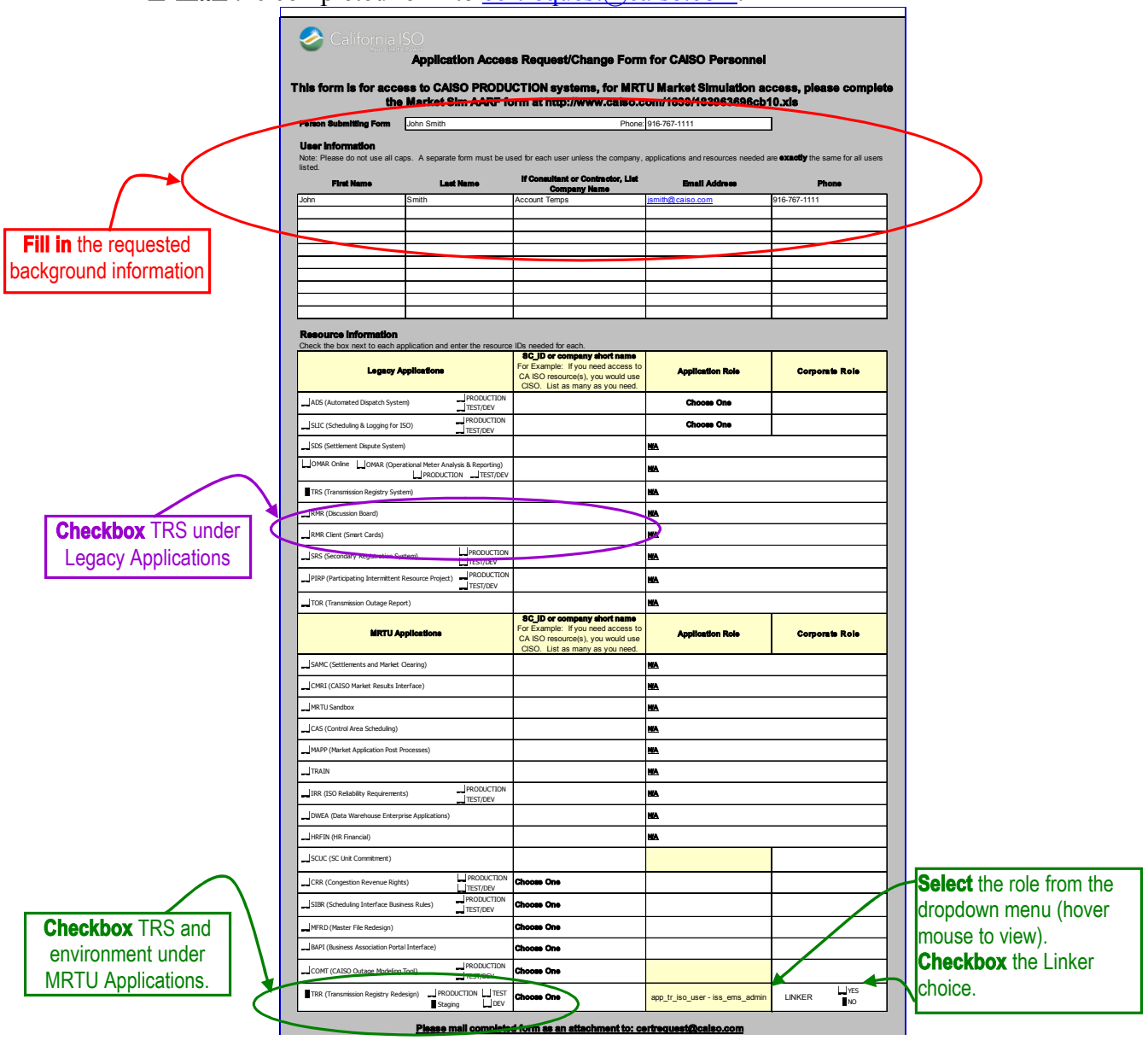


Figure 1. Application Access Request/Change Form Internal CAISO Users

2.2. PTO User Request TR Certification

- **Access** the following CAISO URL to obtain the application: http://www1.caiso.com/docs/2000/03/01/2000030110195926538.xls
- **Fill out** the form following the instructions, as shown in Figure 2.
- **Save** as an Excel file to your drive.
- **E-mail** the completed form to certrequest@caiso.com.

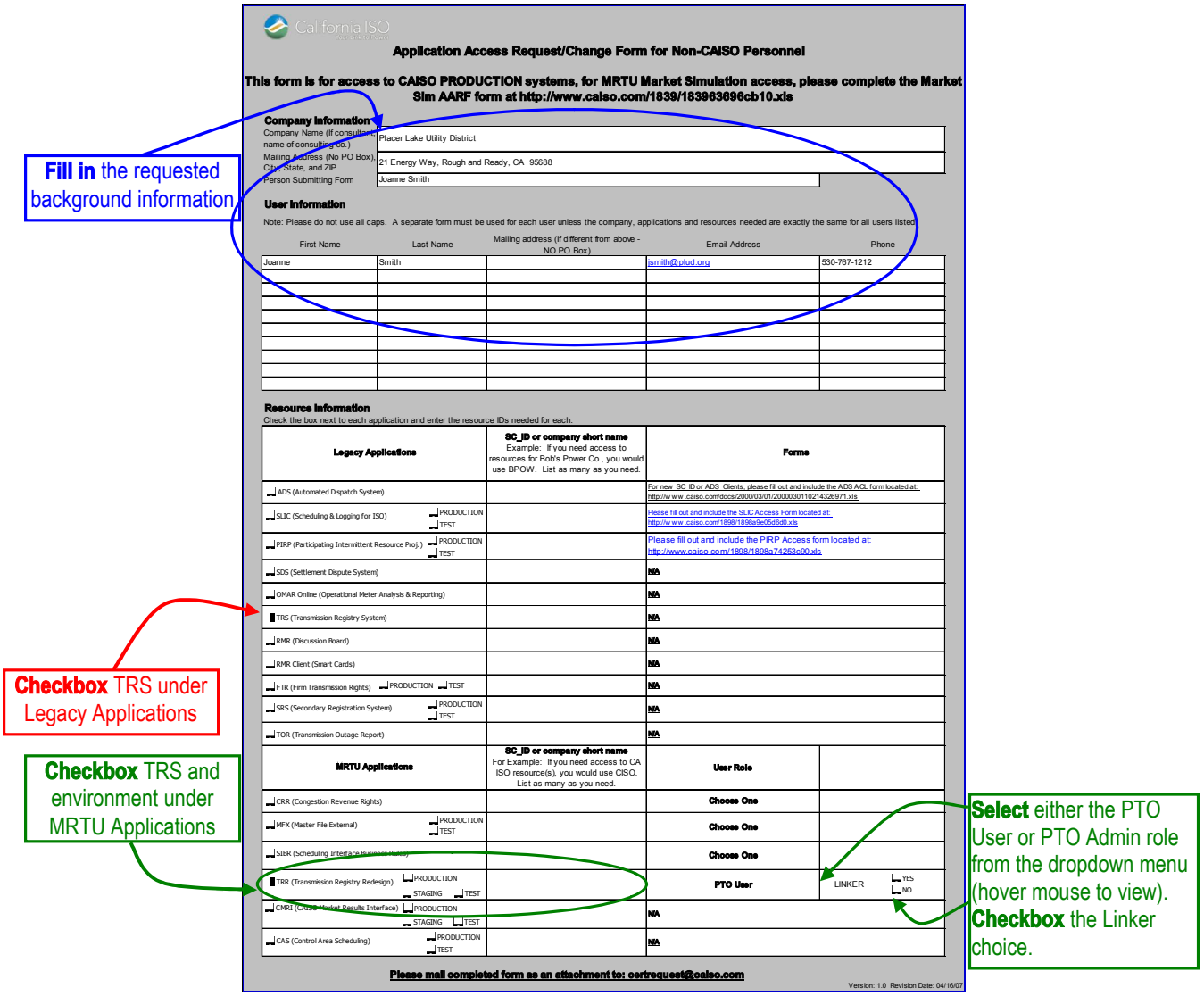


Figure 2. CAISO Application Access Request/Change Form External Users

2.3. Certificate Installation

Once approved, Certificate Request replies via e-mail with the TR Certificate, password, and TR Installation Instructions. A password is required for the initial login only. All ensuing accesses automatically connect the user.

- **Save** the certificate file and installation PIN in a secure location for possible future use **and follow** the installation instructions.

2.4. Accessing TR

- **Type** the URL address into your browser address bar. ***Note:*** *the following URL addresses transport a user to the Staging Environment only. The Production Environment URLs are soon to follow.*
  For **internal CAISO** users: https://Portal.wepex.net/tr/app
  For **external PTO** users: https://Portal.caiso.com/tr/app

3. Using TR Functions/Screen Views

3.1. Main Screen

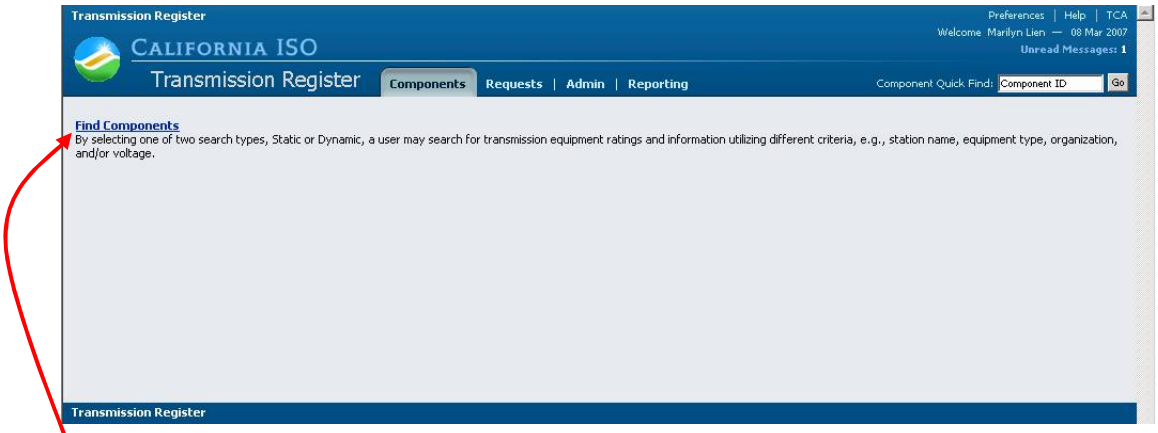


Figure 3. TR Main Screen – Components

Once the address has been typed into the browser, the screen in Figure 3 appears, displaying two folder labels, Components and Reporting.

- **Click** on the **Find Components** hyperlink.

Figure 4. Find Components Page

This is where the search process begins in the selection of a Search Type. The Search Type window provides the user with the ability to conduct the search using either a **Static Search** or a **Dynamic Search**. The user may view their organization's components and only those that are included in the Maintenance Organization list, or if a valid share exists between the component and the user's organization.

As shown is Figure 4, the application automatically defaults to the Static Search screen.

- **If** a Dynamic Search is desired,
  Then select the **Dynamic Search** hyperlink and proceed to Section 3.3.
- **If** a Static Search is desired,
  Then proceed to Section 3.2.

3.2. Find Components- Static Search

As stated in Section 3.1., the **Find Components** defaults to the **Static Search** (refer to Figure 4). Static Searches allow the user to select ***any or all*** the criteria for a search, however keep in mind that the fewer the search selections, the larger the results. The user can likewise select a specific parameter in the left-hand column; however, the search automatically defaults to Equal to.

Note: *users can view only information that is relevant to their organization.*

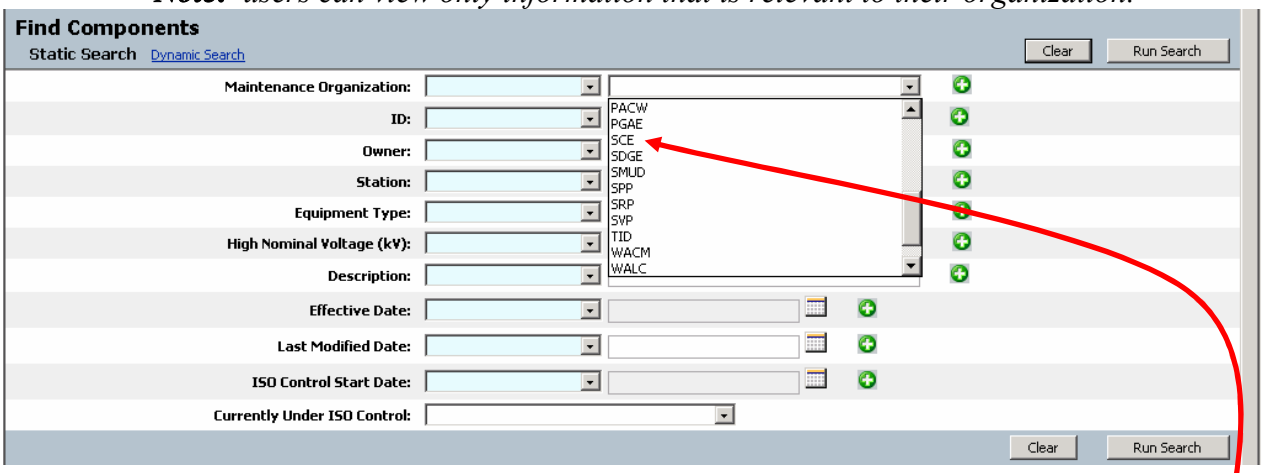


Figure 5. Static Search- Organization

- **Select** the **Maintenance Organization** from the right column drop-down menu shown in Figure 5 **and select** Equal to parameter in the left-hand column, shown in Figure 6. ***Tip:*** *The user is not required to make parameter selection in the left-hand column if "Equal to" is the preference.*

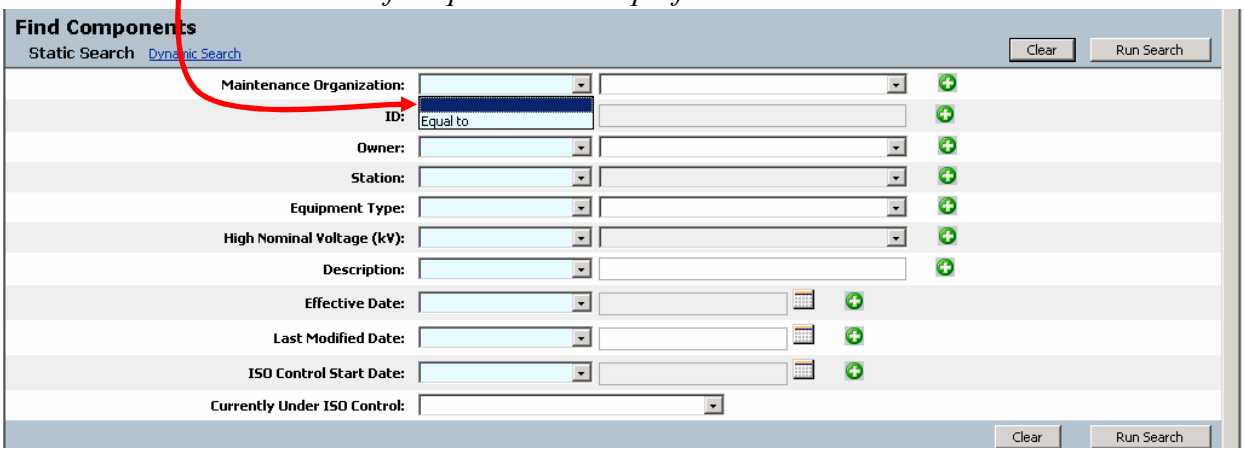


Figure 6. Static Search- Parameters

- **Enter** the component **ID** in the second row of the right column **and select** the left-hand column parameter of one of the following:
  - *Equal to*- searches the exact ID number (the default choice)
  - *Contains*- searches using a partial ID number
  - *Starts with*- searches using the first few digits of an ID number
- **Select** the **Owner**.

