

January 1, 2024

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California Independent System Operator

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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 the CAISO assumed or relinquished Operational Control.
- Date of any change in 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 Transmission Register user functions and steps required for viewing Transmission Register 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
САР	Shunt Capacitor
СВ	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	Overhead Conductor
.CSV	Comma Separated Values (Excel format)
CSW	Circuit Switch
СТ	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
liD	Imperial Irrigation District
ISO Equipment	Represents Components turned over to the ISO for their Operational Control.
LADWP	Los Angeles Department of Water and Power

Object	Definition
LEG	Component typically consisting of CB, DISCs, and COND at the 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
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
PACW	PacifiCorp West
PGAE	Pacific Gas and Electric
РТО	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

Object	Definition
0045	
SCAP	Series Capacitor
SCE	Southern California Edison
SCND	Synchronous Condenser
SDGE	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
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

- 1) From the eCurrent homepage 'QUICK LINKS' section, click on the Internal Application Access and you will land you 'Access request form' home page.
- 2) From the Internal Application Access Request homepage, click on 'Create Access Request' and follow the steps outlined in the <u>User Guide</u>.
- Application = "TR Transmission Register (TR)", Access Role = ISO USER, and Environment = Production

2.2. PTO User Request TR Certification

- 1) Access the following CAISO URL to obtain the External AARF: http://www.caiso.com/Documents/ApplicationAccessRequestForm.xls
- 2) The authorized UUA for the requesting Organization must fill out the form per the instructions in the form and submit as per <u>Application Access</u> <u>Request Form Reference Guide</u>

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 <u>https://portal.caiso.com/tr/app</u> into your browser address bar.

3. Using TR Functions/Screen Views

3.1. Main Screen

Below is the Transmission Register main screen. The user has the option of using "Light" or "Dark" mode, as shown below.

Transmissi	on Register	Component quick find	Q (G (8) Nancy Strouse
Components A	Requests \checkmark Admin \checkmark Reports		
Find Components PTO Entitlements			
Home Page			
Iransmission Reg	jister	Component quick find	د 🛞 🛞 itpm ext_other_rwx10718
Components A	uests 🗸 Admin 🗸 Reports		
Find components Add components			
Link components			
PTO entitlements			

Figure 1 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 <u>Find Components</u>. Preferences are in a dropdown under the user's profile.

Click to go back (Alt+Left arrow), hold to see histo			Component quick find	, C. (2) Nancy Strouse		
Components \lor Requests \lor	Admin 🗸	Reports				
Home / Components / Find						
Find Components						
By selecting one of two search types information utilizing different criteric	s, Static or Dyr 1, e.g., station r	amic, a user may search for trans ame, equipment type, organizatio	mission equipment ratin n, and/or voltage.	gs and		
Static Search Dynamic Search				Sc	aved Queries	V .
Maintenance Organization	~	Component ID	∼ Owne	r	~	Run search
Station	~	Equipment Type	 ✓ High t 	lominal Voltage (kV)	~	C Reset all filters
Description	~	Effective Date	✓ Last A	Aodified Date	~	
ISO Control Start Date	\sim	Currently under ISO Control	~			

Figure 2 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, proceed to Section 3.3 and 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 greater the results. The user can likewise select a specific parameter in the left-hand column; however, the search automatically defaults to Equal to.

Service only information that is relevant to their organization.

TR Transmission Registe		Component quick find	Q	Nancy Strouse		
Components V Request	s 🗸 Admin 🗸 Reports					
- ind Componer	nts					
y selecting one of two searc	n types, Static or Dynamic, a user me	ay search for transmi	ssion equipment ratings an	nd		
formation utilizing different	criteria, e.g., station name, equipmer	nt type, organization,	and/or voltage.			
Static Search Dynamic S	Search			Saved	d Queries	· · · · ·
Static Search Dynamic S	Search			Save	d Queries	<u> </u>
Static Search Dynamic S	Search		 ✓ Owner 	Save	d Queries	Run search
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Static Search Dynamic : Maintenance Organization AEP ANHM APS BANC BPA	Search Component ID Equipment Typ Effective Date Currently under	ve r ISO Control	V Owner V High Nomin V Last Modifie V	Saved Ial Valtage (kV) ed Date	d Queries	Run search

Figure 3 Static Search - Organization

- 1) 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.
 - It is not required to make parameter selection in the left-hand column if "Equal to" is the preference.
 - There is no need to select "Equal to". The user selects the Maintenance Organization by clicking and checking the Maintenance Organization they would like to see.

Static Search Dynamic Search				Saved	Queries	~
Maintenance Organization	Component ID -		Owner		~	Run search
Station	Conditions-	Component ID		nal Voltage (kV)	~	$\ensuremath{\bigcirc}$ Reset all filters
Description	Equal to			ied Date	\sim	
SO Control Start Date	Contains Start With	Control	~			
Results			Export	Layouts – Default		· · ·
Q. Search	×					

Figure 4 Static Search - Parameters

- 2) Enter the component ID in the second row of the right column and select the lefthand column parameter to 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
- 3) Select the Owner.

Static Search Dynamic Search				Saved Queries	~][
Maintenance Organization	~	Component ID	✓ Owner	~	un search
Station	~	Equipment Type	✓ High Nominal Voltage (kV)	~ 01	Reset all filters
3	ô	Effective Date	✓ Last Modified Date.	~	
		Currently under ISO Control	~		
-			Export V	- Layouts	~ ·
3					

Figure 5 Static Search – Station Name

- 4) Select or type the Station name.
- 5) Select the Equipment Type.

I

This window offers all equipment types, which may or may not be related to the Organization or Owner.

mponents	Reports		
Static Search Dynamic Search			Saved Queries
laintenance Organization	Component ID	✓ Owner	∼ Run search
tation \sim	Equipment Type	High Nominal Voltage (kV)	∧ C Reset all filters
escription \sim	Effective Date	~ 1000	Î
O Control Start Date 🗸 🗸	Currently under ISO Control	> 525	
Poculto		500	~] []
Q Search		345	
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Figure 6 Static Search - High Nominal Voltages

TR Transmission Re									Component quic				MEAT_LSEI	
Components ~ Re	quests \sim	Admin \sim	Reports											
Find component	s													
By selecting one of two s criteria, e.g., station nam	search typ 1e, equipm	es. Static or Dync ent type. organiz	amic, a user mo ation, and/or vi	iy search for transmissi oltage.	ion equipm	ent ratings and information u	tilizing	different						
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18 Transmission Rep Components Rec tome J Components J Find components Sitesting one of two s by selecting one of two s statesting one of two s	gister quests \sim d 5 earch type e, equipme	Admin ~ as. Static or Dyna ant type, organize	Reports mic. a user ma	y search for transmissi irlage.	View comp	No results connect by when the appropriate fit	ters abo	ve g different	Less than or oc	ck find	ď	(L ® 1	TPM EXT_LSI	EL_RWARD
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Figure 7 Static Search – Conditions (Dark and Light modes)

- 6) Select the High Nominal Voltage (kV), and then select one of the left-hand column parameters:
 - Equal to
 - Not Equal to

- Greater than
- Greater than or equal to
- Less than
- Less than or equal to
- Static Search offers all voltages, which may or may not be related to the Organization or Owner.

