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REVISION HISTORY

REVISION NO.	DATE	DESCRIPTION	Comments
1.0	5/18/2017	First Release This is an update on the FNM Reference Document for Market Scheduling Limit (MSL) and Branch Group (BG) information, to reflect the replacement of Intertie Constraint (ITC) with Market Scheduling Limit (MSL) Removed SYLMAR-SIM_ITC	
1.1	2/21/2019	Retired BLYTHE_BG	

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1. PURPOSE

This document was created to provide Intertie Constraint (ITC) and Branch Group (BG) information and relationships with Tnames, operating procedures and/or diagrams, as applicable. The information will be maintained for an interim basis in this document until such time as the ISO determines an alternative means for providing the information.

2. DESCRIPTION OF CONTENT

An Intertie Constraint (ITC) is a scheduling limit based on a specified set of scheduling points. Through this arrangement, the ITC accounts for 100% of the scheduled net energy flow from the specified scheduling points to the ISO regardless of the electrical path of physical flows. Contractual scheduling rights are reflected in the interchange schedules between balancing authority areas after the completion of the market optimization. The market scheduling must be performed using a series of ITCs that align with the contractual limits.


For each of the figures shown in Section 3 and the related mapping in Section 4, the interchange constraints and branch groups deployed in the ISO full network model are shown relative to associated transmission, interties and scheduling points. Reference documents related to intertie constraints and branch groups can be found in the ISO Full Network Model Business Practice manual in sections 2.1.1.2, 3.1.4 and 4.2.4.3 and in the applicable operating procedures referenced in Section 4. These documents provide a more detailed description on the use and implementation of the intertie constraints and branch groups, and these documents are located on the ISO website at the following links:

BPM of Managing Full Network Model

<http://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Managing Full Network Model>

California ISO Operating Procedures

<http://www.caiso.com/rules/Pages/OperatingProcedures/Default.aspx>

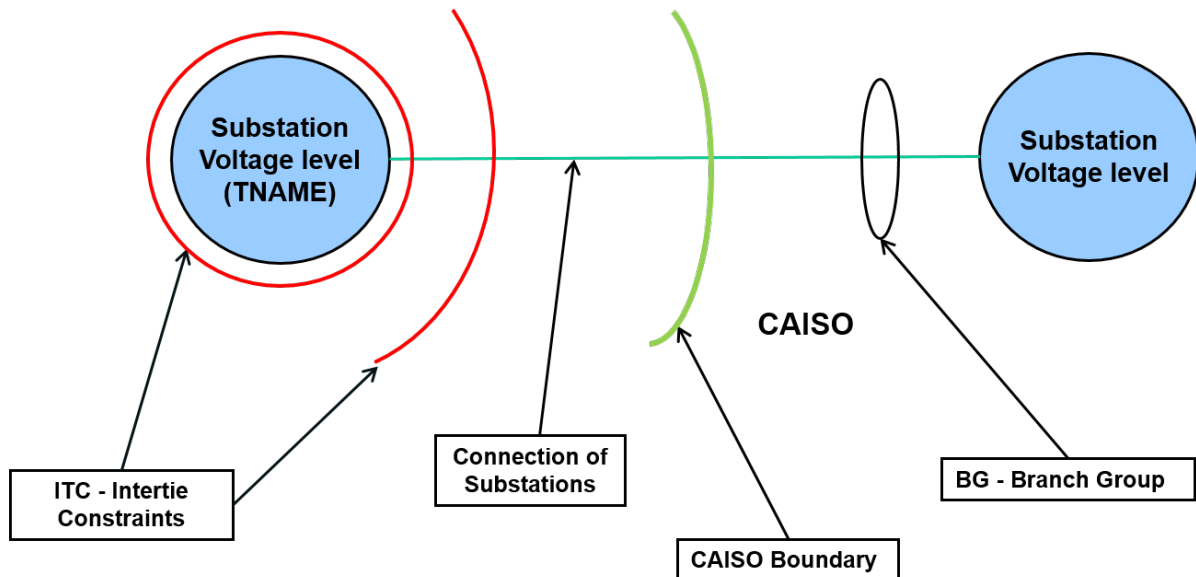
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3. ITC/BG, TNAME DIAGRAM

The follows describes the name in the legend of diagram.

- **Intertie Constraint (ITC)** – The red cycle represents a specified set of scheduling points
- **Substation Voltage Level** – Represent the substations and their voltages in diagrams
- **Connection of Substation** – Represent the connectivity between the substations. It is symbolic representation of the lines, not their physical distances.
- **CAISO Boundary** – It shows where the CAISO boundary. The lines that crossing the boundary are the CAISO intertie lines
- **Branch Group (BG)** – Represents one line or a group of lines that consist of the Branch Group.