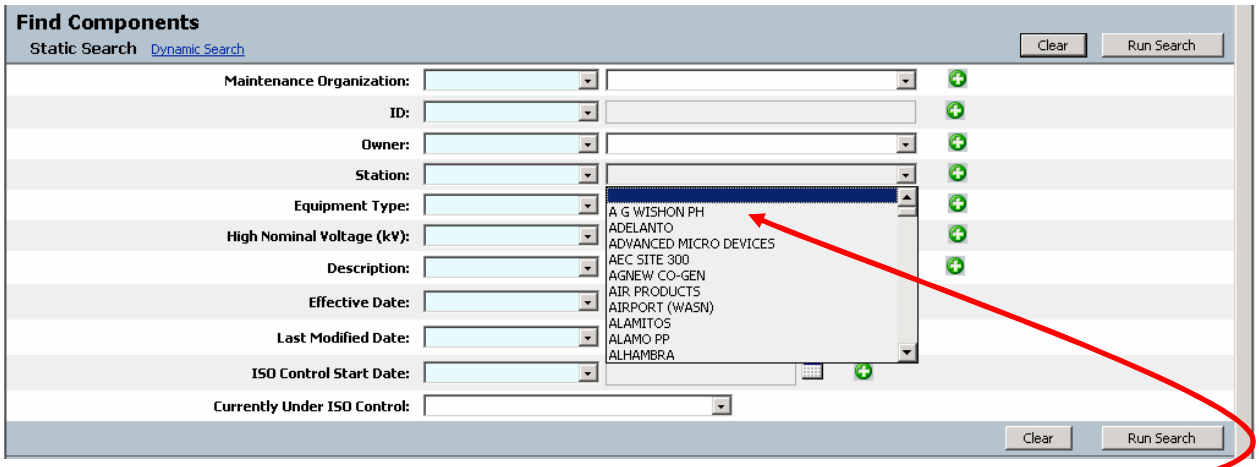


Figure 7. Static Search- Equipment Type

- **Select** the **Station** name.
- **Select** the **Equipment Type** shown in Figure 7.

Note: *this window offers all equipment types, which may or may not be related to the Organization or Owner.*

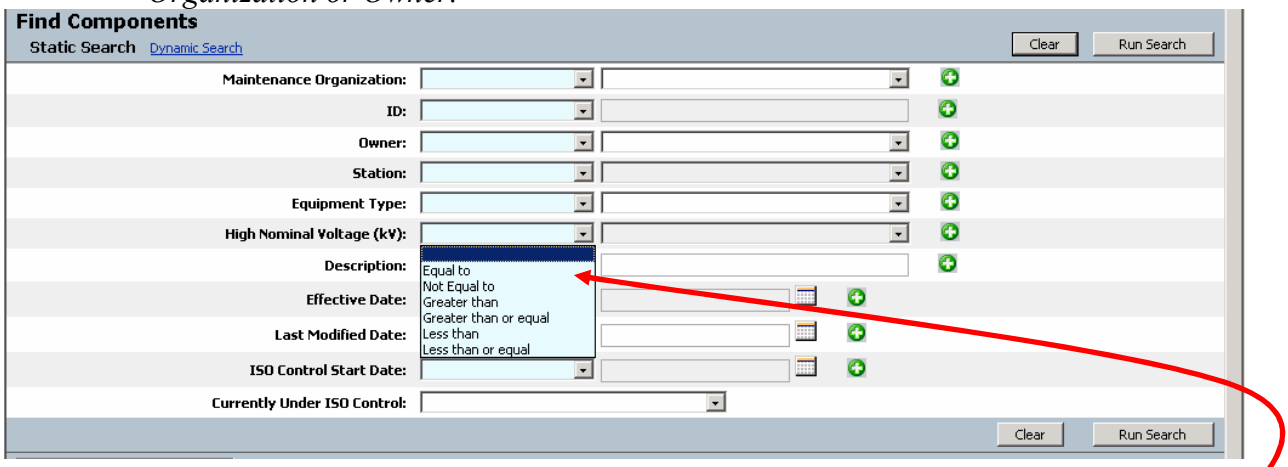


Figure 8. Static Search- High Nominal Voltages

- **Select** the **High Nominal Voltage (kV)**, **and select** one of the left-hand column parameters (shown in Figure 8):
  - Equal to
  - Not Equal to
  - Greater than
  - Greater than or equal to
  - Less than
  - Less than or equal to

Note: *Static Search offers all voltages, which may or may not be related to the Organization or Owner.*

- **Type** in the **Description and select** one of the left-hand column parameters:
  - Equal to
  - Contains
  - Starts with

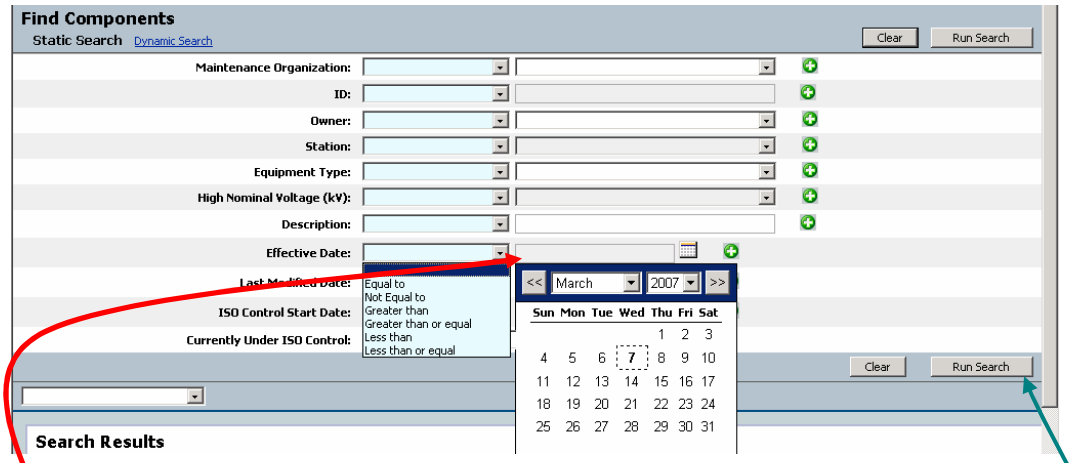


Figure 9. Static Search- ISO Control Start Date

- **Type in** the **Effective Date**,
  OR
  Select the **Effective Date** by clicking on the date icon shown in Figure 9. A calendar displays.
  - **Click** the desired day of the month and the calendar automatically closes.
  - **Select** the left-hand column parameters for the **Effective Date** shown in figure 9.
- **Select** the **Last Modified Date** and parameters using the same method as shown previously.
- **Select** the **ISO Control Start Date** and parameters in the same manner.
- **Choose** either Yes or No from the **Currently Under ISO Control** drop-down window.

After the desired criterion is selected, then:

- **Click** the Run Search button shown in Figure 9.

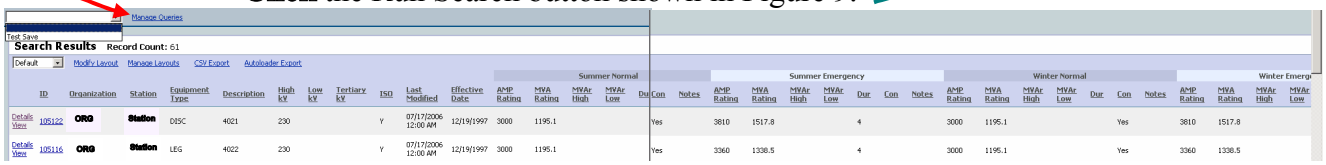


Figure 10. Static Search Results

3.2.1. Details View of Static Search Results

The search results display at the bottom of the page, shown in Figure 10. The user can scroll to the right of the Search Results screen and view the ratings for Summer Normal, Summer Emergency, Winter Normal, Winter Emergency, and all other ratings currently populated for each component.

To save the query:

- **Click** the Manage Queries hyperlink and a window loads to name and save the query for future reference (refer to Figure 10).
- **Type in** the file name.
- **Press** the OK button. The screen refreshes and you can now see your saved query in the dropdown window next to Manage Queries shown in Figure 10.

To sort the results by a specific category:

- **Click** the desired hyperlinked category and the screen refreshes.

To view more details:

- **Click** on the Details View hyperlink (clicking the ID number hyperlink next to the Details View provides the same outcome).

The screen shown in Figure 11 offers additional details of the search.

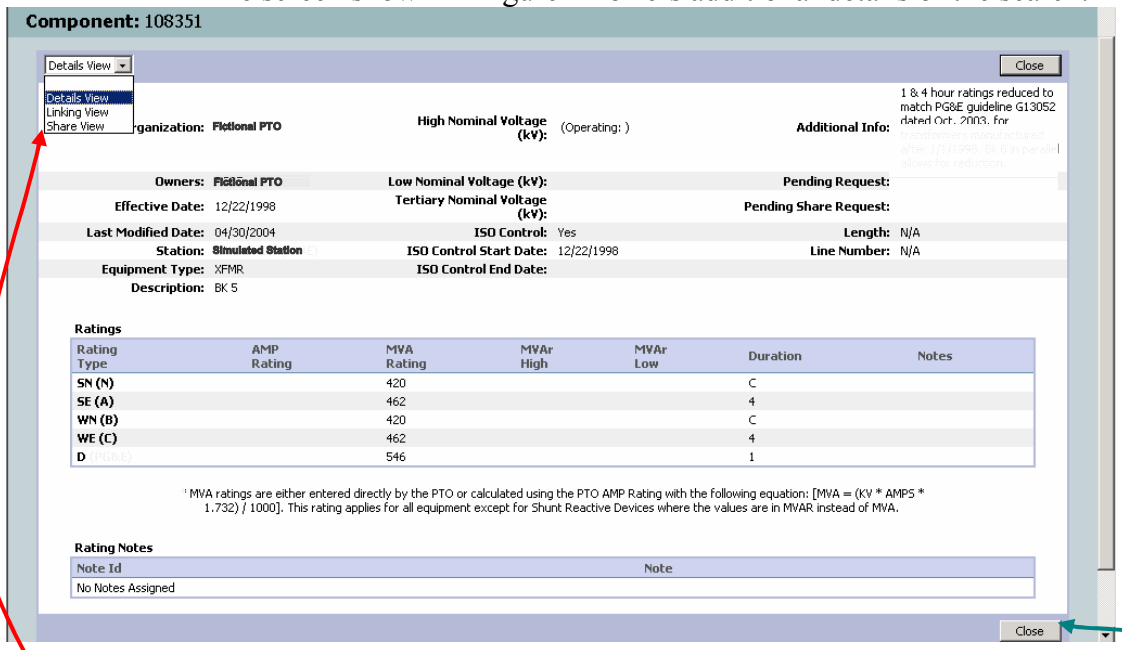


Figure 11. Details View

Once in the Details View, the user has the option to view components linked to this component (Linking View). A Component Link is a relationship between two Components of which one is considered a Parent Component and the other a Child Component. To view component links, from the dropdown menu:

- **Select** Linking View and the screen shown in Figure 12 appears.

Also while in the Details View the user can opt to select the Share View that enables the Component to be viewed by the Organization it is shared with, but that Organization may not link any of its non-shared Components to it:

- **Select** Share View. In this case, there are no shares attached, as shown in Figure 13.
- **Press** the Close button to return to the previous screen.

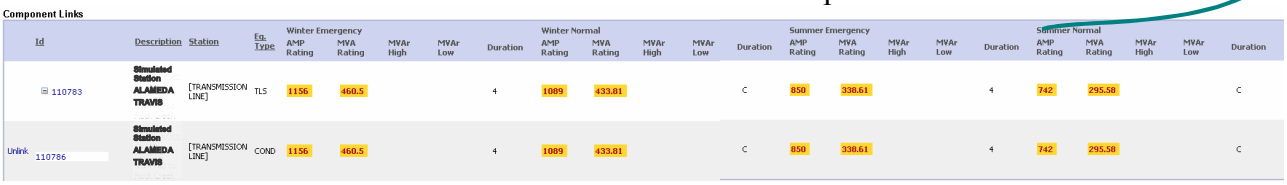


Figure 12. Component Link View

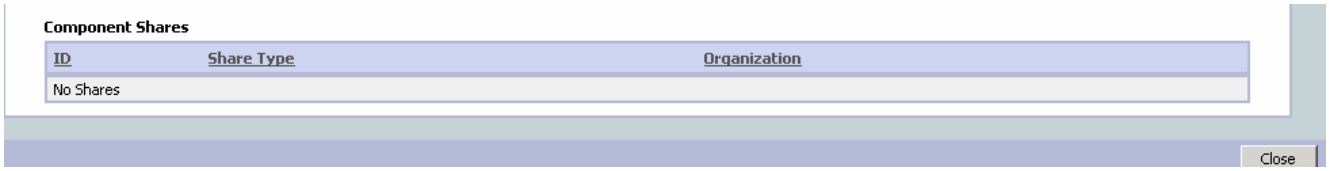


Figure 13. Component Share View

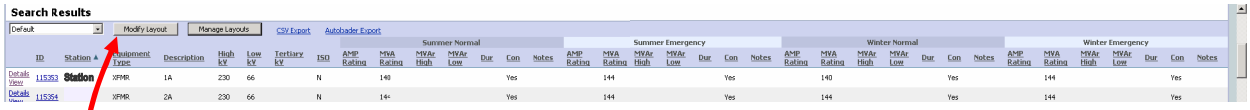


Figure 14. Search Results Modification

3.2.2. Modify/Manage Layout of Static Search Results

The Modify and Manage Layout window allows the user to change the headings of their Search Results, as well as save the modified layout for future component searches. As shown in Figure 15, an organization's proprietary rating types can be added or subtracted, as required, using the east/west arrows provided in the partition between the Available Columns and In Layout.

