

Version 1.0

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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.
- 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.

The PTO Admin maintains and manages the Component information for their Organization within the TR. Their responsibilities and permissions include, but are not limited to:

- ✓ Creating Change Requests for Component additions and modifications.
- ✓ Defining relationships between Components (linking) as well as between Organizations (sharing).
- ✓ Viewing users, rating types, and rating notes specific to their organization.

Note: Refer to the <u>Transmission Register CAISO & PTO General User Manual</u> for the basic steps to navigate within TR, and to the <u>Transmission Register Autoloader User Manual</u> to perform bulk Change Requests.

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. An individual from each organization must be designated as the PTO Admin to add, update, or delete component information to ensure the TR database has the most current information.

1.2. Scope

The PTO Admin is appointed permission to manage, modify, report, and view all Components that are maintained, owned by, or shared with their specific Organization.

1.3. Definitions

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

Object	Definition
BSCB	Bus Sectionalizing Circuit Breaker
CABLE	Cable
САР	Shunt Capacitor
СВ	Circuit Breaker

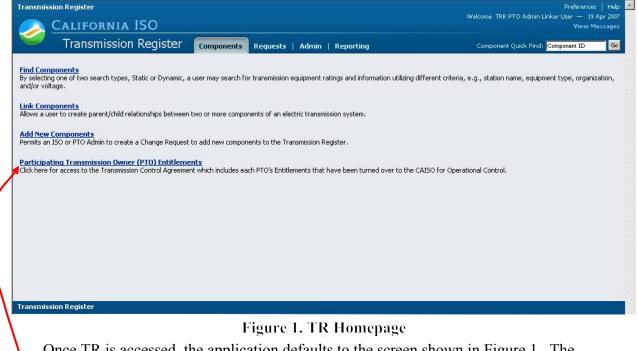
Object	Definition
Component	A single piece or grouping of electrical transmission equipment
	embedded within the Grid System. Attributes that define a
	component include the Organization, Owner, Description, Station,
	Voltages, Ratings, and ISO or Non-ISO.
COND	Overhead Conductor
CSW	Circuit Switch
СТ	Current Transformer
DISC	Disconnect Switch
Dynamie	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:
	Organization
	Station
	High Nominal Voltage
	Equipment Type
Equipment	Electrical transmission equipment category created to represent a
	Component, e.g. Circuit Breaker, Transformer, Leg, Transmission
	Line Segment, etc.
FUSE	Fuse
ISO	Represents Components turned over to the ISO for their Operational
Equipment	Control.
LEG	Typically consists of a CB, DISCs, and COND at a CB position
	inside a Station.
MOD	Motor Operated Disconnect Switch
Nominal	Represents the voltage class at which an Organization has decided is
Voltage	the utility industry-wide standard value used to classify a range of
	voltages it actually operates its Components by, e.g., 220 or 225 kV
	Operating Voltages would each fall into the 230 kV voltage class.
NULL	Empty or none
OID	Component Identification Number
Operating	Represents the voltage at which an Organization has decided to
Voltage	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.
РТО	Participating Transmission Owner
Rating Note	An Organization specific note that provides additional rating limit
	detail an operator needs to use when operating the Component.

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Object	Definition
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
SCAP	Series Capacitor
SCND	Synchronous Condenser
SRCT	Series Reactor
Static	A TR search type that allows the User to openly select or enter
	values as search criteria, and then submit all values at once.
Station	Organization specific Substation/Switching Station full name or a
Name	special category (Transmission Line) reserved to be the umbrella for
	all Organization specific transmission circuits and their associated
~~~~~	equipment types.
SVC	Static VAR Compensator
TERM	Represents 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
Transmission	All equipment and Components transferred to the ISO for
Facilities	Operational Control, pursuant to the Transmission Control
	Agreement, such as overhead and underground transmission lines,
	Stations, and associated facilities.
TRCT	Tertiary Reactor
WTRP	Wave Trap
XFMR	Transformer
XFMR BANK	Transformer Bank
XFMR BAY	Transformer Bay

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## 2. Components Homepage



Once TR is accessed, the application defaults to the screen shown in Figure 1. The following subsections provide details for navigating through each of the displayed hyperlinks.

*Note:* Click on the hyperlink to access the Participating Transmission Owner (PTO) *Entitlements.* 

### 2.1. Find Components

For steps to Find Components, refer to section 3.2. of the <u>Transmission Register</u> CAISO & PTO User Manual.

### 2.2. Link Components

For steps to Link Components, refer to section... of the <u>Transmission Register</u> <u>Component Linking Manual</u>.

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### 2.3. Add New Components

ange Request: TBD	Status: Work In Progress				
	Status. WORK INFOGRESS				
					Save Submit Cancel
	Process Type:	O Upon Appro	oval 🔿 Upon Effect	ive Date	
	Proposed Effective Date:				
	Reason:			•	
	Originator:	TRR PTO Admin	Linker User		
component ID: TBD	Copy From Component Without Rating	S Copy From Co	omponent With Ratin	<u>qs</u>	
	Organization:	OTHER			
	Owners:			Q	
	Station:			•	
	Equipment Type:			•	
	Description:				
	High Nominal Voltage (kV):			Υ.	