Legend of Diagram



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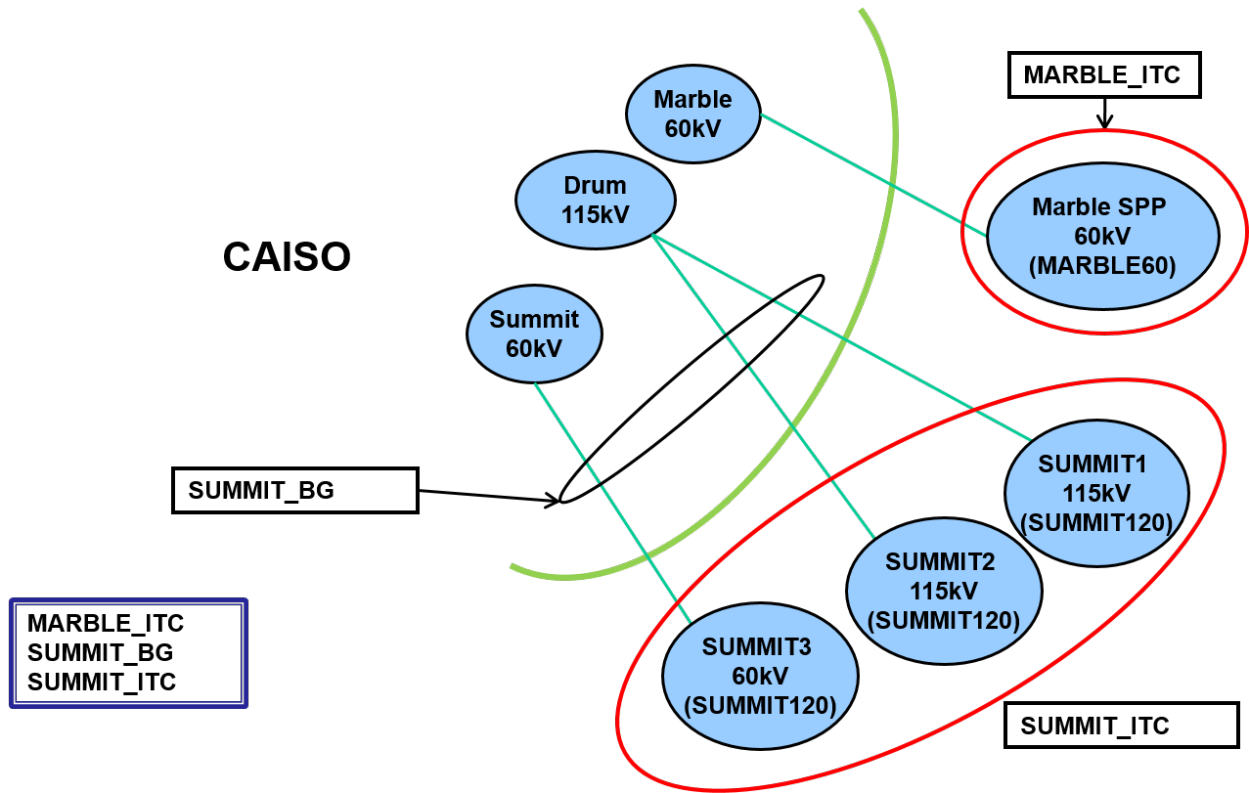



Figure 2: Summit and Marble

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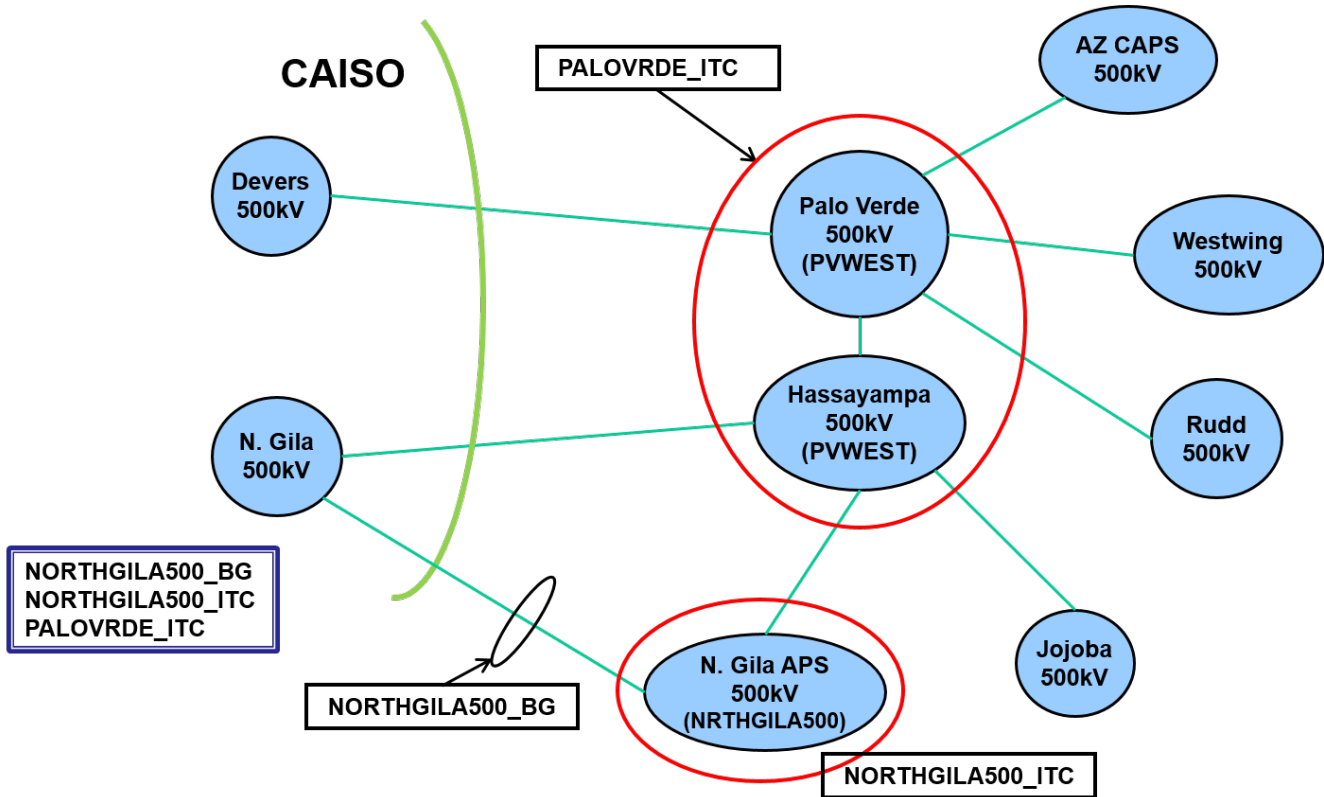