7) Type in the Description and select one the left-hand column parameters:

- Equal to
- Contains
- Starts with

				<		Augu	t 202	3	>	
Static Search Dynamic Search				Su	Mo	Tu V	/e Th	Fr	Sa	
Maintenance Organization	<u>.</u>			30	31	1	2 3	4	5	
SCE V	Component ID	\sim	Owner	6	7	8	9 10	11	12	Run search
Station 🗸	Equipment Type	~	High Nominal Voltage	13	14	15	6 17	18	19	7 Reset all filters
Description 🗸	Effective Date	~	Last Modified Date	20 27	21 28	22 2 29 3	3 24 0 31	25 1	26 2	
SO Control Start Date 🗸 🗸	Currently under ISO Control	Condit	ions 🗸	Ente	r date	•				
Results		+ Add	l I							·
Q Search X									÷	=

Figure 8 Static Search - ISO Effective Date

- 8) Type in the Effective Date or select the Effective Date by clicking on the date icon shown in Figure 9. A calendar displays.
 - i. Click the desired day of the month and the calendar automatically closes.
 - ii. Select the left-hand column parameters for the Effective Date shown in figure 9.
- 9) Select the Last Modified Date and parameters using the same method as shown previously.
- 10) Select the ISO Control Start Date and parameters in the same manner.
- 11) Choose either Yes or No from the Currently Under ISO Control dropdown window.
- 12) After the desired criterion is selected, click the Run Search button.

***		Component quick into	G & Nancy Stro
components 🗸 Requests 🗸 Ad	min 🖂 Reports		
(SCE)	✓ ☐ Component ID	∨ Uwner	∼ Run search
Station	~ Equipment Type	∽ High Nominal Voltage (kV)	
Description	∽ Effective Date	✓ Last Modified Date	~
ISO Control Start Date	✓ Currently under ISO Control	\sim	
Results		Export V Default	~) [
Q Search	<		7 II II I
ACTIONS ID		+1+ : EQUIPMENT TYPE +1+ : DESCRIPT	TION +}+ : HIGH KV +}+
20 C		XFMR	
•	_	XFMR BUS	
components cting one of two search types. Static or Dynamic. of e.e.g., station name, equipment type, organization, c.search Dynamic search	suser may search for transmission equipment ratings and i and/or voltage.	EUS Information utilizing different	
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components cting one of two search types. Static of Dynamic. ex e.g. station name. equipment type. organization. c search Dynamic search conce approximation search Dynamic search conce approximation concerning of the search concerning of the se	user may search for transmission equipment ratings and is and/or voltage.	XFMR BUS Information utilizing different TSS: TSS: Creatly under 50 control Cherring under 50 control More	Streed queries
components cting one of two search types. Static of Dynamic. e. e.g. station nome. equipment type. organization. c search Dynamic search correct organization. Component ID pton Component ID pton Effective date Its	user may search for transmission equipment ratings and is and/or valtage.	XFMR BUS Information utilizing different TSS TSS Creatly under 50 control Chernel Meet	Streed queries
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Components cting one of two search types. Static or Dynamic. e. e. g., station name. equipment type. organization. c search Dynamic search more equipment of the search search Component D aton Component D the file the search search Component D the search Compone	USER may search for transmission equipment ratings and is and/or voltage. Coviner Co	XFMR BUS Information utilizing different Equament type Equament type Equament type Equation of the set of the se	Screed queries

Figure 9 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:

- 1) Click the <u>Manage Queries</u> hyperlink and a window loads to name and save the query to Saved Queries" for future reference.
- 2) Type in the file name.
- 3) Press the OK button. The screen refreshes and you can now see your saved query in the dropdown window next to the Manage Queries.

To sort the results by a specific category, click on the <u>Details View</u> hyperlink (clicking the ID number hyperlink next to the Details View provides the same outcome).

Components 🗠 Requests 🗠	Admin V Reports	÷;;				
forme / Components / Find		.9				
Component				0 Modify Cor	mponent 🔒 S	hare Component
About	Equipment		Voltages	Control	Updates	
Description	Station	Length (Miles)	High Nominal Voltage (kV) 525	ISO control Y	Effective date	Last modified date 09/06/2022 7:42
Organization Owner(s)	Equipment type	Line number	Low Nominal Voltage (kV) 230	150 control start date	Pending change	AM Pending share
	Additional info		Tertiary Nominal Voltage (kV)	ISO control end date $\ensuremath{\mathbb{N}}\xspace/\ensuremath{\mathbb{A}}\xspace$		
Ratings Linking Share						

Figure 10 Static Search 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.

Also, while in 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 Components to it. In this case, there are no shares attached.

TR Transmission Register	Component quick find	۹ (۲ 🛛
Components \lor Requests \lor Admin \lor Reports		
Home / Requests / FindComponentShareRequests Share Request: WORK IN PROGRESS	Originator:	Last modified by undefined on undefined
Change type Shared Organization Share Type Create Shared Organization (Interview Only Control View And Link)		
Component Id:		
Current About		
Description: Organization Owners: Equipment		

Figure 11 Component Link

TR Transmission Register	Component quick find Q
Components \lor Requests \lor Admin \lor Reports	
ome / Requests / FindComponentShareRequests	
Share Request: [WORK IN PROGRESS]	Originator: Last modified by: undefined on undefine
inange type Shared Organization Share Type Shared Organization Organization Ovicew Only Ovicew And Link	
Component Id:	
Current	
About	
Description	
Organization	
Owners:	
Equipment	

Figure 12 Component Share View

	ansmission Register					Co	mponent quick find 9, 6	0 8
Componer	nts 🗸 Requests	✓ Admin ∨ R	eports					Hide all
Static st	warch Dynamic sea						Saved queries	
Maintenan (SCE) (S	DGE PGAE OV					Equipment type (TLS)	V High nominal voltage (kV)	
Descriptio				modified date \sim	ISO control start date Greater Than Man Mar L.	Currently under ISO cor		🔲 10
Results						Export None	Loyouts Default	Cwner
T a	Search							Crgonization
								Contraction
	0 •	OWNER	ORGANIZATIO	N STATION	EQUIPMENT TYPE	DESCRIPTION	HIGH KV LOW KV	Equipment Type
۲					Св		230	Cescription
۲							230	💷 Hah kV
۲							230	
۹								Cow kV
۲							230	Certicity kV
۲								150
۲					DISC		230	
۲								Cast Modified
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Figure 13 Static 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. 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:

1) Press the Modify Layout button and the Modify Layout window appears.