	Low Nominal Voltage (kV):			The second secon	
	Tertiary Nominal Voltage (kV):			~	
	ISO Control:	⊙ Yes O No	1		
	ISO Control Start Date:				
	ISO Control End Date:				
	Additional Info:				
	Addicional fillo.				
Ratings					
	AMP MVA MVAr Rating Rating High	MVAr Low	Duration	Notes	
	ings are either entered directly by the PT 2) / 1000]. This rating applies for all equip				
					Save Submit Cancel

Figure 2. New Component Change Request Screen

A PTO Admin is responsible for notifying the Grid of any new grid assets. This is performed by either filling out a TR Change Request, or if there are numerous changes, by utilizing the TR AutoLoad tool. For steps to upload bulk changes/additions, refer to the <u>Transmission Register AutoLoader User Manual</u>. In this instance, we will go through the steps to add one component at a time:

- Click on the <u>Add New Components</u> hyperlink shown in Figure 1, and the screen in Figure 2 loads.
- Select the appropriate Process Type radio button:

• Upon Approval- based on the basic TR Admin approval process. OR

Upon Effective Date- based on the date the component becomes operative.

	Proposed Effective Date:									
	Reason:	<<	April		•	200	7 🔻	>>	-	
	Originator:	_						_		
Component ID: TBD	Copy From Component Without Ratings	Sur	n Mon					Sat		
	Organization:	1	2	3	4	5	6	7		
	Owners:	8	9	10	11	12	13	14	P	
	Station:	15	16	17	18	19	20	21		
		22	23	24	25	26	27	28		
	Equipment Type:		Sec. 14	124	20	20	21	20	-	
	Description:	29	30							
	High Nominal Voltage (kV):		22.0	. In with	7007	1	Clea		-	
	Low Nominal Voltage (kV):	ι _	23 F	spril, i	2007		CIES	ar I	-	

**Figure 3. Proposed Effective Date** 

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• If the Change Request is based Upon Effective Date,

Then:

- Type in the Proposed Effective Date,

OR

- Select the effective date by clicking on the date icon shown in Figure 3. A calendar displays.
- Click the desired day of the month and the calendar automatically closes. Otherwise, proceed to the next step.
- Select a Change Request Reason from the drop-down window. Refer to Table 1 for Change Request Reason explanations.

Change Request Reason (used for AutoLoad file)	Reason Explanation	Type of Change Designation
Change Facility from/to Non ISO	Change a transmission/station facility in TR that either	Update, Retire
Facility	transitioned into or out of CAISO's Operational Control.	
Convert Rating Unit Type	Correct a miss-entered unit type, i.e., AMPS, MVA, or MVAR.	Update
Corrected a Data Input Error	Correct an existing record in TR that contains misinformation.	Update
Facility Added (Facility Previously	Add a transmission/station facility not currently logged into TR	Create
Existing but Not in Registry)	that has been and still is a part of the Grid.	
Facility Description Changed (Physically Unchanged)	Modify the TR component description of an existing transmission/station facility.	Update
Future Facility / Not Yet In Service	Log a transmission/station facility into TR planned for future service.	Create
Historical change, original reason unknown	Reason given to historical TR changes that did not have an identified change request reason. <i>Historical only, this Change Request Reason is no longer available for use.</i>	Update, Retire
New GRID Asset (Facility Previously Non-Existing Until New Construction)	Log a previously non-existent transmission/station facility into TR.	Create
Other (Causes not covered in above listing)	Use to cover any aspect not mentioned in the change request other reasons.	Create, Retire, Update
Rating Repetition (Removed emergency ratings identical to normal ratings)	Remove emergency ratings identical to the normal ratings. <i>Historical only, this Change Request Reason is no longer</i> <i>available for use.</i>	Update
Replaced Existing Equipment	Use when an existing transmission/station facility is replaced.	Update
Retired Duplicate Facility Entry	Use to correct a second entry of a transmission/station facility improperly entered.	Update
Revised Ratings (Equipment Physically Unchanged)	Log modified ratings of an existing, reevaluated transmission/station facility.	Update
Transmission Line/Facility Reconfigured (Physically Changed)	Enter reconfigurations of existing transmission/station facilities after physical modifications are installed.	Update, Retire

Table 1. Change Request Reasons

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Change Request: TBD Status: Work In Progress	-													
Process Type:       © Upon Approval © Upon Effective Date         Proposed Effective Date:	Cha	nge Request: TBD	Sta	tus: Work In Pr	ogress									
Process Type:       © Upon Approval © Upon Effective Date         Proposed Effective Date:												C hun	[	1
Proposed Effective Date:											Save	Submit	Cancel	