Figure 3: Palo Verde and N. Gila

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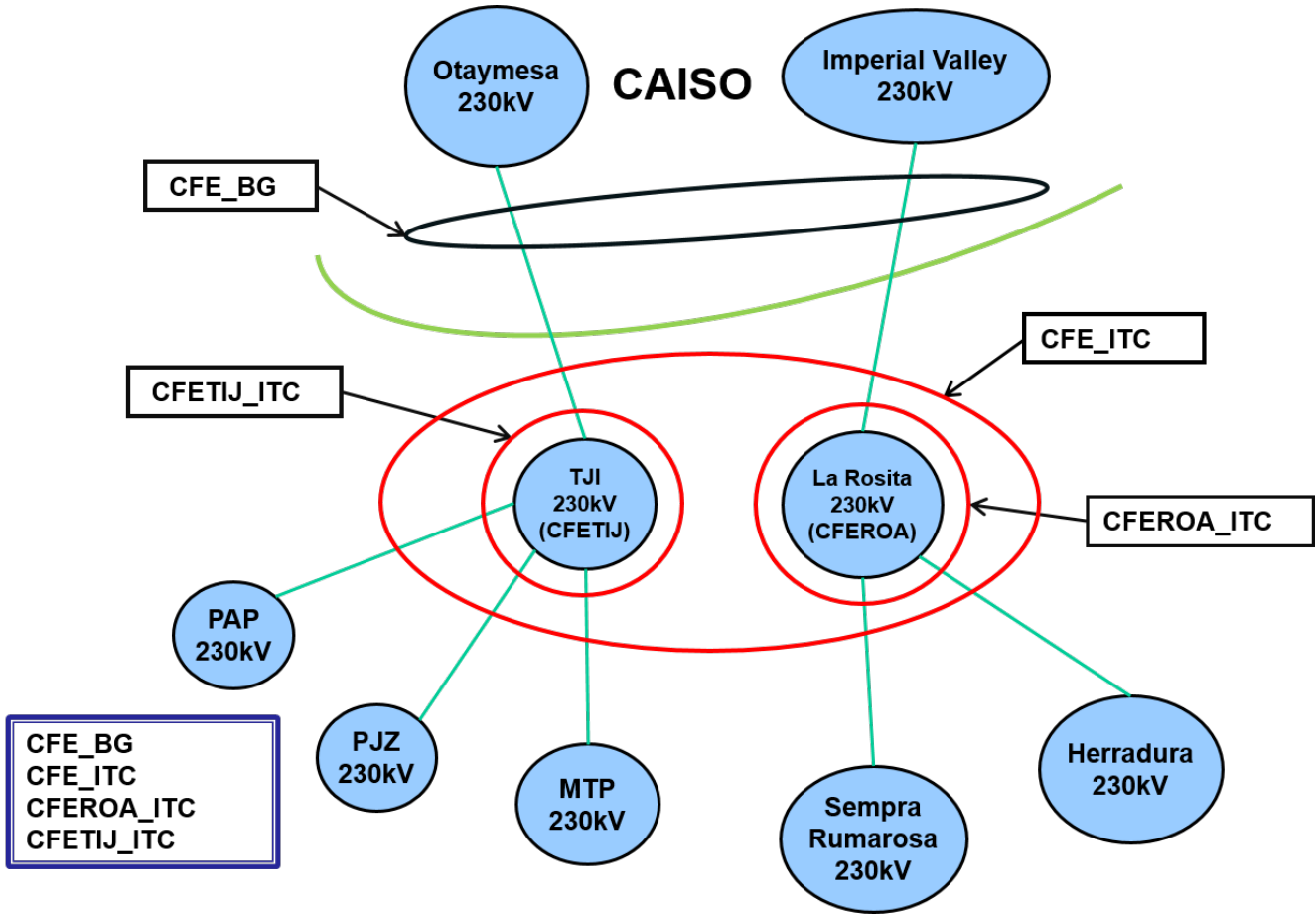