Figure 14 Modify Layout Window

- 2) Select the topic to either add (Available Columns) or remove (In Layout)
- 3) Click on the arrow to move the topics for layout.
- 4) Click Ok when complete.

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۲	03/18/2014 5:01 PM	12/19/1997			1760	420.7			0.5		
۲	12/02/2014 4:47 PM	12/19/1997		0.7	1145	273.7	0	0	9		

Figure 15 Manage Layout Window

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

- 1) Refer to the Static Search Results window.
- 2) Click on Manage Layout and the "Manage Layout" window appears.
- 3) Select one of two options and click "ok".
 - i. 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.
 - ii. If you want to delete the current layout, then check the Delete current layout button and click Ok.

Export Static Search Results to .csv Format

To export the results into an Excel .csv format, click the <u>CSV Export</u> hyperlink, which exports the Search Results into Excel's .csv format. A mock-up version is shown in Figure 17.

Component	ts 🗸 Requests	∨ Admin ∨ Rep	iorts									
By selecting criteria, e.g	g one of two search to , station name, equip	ypes. Static or Dynamic, a ment type, organization, c	user may ind/or vol	search for transmis Itage.	sion equipm	ent ratings and inform	nation utilizi	ng different				
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Maintenance SCE PG	e organization * GAE (SDGE) (3) ~	Component ID				Station		- Equipment t			High nominal voltage (kV) Less Than 230	Run search
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۲	2/02/2014 4:47 PM	12/19/1997			0.7	1145		273.7		0	0	9

Figure 16 CSV Export Sample

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3	TERM	full test	525 Y	9/26/2023 12:28	10/16/2023 10:1	1		1000	909.3			Yes			
4	TLS	adding componen	345 Y	9/27/2023 9:08	10/16/2023 10:1	2		100	\$9.8			Yes		110	65.7
5	TERM	KENT SW STA-WES	70 Y	9/25/2023 16:31	9/25/2023 16:3	1		631	76.5			Yes	1.1	26 742	90
6	SRCT	CAP REACTOR - CE	230 Y	8/17/2023 15:51	8/17/2023 15:5	1		1600	637.4			Yes		1600	637.4
7	CT	XFMR BK 6 LS	230 Y	8/17/2023 15:33	8/17/2023 15:3	3		3000	1195.1			Yes		3000	1195.1
8	CT	XFMR BK 4 LS	230 Y	8/17/2023 15:33	8/17/2023 15:3	3		3000	1195.1			Yes		3000	1195.1
9	CT	XFMR BK 3 HS	230 Y	8/17/2023 15:33	8/17/2023 15:3	3		3000	1195.1			Yes		3000	1195.1
10	CT	XFMR BK 2 LS	230 Y	8/17/2023 15:33	8/17/2023 15:3	3		3000	1195.1			Yes		3000	1195.1
11	CT	XFMR BK 1 HS	230 Y	8/17/2023 15:33	8/17/2023 15:3	3		3000	1195.1			Yes		3000	1195.1
12	CT	CB 2322	230 Y	8/17/2023 13:57	8/17/2023 13:5	7		6000	2390.2			Yes		6000	2390.2
13	CT	CB 2012	230 Y	8/17/2023 13:57	8/17/2023 13:5	7		6000	2390.2			Yes		6000	2390.2
14	CT	CB 892	230 Y	8/17/2023 12:12	8/17/2023 12:1	2		3000	1195.1			Yes		3000	1195.1
15	CT	CB 882	230 Y	8/17/2023 12:12	8/17/2023 12:1	2		3000	1195.1			Yes		3000	1195.1
16	CT	CB 842	230 Y	8/17/2023 12:00	8/17/2023 12:0	0		6000	2390.2			Yes		6000	2390.2
17	CT	CB 822	230 Y	8/17/2023 12:00	8/17/2023 12:0	0		6000	2390.2			Yes		6000	2390.2
18	CT	CB 812	230 Y	8/17/2023 12:00	8/17/2023 12:0	0		6000	2390.2			Yes		6000	2390.2
19	CT	CB 392	230 Y	8/17/2023 12:00	8/17/2023 12:0	D		6000	2390.2			Yes		6000	2390.2
20	CT	CB 292	230 Y	8/17/2023 12:00	8/17/2023 12:0	D		6000	2390.2			Yes		6000	2390.2
21	CT	CB 202	230 Y	8/17/2023 12:00	8/17/2023 12:0	0		3000	1195.1			Yes		3000	1195.1
22	COND	BK 4 LS (Smallest E	230 Y	8/17/2023 15:33	8/17/2023 15:3	1		2550	1015.8			Yes		3150	1254.8

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4 KENT SW STER	1 70	Y AMPS	SN (N) 631 0	26 SE (A) 742	4 26
5 CAP REAC SRCT	230	Y AMPS	SN (N) 1600 0	SE (A) 1600	0
6 XFMR BK (CT	230	Y AMPS 3000/5*1.0 TRF = 30	(SN (N) 3000 0	SE (A) 3000	0
7 XFMR BK 4CT	230	Y AMPS 3000/5*1.0 TRF = 30	(SN (N) 3000 0	SE (A) 3000	0
8 XFMR BK 2CT	230	Y AMPS 3000/5*1.0 TRF = 30	(SN (N) 3000 0	SE (A) 3000	0
9 XFMR BK 2CT	230	Y AMPS 3000/5*1.0 TRF = 30	(SN (N) 3000 0	SE (A) 3000	0
10 XFMR BK 1CT	230	Y AMPS 3000/5*1.0 TRF = 30	(SN (N) 3000 0	SE (A) 3000	0
11 CB 2322 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 6000 0	SE (A) 6000	0
12 CB 2012 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 6000 0	SE (A) 6000	0
13 CB 892 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 3000 0	SE (A) 3000	0
14 CB 882 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 3000 0	SE (A) 3000	0
15 CB 842 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 6000 0	SE (A) 6000	0
16 CB 822 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 6000 0	SE (A) 6000	0
17 CB 812 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 6000 0	SE (A) 6000	0
18 CB 392 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 6000 0	SE (A) 6000	0
19 CB 292 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 6000 0	SE (A) 6000	0
20 CB 202 CT	230	Y AMPS 3000/5 CTs set at 30	(SN (N) 3000 0	SE (A) 3000	0
21 BK 4 LS (Sr CON	230	Y AMPS 4" SPS AL SCH 40 - IN	ISN (N) 2550 0	SE (A) 3150	4

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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. To do this, click the <u>Autoloader Export</u> hyperlink, which exports the Search Results into an Excel .csv format. A mock-up version is shown in Figure 18.

