

Southern California Edison's 2012 Request Window Proposals

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2012/2013 ISO Transmission Plan
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Folsom, CA

2012 SCE Area Reliability Projects

1. Barre - Ellis 230 kV Reconfiguration (Thermal)
2. Johanna & Santiago 230 kV Capacitor Banks (Voltage)
3. Viejo 230 kV Capacitor Banks (Voltage)
4. Orange County Static VAR Compensator (Voltage)

System Scenario: In peak 2013, with Huntington Beach 3 & 4 retired, the potential continued unavailability of SONGS 2 & 3 creates reliability violations in Orange County.

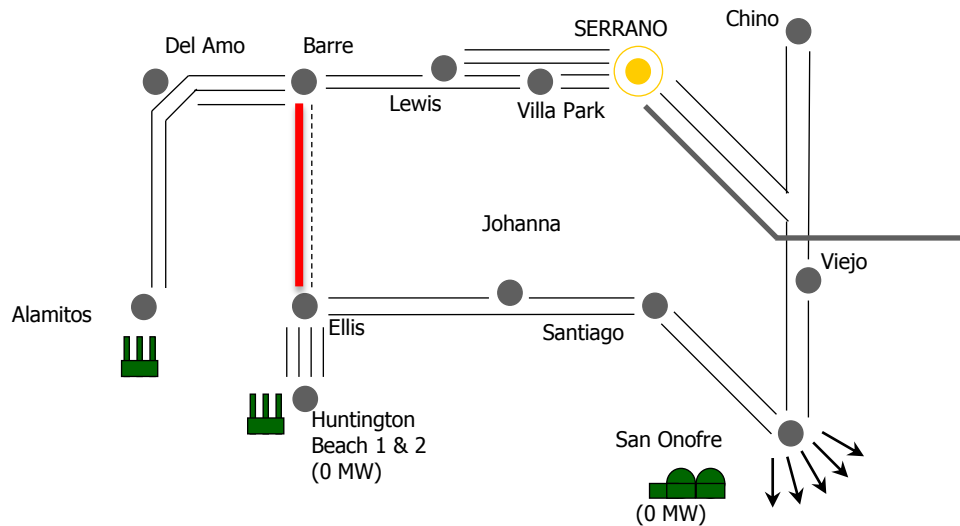
Barre - Ellis 230 kV Reconfiguration Project

Background: In addition to mitigating the Category C contingency published by the ISO (N. Gila – Imperial Valley 500kV & Barre – Ellis 230kV No. 1 or 2 lines). This project provides operational flexibility for a forced outage of Huntington Beach Units 1 & 2.

With Huntington Beach Units 1 & 2 at 0 MW, Barre-Ellis No. 1 or 2 lines overload under a Category B Contingency.

Pre- Mitigation

Overloaded Facilities	Contingency	Performance Category	Percentage (4 hr rating)
Barre - Ellis 230 kV No. 1 or 2	Barre - Ellis 230 kV No. 2 or 1	B (L-1)	111%



Barre - Ellis 230 kV Reconfiguration

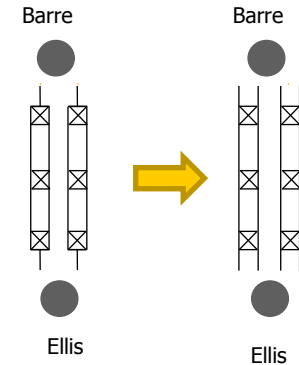
Project Scope: This project will reconfigure the Barre - Ellis 230 kV lines from 2 to 4 circuits. The existing Barre- Ellis No. 1 & 2 lines are in a box loop configuration, decoupling the box loop provides more lines eliminating category B contingencies.

A fault on this corridor pre-project would remove 50% of the transmission capacity. Post project, a fault will remove only 25%.

Critical Contingency Post-Project: The C.5 contingency does not overload beyond the 15 minute rating and can be addressed by an operating procedure.