Reason:       Convert Rating Link Type         Originator:       mile         Component ID: TBD       Cover From Consocretent Without Ratings:         Owners:       Image: Cover From Consocretent Without Ratings:         Owners:       Image: Cover From Consocretent Without Ratings:         Equipment Type:       Image: Cover From Consocretent Type:         Description:       Image: Cover From Consocretent Type:         Low Nominal Voltage (kV):       Image: Cover From Consocretent Type:         Low Nominal Voltage (kV):       Image: Cover From Consocretent Type:         So Control:       Image: Cover From Consocretent Type:         Low Nominal Voltage (kV):       Image: Cover From Consocretent Type:         So Control:       Image: Cover From Consocretent Type:         Iso Control Start Date:       Image: Cover From Control Start Date:         Iso Control Start Date:       Image: Cover From Control Start Date:         Additional Info:       Image: Cover From Control Start Date:         Additional Info:       Image: Cover From Control Start Date:         Matting:       MVA: Matting: MVA: MVA: Cover Date:         Matting:       MVA: Matting: Cover Co				Pro	cess Type:	O Upon App	oroval 🔿 Upon Effe	ective Date						
Originator: miler         Component ID: TBD       Covy From Concordent Without Rating:         Organization: <ul> <li>Organization:</li> <li>Owners:</li> <li>Station:</li> <li>Station:</li></ul>			F	Proposed Effe	tive Date:									
Component ID: TBD       Cover From Concorrent Without Ratings         Organization:       Image: Cover From Concorrent With Ratings         Owners:       Image: Cover From Concorrent Without Ratings         Station:       Image: Cover From Concorrent Without Ratings         Equipment Type:       Image: Cover From Concorrent Without Ratings         Fight Nominal Voltage (KV):       Image: Cover From Concorrent Without Ratings         Iso Control Fort (KV):       Image: Cover From Concorrent Without Ratings         Iso Control Fort Date:       Image: Cover From Concorrent From Concorrent From Cover From From Cover From Cover From Cover From Cover From Cover					Reason:	Convert Rati	ng Unit Type	-	]					
Organization:       Image: Control Station:         Owners:       Image: Control Station:         Station:       Image: Control Station:         Description:       Image: Control Station:         Low Nominal Voltage (KV):       Image: Control Station:         ISO Control Station:       Image: Control Station:         ISO Control Station:       Image: Control Station:         Additional Info:       Image: Control Station:         Rating:       MVA:         MVA:       Nume: Control Station:         * MVA:       MVA:         Multiple:       Image: Control Station:         * MVA:       MVA:         * MVA:       MVA: </th <th></th> <th></th> <th></th> <th></th> <th>Originator:</th> <th>mlien</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th>					Originator:	mlien								
Owners:       Image: Control Station:         Station:       Image: Control Station:         Description:       Image: Control Station:         High Nominal Voltage (KV):       Image: Control Station:         Low Nominal Voltage (KV):       Image: Control Station:         Isol Control Station:       Image: Control Station:         Isol Control Station:       Image: Control Station:         Isol Control Station:       Image: Control Station:         Additional Info:       Image: Control Station:         Rating:       MVA: Rating: MVA: MVA: Duration Notes         * MVA ratings are either entered directly by the PTO or calculated using the PTO AMP Rating with the following equation: [MVA = (KV * AMPS * 1.732) / 1000]. This rating apples for all equipment except for Shurt Reactive Devices where the values are in MVAR instead of MVA.	Co	omponent ID: TBD	Copy Fro	m Component W	lithout Rating	Copy From	Component With Ral	<u>tings</u>						
Station:			1	Orç	janization:			-	]					
Equipment Type:					Owners:			\$	0					
Additional Info:         Ratings         AMP       MYAr         MYAr       Duration         Notes         * MWA ratings are either entered directly by the PTO or calculated using the PTO AMP Rating with the following equation: [MWA = (K) * AMPS * 1.732) / 1000]. This rating applies for all equipment except for Shurk Reactive Devices where the values are in MWAR instead of MWA.					Station:			-	1					
High Nominal Voltage (kV):				Equipn	nent Type:				1					
High Nominal Voltage (kV):				D	escription:				1					
Low Nominal Voltage (kV):			Hir		-			-	1					
Tertiary Nominal Voltage (kV):						, 			-					
IS0 Control       © Yes       No         IS0 Control Start Date:									1					
ISO Control Start Date:			rereta			• v~ • •	No		-					
Additional Info:       Ratings       Additional Info:       Rating string       MVA ratings are either entered directly by the PTO or calculated using the PTO AMP Rating with the following equation: [MVA = (KY * AMPS * 1.732) / 1000]. This rating applies for all equipment except for Shurt Reactive Devices where the values are in MVAR instead of MVA.						© res O I	NO							
Additional Info:         Ratings         MMP       MVAr       Duration       Notes         * MVA ratings are either entered directly by the PTO or calculated using the PTO AMP Rating with the following equation: [MVA = (KY * AMPS * 1.732) / 1000]. This rating applies for all equipment except for Shurt Reactive Devices where the values are in MVAR instead of MVA.														