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2	-	1	95203		1	station	1E	LEG	230		-	Y	AMPS	100	1	WE (C)	1,925		0.25		WN(B)	1,73	5	1000	0	SE(A)	1,92	5	0.25	5	SN(N)	1,735	(*************************************	0	0000
3			95202		1	station	11	LEG	230			Y	AMPS			WE (C)	1,925		(WN(B)	1,92	5		0	SE(A)	1,92	5			SN(N)	1,925		0	
4			112503	b)		station	17	CB	230			Y	AMPS			WE (C)	2,000				WN(B)	2,00	0		0	SE(A)	2,00	0	0		SN(N)	2,000		0	
5			113483	t)	-	station	230036	TERM	230			7	AMPS			WE (0)	1,925		(WN(B)	1,92	5		0	SE(A)	1,92	5	0	>	SN(N)	1,925		0	
6		-	95208	\$		station	21	LEG	230			Y	AMPS			WE (C)	1,925		0.25		WN(B)	1,73	5	_	0	SE(A)	1,92	5	0.25	5	SN(N)	1,735		0	
7		-	95209	6	-	station	21/	LEG	230	_	-	Y	AMPS			WE(C)	1,925		(WN(B)	1,92	5	-	0	SE(A)	1,92	5	0	Þ	SN(N)	1,925		0	
8		_	113504	0		station	21/	CB	230			Y	AMPS			WE (C)	2,000				WN(B)	2,00	0	_	0	SE(A)	2,00	0	0	D	SN(N)	2,000		0	
9	_	-	112495		-	station	40	0 DISC	230	_	-	Y	AMPS	Line Dire	(CB 2W-	WE (C)	2,000				WN(B)	2,00	0		0	SE(A)	2,00	0		D	SN(N)	2,000		0	
10	-	-	95207		-	station	40	O LEG	230		-	- Y	AMPS		1	WE (O)	1,925				WN(U)	1,92	5	-	0	SE (A)	1,92			-	SN(N)	1,925	-	0	
n			113492	<u> </u>	-	station	40	5 DISC	230	_		- X-	AMPS	Due (W.	BurtaCE	S WE (C)	2,000			-	WN(B)	2,00	0	-	0	SE(A)	2,00	0			SN(N)	2,000	-	0	
12	-	-	11,5494	-	-	station	40	9 DISC	230			- T	AMPS	Line Dure	(112301	1 WE (C)	2,000		-		WN(B)	2,00		-	0	SE(A)	2,00			-	SH(H)	2,000		0	
13	-	-	99201		-	station	41	O LEG	230			- Y	AMPS	Burbles	(22662-4	WE(C)	1,925			-	WN(B)	1,92	>	-	0	SE(A)	3,92	2		-	SH(H)	3,965		0	
	-	-	112445		-	station	1 2	H DISC	220				AMPC	Line Dies	Colling T	WE(C)	2 000				WHICE)	2.00	ě.	-	ě.	SE(A)	2.00				SN(N)	2.000			
46		-	113502	1	-	station	Bar CT2	OT	230			1.0	AMPS	Line Dur	Co come i	WE (C)	2 200				WN(R)	2 20	0	-	0	SE(A)	2 20	0			SN(N)	2 200			
17		-	956.14			station	FAST	BUS	230		-		AMPS			WEICH	4 450		1		WN(R)	4 45	0	-	0	SELAN	4 45	0			SN(N)	4 450		0	
12	-		112484	-	-	station	Jeaff	COND	230			÷.	AMPS	2500 AL		WEICH	2 000		0.25		WNCR	1.42	s	-	0	SE(A)	2.00	0	0.25		SN(N)	1425		0	
19	-		112406	1	-	station	Jag (Cl	B COND	230			17	AMPS	2500 AL		WE(C)	2,000		0.25		WN(B)	1,92	5		0	SE(A)	2,00	0	0.25	5	SN(N)	1,925		0	
20			113492			station	Jap (Cl	B COND	230			Y	AMPS	2500 AL		WE (C)	2,000		0.25		WH(B)	1,92	5		0	SE(A)	2,00	0	0.25	5	SN(N)	1,925		0	
21			113491	1		station	Jmp (Di	COND	230			Y	AMPS	2500 AL		WE(C)	2,000		0.25		WN(B)	1,92	5		0	SE(A)	2,00	0	0.25	5	SN(N)	1,925		0	
22			113485	1		station	Jmp (Li	n. COND	230			Y	AMPS	2500 AL		WE (C)	2,000		0.25		WN(B)	1,92	5		0	SE(A)	2,00	0	0.25	5	SN(N)	1,925		0	
22		-	112487	1	-	station	Jmp (Li	. COND	230			Y	AMPS	2500 AL		WE (C)	2,000		0.25		WN(B)	1,92	5	-	0	SE(A)	2,00	0	0.25	5	SN(N)	1,925		0	
24		-	113493			station	Jmp (Li	A. COND	230			Y	AMPS	2500 AL		WE (0)	2,000		0.25		WN(B)	1,92	5		0	SE (A)	2,00	0	0.25	5	SN(N)	1,925		0	
25		-	113488	<u> </u>	-	station	Jmp (Li	. COND	230	_		Y	AMPS	2500 AL		WE (C)	2,000		0.25		WN(B)	1,92	5	-	0	SE(A)	2,00	0	0.25	5	SN(N)	1,925		Ó	
26	-	-	113484		-	station	Jmp (Li	n. COND	230	-	-	1	AMPS	2500 AL		WE (C)	2,000		0.25		WN(B)	1,92	5	-	0	SE(A)	2,00	0	0.25	5	SN(N)	1,925	6	0	
27			113512	-	-	station	Jmp (Li	A. COND	230	_	-	-15-	AMPS	2500 AL		WE (C)	2,000		0.25		WN(B)	1,92	-	-	0	SE(A)	2,00	0	0.25	-	SN(N)	1,925	-	0	
28		-	112490		-	Atotion	Jang (W.	LCOND	230	-	-	1	AMPS	2300 AL	-	WE (C)	2,000	-	9.29		WH(B)	1,92		-	0	36 (A)	2,00	0	0.25		SH(N)	1,925	(0	
67	-		113499	-	-	ration	Line CT	2 01	630		-	1	AMPS	-		WE (0)	6,200		- 5	-	wri(B)	2,20	0	-	0	35 (A)	2,20	0	- 2		SH(N)	2,200	-	0	
24	-	-	112500	-	-	Aution	LineOT	21 CT	220		-		AMPC	-	-	ME (C)	2 200	-			WH(D)	2,20	0	-	0	SELAD	2,20	0		\rightarrow	SN(N)	2 200	-	0	
22	-	-	112542	-	-	Aution	Line Des	COND	270	-	-	14	AMPC	2500 AL	-	WE (C)	2 000		0.25		WN (D)	1.02	6	-	0	SECAL	2.00	0	0.25		SN (N)	1.025	0	0	
22		-	95615		-	station	WEST	BUS	210			10	AMPS	EIPS AL		WECO	4 450		9.45	-	WN (D)	4.45	0	-	0	SE (A)	4.45	0	0.4.7		SN(N)	4 450			

Figure 17 AutoLoader Export Sample

TR Transmission Register			Component quick find	S Nancy Strouse
Components 🗸 Request:	\vee Admin \vee Reports			
iome / Components / Find				
Find Componer	its			
y selecting one of two search formation utilizing different (types, Static or Dynamic, a user m riteria, e.g., station name, equipme	ay search for transmission e nt type, organization, and/c	equipment ratings and r voltage.	
0				
Static Search Dynamic S	earch			
Static Search Dynamic S	earch ▼ Station		✓ High Nominal Voltage (kV)	▼ Run search

Figure 18 Dynamic Search Main Screen

The TR Dynamic Search (refer to Figure 19) offers fewer criteria, but you can just select 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.

