James F. Walsh
Senior Counsel

101 Ash Street
HQ13D
San Diego, CA 92101-3017

Tel: 619. 699. 5022
Fax: 619. 699. 5027
jwalsh@sempra.com

January 28, 2005

To All Parties of Record in A.04-02-026

Re: SONGS 2 & 3 Steam Generator Replacement Application; SDG&E Errata

Please find enclosed San Diego Gas & Electric Company's errata to the direct testimony of SDG&E's Mr. Richard Sheaffer. Copies of this errata are being electronically delivered to all parties of record and ALJ O'Donnell today. Hard copies will be mailed today.

Sincerely,

James Walsh

James F. Walsh
Attorney for
San Diego Gas & Electric Company

Enclosures

JFW:cj

Application of Southern California Edison Company (U 338-E) for Authorization: (1) to replace San Onofre Nuclear (SONGS 2 & 3) steam generators; (2) establish ratemaking for cost recovery; and (3) address other related steam generator replacement issues.	)))))))

Application No. 04-02-026
Exhibit No. __ (SDG&E-__)
Witness: Richard Sheaffer

ERRATA TO

PREPARED DIRECT TESTIMONY

OF RICHARD SHEAFFER

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

January 28, 2005

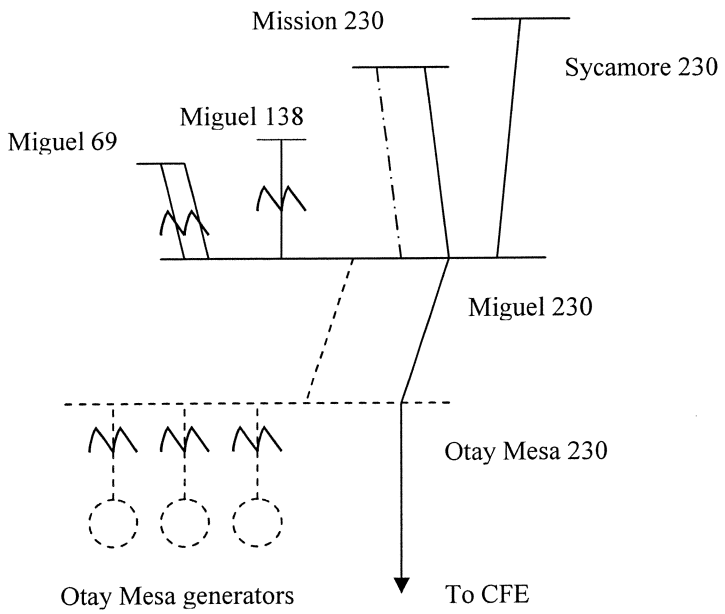


Figure 1-1: Incorrect Otay Mesa Interconnection Represented in SCE Filing Cases

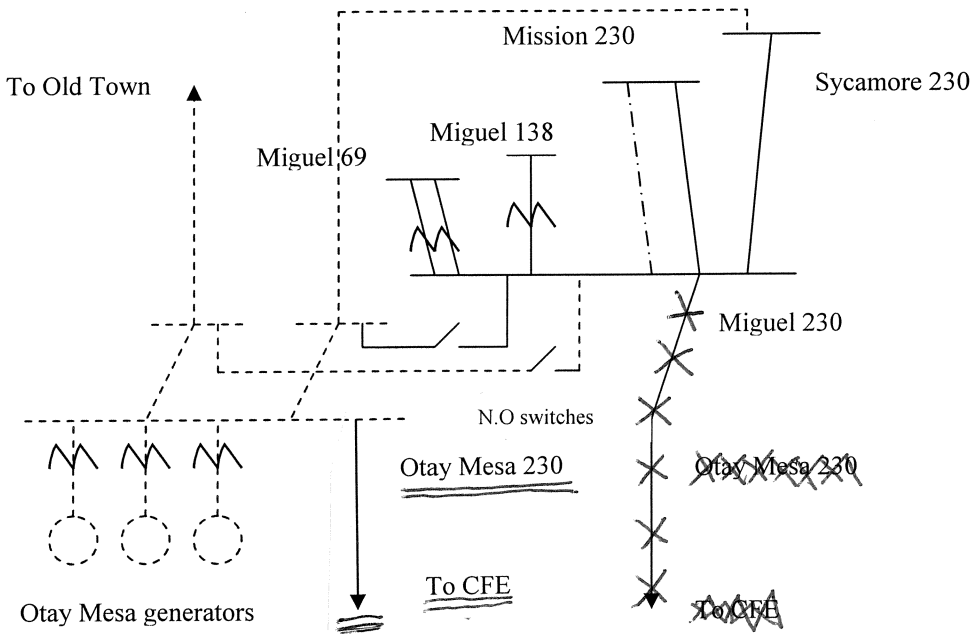


Figure 1-2:
Correct Otay Mesa Interconnection Cases

C. SCE's Modeling of the Palomar Generation Interconnection Results in Erroneous Conclusions

Another critical assumption made in SCE's Transmission Alternatives And Associated Costs Study involved its modeling of the Palomar generation and associated interconnection. SCE used these incorrect assumptions in the study cases it utilized in Exhibit SCE-5. In the SCE "SONGS On" case, the Palomar generation was not shown as running. In the other four SCE cases, the ~~551~~ 