AMIP Rating         MVA Rating         MVAr High         MVAr Low         Duration         Notes           * MVA ratings are either entered directly by the PTO or calculated using the PTO AMP Rating with the following equation: [MVA = (KY * AMPS * 1.732) / 1000]. This rating applies for all equipment except for Shunt Reactive Devices where the values are in MVAR instead of MVA.				ISO Contro	End Date:									
AMP Rating         MVA High         MVAr Low         Duration         Notes           * MVA ratings are either entered directly by the PTO or calculated using the PTO AMP Rating with the following equation: [MVA = (KV * AMP5 * 1.732) / 1000]. This rating applies for all equipment except for Shurt Reactive Devices where the values are in MVAR instead of MVA.				Addit	ional Info:									
AMP Rating         MVA High         MVAr Low         Duration         Notes           * MVA ratings are either entered directly by the PTO or calculated using the PTO AMP Rating with the following equation: [MVA = (KV * AMP5 * 1.732) / 1000]. This rating applies for all equipment except for Shurt Reactive Devices where the values are in MVAR instead of MVA.														
Rating         Rating         High         Low         Duration         Notes           * MWA ratings are either entered directly by the PTO or calculated using the PTO AMP Rating with the following equation: [MWA = (KY * AMP5 * 1.732) / 1000]. This rating applies for all equipment except for Shurt Reactive Devices where the values are in MWAR instead of MVA.		Ratings												
1.732) / 1000]. This rating applies for all equipment except for Shunt Reactive Devices where the values are in MVAR instead of MVA.							Duration	, i	lotes					
Save Submit Cancel		* MVA ra 1.73	tings are eit 2) / 1000].	her entered dire This rating appli	ectly by the PT es for all equip	10 or calculate oment except f	d using the PTO AMP or Shunt Reactive De	Rating with the f evices where the	ollowing equati values are in M	ion: [MVA = (K IVAR instead ol	V * AMPS f MVA.	*		
											Save	Submit	Cancel	-

Figure 4. Change Request Screen

To save time and energy, the user can pull previously existing component information, either with or without ratings, into the Change Request screen (refer to Figure 4), or manually fill out the Change Request. To pull previously existing component information, proceed to Section 2.3.1. For steps to manually fill out the Change Request, advance to Section 2.3.2.

### 2.3.1. Copy Information from Existing Component

The user can choose to use preexisting component information with or without ratings:

- If components *without* ratings are required,
- Then click on the <u>Copy from Component Without Ratings</u> hyperlink and the screen in Figure 5 loads.
- If components *with* ratings are required,

•

Then click on the <u>Copy from Component With Ratings</u> hyperlink and the screen in Figure 5 also loads.

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Component Sea	rch						
Station	Voltage (kV)		Equipment	Туре			
SLY PARK DAM	-	•			-	Run Search	
Station	Туре	Comp	onent Des	cription			
SLY PARK DAM CB 1	32						
SLY PARK DAM CB 1	.52						
SLY PARK DAW CB 1	.62						
Component Deta	nils						_
Descriptio	n: 132						
	D: 108395			h (k¥):	115		
Or	g: PLUD		Lo	w(k¥):	115		
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Or Owner Effect Dat Last Mod Dat Statio Equip Typ Lengt	g: PLUD s: PLUD e: 12/22/1998 e: 03/12/2001 n: SLY PARK DAD e: CB h: t: N/A	MVAr	Lor Tertiar Star Enc Addition	w (k¥): y (k¥): ISO: t Date: d Date: al Info: Line #:	N 12/22 03/12	/2001	
Or Owner Effect Dat Last Mod Dat Statio Equip Typ Lengt Pending Reques Ratings	g PLUD s: PLUD e: 12/22/1998 e: 03/12/2001 n: SLY PARK DAM e: CB h: h: k: N/A P MVA		Lo Tertiar Star End Addition	w (k¥): y (k¥): ISO: t Date: d Date: al Info:	N 12/22 03/12		

Figure 5. Component Search Screen

One or all of the choices can be selected, but To narrow the search, we will select all of the options:

- Select a station from the dropdown window.
- Select a voltage (kV) from the dropdown window
- Select the Equipment Type from the dropdown window (refer to Section 1.3. for the definitions of the equipment short names).
- Press the Run Search button and the window loads with rating information, as shown in Figure 5.
- Select one of the station results and the choice highlights.
- Press the OK button.
  - If no ratings were selected, then the screen in Figure 6 loads.
  - If ratings were selected, then the screen in Figure 7 loads.