To modify the criteria for the Search Results, take the following steps:

- **Press** the Modify Layout button (refer to Figure 14) and the Modify Layout window appears (refer to Figure 15).
- **Select** the topic to either add (Available Columns) or remove (In Layout).
- **Click** on the arrow to move the topics for layout.
- **Click** Ok when complete.

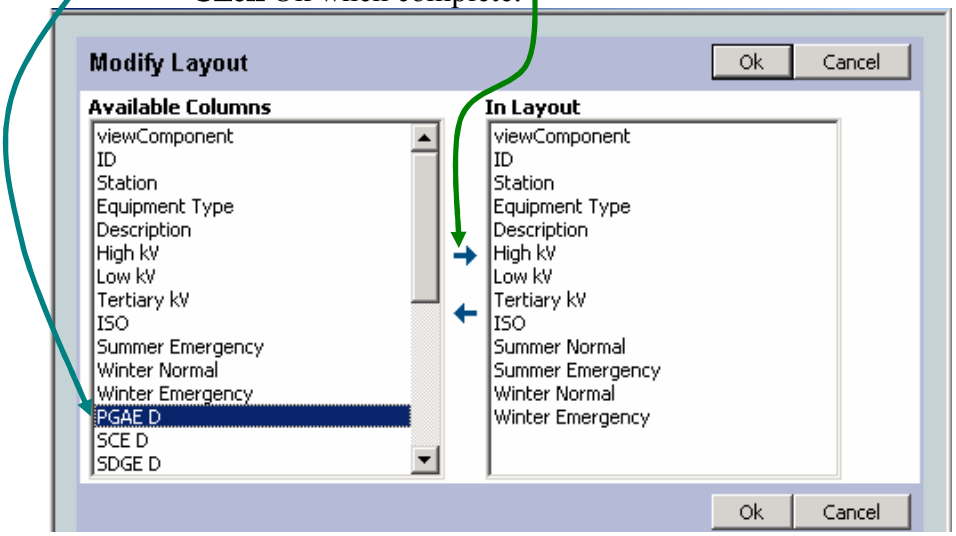


Figure 15. "Modify Layout" Window

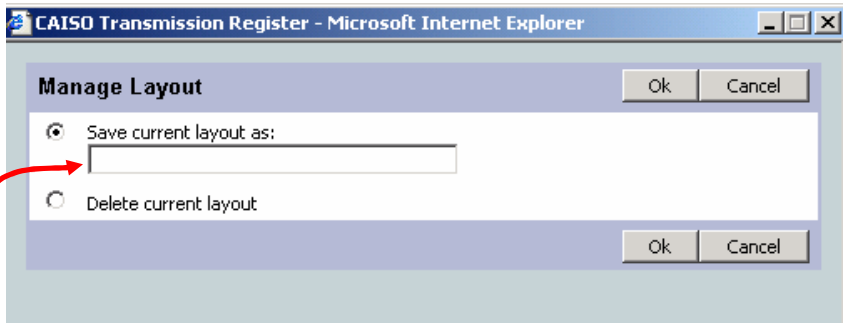


Figure 16. "Manage Layout" Window

To save a layout for future use, take the following steps:

- **Refer** to the Static Search Results window in Figure 10.
- **Click** on Manage Layout and the "Manage Layout" window appears (refer to Figure 16).
- **Select** one of two options and click "ok".
  - **If** you want to save the current layout (Manage Layout defaults to "Save current layout as"),
    Then type in a file name and **click** ok.
  - **If** you want to delete the current layout,
    Then check the Delete current layout button and **click** Ok.

3.2.3. Export Static Search Results to .csv Format

To export the results into an Excel .csv format:

- **Click** the CSV Export hyperlink, which exports the Search Results into Excel's .csv format. A mock-up version is shown in Figure 17.

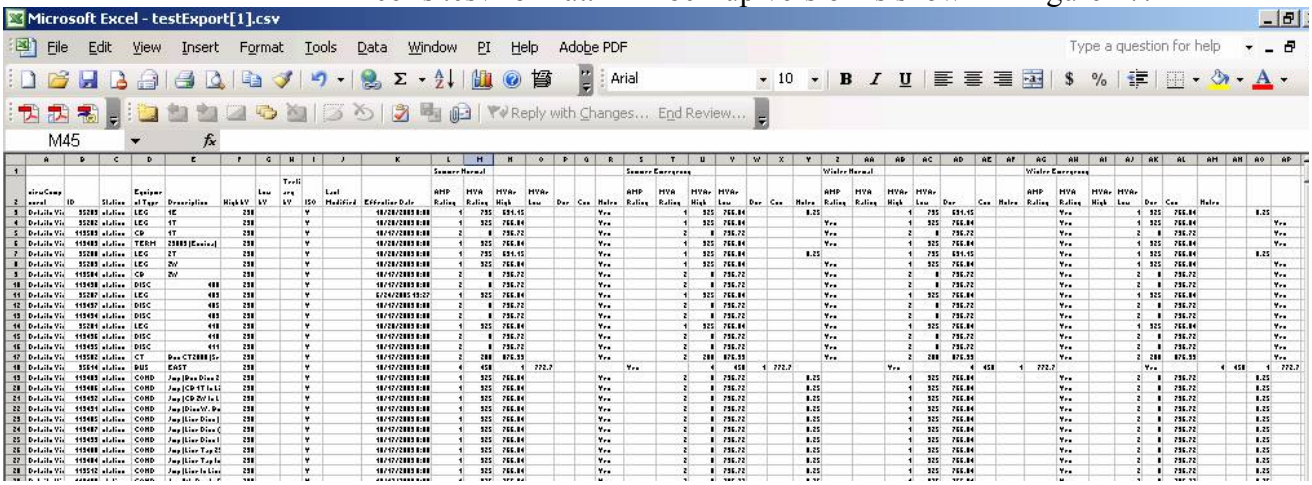


Figure 17. CSV Export Sample

3.2.4. Export Static Search Results to Autoloader Format

The results can likewise be exported into an Autoloader format (also .csv) so that changes are inserted quickly, and then uploaded by the PTO Administrator back into the Transmission Register.

- **Click** the Autoloader Export hyperlink, which exports the Search Results into an Excel .csv format. A mock-up version is shown in Figure 18.

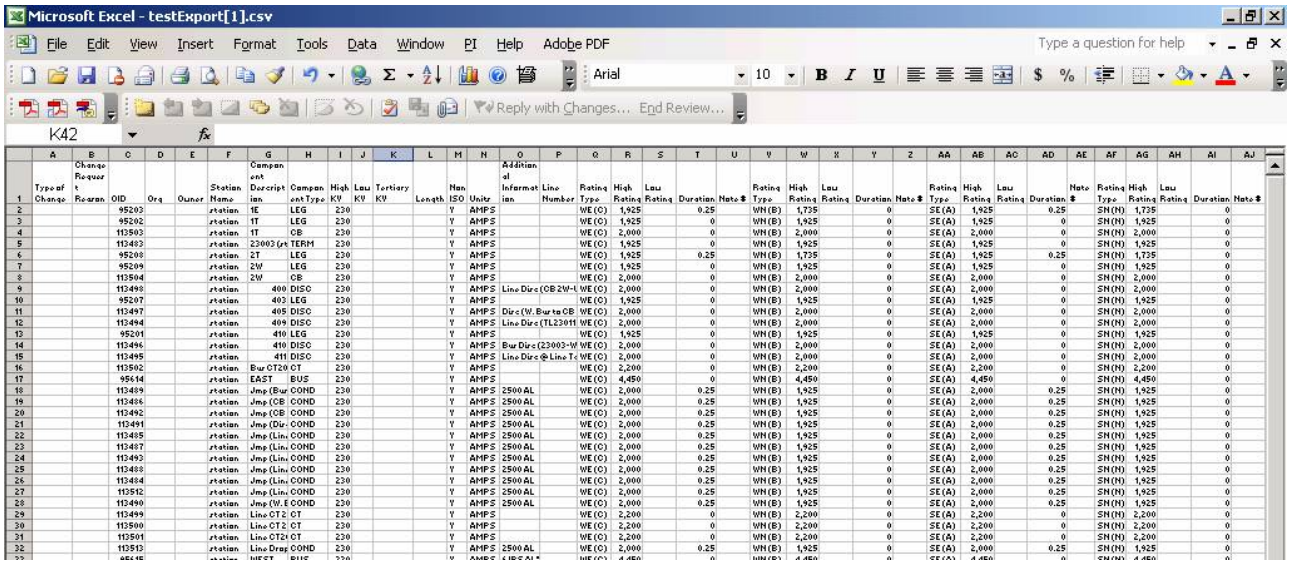


Figure 18. AutoLoader Export Sample

3.3. Find Components- Dynamic Search

Figure 19. Dynamic Search Main Screen

The TR Dynamic Search (refer to Figure 19) offers fewer criteria, but you can either select only an Organization, or drill down to specific component details. After choosing the Organization, the screen refreshes after each selection with the associated station, voltage, and equipment type information.

Note: *users can view only information that is relevant to their organization.*

- **Select** the **Organization** name from the dropdown window shown in Figure 20. When a user selects Organization, the Station refreshes and populates with only stations that have active components for the organization.
- **Select** the **Station** from the dropdown window. Once a station is selected, the high nominal kV refreshes and populates based on the high nominal kV values of components associated with that station and organization.
- **Select** the **High Nominal Voltage (kV)** from the dropdown window. Once the voltage is selected, the equipment type refreshes and populates based on the previous entries.
- **Select** the **Equipment Type** from the dropdown window.
- **Press** the Run Search button.

Note: *the screen in Figure 21 displays mock-up results of a Dynamic Search.*

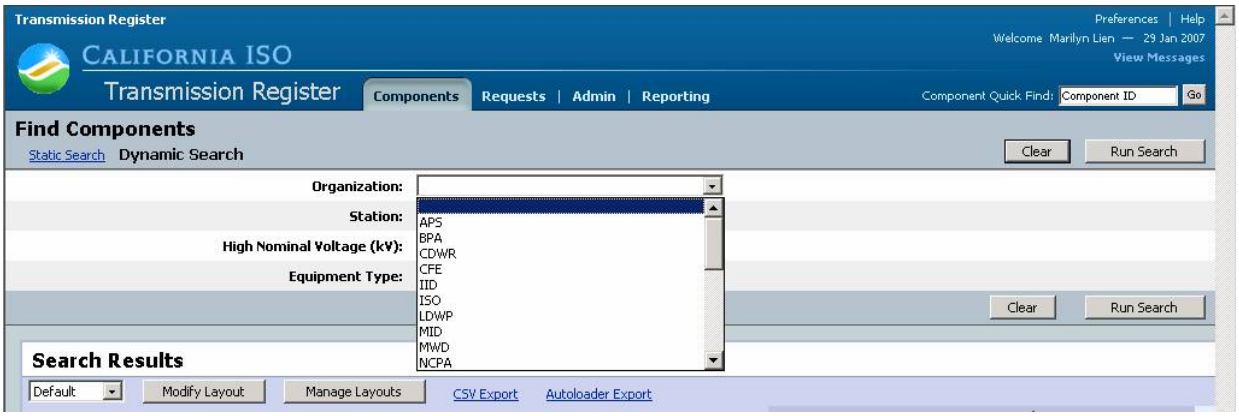


Figure 20. Dynamic Search Organization Dropdown

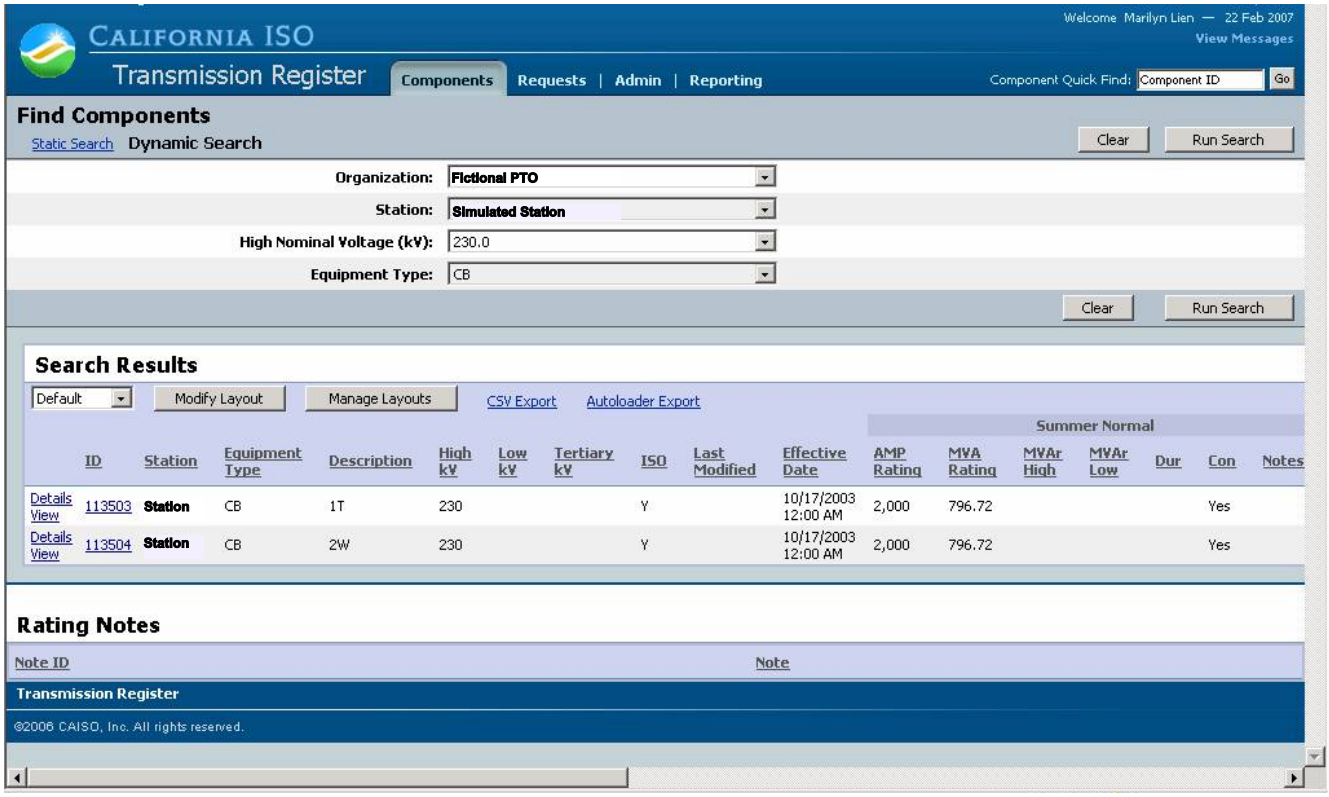


Figure 21. Dynamic Search Results

3.3.1. Details View of Dynamic Search Results

To view the details of your Dynamic Search, refer to the steps in 3.2.1.