521 MW (and corresponding reactive flow up to 306 MVAR) of Palomar generation was directly tied into the Escondido 230 bus as one large unit. Such a simplifying representation was undoubtedly easier for modeling purposes, but incorrectly placed the Palomar generation output onto SDG&E's existing 230/138/69 kV system. As a result, this model results in unrealistic power flows and other system stresses within SDG&E's system that would lead to substantially erroneous conclusions.

The correct representation for the Palomar generation and associated interconnection is to accurately represent the Palomar power plant as three distinct units (two Combustion Turbines or "CTs" and one Steam unit). Further, the units are to be connected to a Palomar 230 kV bus that has the existing Escondido – Sycamore 230 kV line looped into it (presently planned by October 2005), shown below in Figure 2-1.[3] Additionally, the nearby 138 kV system needs to be modeled as being reinforced as well for reliability reasons in preventing overloads (presently planned by June 2006), as shown below in Figure 2-2. The following diagram represents these planned system additions, including a new transformer at Sycamore Canyon Substation, which are not

[3] Direct Testimony of David M. Korinek in Order Instituting Rulemaking to establish Policies and Cost Recovery Mechanisms for Generation Procurement and Renewable Resource Development, R.01-10-024, dated October 7, 2003.

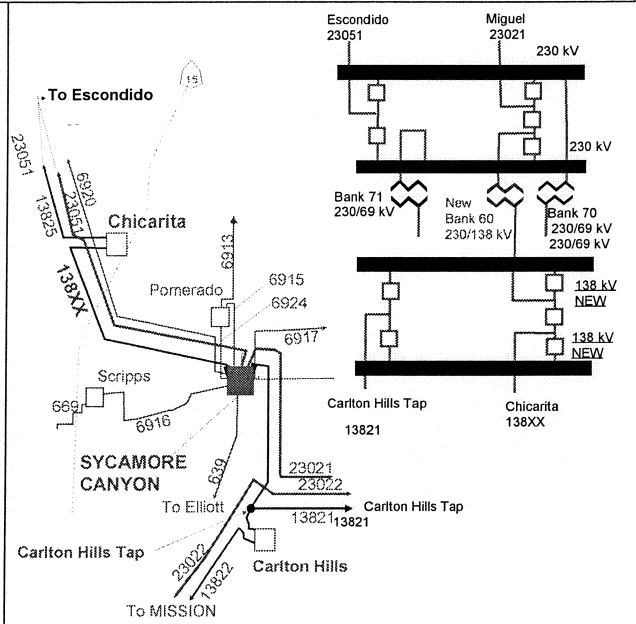
New 230/138 kV Transformer at Sycamore Canyon Substation	P04193	June '06
Driving Factor: Eliminate congestion associated with Palomar generation interconnection **Scope:** Add 230/138 kV transformer, 138 kV bus and loop-in 138 kV transmission **Status:** In design Current in-service date is June, 2006	