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		Prec	ana Tapa: G	) (Devis Arres	roval O Upon Effective De			
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Figure 6. Copied Component Information without Ratings

Change Re	equest: TBD	Status	Work in	Program			- 19	100
							Seve Submit 4	Cencel
		Proces	s Type: (	D Lipon App	roval 🔿 Upon Effective D	-		
	Pro	posed Effectiv						
			teason	Convert Ratin	g Unit Type	0.00		
			inator av		tines Cape From Come	and the second second	9/9	
Componei		Ratings	<b>Difference</b>	CHING ST CO.	land Capitrian Cons	Science with		
		Organi	mation:	PLUD				
		c	wners	PLUD		Et-		
			itation:	ADOR				
		Equipmen	t Type:	OTMR BANK		100		
		Desc	ription:	BK G				
	High 1	fominal Voltag	+ (kv):	230.0				
	Low P	tominal Voltag	+ (kv)=	115.0				
	Tertiary F	fominal Voltag						
			0101100	∋ Yes O s	6	-		
	15	O Control Star	t Date:	12/13/2002				
		ISO Control En	d Date:			11		
		Addition	al Info:	l & 4 hour i	atings reduced to mate	IN PLUD		
Ratings								
	AMP	HEVA Rating	MVAr High	HV/Ja-	Duration	Notes		
SN (N)	1400.0	557.704			⊕ Con. O		Apply To	M
SE (A)	1400.0	\$57.704			O Can. O		2	
WW (8)	1400.0	557.704			O Con. O		P	
WE (C)	1400.0	557.704			O Can. O		2	
D		S 5			O Con. O		0	
E					⊙ Can. O		Ø	
F					© Can. O		0	
G					G Can. O		0	
* MVA retires	are either entered.	drectly by the P	TO er cele	ulated using		the following equation: INVV	= (NY * AMPS * 1.732) / 1000	ol. The
						the values are in MVAR inst		
							Dave Submit	Cencel

Figure 7. Copied Component Information with Ratings

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Transmission Register	Select Organizations
🔼 California ISO	Organization
	Arizona Public Service Company
Transmission Register Components   Requests   Admin   Reporting	Bonneville Power Administration
Change Request: TBD Status: Work In Progress	California Department of Water Resources
	Comision Federal De Electricidad
	Imperial Irrigation District
Process Type:      G Upon Approval      Upon Effective Date	California ISO
Proposed Effective Date:	Los Angeles Department of Water & Power
Reason: Convert Rating Unit Type	Modesto Irrigation District
Originator: mlien	Metropolitan Water District/Southern
Component ID: TBD Copy From Component Without Ratings Copy From Component With Ratings	Northern California Power Agency
Organization: BPA	Nevada Power Company
Owners:	Facilities Owned by Other Organizations
Station:	Pacificorp East
Equipment Type:	Pacificorp West
Description:	Pacific Gas & Electric PGAE
High Nominal Voltage (k¥):	Southern California Edison
Low Nominal Voltage (k¥):	San Diego Gas & Electric
Tertiary Nominal Voltage (kV):	Sacramento Municipal Utility District
ISO Control: 💿 Yes C No	Sierra Pacific Power Company
ISO Control Start Date:	Salt River Project
ISO Control End Date:	Silicone Valley Power
Additional Info:	Turlock Irrigation District,
	🔲 Western Area Colorado Missouri
Ratings	Western Area Lower Colorado
AMP MVA MVAr MVAr Aller Aller	Western Area Power Agency

### 2.3.2. Manually Enter Change Request

Figure 8. Change Request Screen

- Select the Organization from the dropdown window and the screen automatically refreshes with that organization's information.
- Select the Owners from by clicking the magnifying glass and a window listing all organizations adjacent to a checkbox loads (refer to Figure 8).
- Click the desired checkbox and press the OK button and it refreshes.
- Select the station.
- Select the Equipment Type and the screen refreshes with the specifics for that equipment.
- Type in the Description of the equipment. This is free-text, which can include up to ninety-six (96) characters.
- Select the High Nominal Voltage (kV).
- If the Low Nominal Voltage (kV) is highlighted, Then select the correct voltage and it must be less than High Nominal Voltage.
- If the Tertiary Nominal Voltage is highlighted, Then the voltage may be added and it must be less than the Low Nominal Voltage.
- Select the Yes or No radio button to designate if under ISO Control (defaults to Yes).

	ISO Control Start Date:	04/01/2007
	ISO Control End Date:	<< April 🔽 2007 🔽 >>
	Additional Info:	Sun Mon Tue Wed Thu Fri Sat
		1 2 3 4 5 6 7
Ratings		8 9 10 11 12 13 14
	AMP MVA MVAr Rating Rating High	15 16 17 18 19 20 21 Notes
	* MVA ratings are either entered directly by the P 1.732) / 1000]. This rating applies for all equip	
		26 April, 2007 Clear

Figure 9. Calendar Icon

• Type in, if needed, the ISO Control Start Date, OR

Select by clicking on the date icon and a calendar displays (shown in Figure 9).

- Click the desired day of the month and the calendar automatically closes.
- Select, if needed, the ISO Control End Date in the same manner.
- Type in any Additional Info using optional free-text, which can include up to 256 characters.
- Press the Save button.
- Press the Submit button and the screen in Figure 10 loads. The TR Admin then reviews and notifies the PTO Admin of approval or rejection of the Change Request via an email.