3.3.2. Modify/Manage Layout of Dynamic Search Results

To modify or manage the layout for your Dynamic Search results, refer to the steps in 3.2.2.

3.3.3. Export Dynamic Search Results to .csv Format

To export your Dynamic Search results to .csv format, refer to the steps in 3.2.3.

3.3.4. Export Dynamic Search Results to Autoloader Format

To export your Dynamic Search results to Autoloader format, refer to the steps in 3.2.4.

4. Requests & Rating Facts

General users have read privilege to view information under the two folder tabs of Requests and Admin, which includes the following subjects:

- **Find Change Requests-** Search and view pending Change Requests for new and existing components.
- **Find Component Share Requests-** Find a component that is shared by another Organization.
- **Rating Types-** View the different rating types, this can include those unique to a specific Organization.
- **Rating Notes-** View Organization-specific rating notes.

The ensuing subsections offer the steps to navigate through these two screens.

4.1. Find Change Requests

Figure 22. Requests Screen

- **Click** the Find Change Requests hyperlink (refer to Figure 22) and the screen in Figure 23 loads.

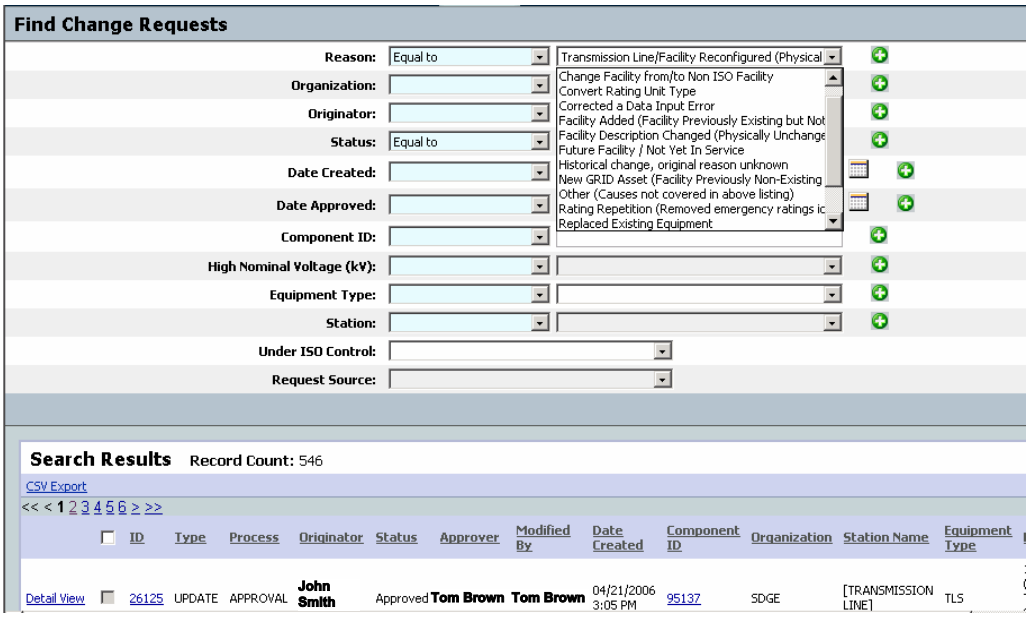


Figure 23. Find Change Requests Page

Under the Find Change Requests topic, the user can search for Change Requests on new or existing components using either specific criteria or by general category type. For example, if we choose the Reason as Transmission Line/Facility Reconfigured (Physically Changed), and then select the Status Approved, we retrieve six pages of approved Change Requests that pertain the that reason type. However, for training

purposes, we will proceed step-by-step as if all the criteria is identified:

Reminder: *The parameter for all search options automatically defaults to Equal to.*

- **Click** the Find Change Requests hyperlink shown in Figure 22 and the screen in Figure 23 loads.
- **Select** the following criterion from the dropdown windows.
  - **Reason**
  - **Organization**
  - **Originator**
  - **Status –** Defaults to "Pending Approval".
- **Type in** the Date Created,
  OR
  Press the calendar icon **and select** a date. Once the date is selected the window automatically closes.
- **Select** the appropriate Date Created parameter if different than "Equal to".
- **Type in** the Date Approved,
  OR
  Press the calendar icon **and select** a date.
- **Select** the appropriate Date Approved parameter if different than Equal to.
- **Type in** the Component ID. If only a partial number is available, you can select the parameter of either "Contains" or "Starts with".
- **Select** the High Nominal Voltage (kV) and the associated parameter (defaults to "Equal to").
- **Select** the Equipment Type.
- **Select** the Station name.
- **Choose** either Yes or No as to whether the component is Under ISO Control.
- **Choose** AUTOLOAD for the Request Source and the search outputs below the Search Results on the bottom of the page, as demonstrated in Figure 23.

Type of Change	Change Request Reason	OID	Org	Owner	Station Name	Component Description	Component Type	High KV	Low KV	Tertiary KV	Length	ISO Control	Units	Additional Information	Line Number	Rating Type	High Rating	Low Rating	Duration	Note #
create	New GRID Asset (Facility Previously non-Existing Until New Construction)		PLUD	PLUD	AMADOR	BSCB 1	BSCB	230				Y	AMPS							
update	Revised Ratings (Equipment Physically Unchanged)	95668	PLUD	PLUD	AMADOR	NORTH	BUS	70				Y	AMPS			WE (C)	2900		0	
retire	Other (Causes not covered in above listing)	95669	PLUD	PLUD	AMADOR	SOUTH	BUS	69				Y	AMPS							
create	New GRID Asset (Facility Previously non-Existing Until New Construction)		PLUD	PLUD	AMADOR	NEW 1	FUSE	69				Y	AMPS							

Figure 24. Sample .csv Format

The user can export to a .csv format by clicking the CSV Export hyperlink shown in Figure 23 and the spreadsheet shown in Figure 24 is generated.

To view the details of one line of the Search Results:

- **Click** the Details View hyperlink shown in Figure 23 and the Change Request in Figure 25 loads.

- **Press** the Close Button when complete.

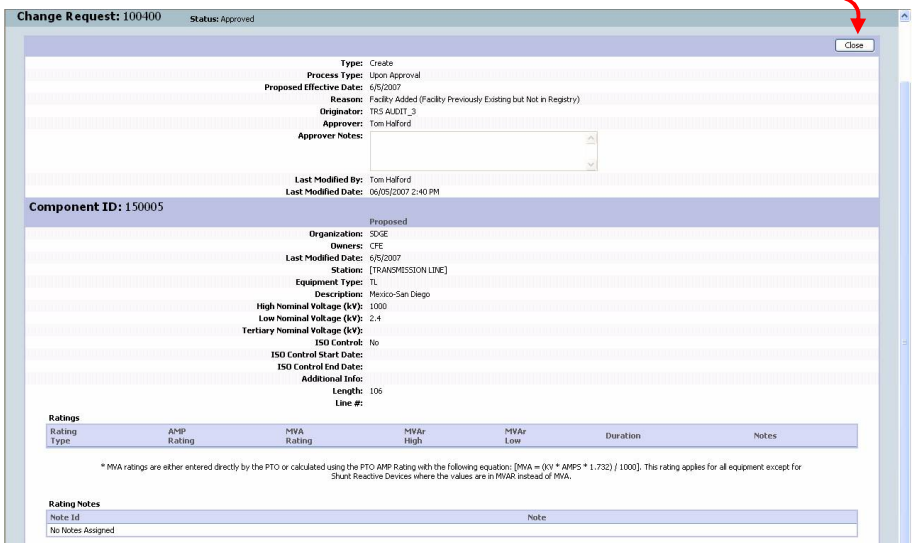


Figure 25. Details View Window

4.2. Find Share Requests

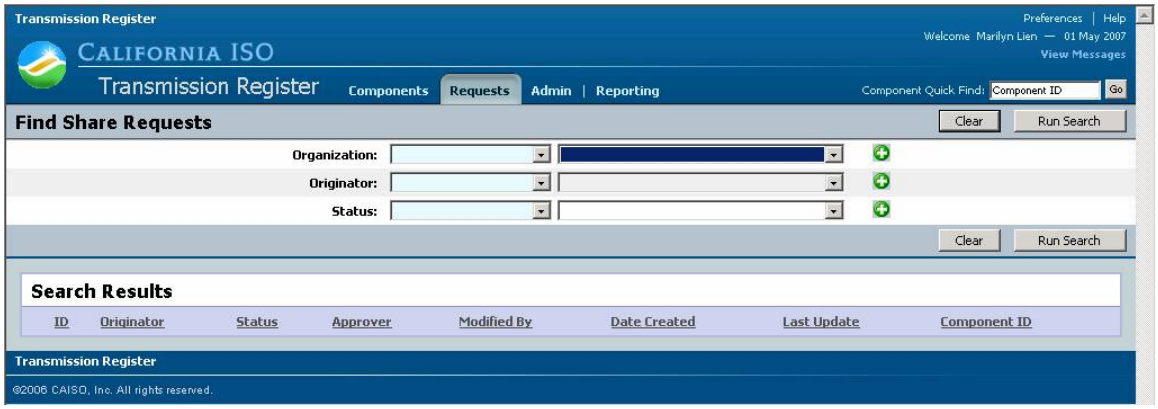


Figure 26. Find Share Requests

The Find Share Requests page permits the user to search and view requests submitted by different organizations that share their component and related equipment ratings information. One or the entire criterion can be selected, but for training purposes, we select all.

Take the following steps to Find Share Components:

Reminder: *The parameter for all search options automatically defaults to Equal to.*

- **Click** the Find Share Requests hyperlink shown in Figure 22 and the window in Figure 26 loads.
- **Select** the Organization.
- **Select** the Originator.
- **Select** the Status.
- **Press** the Run Search button and the screen in Figure 27 loads.

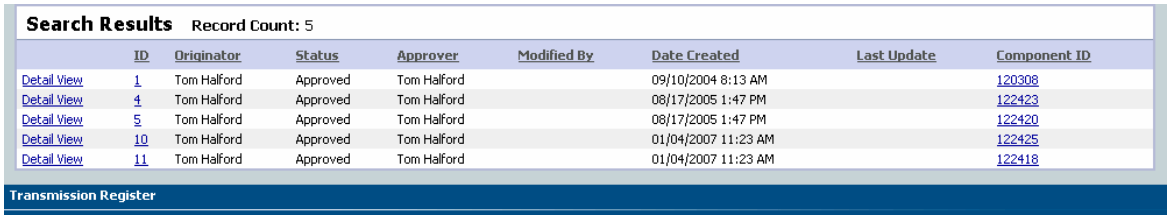


Figure 27. Find Share Requests Results

- **Click** the Detail View hyperlink to see the Share Request details.

4.3. Rating Types

Figure 28. Admin Screen

Rating Types defined is an organization's standard description of an industry common operating condition that an electrical component would be subjected to when in an energized state (e.g. Winter Normal, Summer Normal).

- **Click** on the Rating Types hyperlink shown in Figure 28 and the screen in Figure 29 loads.

Figure 29. Rating Types Screen

Click the View Rating Type or Rating Type ID hyperlink to view the details of a rating type, and the example shown in Figure 30 loads.

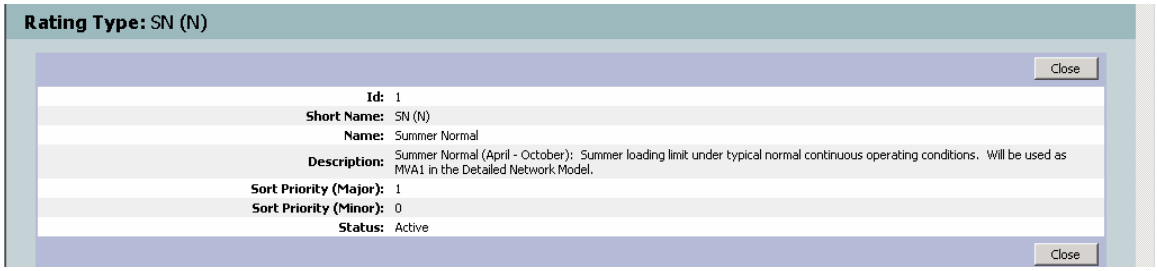


Figure 30. Rating Type Details

4.4. Rating Notes

Rating Notes are an organization's detailed operating constraint that is in addition to or reaffirms an electrical component's Rating Type information. The note typically informs the operator what additional constraint has been applied to the Rating Type (e.g. Limited by Ground Clearance, Limited by Disconnect).

- **Click** on the Rating Notes hyperlink shown in Figure 28 and the screen in Figure 31 loads.

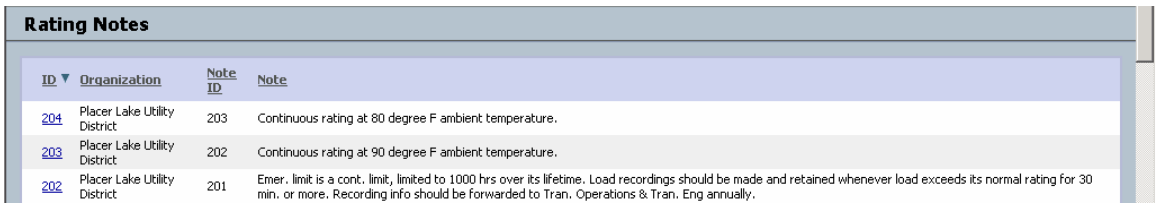


Figure 31. Rating Note Details

- **Click** the ID number to view the details of the rating note and the window in Figure 32 loads.