Figure 2-2

D. SCE Incorrectly Adds Excessive Load to SDG&E's Model

For the year 2010, SDG&E's projected load and loss is ~~4924~~ 4920 MW, as in the Long Term Resource Plan filed with the CPUC. SCE contends in its Exhibit SCE-5 is that "San Diego Gas & Electric Company's (SDG&E) Transmission Planning department provided information that SCE used to model SDG&E's transmission system in future year 2010". ~~Not only does this~~ This does not make reference to the fact that ~~this~~ such information was obtained for purported joint study purposes, ~~but also infers that SDG&E agrees with the way that SCE used this data, which SDG&E does not. SCE's Transmission Alternatives And Associated Costs Study incorrectly added losses again to this load number, thus double counting the losses and representing SDG&E's load and loss quantity to be 5044 MW. This additional 120 MW, which essentially acts as 120 MW of load above and beyond what is expected in SDG&E's area unrealistically stresses SDG&E's system~~ At the time the joint study was being prepared, SDG&E's 2003 load forecast for the year 2010 was 5031 MW (load plus loss). Since the time SDG&E provided that number to SCE for joint study purposes, the SDG&E load forecast (as reflected in the 2004 resource plan) has been revised downward by 111 MW to a level of 4920 MW. Absent that update, SCE's studies show an excess load of 111 MW. This additional 111 MW, which essentially acts as 111 MW of load above and beyond what is expected in SDG&E's area, unrealistically stresses SDG&E's system,

mistakenly giving the appearance that certain mitigations are needed, when in fact those mitigations are not needed. Therefore, the conclusions pertaining to this aspect of SCE's study are outdated and would be different if the studies were performed using that updated load forecast.

E. SCE's Inaccurate Modeling of Voltage Control Devices Results in Excess Need for Voltage Support

All five cases used in SCE's Transmission Alternatives And Associated Costs Study modeled Heavy Summer peak load and high Southwest Powerlink ("SWPL") flow. Based on those conditions, SCE incorrectly modeled many voltage control devices as being on-line when in fact they should have been off. These types of devices are needed for light loading conditions, when the MVAR "charging" of long transmission lines causes voltage to rise excessively. Conversely, for heavy loading conditions (such as those modeled in SCE's and SDG&E's studies), these types of devices need to be removed to avoid degrading the voltage. Specifically, these included:

- two 114 MVAR line reactors on the Hassayampa (Palo Verde area) – North Gila 500 kV Line;
- one 114 MVAR line reactor at the Imperial Valley side of the North Gila – Imperial Valley 500 kV Line; and
- one of the Miguel 45 MVAR tertiary shunt reactors.

These reactors are used to regulate the voltage at these substations, and the simulation of these reactors on-line, when in fact they should be off, artificially creates the apparent, erroneous "need" for additional Static VAR Compensators ("SVCs"). The same type of erroneous assumptions also occurred in regard to the line reactors at both ends of the existing Palo Verde – Devers 500 kV Line. Separate from other data errors pointed out by SDG&E, the reactor errors described here alone account for about 640 MVAR of excessive need for SVCs seen in SCE's transmission study.

Units 2 & 3, there exist 130 MVAR that flow from SDG&E to SCE at the SONGS interconnection.

All of these case scenarios undertaken by SCE and SDG&E indicate that SDG&E's system is providing voltage support to the SCE system. Thus, it is SCE that benefits from voltage support from SDG&E, with or without the presence of the SONGS units, not the other way around as SCE incorrectly would lead us to believe.

These conclusions are confirmed by examining historical real-time data recordings as opposed to study results of future scenarios. For example, both SONGS Units 2 and 3 were recently off-line in the November 19 to November 23, 2004 period. At that time, Unit 3 was down for refueling and other repairs, when Unit 2 tripped off-line. Real-time data of the MVAR flow from SDG&E's five 230 kV lines to the SONGS 230 kV bus during that period indicate that an average of 73 MVAR were flowing from SDG&E's system to SCE's system, again illustrating the voltage support that SDG&E was providing to SCE (via the SONGS 230 kV bus) during that period. In yet another example, the hourly recorded data was examined for the last seven months of the previous year, 2003. In that data, I see an average of 77.7 MVAR flowing from the SDG&E system to the SONGS 230 kV bus (the SONGS interconnection with SCE). At the same time, the recorded data shows that the average MVAR output of Unit 2 was 16.1 MVAR and the MVAR output of Unit 3 was 16.7 MVAR, a total of 32.8 MVAR. Therefore, I conclude that on average for that data period, 100% of the MVAR output of the SONGS units flowed to the SCE system (to support the SCE system voltage). While on average SDG&E received none of those SONGS-produced MVARs to support its own system voltage, the SDG&E system actually sent an additional 44.9 MVARs of voltage support