Figure 4: CFE

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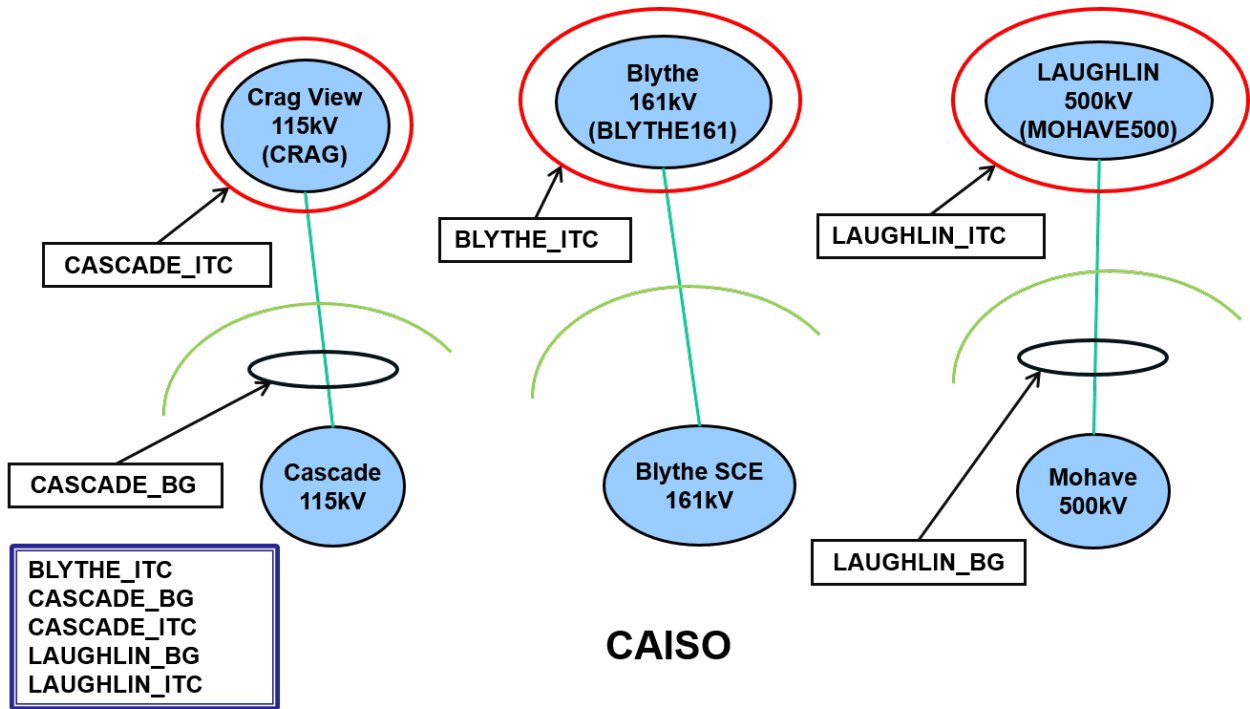