nge keque	<b>st:</b> 100150	Status: Work I	n Progress			
Modify Request	Submit Request	Copy Request				Clos
		Type:	Create			
		Process Type:	Upon Approval			
	Propo	sed Effective Date:				
		Reason:	Convert Rating Uni	it Type		
		Originator:	Marilyn Lien			
		Last Modified By:				
	L	ast Modified Date:				
omponenti	<b>(D:</b> 150081					
			Proposed			
		Organization:	BPA			
		Owners:	BPA			
	L	ast Modified Date:				
		Station:				
		Equipment Type:				
		Description:	-			
	2	ninal Voltage (kV):	230			
		ninal Voltage (kV):				
	Terciary Nor	ninal Voltage (kV): ISO Control:	Vec			
	150	Control Start Date:				
		) Control End Date:	47172007			
		Additional Info:				
Ratings						
Rating	AMP Rating	M¥A Rating	M¥Ar High	M¥Ar Low	Duration	Notes

Figure 10. Change Request Work In Progress (Mock Up)

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### 3. Requests Page

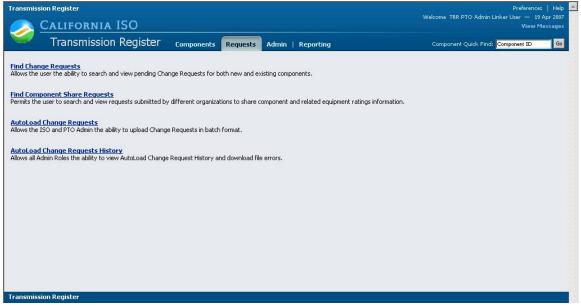


Figure 11. Requests Page

Select the Requests folder tab and the Requests page (shown in Figure 11) offers the PTO Admin the ability to perform the following:

- 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.
- AutoLoad Change Requests- Uploads bulk Change Requests into TR.
- AutoLoad Change Requests History- View all the Change Requests pending approval.

The subsequent subsections offer steps to complete the each of the above-mentioned tasks on the Requests page.

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### 3.1. Find Change Requests

Find Change Requests							
Reason:	Equal to			.ine/Facility Reconfi	· · · _	] 🖸	
Organization:			Change Facilit Convert Ratin	y from/to Non ISO F a Unit Type	Facility	0	
Originator:				ata Input Error (Facility Previously	Existing but Not	0	
Status:	Equal to		Facility Descrip	tion Changed (Phy / Not Yet In Service	sically Unchange	0	
Date Created:			Historical char	ge, original reason et (Facility Previous	unknown		
Date Approved:		•	Other (Cause: Rating Repetil	not covered in abo ion (Removed emer	ive listing)	. 0	
Component ID:		-	Replaced Exis	ing Equipment		0	
High Nominal Voltage (kV):		•			•	0	
Equipment Type:		•				]	
Station:		•			•	0	
Under ISO Control:				•			
Request Source:				•			
Search Results Record Count: 546							
CSV Export							
<< <1 <u>23456&gt;&gt;&gt;</u>							
T <u>ID</u> <u>Type</u> <u>Process</u> <u>Originator</u>	tatus <u>Approver</u>	<u>Modific</u> By	<u>ed Date</u> <u>Create</u>	<u>Component</u> <u>d ID</u>	Organization	Station Name	<u>Equipment</u> Type
Detail View 26125 UPDATE APPROVAL Smith	pproved Tom Halford	Tom Ha	04/21/2 3:05 PM		SDGE	[TRANSMISSION LINE]	TLS

Figure 12. 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 get back six pages of approved Change Requests that pertain the that reason type. However, for guidance 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 <u>Find Change Requests</u> hyperlink shown in Figure 11 and the screen in Figure 12 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.

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- 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.
- Select AUTOLOAD as the Request Source, which outputs below the Search Results at the bottom of the page. Refer to the Figure 12 Search Results.

Turn of					Otation	0	0			Tertiary		ISO		Additional	1 in a	Rating	1 Back	1		
Type of					Station	Component	Compone			Tertiary		150		Additional	Line	Rating	High	Low		
Change	Change Request Reason	OID	Org	Owner	Name	Description	nt Type	High KV	Low KV	KV	Length	Control	Units	Information	Number	Туре	Rating	Rating	Duration	Note #
	New GRID Asset (Facility																			
	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 13. Sample Excel .csv Format

The user can export to a .csv format by:

• **Click** the <u>CSV Export</u> hyperlink shown in Figure 12 and the spreadsheet in Figure 13 generates.

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

- **Click** the Details View hyperlink shown in Figure 12 and the Change Request in Figure 14 loads.
- **Press** the Close Button when complete.⁻

ge Request:	100400 Status: Appr	oved				
						Close
		Type:				
		Process Type:				
		Proposed Effective Date:				
			Facility Added (Facility Previou	isly Existing but Not in Regi	stry)	
			TRS AUDIT_3			
			Tom Halford			
		Approver Notes:			~	
		Last Modified By:				
		Last Modified Date:	06/05/2007 2:40 PM			
nponent ID:	: 150005					
			Proposed			
		Organization:				
		Owners:				
		Last Modified Date:				
			[TRANSMISSION LINE]			
		Equipment Type:				
			Mexico-San Diego			
		High Nominal Voltage (kV):				
		Low Nominal Voltage (k¥):	2.4			
		Tertiary Nominal Voltage (kV): ISO Control:				
		ISU Control: ISO Control Start Date:	NO			
		ISO Control End Date:				
		Additional Info:				
		Length:	106			
		Line #:	100			
Ratings		cinc #.				