Figure 32. Rating Note Detail

5. Reports

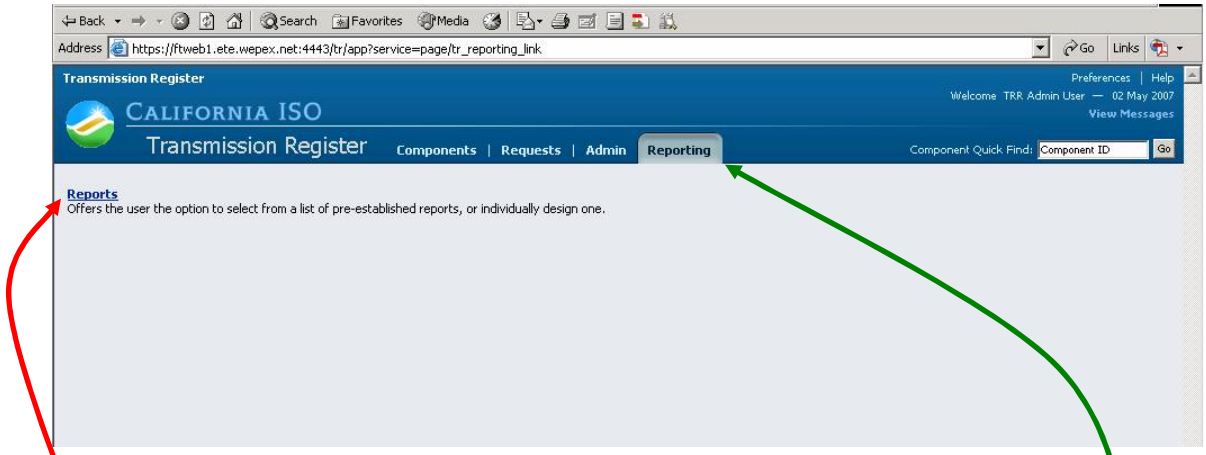


Figure 33. Reporting Screen

To access the TR report options, take the following steps:

- **Select** the Reporting file folder of the main TR screen shown in Figure 33.
- **Click** on the "Reports" hyperlink. This navigates the user to the Actuate Report site shown in Figure 34.
- **Click** on TR folder name and the screen in Figure 35 appears offering a selection of reports the user can run.

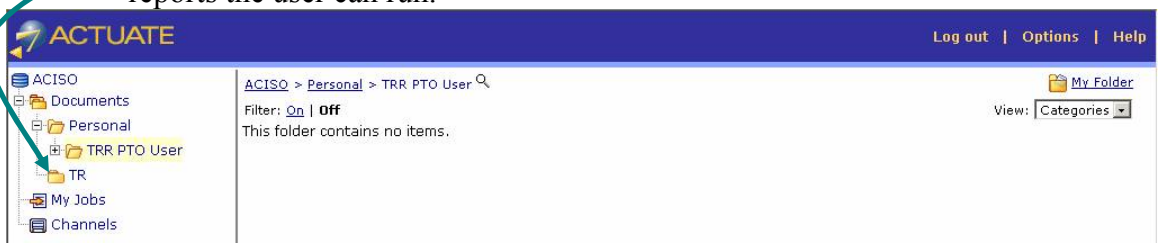


Figure 34. Actuate Report Screen

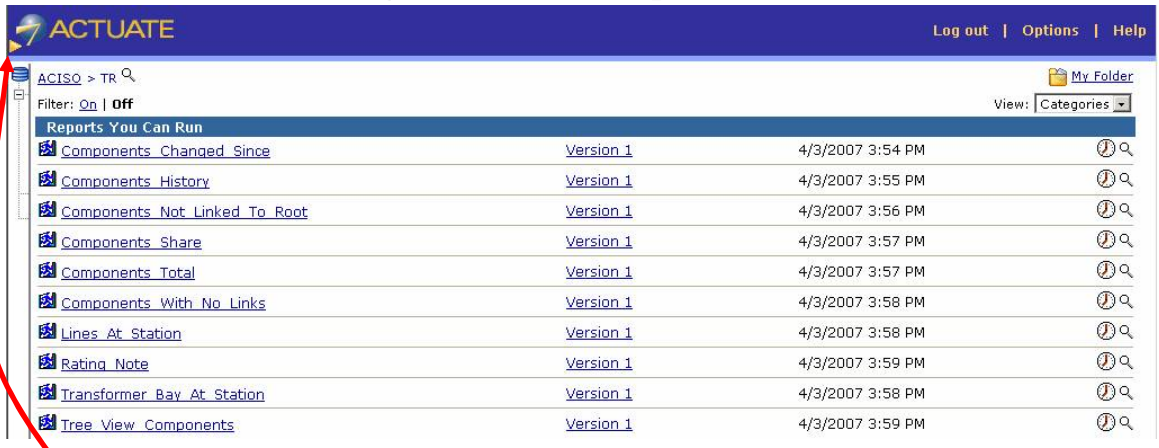


Figure 35. TR Report Selection

Note: *The left window that displays the file folders can be adjusted smaller to view a larger Report screen by right-clicking the left pointed arrow. To make larger, right-click the right arrow.*

At the top of the ACTUATE screen (refer to Figure 35), the toolbar contains the following features:

- Log out Self-explanatory; clicking this button closes your session with the tool.
- Options An out-of-the-box feature of Actuate, unavailable for the *Transmission Register*.
- Help An out-of-the-box feature of Actuate, unavailable for the *Transmission Register*.

5.1. Components Changed Since

The Components Changed Since report retrieves all active or retired components modified since a specific date for a particular utility. Any change request information associated with the components is displayed including change request reasons.

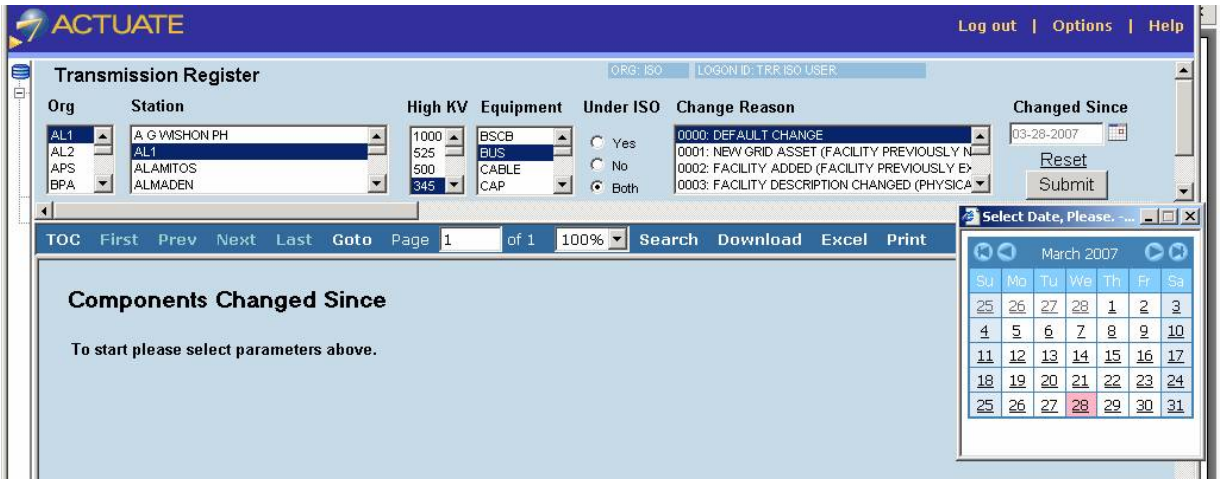


Figure 36. Components Changed Since Parameters

To create a "Components Changed Since" report, choose the parameters shown in Figure 36. ***Note:*** *Depending on the desired outcome, one or all of the parameters may be selected. However, be cognizant of the additional time to download more results when fewer parameters are selected*:

- **Select** the Org (organization). A range of Orgs can be chosen at one time:
  - **Left-click** the mouse on the first Org choice.
  - **Press down** continuously on the keyboard shift key.
  - **Select** the range of organizations until all are highlighted blue.

  OR select individual organizations:
  - **Left-click** the mouse on the first Org choice.
  - **Press** the Control Key and **left-click** simultaneously on all desired Orgs.
- **Select** the Station(s).
- **Select** the High kV(s)
- **Select** the Equipment Type(s).
- **Click** the radio button that signifies whether or not equipment is Under ISO Operational Control, or both.
- **Select** the Change Reason(s) from the Change Reason box.

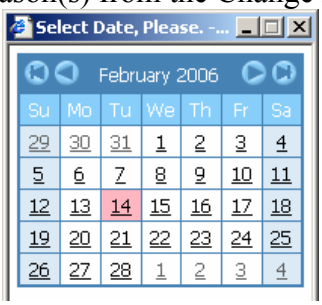


Figure 37. Calendar Icon

- **Type in** the date or **left-click** the date icon (refer to Figure 37) to select a date:
  - to shift the calendar back one year from the highlighted date.
  - to shift the calendar forward one year from the highlighted date.
  - to shift the calendar back one month from the highlighted date.
  - to shift the calendar forward one month from the highlighted date.
- **Click** the Submit button or **press** the Reset hyperlink refreshing to a blank screen.

Once submitted, a screenshot resembling Figure 38 appears.

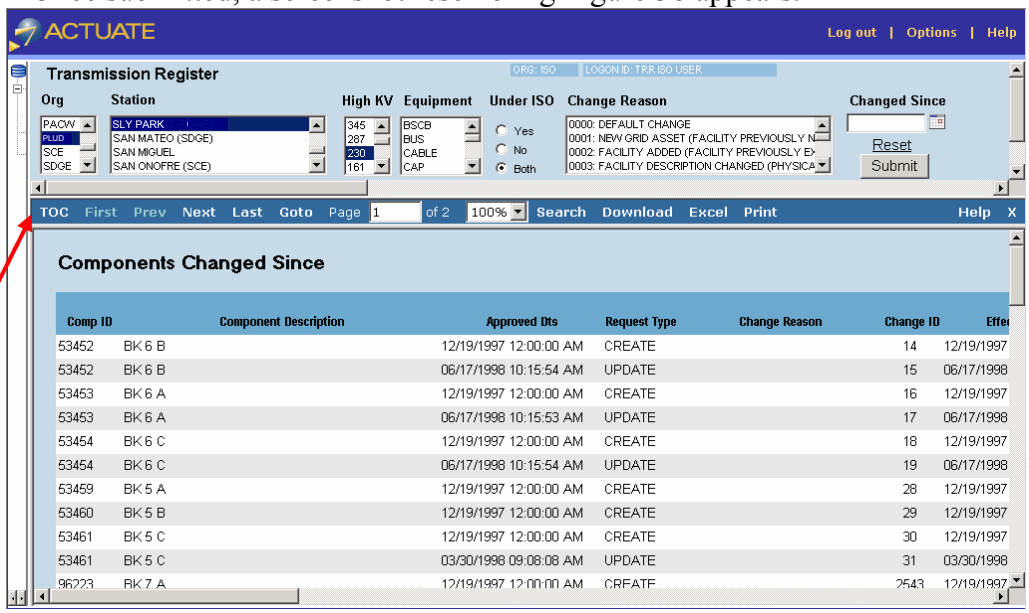


Figure 38. Components Changed Since Results

Notice at the top of the report, the following options are available:

- TOC — An out-of-the-box feature of Actuate, unavailable for the *Transmission Register*.
- First — Takes you to the first page of the report.
- Prev — Takes you to the previous page of the report.
- Next — Takes you to the next page of the report.
- Last — Takes you to the last page of the report.
- Goto —Allows you to enter a specific page of the report to be viewed.
- 100% -Allows you to enlarge or shrink the view of the report from a predefined drop-down list of values.

5.2. Components History

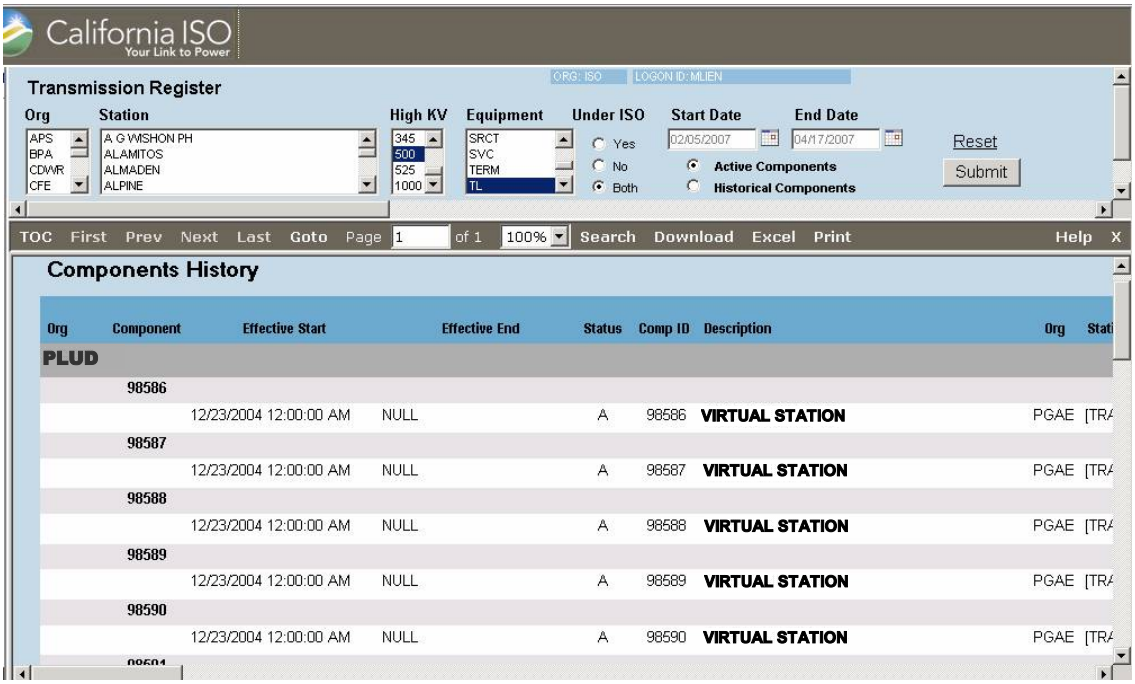


Figure 39. Components History

The Components History report shows all versions of one or more components over a desired date range, highlighting any attribute values that changed between each version.