- 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 populates with only stations that have active components for the organization.

TR Transr	ission Register	Component quick find Q 🕓 🛞 Nancy Strouse
Components	AEP Admin V Reports	
Home / Comp	ANHM. APS BANC	
Find Cc	BPA	
By selecting o	CCSF 5. Static or Dynamic, a user may search for transmission equipment ratings	s and
information ut	CDWR a, e.g., station name, equipment type, organization, and/or voltage.	
	CFE	
Static Searc	DSER	
Orgonization	GWT Station High No	minal Voltage (kV)
Equipment Tyj	HZWT -	⊖ Reset all filters
Results	ISO LDWP	V Cefault V .
Q Sea	MID MWD	7 III II (2

Figure 19 Dynamic Search Organization Dropdown

- Select the Station from the dropdown window. Once a station is selected, the high nominal kV 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 populates based on the previous entries.
- Select the Equipment Type from the dropdown window and press the Run Search button.
- The screen in Figure displays mock-up results of a Dynamic Search.

Viewing the details of a Dynamic Search, modifying or managing layouts, and exporting Dynamic Search results to .csv and Autoloader formats is the same procedure for a Static Search described in Sections 3.2.1 thru 3.2.4.

Transmission Register	Saved layout successfully	Component quick find	۹ Ø Ø
Components V Requests V Admin V Reports			
Find components			
By selecting one of two search types. Static or Dynomic, a user may search for transmission equip criteria, e.g., station name, equipment type, organization, and/or voltage.	ment ratings and information utilizing di	fferent	
Static search Dynamic search			
Cranication V Station V 220 V	CB ~		Run search
			C Reset all filters
Results		None V	s
Q. Search X			╤ Ш 🖽 🗹
DID OWNER ORGANIZATION STATION	EQUIPMENT TYPE	DESCRIPTION HIGH KV	LOW KV
	CB	IT 230	

Figure 20 Dynamic Search Results

4. Request & 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

omponents 🗸	Requests ^ Admin > Reports	
ome / Home ome Page	Find Change Requests Find Component Share Requests AutoLoad Change Requests History	

Figure 21 Request Screen

Click the Find Change Requests hyperlink and the screen loads.

TR Transmission Register			Component quick find	٩	, 💪 🛞 Nancy Strouse
Components \lor Requests \lor Admin \lor	Reports				
Home / Requests / FindChangeRequests					
Find change requests					
Allows the user the ability to search and view pene	ding Change Requests for both new	and existing componer	its.		
r Reason					-
^	Organization	✓ Origina	for	~	Run search
0001: NEW GRID ASSET (FACILITY PREVIOUSLY N	Date Created	✓ Date A;	proved	\sim	C Reset all filters
0002: FACILITY ADDED (FACILITY PREVIOUSLY E 0003: FACILITY DESCRIPTION CHANGED (PHYSIC	High Nominal Voltage (kV)	∼ Equipm	ent Type	~	
0004: TRANSMISSION LINE/FACILITY RECONFIGI	Under ISO Control	~ Reques	t Source	\sim	
0005: CONVERT RATING UNIT TYPE					
0006: REVISED RATINGS (EQUIPMENT PHYSICAL					
					≂

Figure 22 Find Change Request 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".

- 1) Click the Find Change Requests hyperlink shown in Figure 22 and the screen in Figure 23 loads.
- 2) Select the following criterion from the dropdown windows.

- a. Reason
- b. Organization
- c. Originator
- d. Status Defaults to "Pending Approval".
- 3) Type in the Date Created, or press the calendar icon and select a date. Once the date is selected the window automatically closes.
- 4) Select the appropriate Date Created parameter if different than "Equal to".
- 5) Type in the Date Approved, or press the calendar icon and select a date.
- 6) Select the appropriate Date Approved parameter if different than "Equal to".
- 7) 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").
- 9) Select the Equipment Type.
- 10) Select the Station name.
- 11) Choose either Yes or No as to whether the component is Under ISO Control.
- 12) Choose AUTOLOAD for the Request Source and the search outputs below the Search Results on the bottom of the page, as demonstrated.

Type of				1	Station	Component	Compone			Tertiary	r –	150		Additional	Line	Rating	High	Low		
Change	Change Request Reason	OD	Orn	Owner	Name	Description	nt Type	High KV	LOWIKV	KV	Length	Control	Units	Information	Number	Type	Rating	Rating	Duration	Note #
on an igo	New GRID Asset (Facility				- tearing	Contraction	in ijpe				congen					.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	. aring	- weing	Carocon	
	Previously non-Existing																			
create	Until New Construction)		PLUD	PLUD	AMADOR	BSCB 1	BSCB	230				Y	AMPS							
	Revised Ratings																			
	(Equipment Physically																			
update	Unchanged)	95668	PLUD	PLUD	AMADOR	NORTH	BUS	70				Y	AMPS			WE (C)	2900		0	
	Other (Causes not																			
retire	covered in above listing)	95669	PLUD	PLUD	AMADOR	SOUTH	BUS	69				Y	AMPS							
	New GRID Asset (Facility																			
	Previously non-Existing																			
create	Until New Construction)		PLUD	PLUD	AMADOR	NEW 1	FUSE	69				Y	AMPS							

Figure 23 Sample .csv Format

The user can export to a .csv format by clicking the <u>CSV Export</u> hyperlink and the spreadsheet shown is generated.

- To view the details of one line of the Search Results:
 - 1) Click the Details View hyperlink and the Change Request loads.
 - 2) Press the Close Button when complete.