Rating	AMP	MVA	MVAr	MVAr	Duration	Notes
Туре	Rating	Rating	High	Low	Duración	BULES
* MW	A ratings are either entered directly	by the PTO or calculated using the P Shunt Rea	TO AMP Rating with the followin ctive Devices where the values	ig equation: [MYA = (KV * A are in MVAR instead of MV	AMPS * 1.732) / 1000]. This rating app A.	lies for all equipment except for
				Nebe		
Note Id				Note		

Figure 14. Details View Window

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### 3.2. Find Share Components

9	Transmiss	ion Registe	Components	Requests Admin	Reporting	Compone	nt Quick Find: Component ID
ind Sh	nare Request	s					Clear Run Search
		01	ganization:			· O	
			Originator:	•		. 0	
			Status:	•			
							Clear Run Search
Searc	h Results						
ID	Originator	Status	Approver	Modified By	Date Created	Last Update	Component ID

**Figure 15. 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 all the criterion can be selected, but for training purposes, we will select all.

Take the following steps to Find Share Components:

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

- Click the <u>Find Share Requests</u> hyperlink shown in Figure 11 and the window in Figure 15 loads.
- Select the Organization.
- Select the Originator.
- Select the Status.
- Press the Run Search button and the screen in Figure 16 loads.

Search Results Record Count: 5										
	ID	<u>Originator</u>	<u>Status</u>	Approver	Modified By	Date Created	Last Update	Component ID		
Detail View	1	Tom Halford	Approved	Tom Halford		09/10/2004 8:13 AM		<u>120308</u>		
Detail View	4	Tom Halford	Approved	Tom Halford		08/17/2005 1:47 PM		122423		
Detail View	5	Tom Halford	Approved	Tom Halford		08/17/2005 1:47 PM		<u>122420</u>		
Detail View	<u>10</u>	Tom Halford	Approved	Tom Halford		01/04/2007 11:23 AM		122425		
Detail View	<u>11</u>	Tom Halford	Approved	Tom Halford		01/04/2007 11:23 AM		<u>122418</u>		
ranemiccion D	enicter									

**Figure 16. Find Share Requests Results** 

The PTO Admin may now modify the share permissions for their organization:

• Click the <u>Detail View</u> hyperlink and the window shown in Figure 17 loads.

nare Request: 1	Status: Approved				
					Close
		Type: Create			
		Originator: Tom Halford			
		Approver: Tom Halford			
		Approver Notes:		×	
		Last Modified By:			
		ast Modified Date:			
Share ID: 2					
	Shi	ared Organization: EED			
		Share Type: View			
Component ID:	20308				
Organization	1: PLUD	High Nominal Voltage (k¥):	500 (Operating: 500)	Additional Info:	Ratings changed to reflect EEID recalculation to reflect summer preloading and reduce loading time to .5hr.
Owner	s: PLUD	Low Nominal Voltage (kV):		Pending Request:	
Effective Date	e: 08/24/2004	Tertiary Nominal Voltage (kV):		Pending Share Request:	
Last Modified Date	e: 06/14/2005	ISO Control:	Yes	Length:	
	n: [TRANSMISSION LINE]			Line Number:	N/A
Equipment Type	e: TLS n: SLY PARK-PLACER	ISO Control End Date:			
۰ ، Component Shares	IVA ratings are either enter 1.732) / 1000]. This ratin	red directly by the PTO or calculated usin g applies for all equipment except for Shu	g the PTO AMP Rating with the unt Reactive Devices where the	following equation: [MVA = (KV * A values are in MVAR instead of MVA	NPS * 
ID Share Ty		0 i i'			
		Organization	Remove Share	Modify Share	
2 View Only		EEID			

• If the share needs to be removed,

Then click the Remove Share hyperlink shown in Figure 17. The screen refreshes and now includes a <u>Cancel Request</u> hyperlink at the top of the page to cancel the change.

١

• If the share needs to be modified,

Then click the Modify Share hyperlink and the screen shown in Figure 18 loads.

						Save Submit Can
	Type: M	odify				
Cor	nponent Share: 1	20308				
Share	ed Organization EE	ID				
	Share Type: (	View Onlγ ⊂ View An     View Onlγ ⊂ View An      View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An     View An	d Link			
		R PTO Admin Linker User				
Component ID	-					
	Organization:	18				
	Owners:					
	Effective Date: 08	3/24/2004				
Las	Modified Date: 06	5/14/2005 10:36 AM				
	Station: [T	RANSMISSION LINE]				
6	quipment Type: TL	S				
	Description: SL	Y PARK-PLACER				
High Nomin	al Voltage (kV): 50	0				
Low Nomin	al Voltage (kV):					
Tertiary Nomin	al Voltage (kV):					
	ISO Control: Y					
ISO Con	trol Start Date: 12	2/09/2004 12:00 AM				
150 Co	ontrol End Date:					
	Additional Info: R	atings changed to reflect PG8E	(Rick Gavazza) recalcula	tion to reflect summer p	reloading and reduce loading	time to .5hr.
Ratings						
Rating	AMP	MVA	MVAr	MVAr	Duration	Notes
Туре	Rating	Rating	High	Low	Duracion	Hotes
SN (N)	2230	1931.18			C	
SE (A)	3556	3079.5			0.5	
WN (B)	3962	3431.09			C	
WE (C)	4254	3683.96			4	
D	2478	2145.95			C	
E	2964	2566.82			4	

Figure 18. Modify Share Request Page

The modification on this page changes the Share Type from View Only to View And Link.

- Click the View And Link radio button.