The user has the option to query on a record status including active components and associated history (default setting), or on inactive components with associated history. ***Note:*** *Depending on the desired outcome, one or all of the parameters may be selected. However, be cognizant of the additional time to download more results when fewer parameters are selected.* A mock up report is demonstrated in Figure 39.

- **Select** the Org.
- **Select** the Station(s).
- **Select** the High kV(s)
- **Select** the Equipment(s).
- **Click** the radio button that signifies whether or not equipment is Under ISO Operational Control, or both.
- **Select** the Start Date (refer to the 5.1 steps).
- **Select** the End Date.
- **Click** the radio button for either**:**
  - Active Components

  OR
  - Historical Components
- **Press** the Submit button

5.3. Components Not Linked to a Root Component

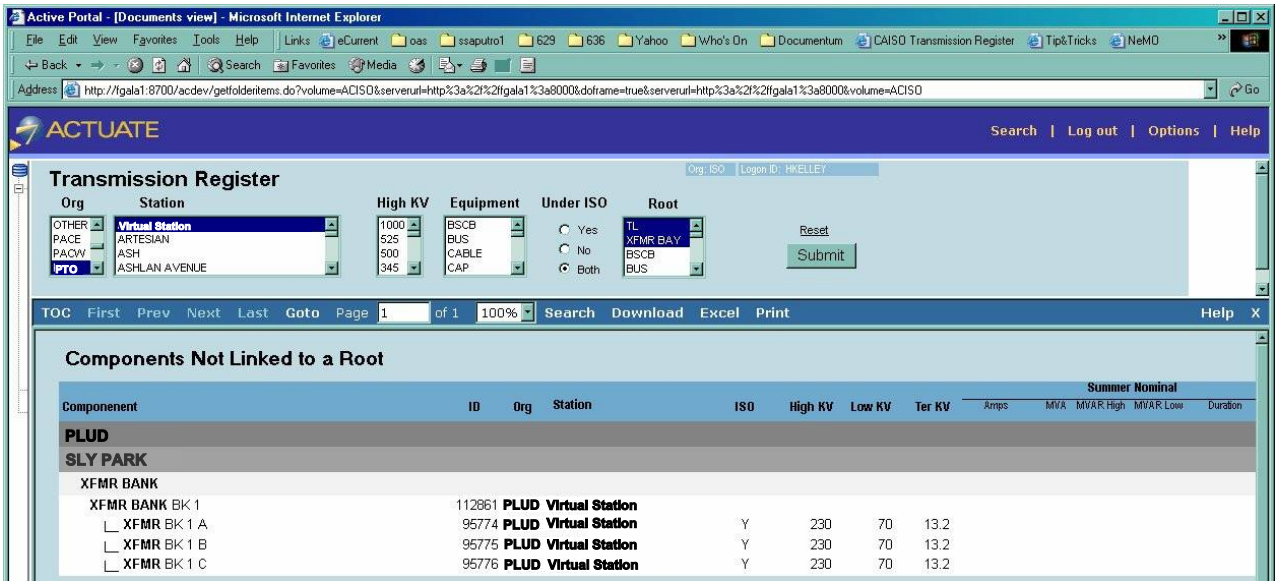


Figure 40. Components Not Linked to a Root

The Components Not Linked to a Root Component report lists all active components that are not linked to a root component. It shows the top-most Component in each "branch" not linked to a root component, but not the entire branch. ***Note:*** *Depending on the desired outcome, one or all of the parameters may be selected. However, be cognizant of the additional time to download more results when fewer parameters are selected*. A sample report is shown in Figure 40.

- **Select** the Org.
- **Select** the Station(s).
- **Select** the High kV(s)
- **Select** the Equipment Type(s).
- **Click** the radio button that signifies whether or not equipment is Under ISO authority, or both.
- **Select** the Root component.
- **Press** the Submit button

5.4. Components Share

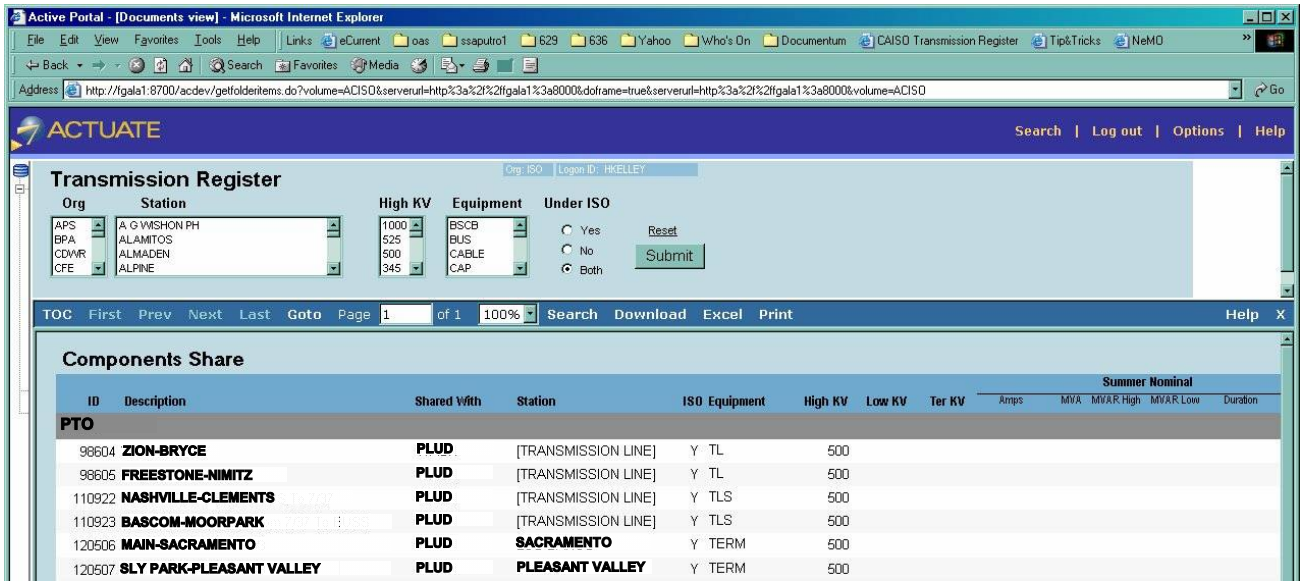


Figure 41. Components Share

The Components Share report displays all active Component Shares for a specified Organization, which is demonstrated in Figure 41. ***Note:*** *Depending on the desired outcome, one or all of the parameters may be selected. However, be cognizant of the additional time to download more results when fewer parameters are selected.*

- **Select** the Org.
- **Select** the Station(s).
- **Select** the High kV(s)
- **Select** the Equipment Type(s).
- **Click** the radio button that signifies whether or not equipment is Under ISO Operational Control, or both.
- **Press** the Submit button

5.5. Components Total

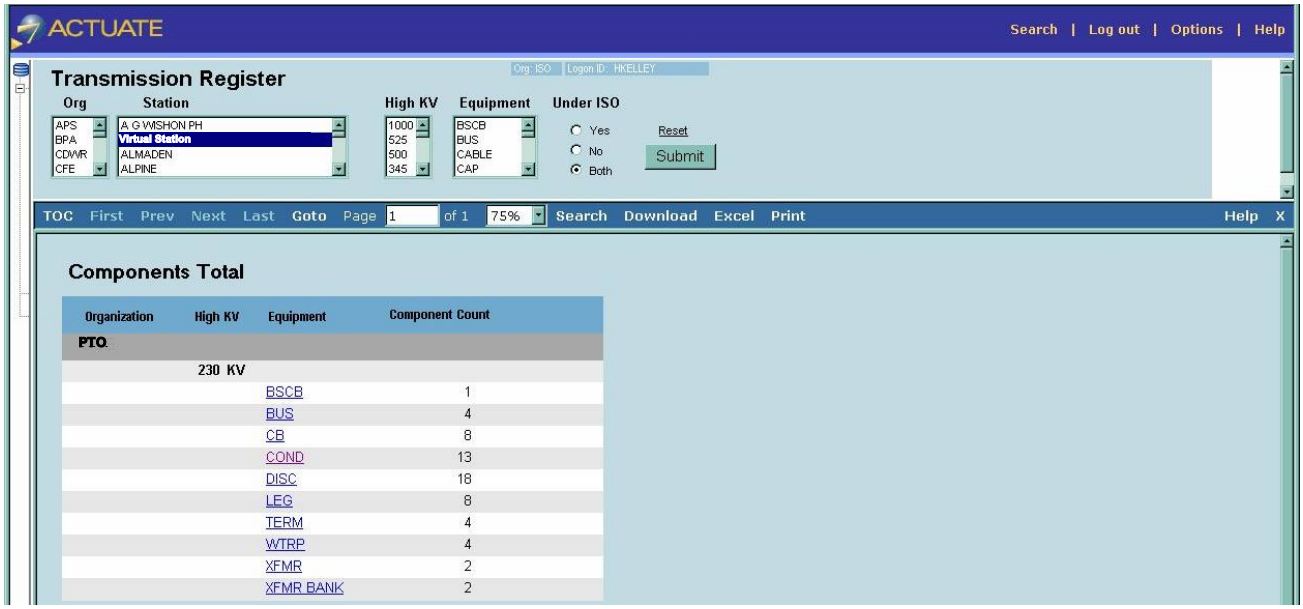


Figure 42. Components Total

The Components Total report identifies the number of Components for an Organization using any Component attribute.

The user can click on an Equipment Type and view the actual components totaled when calculating the sum for that Equipment Type. Refer to Figure 42.

Note: *Depending on the desired outcome, one or all of the parameters may be selected. However, be cognizant of the additional time to download more results when fewer parameters are selected.*

- **Select** the Org.
- **Select** the Station(s).
- **Select** the High kV(s)
- **Select** the Equipment Type(s).
- **Click** the radio button that signifies whether or not equipment is Under ISO authority, or both.
- **Press** the Submit button

5.6. Components with no Links

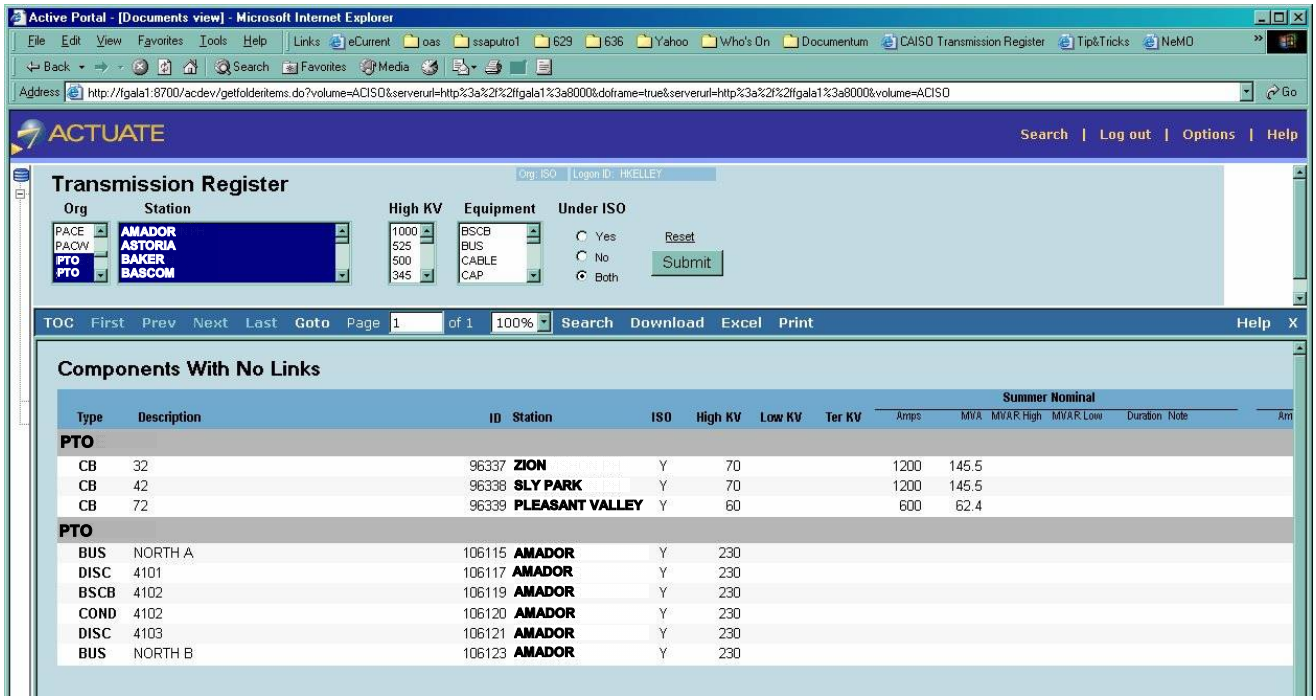


Figure 43. Components With No Links

The Components with No Links report lists all active components that have no links associated to them. ***Note:*** *Depending on the desired outcome, one or all of the parameters may be selected. However, be cognizant of the additional time to download more results when fewer parameters are selected*. Refer to Figure 43 for a sample report.