Figure 5: Cascade, Blythe and Mohave

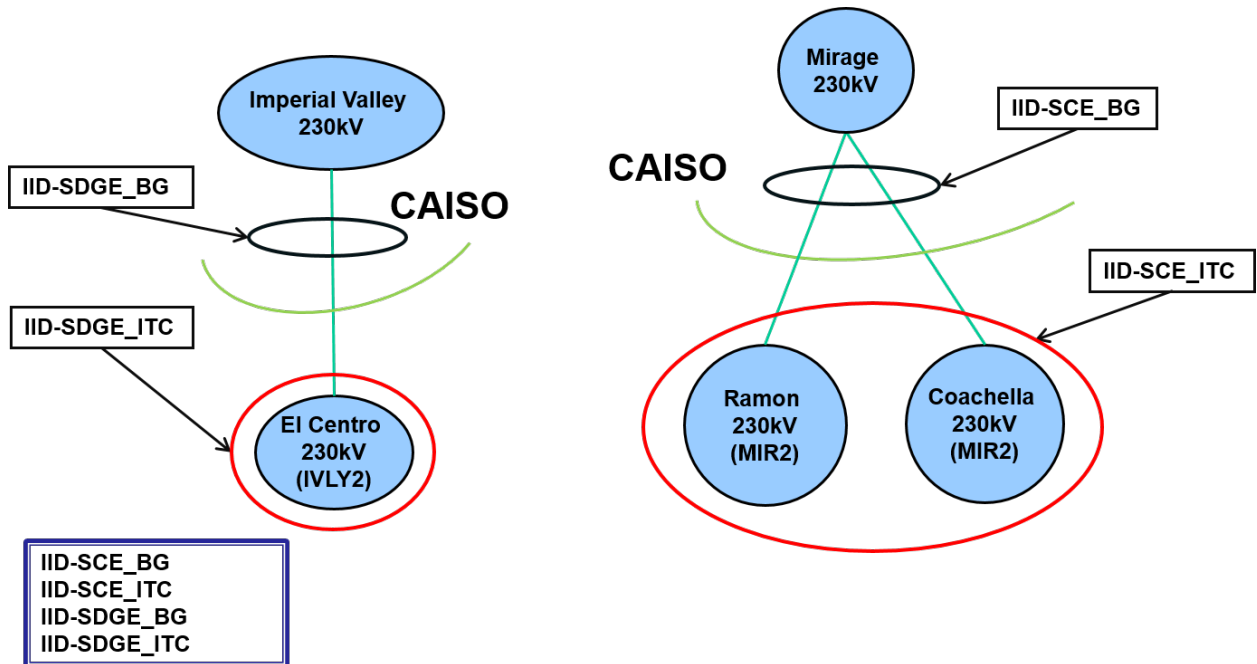



Figure 6: IID

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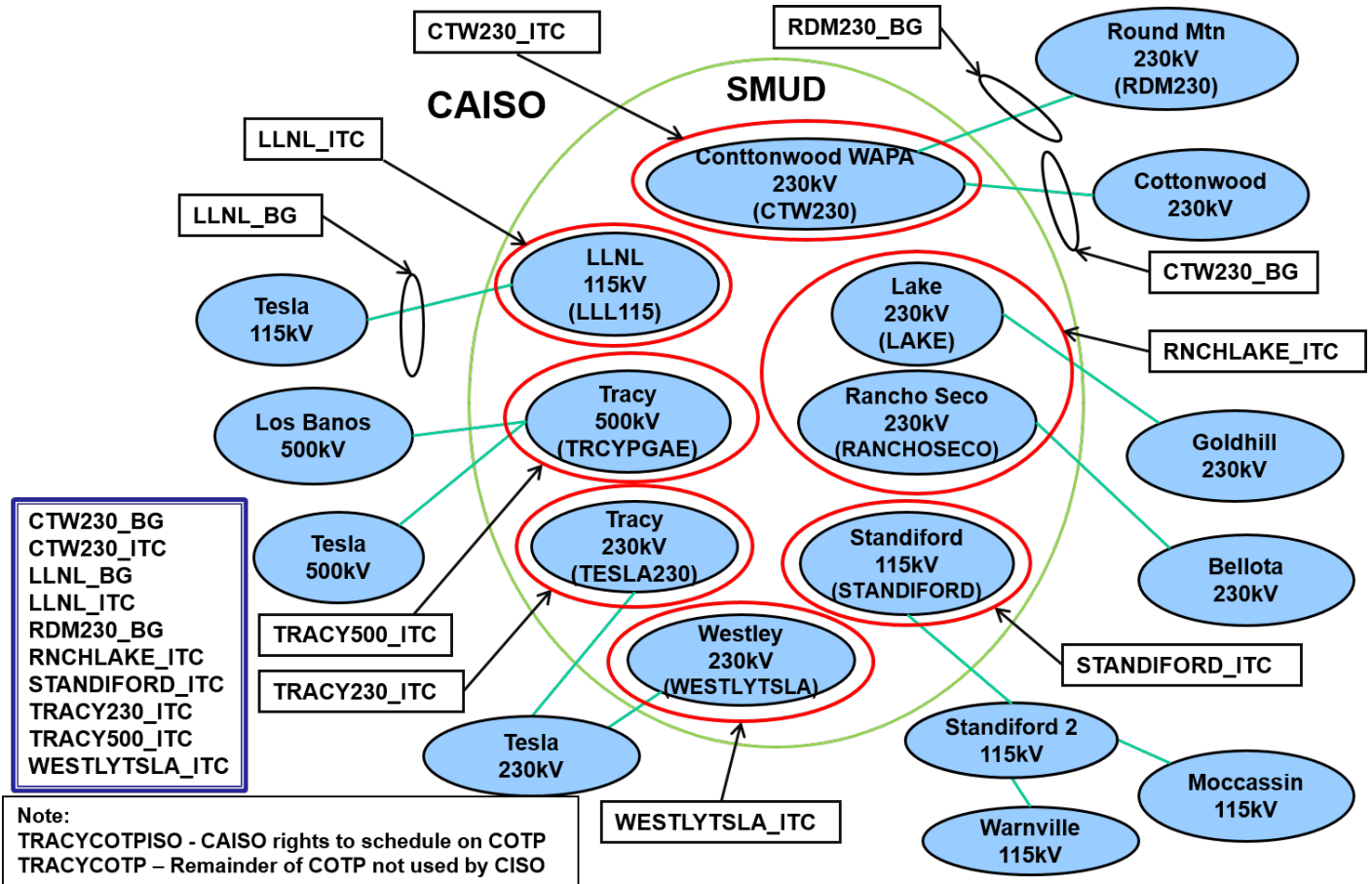