- Press the Save button.
- Press the Submit or Cancel button.

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### 3.3. AutoLoad Change Requests and AutoLoad Change Requests History

The AutoLoad Change Requests page allows the ISO and PTO Admin the ability to upload Change Requests in batch format. For steps to perform this, refer to the <u>Transmission Register AutoLoader User Manual</u>.

The AutoLoad Change Requests History page allows the TR Admin the ability to view AutoLoad Change Request History and download file errors. For steps to use this feature together with the AutoLoader application, refer to Section 3.4. of the <u>Transmission Register AutoLoader User Manual</u>.

Both of these tools are accessed from the Requests page under the <u>AutoLoad Change</u> <u>Requests</u> and <u>AutoLoad Change Requests History</u> shown in Figure 11.

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## 4. Admin Screen



### Figure 19. Admin Screen

The PTO Administrators can view organization-specific users, and proprietary rating types and rating notes, along with their IDs. By selecting the Admin folder tab, the screen in Figure 19 appears. The following subsections offer steps to view Users, Rating Types, and Rating Notes.

### 4.1. Users

Users						
<< < 1 <u>2 3 &gt; ;</u>	>>					
	<u>User ID</u>	Loqon ID	Organization	▲ Email	Last Logon	<u>Status</u>
View User	1	TRSYSTEM				Active
View User	<u>50</u>	aamark	California ISO	aamark@caiso.com		Active
View User	1015	amann	California ISO	amann@caiso.com		Active
View User	<u>55</u>	agilfoy	California ISO	agilfoy@caiso.com		Active
View User	<u>59</u>	abhaumik	California ISO	abhaumik@caiso.com		Active

Figure 20. Users Screen

- Click on the <u>Users</u> hyperlink shown in Figure 19 and the screen in Figure 20 loads.
- Click on either the <u>View User</u> or User ID hyperlink to view details of a particular individual's permission status and role.

### 4.2. Rating Types

Rating Types									
	<u>Rating</u> Type ID	<u>Short</u> Name	Full Name	Description	Sort Priority (Major)	Sort Priority			
View Rating Type	1		Summer Normal	Summer Normal (April - October): Summer loading limit under typical normal continuous operating conditions. Will be used as MVA1 in the Detailed Network Model.	1	( <u>Minor)</u> 0			
View Rating Type	2	SE (A)	Summer Emergency	Summer Emergency (April - October) Summer emergency loading limit. Will be used as MVA2 in the Detailed Network Model.	2	0			
View Rating Type	3	WN (B)	Winter Normal	Winter Normal (November - March): Winter loading limit under typical normal continuous operating conditions. Will be used as MVA3 in the Detailed Network Model.	3	0			
View Rating Type	4	WE (C)	Winter Emergency	Winter Emergency (November - March): Winter emergency loading limit. Will be used as MVA4 in the Detailed Network Model.	4	0			

Figure 21. Rating Types Screen

Rating Types are 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 <u>Rating Types</u> hyperlink shown in Figure 19 and the screen in Figure 21 loads.
- 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 22 loads.

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ating Type: SN (N)	
	Close
Id:	1
Short Name: 1	SN (N)
	Summer Normal
Description:	Summer Normal (April - October): Summer loading limit under typical normal continuous operating conditions. Will be used as MVA1 in the Detailed Network Model.
Sort Priority (Major):	1
Sort Priority (Minor):	0
Status:	Active
	Close

Figure 22. Rating Type Details

### 4.3. Rating Notes

	Ratir	Rating Notes						
	ID 🔻	Organization	<u>Note</u> ID	Note				
I	<u>204</u>	Placer Lake Utility District	203	Continuous rating at 80 degree F ambient temperature.				
	<u>203</u>	Placer Lake Utility District	202	Continuous rating at 90 degree F ambient temperature.				
	<u>202</u>	Placer Lake Utility District	201	Emer. limit is a cont. limit, limited to 1000 hrs over its lifetime. Load recordings should be made and retained whenever load exceeds its normal rating for 30 min. or more. Recording info should be forwarded to Tran. Operations & Tran. Eng annually.				

### Figure 23. Rating Notes Screen

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 <u>Rating Notes</u> hyperlink shown in Figure 19 and the screen in Figure 23 loads.
- Click on the ID hyperlink (refer to Figure 23) to view details of a specific rating note and the example shown in Figure 24 loads.

lating Note: 201							
	Close						
Id:	202						
Organization:	PLUD						
Associated Component Count:	0						
Note ID:	201						
Note:	Emer. limit is a cont. limit, limited to 1000 hrs over its lifetime. Load recordings should be made and retained whenever load exceeds its normal rating for 30 min. or more. Recording info should be forwarded to Tran. Operations & Tran. Eng annually.						
Status:	Active						
	Close						
Transmission Register							

Figure 24. Rating Note Details

## 5. Reporting Screen

Refer to the <u>Transmission Register CAISO & PTO General User Manual</u> for a description of all available reports, as well as, steps to generate a report.

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## 6. Revision History

Version	Activity	Ву	Date
1.0	Draft	Marilyn Lien	5/1/07

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