- **Select** the Org.
- **Select** the Station(s).
- **Select** the High kV(s)
- **Select** the Equipment Type(s).
- **Click** the radio button that signifies whether or not equipment is Under ISO Operational Control, or both.
- **Press** the Submit button

5.7. Lines at a Station

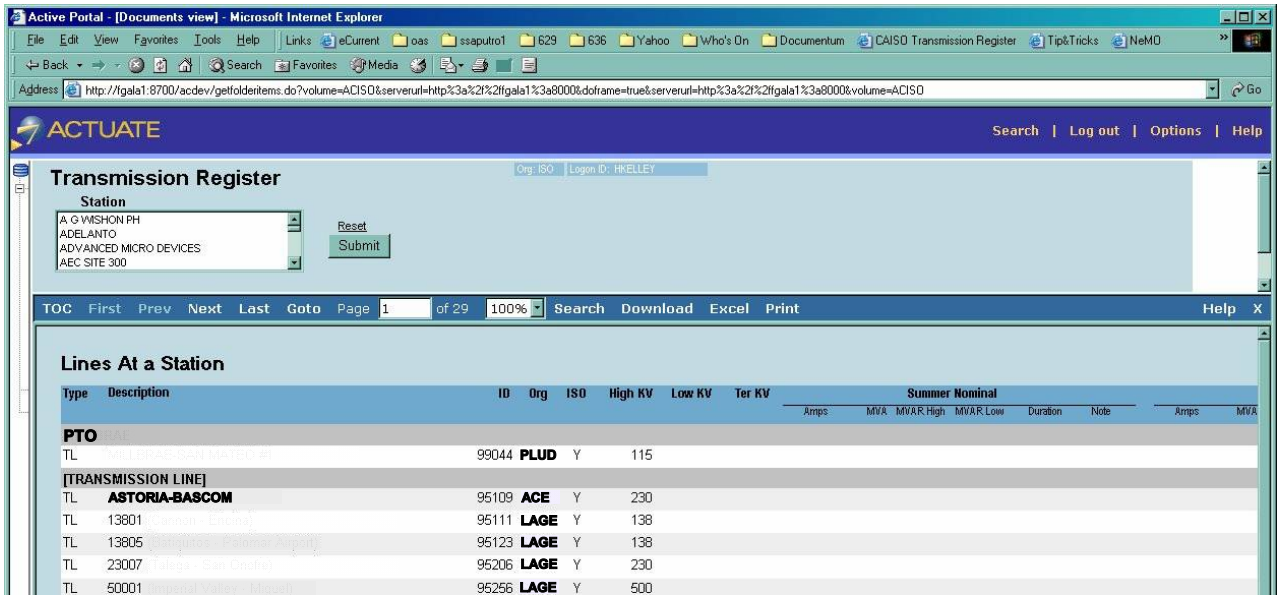


Figure 44. Lines at a Station

The Lines at a Station report determines which Transmission Lines are linked to a Component in that Station. To do so, the report examines all components at the specified Station and determines if any of those Components are linked to a component of equipment type "TL". All active linked components of equipment type "TL" that are found are displayed in the report as Transmission Lines linked with that Station. ***Note:*** *More lines may be coming into the station, but they will not appear in this report until they are linked correctly and have been created in the TR. Also, be cognizant of the additional time to download more results when fewer parameters are selected*

- **Select** the Station(s).
- **Click** the Submit button.

A report similar to Figure 44 appears.

5.8. Rating Notes

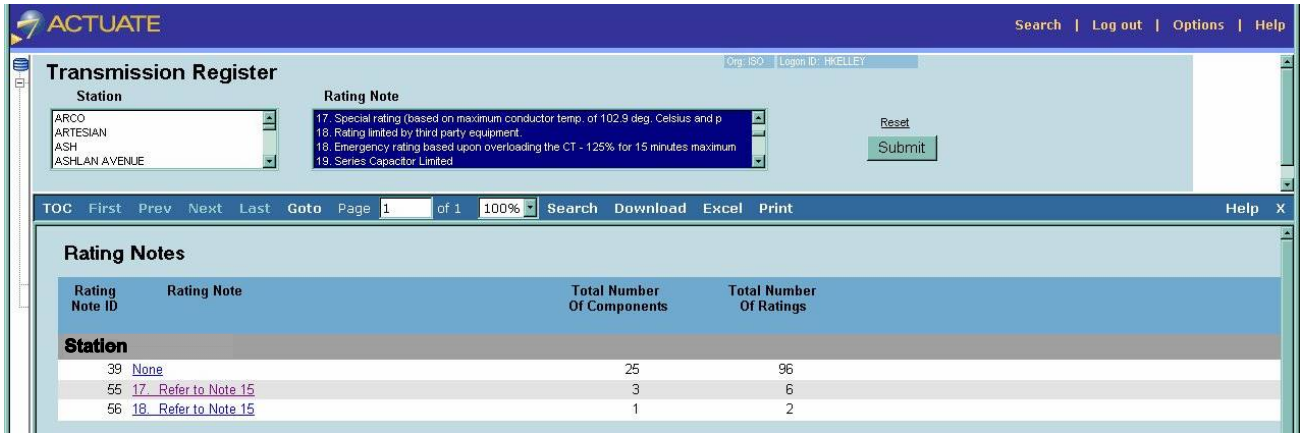


Figure 45. Rating Note

The Rating Notes report displays the total number of active Components with ratings associated with a rating note. In addition, it likewise displays the total number of ratings that are associated with a rating note. ***Note:*** *Depending on the desired outcome, one or all of the parameters may be selected. However, be cognizant of the additional time to download more results when fewer parameters are selected.*

- **Select** the Station(s).
- **Select** the Rating Note(s).
- **Click** the Submit button.

The report similar to Figure 45 appears.

5.9. Transformer Bays at a Station

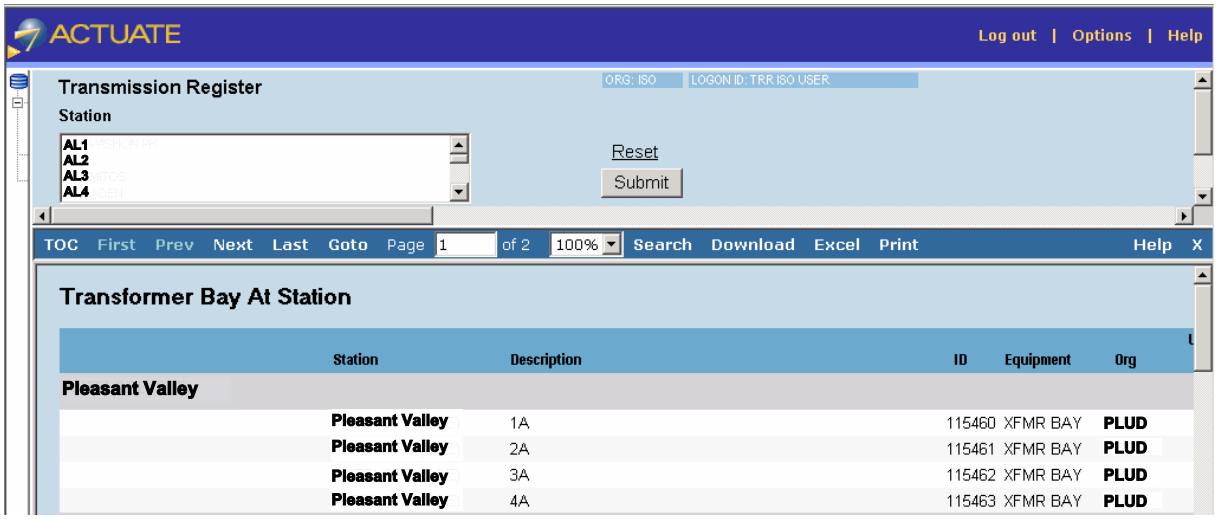


Figure 46. Transformer Bays at a Station Report

The Transformer Bays at a Station report determines which Transformer Bays are connected to a Station. To do so, the report examines all the components of equipment type "XMFR BAY" that have a station equal to the specified station. This is displayed in the report as Transformer Bays associated with that Station. ***Note:*** *There may be more transformer bays in the station, but they will not appear in this report until those components are created in the TR. Also, be cognizant of the additional time to download more results when fewer parameters are selected*

- **Select** the Station(s).
- **Click** the Submit button.

The sample report in Figure 46 appears.

5.10.Tree View Components

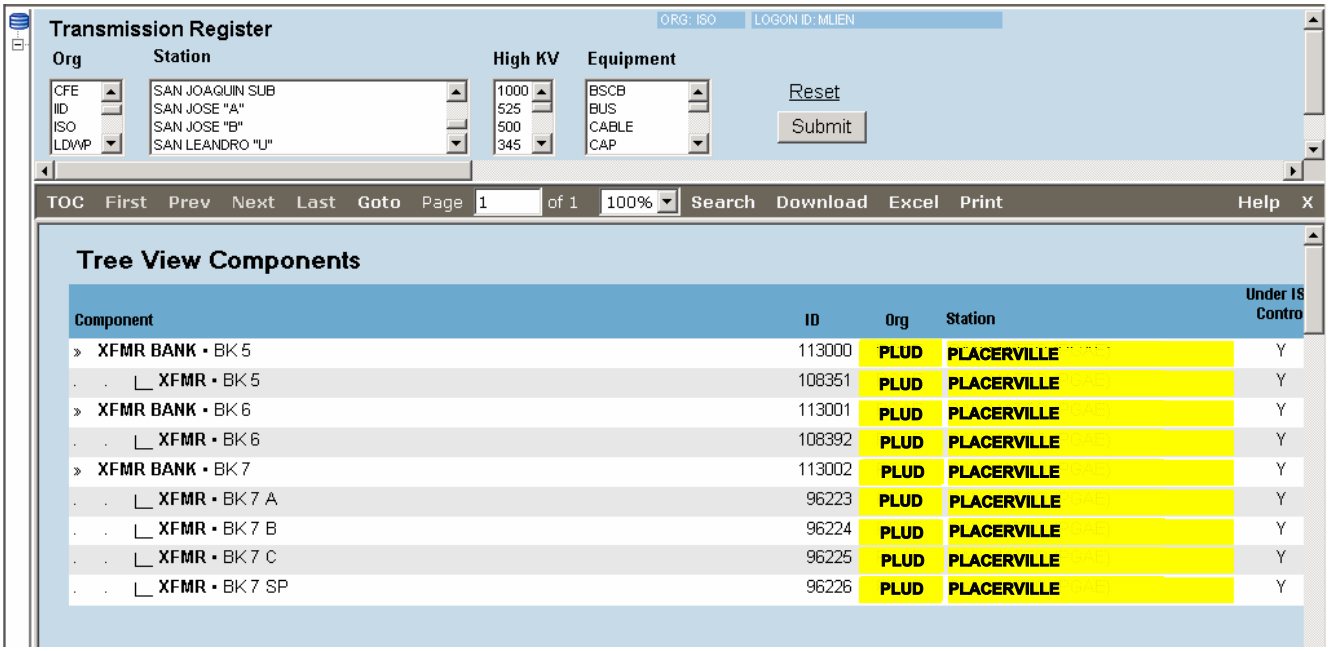


Figure 47. Tree View Components

The Tree View Components report displays any or all linked active components in a hierarchical (tree) format, and includes actively linked components for a specified Organization, Station, High Nominal Voltage or Equipment Type selected. ***Note:*** *Depending on the desired outcome, one or all of the parameters may be selected. However, be cognizant of the additional time to download more results when fewer parameters are selected.*

To create a Tree View Components report, which is demonstrated in Figure 47, take the following steps:

- **Select** the Org.
- **Select** the Station(s).
- **Select** the High kV(s).
- **Select** the Equipment Type(s).
- **Press** the Submit button.

5.11.Printing a Report

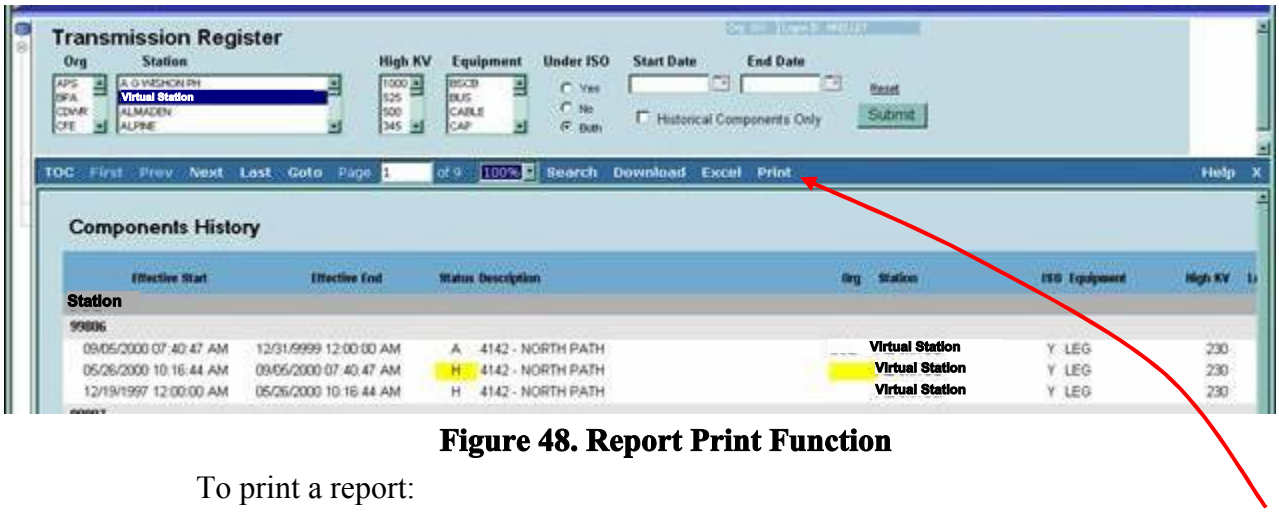


Figure 48. Report Print Function

To print a report:

- **Click** on the Print hyperlink (refer to Figure 48) and the report opens up into a full screen, along with the print properties window (shown in Figure 49).

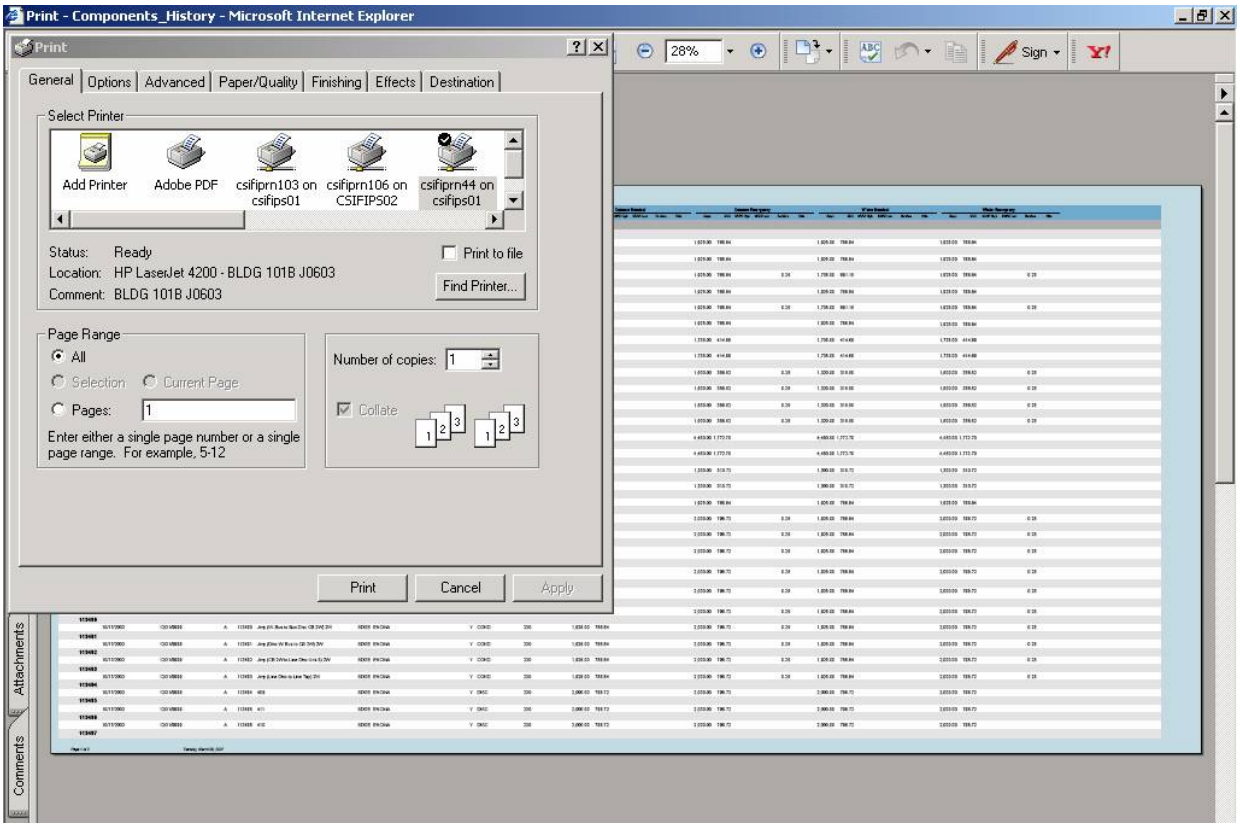


Figure 49. Print Properties Window

5.12.Saving a Report

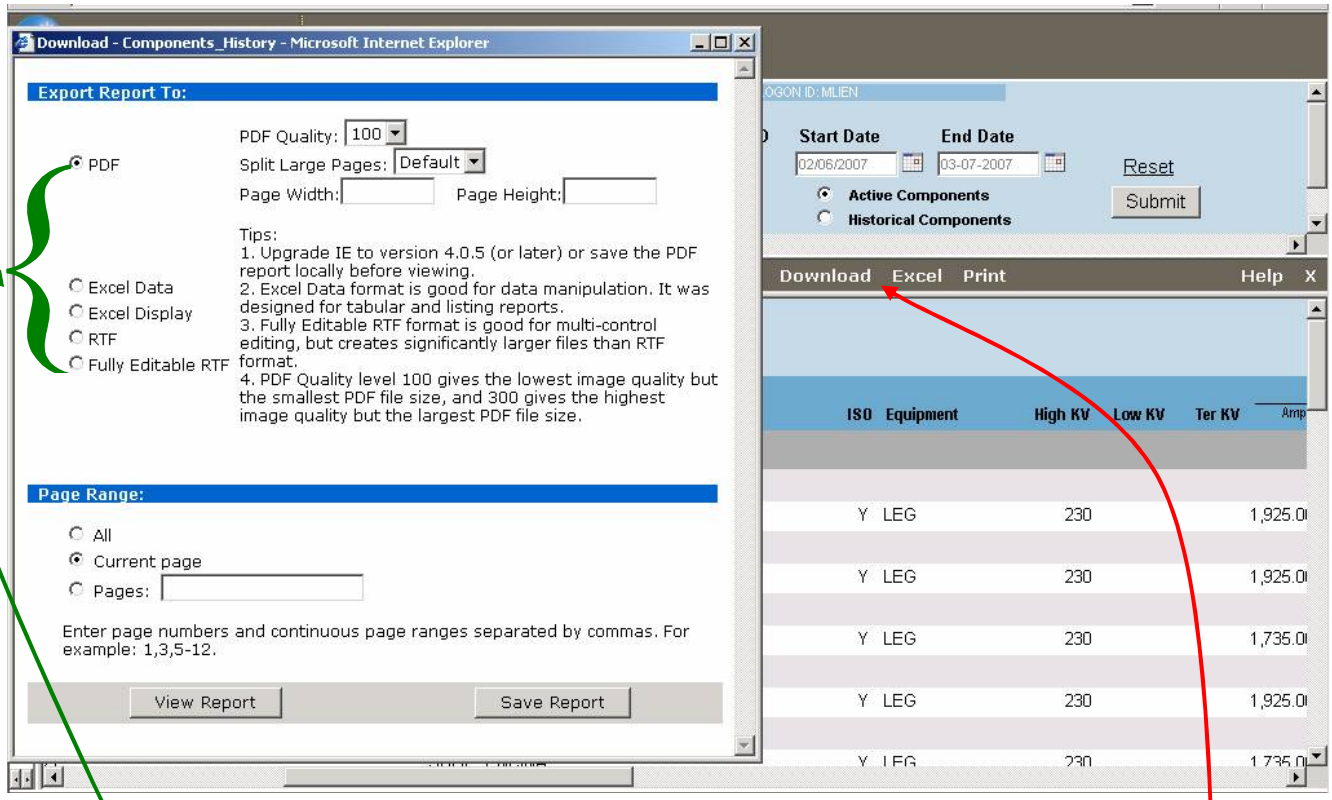


Figure 50. Report Download Screen

To download a report into another format to be stored on your hard drive:

- **Click** the Download hyperlink and the window shown in Figure 50 appears.
- **Select** the file format by clicking the desired radio button.
  - **PDF-** This default format can take up to one-half the file space of a Word document and one-fourth the space of an Excel worksheet (refer to Figure 51).
  - **Excel Data-** This Excel format allows the user to edit changes in the worksheet (refer to Figure 52).
  - **Excel Display-** This format resembles a Word document and is a viewable only representation (refer to Figure 53).
  - **RTF-** This Word format that can be viewed in other word processing applications (refer to Figure 54).
  - **Fully Editable RTF-** This is an editable Word format that can be manipulated by other word processing applications (refer to Figure 55).

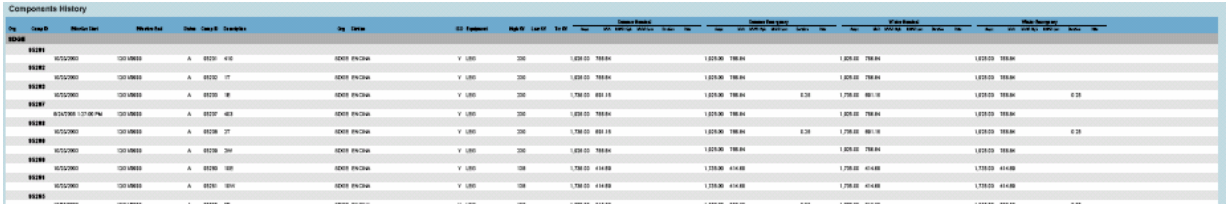
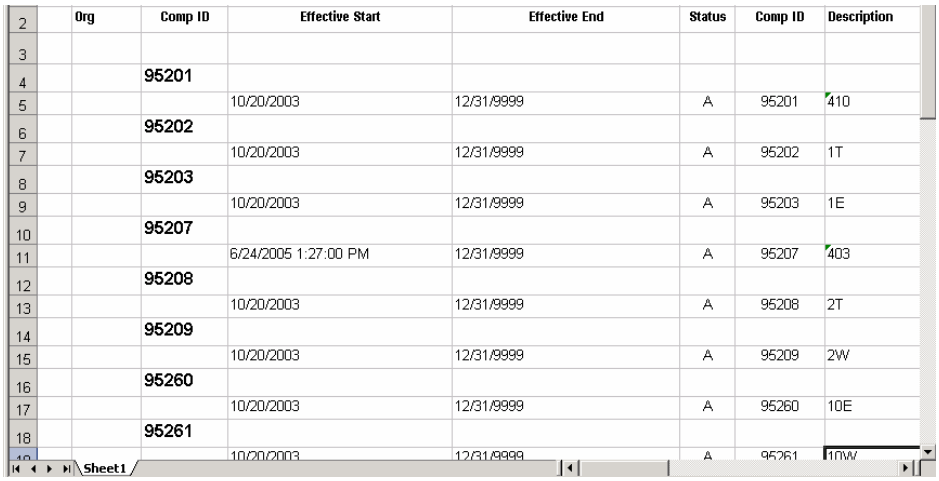


Figure 51. PDF Download



	Org	Comp ID	Effective Start	Effective End	Status	Comp ID	Description
2							
3							
4		95201					
5			10/20/2003	12/31/9999	A	95201	410
6		95202					
7			10/20/2003	12/31/9999	A	95202	1T
8		95203					
9			10/20/2003	12/31/9999	A	95203	1E
10		95207					
11			6/24/2005 1:27:00 PM	12/31/9999	A	95207	403
12		95208					
13			10/20/2003	12/31/9999	A	95208	2T
14		95209					
15			10/20/2003	12/31/9999	A	95209	2W
16		95260					
17			10/20/2003	12/31/9999	A	95260	10E
18		95261					
19			10/20/2003	12/31/9999	A	95261	10W

Sheet1

Figure 52. Excel Data Download

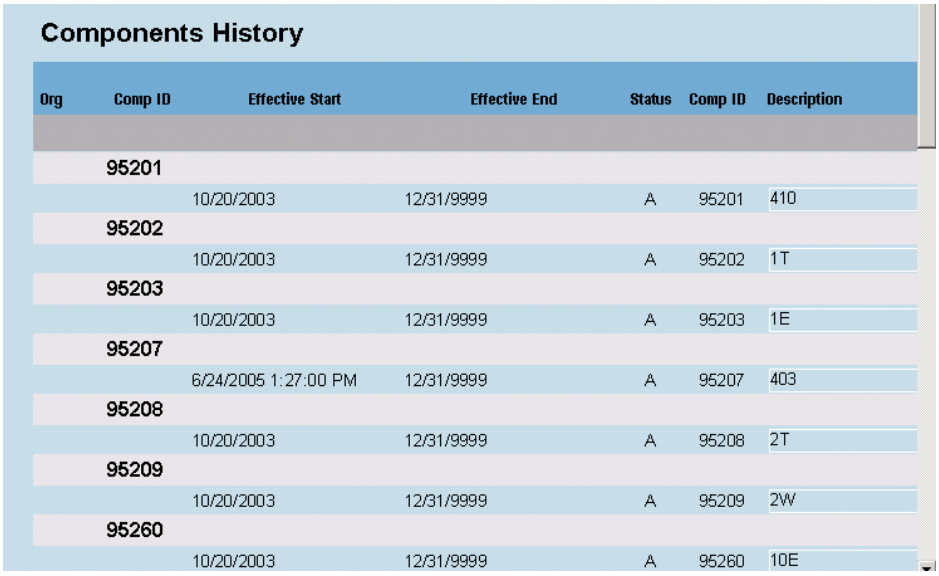
Org	Comp ID	Effective Start	Effective End	Status	Comp ID	Description
	95201					
		10/20/2003	12/31/9999	A	95201	410
	95202					
		10/20/2003	12/31/9999	A	95202	1T
	95203					
		10/20/2003	12/31/9999	A	95203	1E
	95207					
		6/24/2005 1:27:00 PM	12/31/9999	A	95207	403
	95208					
		10/20/2003	12/31/9999	A	95208	2T

Figure 53. Excel Display Download

Components History

Org	Comp ID	Effective Start	Effective End	Status	Comp ID	Description
	95201					
		10/20/2003	12/31/9999	A	95201	410
	95202					
		10/20/2003	12/31/9999	A	95202	1T
	95203					
		10/20/2003	12/31/9999	A	95203	1E
	95207					
		6/24/2005 1:27:00 PM	12/31/9999	A	95207	403
	95208					
		10/20/2003	12/31/9999	A	95208	2T
	95209					
		10/20/2003	12/31/9999	A	95209	2W

Figure 54. RTF Download



Components History

Org	Comp ID	Effective Start	Effective End	Status	Comp ID	Description
	95201					
		10/20/2003	12/31/9999	A	95201	410
	95202					
		10/20/2003	12/31/9999	A	95202	1T
	95203					
		10/20/2003	12/31/9999	A	95203	1E
	95207					
		6/24/2005 1:27:00 PM	12/31/9999	A	95207	403
	95208					
		10/20/2003	12/31/9999	A	95208	2T
	95209					
		10/20/2003	12/31/9999	A	95209	2W
	95260					
		10/20/2003	12/31/9999	A	95260	10E

Figure 55. Fully Editable RTF Download

- **Click** the radio button for the desired page range. The function defaults to Current Page.
- **If** selected pages are desired,
  Then type a specific range of pages using a hyphen to separate (refer to Figure 56).

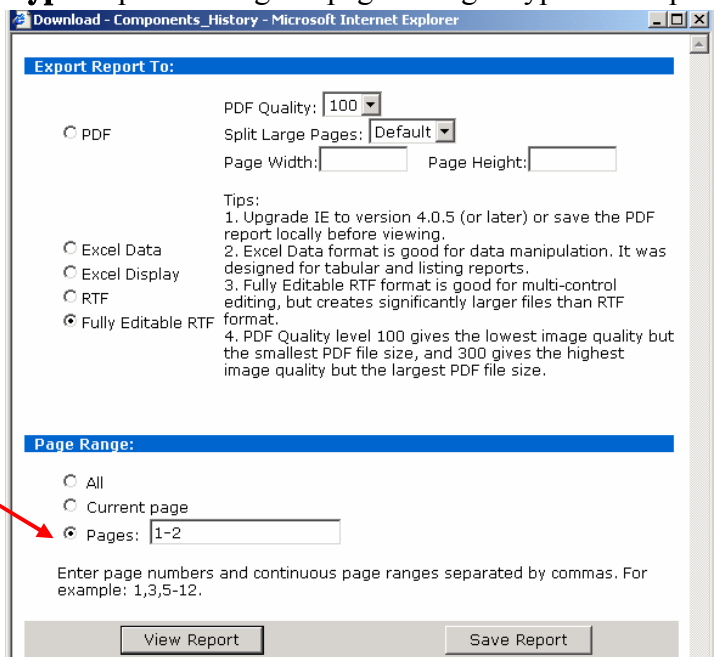


Figure 56. Page Range Selection

- **Click** View Report to see a sample before saving,
  OR,
- **Click** Save Report to save immediately.

6. Revision History

Version	Activity	By	Date
1.0	Draft	Steve Rutty	7/1/02
2.0	Complete reconstruction of TR System.	Marilyn Lien	4/10/07