Transmission Register	Component quick find Q (3
mponents 🗸 Requests 🗸 Admin 🗸 Reports		
Component Id:		
Current	Proposed	
About	About	
Description:	Description	
Organization	Organization	
Owners:	Owners.	
Equipment	Equipment	
Station	Station:	
Equipment Type:	CT Equipment Type:	CT
Additional Info: 1200	/5A set at 1000*1.0 TRF Additional Info: 1200/5A set at 800/5*2.0 TRF = 1600; SF6; Manufor	tured 2008
Voltage	Voltage	
High Nominal Voltage (kV):	115 High Nominal Voltage (kV):	115
and the second		

Figure 24 Details View

	ransmission kegister				сотронялі дыск піх		4	91	
ompone	nts 🗸 Requests 🔌	Admin 🗸	Reports						
Reason		~	Organization	~	Originator		<	tun search	
Status	Approval	~	Date Created	~	Date Approved	~	0	Reset all filters	
Compone	nt ID	~	High Nominal Voltage (kV)	~	Equipment Type		/		
Station		~	Under ISO Control	~	Request Source	~	~		
Results	Search	×					7		2
	D ID +	TYPE +	PROCESS 1	REASON +		ORIGINATOR		STATUS	÷
	View Details	UPDATE	APPROVAL	Corrected a Data Input	Error			Pending App	provi
0		RETIRE	APPROVAL	Transmission Line/Facilit	y Reconfigured (Physically Changed)			Pending App	provi
	-	OFTIDE		Transmission Line/Facilit	v Reconfigured (Physically Changed)			Pending Apr	oroau
۲		RETIRE	Providence Production		I needingared in ithready endinged.				

Figure 25 Change Request

4.2. Find Share Requests

In anishinasion Registe	r			Compone	ent quick find	9. (G (8) NO	ancy Strouse
omponents \vee 🦷 Request	s 🗸 🛛 Admin 🗸	Reports					
ind Share Req	uests						
rmits the user to search and	d view requests subm	itted by different orga	nizations to share con	nponent and related equipn	nent ratings information.		
Organization	\sim	Originator		Status Pending Approval		✓ Run search	
						C Reset all filt	rers
Results							
Q Search	×					₹ Ш ■	
ACTIONS ID		STATUS		: MODIFIED BY	DATE CREATED	LAST UPDATE	4

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.

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

Take the following steps to Find Share Components:

- 1) Click the <u>Find Share Requests</u> hyperlink shown in Figure 22 and the window in Figure 26 loads.
- 2) Select the Organization.
- 3) Select the Originator.
- 4) Select the Status.
- 5) Press the Run Search button and the screen in Figure 27 loads.
- 6) Click the <u>Detail View</u> hyperlink to see the Share Request details.

Q Sec	arch	×						₹ □ ■	Z
ACTIONS	ID ⊕ i	ORIGINATOR	⊕ : STATUS	÷:	APPROVER	MODIFIED BY	DATE CREATED	LAST UPDATE	
Vie	ew Details		Approved				02/15/2012 09:52 AM	02/15/2012 10:15	AM
0	117		Approved				02/15/2012 09:53 AM	02/15/2012 10:15	AM
0	140		Approved				02/22/2012 12:53 PM	02/22/2012 01:18	PM
0	141		Approved				02/22/2012 12:54 PM	02/22/2012 01:17	PM
٢	142		Approved				02/22/2012 12:55 PM	02/22/2012 01:29	PM

Figure 27 Find Share Request

TR Transmission Register	Companent quick find Q. (G. (R)
Components V Requests V Admin V Reports	
Home / Requests / FindComponentShareRequests	
Share Request: 116 [APPROVED]	Originator Last modified by: on 02/15/2012 10:15 AM
Change type Approver Approver Notes Shared Organization Share Type Create Robert Valenzuela SCE View Only	
Component Id:	
Current	Current Ratings
About	Ratings
Description:	Apply to al
Organization	RATING TYPE : AMP RATING : MVA RATING* : MVAR HIGH :
Equipment	SN (N) 1736 1503.376 0

Figure 28 Share Request Details

4.3. Rating Types

TR Transmission Register			Component quick find	٩	. (G (8) Nancy Strouse
Components \lor Requests \lor	Admin 🔿 Reports				
Home / Requests / FindChangeRequests	Users Organizations Nominal Voltages				
Find change reques	Equipment Types				
Allows the user the ability to search a	Change Request Reasons Stations Rating Types	equests for both new and existing con	nponents.		
Reason	Rating Notes	~	Originator	\sim	Run search
Status Pending Approval	Roles And Permissions	~	Date Approved	~	C Reset all filters
Component ID	∼ High Nomina	l Voltage (kV) 🗸 🗸	Equipment Type	~	
Station	V Under ISO C	ontrol ~	Request Source	\sim	

Figure 29 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).

- 1) Click on the <u>Rating Types</u> hyperlink shown in Figure 28 and the screen in Figure 29 loads.
- 2) Click the <u>View Rating Type</u> or Rating Type ID hyperlink to view the details of a rating type, and the example shown in Figure 30 loads.

Components \lor	Requests 🗸 🛛 Admin 🗸	Reports	
Home / Admin / Ratio	gtypes		
Rating Type	es		+ Add Rating Types
Add to or modify Rati	ing Types in the Transmission	n Register.	
Q Search	SHORT NAME	: FULL NAME + 1	ESCRIPTION
1	SN (N)	Summer Normal	Summer Normal (April - October): Summer loading limit under typical normal continuous operating
2	SE (A)	Summer Emergency	Summer Emergency (April - October) Summer emergency loading limit. Will be used as MVA2 in the
113	test-mo	TR_testing_mod	modified-description provided by the user
3	WN (B)	Winter Normal	Winter Normal (November - March): Winter loading limit under typical normal continuous operating c
4	WE (C)	Winter Emergency	Winter Emergency (November - March): Winter emergency loading limit. Will be used as MVA4 in the

Figure 30 Rating Types Screen

opudie dala			
Rating Type ID			
Short Name			
30000			
Full Name Summer Normal			
		_	
Summer Normal	(April - October): S	ι	
– Sort Priority (Major) – 1			
Sort Priority (Mind	r)		
_ Status			
Active		• •	

Figure 31 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).

- 1) Click on the <u>Rating Notes</u> hyperlink shown in Figure 28 and the screen in Figure 31 loads.
- 2) Click the ID number to view the details of the rating note and the window in Figure 32 loads.

Click to go back (Alt+Left arrow), hold to see history	\$‡+		Comp	conent quick find Q (C (R)
Components 🗸 Requests 🗸	Admin A Reports			
Home / Admin / Ratingnotes Rating Notes Add to or modify Rating Notes in the	Users Organizations Nominal Voltages Equipment Types Change Request Reasons Stations Rating Types Rating Notes			+ Add Rating Notes
ID 🕂 : ORGANIZATION	Roles And Permissions	ASSOCIATED COMPONENT	NOTE ID	NOTE $\stackrel{+}{\to} \stackrel{+}{\to}$
39	2	8	1	1. Emergency rating for dual N-1 and G-1 condition in San Francisc
228	23	0	1	1. Limited by COND
210	101	9	1	1. Maximum Possible Current = 1170A (AC)
62	4	12	11	1. See nomograms and/or 'MATA' tables for operating limits. MVA
48	2	6	10	10. MVAr High numbers are capacitive and MVAr Low numbers ar

Figure 32 Rating Notes Screen

210	
Organization TBCB ~	
Associated Component Count 9	
Note ID 1	
1. Maximum Possible Current = 1170A (AC)	
Status Active	
Cancel	

Figure 33 Rating Note Details

5. Reports

Figure 33. Reporting Screen

To access the Transmission Register report options, take the following steps:

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



Figure 34 Reporting Screen

California ISO Reporting	٨	Ŧ	?
★ Favorites Browse	🍸 View 🗸	Search	r
Transmission Registry Home > Transmission Registry			
FOLDERS (1) PAGINATED REPORTS (15)			
Components Changed Components History Components Not Linked To Components Share Components Total Components With No Lin Mont	erational Contr	ol	
Lines At Station Rating Note Transformer Bay At Statio			

Figure 35 TR Report Selection

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.