Figure 7: SMUD

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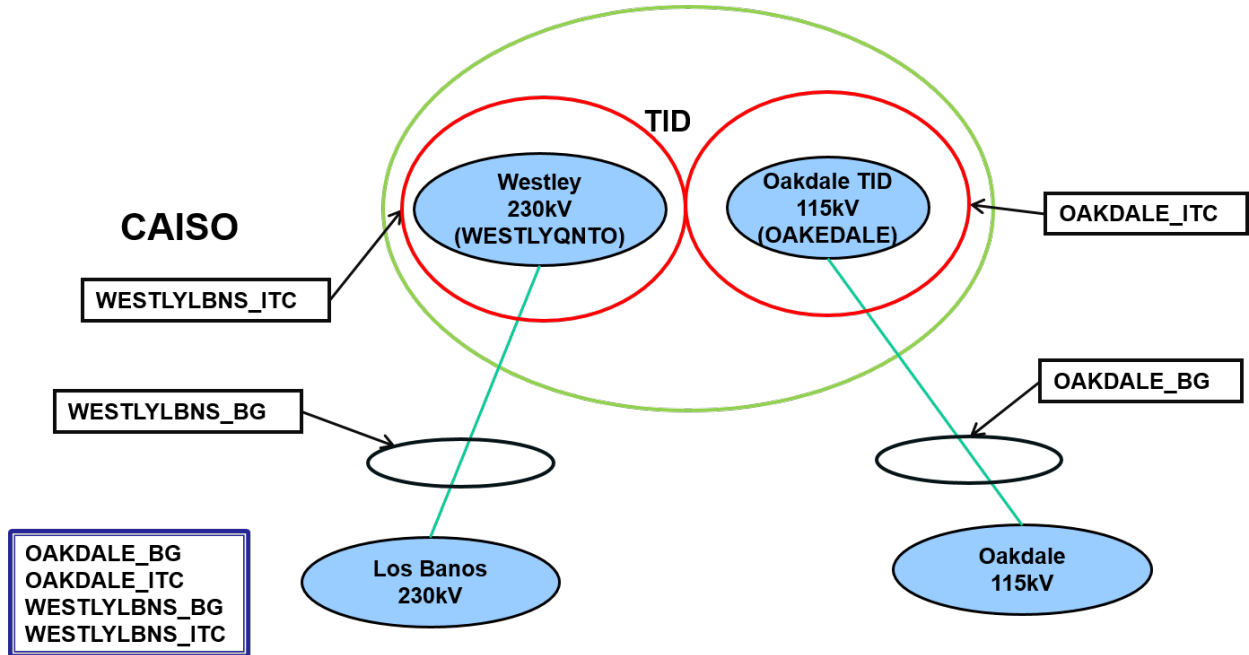


Figure 8: TID

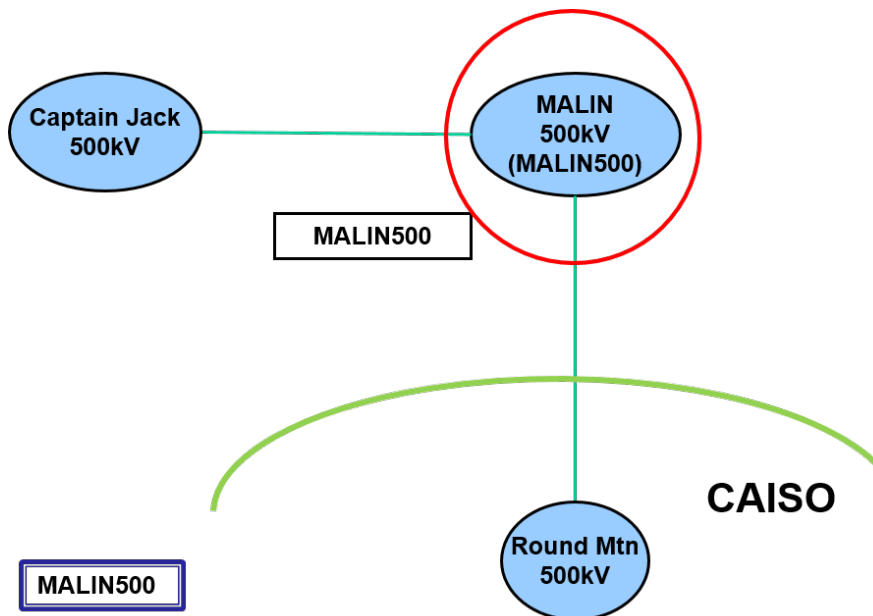



Figure 9: PACI

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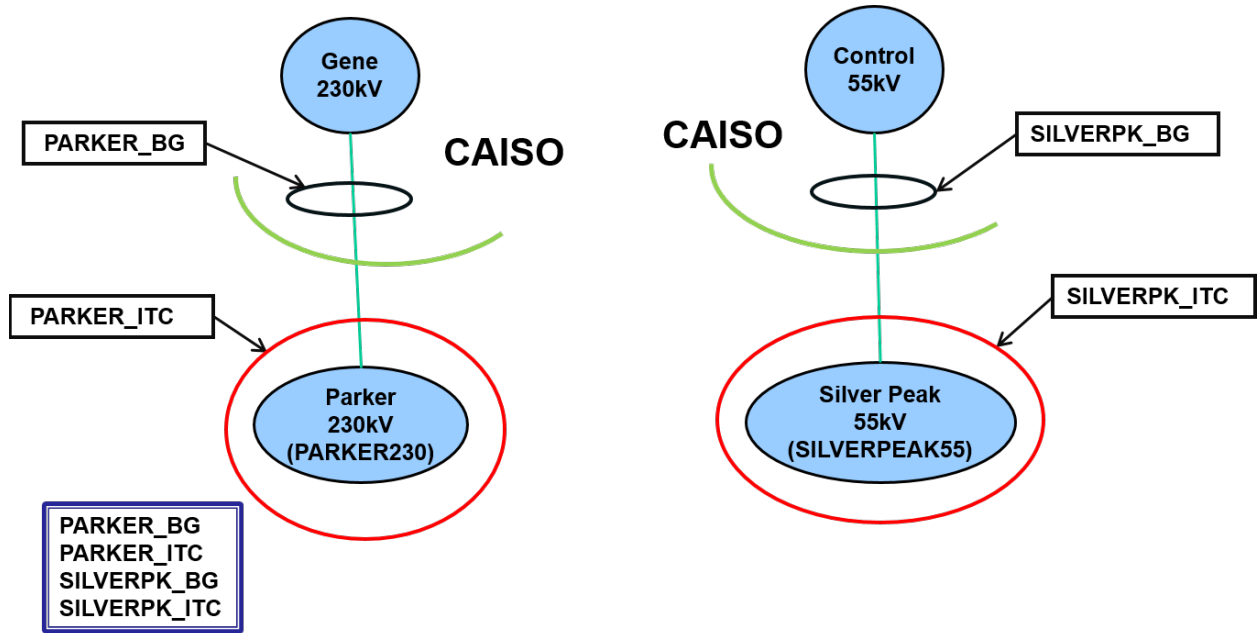


Figure 10: Parker and Silver Peak

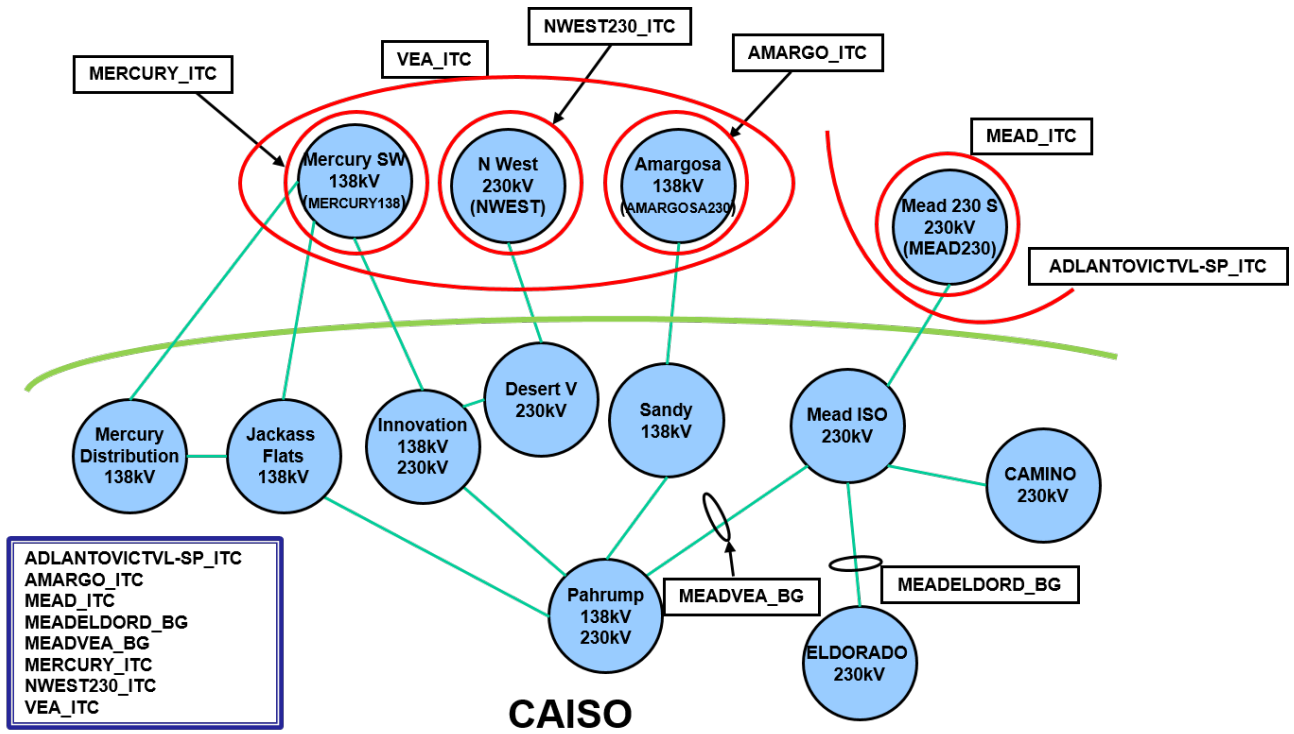




Figure 11: VEA

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4. MAPPINGS OF ITC/BG, TNAME AND RELATED OPERATION PROCEDURES

The following table provides the mapping of ITC/BG, TNAME and Related Operation Procedures.


ITC/BG	TNAME	Operating Procedure ID	Operating Procedure Name	Diagram
ADLANTO-SP_ITC	GONIPP IPP IPPUTAH MARKETPLACE MCCULLOUG500 MDWP MEAD5MSCHD WESTWING500	8110B	Interchange Scheduling Limits	Figure 1: SPTO
ADLANTOVICTVL-SP_ITC	GONIPP IPP IPPUTAH MARKETPLACE MCCULLOUG500 MDWP MEAD5MSCHD MEAD2MSCHD MEAD230 WESTWING500 LUGO SYLMAR	8110B	Interchange Scheduling Limits	Figure 1: SPTO Figure 11: VEA
AMARGO_ITC	AMARGOSA230	8110B	Interchange Scheduling Limits	Figure 11: VEA
BLYTHE_ITC	BLYTHE161			Figure 5: Cascade, Blythe and Mohave
CASCADE_BG CASCADE_ITC	CRAG			Figure 5: Cascade, Blythe and Mohave
CFEROA_ITC	CFEROA			Figure 4: CFE
CFETIJ_ITC	CFETIJ			Figure 4: CFE
CFE_BG CFE_ITC	CFEROA CFETIJ			Figure 4: CFE
COTPISO_ITC	TRCYCOTPISO			Figure 7: SMUD
CTW230_BG CTW230_ITC	CTW230			Figure 7: SMUD
ELDORADO_ITC	WILLOWBEACH	6930	Eldorado Intertie and System	Refer to Figure 1 of 6930 Operating Procedure

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ITC/BG	TNAME	Operating Procedure ID	Operating Procedure Name	Diagram
			(Eldorado-Moenkopi) Scheduling at Willow Beach	
GONDIPPDC_ITC	GONIPP	8110B	Interchange Scheduling Limits	Figure 1: SPTO
IID-SCE_BG IID-SCE_ITC	MIR2			Figure 6: IID
IID-SDGE_BG IID-SDGE_ITC	IVLY2			Figure 6: IID
IPPCADLN_ITC	GONIPP IPP IPPUTAH MDWP	8110B	Interchange Scheduling Limits	Figure 1: SPTO
IPPUTAH_ITC	GONIPP IPPUTAH MDWP	8110B	Interchange Scheduling Limits	Figure 1: SPTO
LAUGHLIN_BG LAUGHLIN_ITC	MOHAVE500			Figure 5: Cascade, Blythe and Mohave
LLNL_BG LLNL_ITC	LLL115			Figure 7: SMUD
MARBLE_ITC	MARBLE60			Figure 2: Summit and Marble
MCCLMKTPC_ITC	MCCULOUG500	8110B	Interchange Scheduling Limits	Figure 1: SPTO
MCCULLGH_ITC	ELDORADO500	8110B	Interchange Scheduling Limits	Figure 1: SPTO
MEADMKTPC_ITC	MEAD5MSCHD WESTWING500	8110B	Interchange Scheduling Limits	Figure 1: SPTO
MEADTMEAD_ITC	MEAD2MSCHD	8110B	Interchange Scheduling Limits	Figure 1: SPTO
MEAD_ITC	MEAD230 MEAD2MSCHD	8110B	Interchange Scheduling Limits	Figure 1: SPTO Figure 11: VEA
MERCHANT_ITC	ELDORADO230			Refer to Figure 1 of 6930 Operating Procedure

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ITC/BG	TNAME	Operating Procedure ID	Operating Procedure Name	Diagram
MERCURY_ITC	MERCURY138	8110B	Interchange Scheduling Limits	Figure 11: VEA
MKTPCADLN_ITC	MARKETPLACE MCCULLOG500 MEAD5MSCHD WESTWING500	8110B	Interchange Scheduling Limits	Figure 1: SPTO
MONAIPPDC_ITC	MDWP	8110B	Interchange Scheduling Limits	Figure 1: SPTO
NORTHGILA500_BG NORTHGILA500_ITC	NRTHGILA500			Figure 3: Palo Verde and N. Gila
NOB_ITC	NOB			Figure 1: SPTO
NWEST230_ITC	NWEST	8110B	Interchange Scheduling Limits	Figure 11: VEA
OAKDALE_BG OAKDALE_ITC	OAKDALE			Figure 8: TID
MALIN500	MALIN500			Figure 9: PACI
PALOVRDE_ITC	PVWEST			Figure 3: Palo Verde and N. Gila
PARKER_BG PARKET_ITC	PARKER230			Figure 10: Parker and Silver Peak
RDM230_BG	RDM230			Figure 7: SMUD
RNCHLAKE_ITC	LAKE RANCHOSECO			Figure 7: SMUD
SILVERPK_BG SILVERPK_ITC	SILVERPEAK55			Figure 10: Parker and Silver Peak
STANDIFORD_ITC	STANDIFORD			Figure 7: SMUD
SUMMIT_BG SUMMIT_ITC	SUMMIT120			Figure 2: Summit and Marble
SYLMAR-AC_ITC	SYLMAR	8110B	Interchange Scheduling Limits	Figure 1: SPTO
TRACY230_ITC	TESLA230			Figure 7: SMUD
TRACY500_ITC	TRCYPGAE TRCYCOTP			Figure 7: SMUD
VEA_ITC	AMARGOSA230 MERCURY138 NWEST	8110B	Interchange Scheduling Limits	Figure 11: VEA
VICTVL_ITC	LUGO	8110B	Interchange Scheduling Limits	Figure 1: SPTO

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ITC/BG	TNAME	Operating Procedure ID	Operating Procedure Name	Diagram
WESTLYLBNS_BG WESTLYLBNS_ITC	WESTLYQNT0			Figure 8: TID
WESTLYTSLA_ITC	WESTLYTSLA			Figure 7: SMUD
WSTWGMEAD_ITC	WESTWING500	8110B	Interchange Scheduling Limits	Figure 1: SPTO