

SDG&E Reliability – 2013 & Beyond

July 15, 2013



Summer 2013 Outlook

- SDG&E expects to meet summer demand, but there could be tight days when we will need help from customers conserving and demand response
 - Without SONGS, there are challenges
- SDG&E's projected **peak demand** is around **4,600 MW** under normal summer conditions, however, an unusually hot summer **peak demand** can reach **5,100 MW**
- In 2012, SDG&E completed the Sunrise Powerlink which has greatly increased reliability, allowed renewable development in Imperial Valley to flourish and increased Southern California's ability to import power
- In addition, SDG&E has completed several transmission upgrade projects that will strengthen the system and help us reliably serve our customers in 2013 and beyond

- Operational studies continue between CAISO, SCE, and SDG&E to be prepared for unexpected systems conditions
- Notable projects completed to assist in voltage support in the absence of SONGS and enhance power transfers between SCE and SDG&E systems
 - Encina Substation - New 230/138 kV transformer
 - Penasquitos Substation - New 230 kV capacitors
- Additional projects completed to reduce congestion costs and improve import capability across the Sunrise and Southwest Powerlinks
 - Kofa Substation (WAPA) -161 kV capacitor addition
 - Sycamore Canyon – Carlton Hills 138kV line reconfiguration

Mid-Term Enhancements to SDG&E System

- 2012/2013 CAISO Transmission Planning Process - Approved transmission projects:
 - New 230 kV Line from Sycamore to Penasquitos Substation (2017)
 - Additional dynamic reactive capability
 - SONGS Mesa* - Static Var Compensator (2015)
 - Investigating future use as DC Terminal
 - Talega Substation - Synchronous Condenser (2015)
- 300 MW of New Local Capacity need approved (2018)
 - SDG&E filed an amended PPTA with the CPUC for Pio Pico
 - Looking at options with developer to get plant built as soon as 2015

To maintain a reliable system, a portfolio of generation and transmission infrastructure and voltage support equipment, is needed: ONE SIZE DOES NOT FIT ALL.

****Provides benefits to both systems, CAISO determined SDG&E should construct and operate.***

Long Term SDG&E/SCE Transmission Studies

- Southern California Reliability Study – SDG&E/SCE joint study looking at 2022, assuming all OTC units are shut down and SONGS is not re-licensed
- Solutions can be a combination of both transmission and generation infrastructure in both SDG&E and SCE service area
- Without SONGS, the SDG&E and the southern SCE systems are more dependent on each other
- Optimization of replacement generation and transmission infrastructure between the San Diego and Los Angeles areas is crucial for minimizing ratepayer impacts

Long Term SDG&E/SCE Transmission Studies (continued)

- Potential SDG&E System Improvements/Additions
 - Transmission Infrastructure
 - 500 kV DC – Imperial Valley to SONGS Mesa or Rainbow
 - Generation Infrastructure
 - New Generation Projects in San Diego LCR area
- Pendleton Energy Park
 - SDG&E is proposing to site up 1000 MW of generation capacity on Camp Pendleton
 - Competitively bid to independent generation developers to own and operated peaking plants as the need is identified in the LTPP
- Preferred Resources EE, DR, and distributed generation will play a role in determining the need for new generation and transmission

SDG&E Conceptual Long Term Transmission Upgrades – DC Alternative

- Technology
 - Conventional DC Converter Technology – 1500-2000 MW
 - “DC Light” Voltage Source Technology – up to 1200 MW
- Routes
 - Option A (IV-SONGS Mesa) – Approximately 200-250 miles
 - Option B (IV-Rainbow) – Approximately 175-225 miles
 - Requires upgrade of existing Escondido-Talega 230 kV line
- Benefits
 - Assuming 1500 MW capability:
 - Reduces San Diego generation need by about 600-800 MW
 - Reduces Western L.A. Basin generation need by about 400 MW.

SDG&E Conceptual Long Term Transmission Upgrades – Option B