California ISO Reporting 💩 🛓 ?								
★ Favorites 🔲 Browse								
Home > Transmission Registry > Components Changed Since								
Organization: Station: High KV: 115			~	View Report				
Equipment: BUS Under ISO Control: BOTH V Change 0000	DEFAULT CHA	ANGE,0001	: NE)					
Component Changed Since :								

Figure 36 Components Changed Since Parameters

To create a "Components Changed Since" report, choose the parameters shown in Figure 36.

- 1) Select the Organization. A range of organizations or individual organizations can be chosen.
- 2) Select the Station(s).
- 3) Select the High kV(s).
- 4) Select the Equipment Type(s).
- 5) Select Under ISO Control.
- 6) Select the Change Reason(s).
- 7) Type in the Component Changed Since date or press the calendar icon and select a date.
- 8) Click View Report.
- 9) Once submitted, a screenshot resembling Figure 37 appears.
- 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.

Seporting SO Reporting 🔹 🛂 ?									
★ Favorites ☐ Browse	★ Favorites 🔲 Browse								
Home > Transmission Registry > Componen	s Changed Since								
Organization:	Station: High I15 KV: 115 Under ISO BOTH Control: Change 0000: D Component Changed 10/28/2007 m	EFAULT CHA	NGE,0001: N		View Report				
< ⊲ < ⊥ of 1 > ▷ Č)	ⓒ 100% ▼ □ ✓ □ Find	Next			•				
Components Changed Since									
Component Description	Component ID Station Name Org Equip Type	Unde Con	r ISO Itrol High	KV Low	KV Ter KV				
115 kV BUS 1	BUS	Y	115	.00	3				
115 kV BUS 2	BUS	Y	/ 115	.00	3				
2 record(s) found Page 1 of 1	Tuesday, November 2, 2021								

Figure 37 Components Changed Since Results

5.2. Component History Report

📀 California ISO 🛛 Reporting	ŝ	⊥	?	
★ Favorites 🔲 Browse				
Home > Transmission Registry > Components History				
Organization: M Station: High KV: 115			M	View Report
Equipment: BUS Under ISO Both V Component Active State:	~]		
Date From: 1/1/1995 🛅 Date To: 10/28/2021 🛅 Component ID:				
< 1 of 1 > ▷ ◯ ⓒ 100% ♥ 🛱 Find Next				
Components History				
Org Component Effective Start Effective End Status Comp ID Description	Org	Station		
07/19/2021 01:19:33 PM A 186473 115 kV BUS 1				
0//19/2021 01:19:33 PM A 1864/4 115 KV BUS 2				
2 record(s) found				
Page 1 of 1 Tuesday, November 2, 2021				

Figure 38 Components History

The Component 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. A sample report is demonstrated in Figure 38.

- 1) Select the Organization.
- 2) Select the Station(s).
- 3) Select the High kV(s).
- 4) Select the Equipment Types(s).
- 5) Select Under ISO Control.
- 6) Select Active Components or Inactive Components.
- 7) Select the Start Date and End Date.
- 8) Click View Report.
- 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.

California ISO Demostina	<i></i>		2	
California ISO Reporting	~~~	⊻	£	
★ Favorites 🔲 Browse				
Home > Transmission Registry > Components Not Linked To Root				
Organization: High 500,230			~	View Report
Equipment: TERM,TLS,XFMR BANK Under ISO Both Root TL,XFMR &	BAY		~	
Component ID Z NULL				
< 1 of 1 > ▷ ♡ ⓒ 100% ▼ 🛱 Find Next				
Components Not Linked to a Root				
Org Station Equipment Type Component	ID C	org Statio	DN	
[TRANSMISSION LINE]				
ILS				
TERM				
XFMR BANK				
BK 1 BK 3				
Page 1 of 1 Tuesday, November 2, 2021				

5.3. Components Not Linked to a Root Component

Figure 39 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. A sample report is shown in Figure 39.

1) Select the Organization.

- 2) Select the Station(s).
- 3) Select the High kV(s)
- 4) Select the Equipment Type(s).
- 5) Select Under ISO Control.
- 6) Select the Root component.
- 7) Click View Report.
- 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.

5.4. Components Share

🍣 California ISO 🛛 Re	<u></u>	$\overline{\uparrow}$?					
★ Favorites 🔲 Browse 🚓								
Home > Transmission Registry > Components	Share							
Organization:	Station: [T	RANSMISSION LINE]	Mig	h KV: 500			~	View Report
Equipment: TLS	Under ISO Control:	oth 🗸	Cor ID	nponent				
< < 1 of 1 > ▷ ひ	() 100%	• 🖬 > 🖨		Find Nex	ct			
Components Share								
Org ID Description	Shared With	Station	Under ISO Control	Equipment H	ligh KV Lov	v KV Ter KV	/ Amps	Sumi MVA MVAR HI
PGAE		[TRANSMISSION LINE]	Y	TLS	500			
		[TRANSMISSION LINE]	Y	TLS	500			
		[TRANSMISSION LINE]	Y	TLS	500			
		[TRANSMISSION LINE]	Y	TLS	500			
		[TRANSMISSION LINE]	Y	TLS	500			
		[TRANSMISSION LINE]	Y	TLS	500			
6 record(s) found								
Page 1 of 1	Tuesday, Noven	nber 2, 2021						

Figure 40 Components Share

The Components Share report displays all active Component Shares for a specified Organization, which is demonstrated in Figure 40.

- 1) Select the Organization.
- 2) Select the Station(s).
- 3) Select the High kV(s).
- 4) Select the Equipment Type(s).
- 5) Select Under ISO Control.
- 6) Click View Report.
- 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.

5.5. Components Total

🍣 California ISO 🛛 🖟	Reporting		ŝ	Ť	?	
★ Favorites 🔲 Browse						
Home > Transmission Registry > Component	s Total					
Organization:	Station: High KV: 115 Under ISO Control: Both				•	View Report
$ \triangleleft \ < 1$ of 1 $> \square $	ⓒ 100% ▼ □ ↓ □ Find	Next				
Components Total						
Organization High KV Equipment	Component Count					
115 KV						
BUS CB COND CT DISC TERM	2 3 4 3 11 2					
6 record(s) found						
Page 1 of 1	Tuesday, November 2, 2021					

Figure 41 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 41.