Expected In Service Date: 06/01/2014

Decoupling
Barre – Ellis No. 1 & 2 box loops

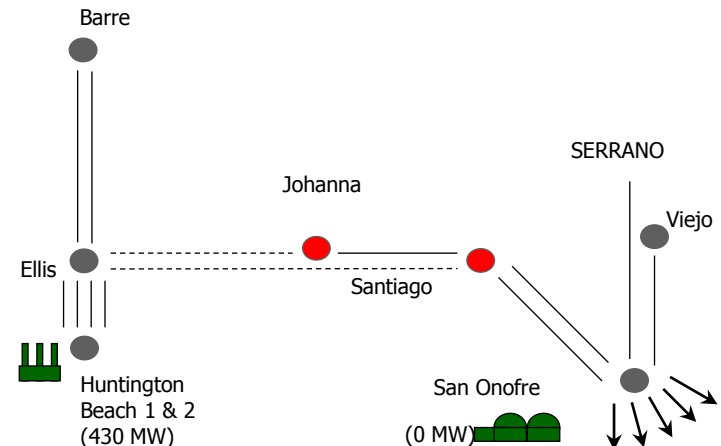
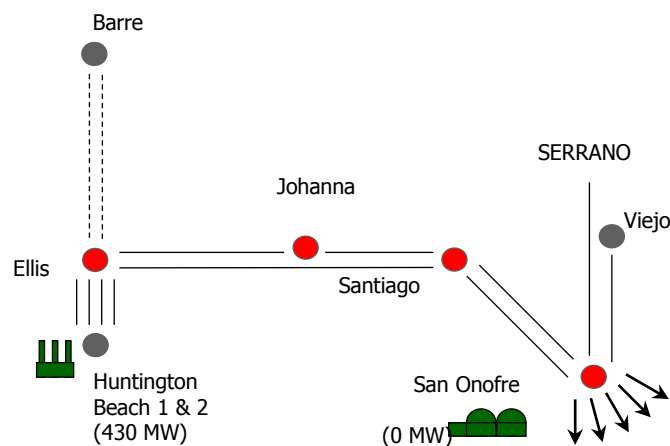


Post-Mitigation			
Overloaded Facilities	Contingency	Performance Category	Percentage (15 min Rating)
Barre - Ellis 230 kV No. 1 & 2 or 3 & 4	Barre - Ellis 230 kV No. 3 & 4 or 1 & 2	C.5 (L-2)	92%

Johanna & Santiago 230 kV Capacitor Banks

Background: The system scenario creates post transient voltage violations for Category C contingencies.

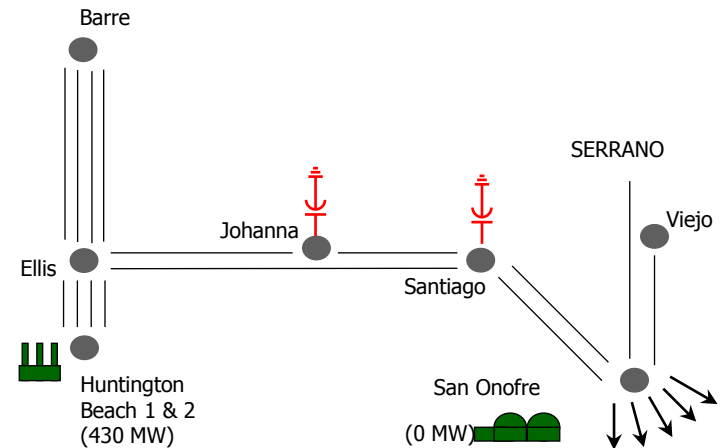
Pre-Mitigation			
Contingency	Performance Category	Voltage Deviation	
		Huntington Beach 1 & 2 In	Huntington Beach 1 & 2 Out
Barre - Ellis 230 kV No. 1 & 2	C.3 (L-1-1)	Ellis: 14% Johanna : 14% Santiago: 14% S.Onofre: 10%	Diverged
Ellis – Johanna & Ellis - Santiago 230 kV	C.5 (L-2)	Johanna : 13% Santiago: 12%	Johanna : 13% Santiago: 12%



Johanna & Santiago 230 kV Capacitor Banks

Project Scope: Install one 79.2 MVAR capacitor bank at Johanna and Santiago Substations for a total of 158.4 MVAR of voltage support in southern Orange County.