- 1) Select the Organization.
- 2) Select the Station(s).
- 3) Select the High kV(s).
- 4) Select the Equipment Type(s).
- 5) Select Under ISO Control.
- 6) Click View Report.
- 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.

5.6. Components with No Link

🎯 California ISO	Reporting		\$\$ 1	2 ?				
🛧 Favorites 🔲 Browse								
Home > Transmission Registry > Con	nponents With No Links							
Organization:	✓ Station:	High KV: 115		~	View Report			
Equipment: DISC	Under ISO Control: Both	•						
$ \triangleleft$ < 1 of 1 > $ \triangleleft $	Ů © 100% ♥ ■	✓ 日 Find Next						
Components With No Links	;							
Org Type	Description	ID Station	Under ISC Control) High KV	Low KV Ter KV			
PGAE								
DISC	1111		Ŷ	115.00				
DISC	1113		r	115.00				
DISC	1115		I V	115.00				
DISC	1121		V	115.00				
DISC	1131		Y	115.00				
DISC	1133		Y	115.00				
DISC	1135		Y	115.00				
DISC	1223		Y	115.00				
DISC	1231		Y	115.00				
DISC	1235		Y	115.00				
11 record(s) found								
Page 1 of 1	Tuesday, November 2, 2021							

Figure 42 Components with No Links

The Components with No Links report lists all active components that have no links associated to them. Refer to Figure 42 for a sample report.

- 1) Select the Organization.
- 2) Select the Station(s).
- 3) Select the High kV(s).
- 4) Select the Equipment Type(s).
- 5) Select Under ISO Control.
- 6) Click View Report.
- 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.

5.7. Lines at a Station

California ISO Reporting ∅ ¥ ?									
★ Faventes Browse	★ Favoĝes 🔲 Browse								
Home > Transmission Registry > Lines At Station									
Station:								(View Report
$ \triangleleft \ < 1$ of $1 \ > > 0 $	100%	• • •			Find Next				
Lines At a Station									
Station	Туре	Description				ID Org	Under ISC Control) High K	V Low KV T
	TL TL TL TL						Y Y Y Y	500.0 500.0 500.0 500.0)))
4 record(s) found. Page 1 of 1	Tuesday, Novemb	ber 2, 2021							

Figure 43 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. A report similar to Figure 43 appears.

- 1) Select the Station(s).
- 2) Click View Report.
- 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.

5.8. Rating Notes

🤡 Co	California ISO Reporting										
★ Favorites	★ Favorites 🔲 Browse										
Home > Tra	ansmission Registry > Ra	ting Note									
Station:	Station: Ratings: 1. Emergency rating for dual N-1										
⊲ < [1	< < 1 of 1 > ▷ <a>C <a>C <a>I <a>										
Rating No	otes										
Rating Note ID Ra	ating Note			Total Numbe Compone	er Of Ints	Total Number Of Ratings					
11 <u>11.</u>	. Limited by multiple compon	ents		10		23					ļ
22 22	Limited by Disconnect Swite	<u>ch</u>		8		23					
26 <u>26</u>	Limited by substation Bus of Limited by Mana Terra anti-	r Jumper Conduct	er rating.	24		52					
41	Rating based on COND pre	a load limits to gain l	igher summer	4		0					
41 <u>em</u>	nergency 30 minute rating.		g	5		11					
5 record(s) four	5 record(s) found.										
Page 1 of 1	Tues	day, November 2, 202									

Figure 44 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. The report similar to Figure 44 appears.

- 1) Select the Station(s).
- 2) Select the Rating Note(s).
- 3) Click View Report.
- 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.

5.9. Transformer Bays at a Station

🎯 California ISO Re	oorting						\$\$ 1	: ?		
★ Favorites										
Home > Transmission Registry >										
Station:									Viev	v Report
< < 1 of 1 > ▷ Č) €) 100% 🗸				Find Next					
Station	Description			ID	Equipment	Org	Under ISO Control	High KV	Low KV	Ter KV
	BAY 11				XEMD BAY		Y	500	220	
	BAY 13				XEMR BAY		Y	500	230	13.80
	BK 1				XEMR BAY		Y	230	115	13.20
	BK 2				XFMR BAY		Y	230	115	13.20
	BK 3				XFMR BAY		Y	230	115	13.20
6 record(s) found										
Page 1 of 1 Tuesday, November 2,	2021									

Figure 45 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. The sample report in Figure 45 appears.

- 1) Select the Station(s).
- 2) Click View Report.
- 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.

5.10. 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.

To create a Tree View Components report, which is demonstrated in Figure 46, take the following steps:

- 1) Select the Organization.
- 2) Select the Station(s).
- 3) Select the High kV(s).
- 4) Select the Equipment Type(s).
- 5) Click View Report.
- 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.

🍣 California ISO 🛛 Reporting				\$\$	Ŧ	?	
★ Favorites 🔲 Browse							
Home > Transmission Registry > Tree View Components							
Organization:		~	High KV: 500		~		uu Danart
Equipment: XEMB BAY						Vie	w Report
Component Drancost	_						
< 1 of 1 > ▷ ♡ ⓒ 100% ▼		8 [Find Nex	t			
Tree View Components							
Component	ID	Org	Station Name	Under ISO Control	High KV	Low KV	Ter KV /
> XFMR BAY . BAY 11				Y	500		
I XFMR BANK . BK 11				Y	500	230	13.20
[_ XFMR . BK 11 A				Y	500	230	13.20
I XFMR . BK 11 B				Y	500	230	13.20
I XFMR.BK 11 C				Y	500	230	13.20
[_ XFMR.BK 11 SP				Y	500	230	13.20
>> XFMR BAY, BAY 12				Y	500	230	40.00
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>> XFMR BAY, BAY 13				Y	500	230	13.80
XFMR BANK . BK 13				Y	500	230	13.80
I_ XFMR . BK 13 A				Y	500	230	13.80
XFMR . BK 13 B				Y	500	230	13.80
XFMR . BK 13 C				Y	500	230	13.80
I_ XFMR . BK 13 SP				Y	500	230	13.80
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Figure 46 Tree View Components

5.11. Printing a Report

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Figure 47 Report Print Function

To print a report, click on the <u>Printer</u> icon (refer to Figure 47) and the report opens up into a printer-friendly PDF version, along with the print properties window.

5.12. Saving a Report

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Figure 48 Report Download

To download a report into another format to be stored on your hard drive, click the <u>Disk</u> icon and the window shown in Figure 48 appears. The desired file format can then be chosen by making a selection from the dropdown menu.

6. Revision History

Version	Activity	Ву	Date
1.0	Draft	Marilyn Lien	4/12/07
2.0	Update to add Future in service date if the appropriate cause is selected	Scott Vaughan	3/05/17
3.0	Updated ISO Logo, formatting and Reports Figures	Chris Hillman	11/02/2021
4.0	Updated screenshots and text for UI updates and updated formatting	N. Strouse	11/14/2023