Expected In Service Date: 08/01/2013

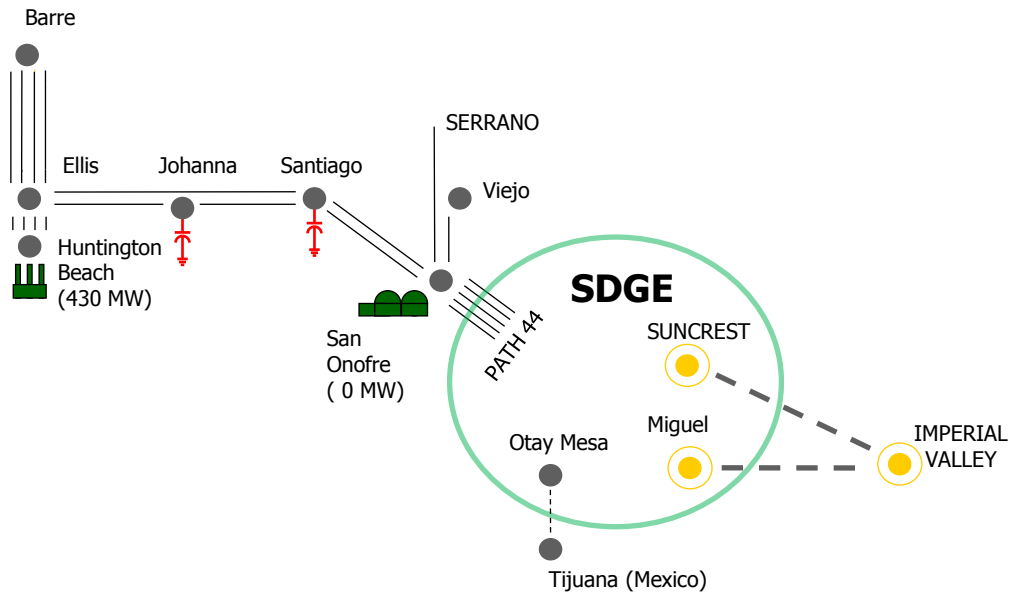


Post-Mitigation			
Contingency	Performance Category	Voltage Deviation	
		Huntington Beach 1 & 2 In	Huntington Beach 1 & 2 Out
Barre - Ellis 230 kV No. 1 & 2	C.3 (L-1-1)	<10%	<10% (with Barre - Ellis 230 kV Reconfiguration)
Ellis - Johanna & Ellis - Santiago 230 kV	C.5 (L-2)	<10%	<10%

Viejo 230kV Capacitor Banks & Orange County Static VAR Compensator

Background: The system scenario creates an interaction between SCE's Orange County area and SDG&E system. Voltage collapse may occur depending on SDGE import levels.

Pre-Mitigation (~2100 MW- SDGE IMPORTS)		
Contingency	Performance Category	Voltage Deviation
Imperial Valley – Suncrest 500 kV & Imperial Valley- Miguel 500 kV (with a cross trip of Otay Mesa- Tijuana 230 kV)	C.3 (L-1-1)	Diverged



Viejo 230 kV Capacitor Banks

Project Scope: Install two 79.2 MVAR capacitor banks at Viejo Substation for a total of 158.4 MVAR of voltage support in southern Orange County.

Expected In Service Date: 09/01/2013

Orange County Static VAR Compensator

Project Scope: Install +300/-100 MVAR SVC in the electrical vicinity of San Onofre Switchyard. The final SVC size and a more precise operating date are under development.

Expected In Service Date: 06/01/2014 (as early as 2014 but more likely by the summer of 2015)

Post-Mitigation (~2200 MW- SDGE IMPORTS)		
Contingency	Performance Category	Voltage Deviation
Imperial Valley- Miguel 500 kV & Imperial Valley – Suncrest 500 kV/ (with a cross trip of Otay Mesa- Tijuana 230 kV)	C.3 (L-1-1)	<10%

Summary:

