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April 8, 2004

The Honorable Magalie Roman Salas  
Secretary  
Federal Energy regulatory Commission  
888 First Street, NE  
Washington, DC 20426


**Re: *City of Anaheim and Riverside, California***  
**Docket Nos. EL03-15-000 and EL03-20-000**

Dear Secretary Salas:

On April 7, 2004, the California Independent System Operator Corporation ("ISO") filed the Cross-Answering Testimony of Ziad Alaywan in the above-captioned docket. It has come to our attention that the line numbering of this testimony was done incorrectly, in that the line numbers did not start over at the top of each page. In order to correct this problem, the ISO is resubmitting Mr. Alaywan's testimony. Since this resubmission has been made necessary by the incorrect line numbering, the ISO is also taking this opportunity to correct certain typographical errors in the testimony. A list of these corrections is included as an attachment to this letter. No substantive change is being made to the testimony.

We apologize for any inconvenience this has caused.

Respectfully submitted,



Julia Moore

Counsel for the California Independent  
System Operator Corporation

### List of Changes to Cross-Answering Testimony of Ziad Alaywan

Page	Line Number	Corrections
1	5	Change "RESPONSIBILTIES" to "RESPONSIBILITIES"
1	8	Change "Of" to "of"
1	14	Change "day ahead" to "Day-Ahead"
1	14	Change "hour ahead" to "Hour-Ahead"
1	14	Change "real time" to "Real Time"
1	15	Change "markets" to "Markets"
1	16	Insert "the" between "and" and "Firm"
2	1	Change "&" to "and"
2	2	Insert "Company ("PG&E") after "in"
2	6	Change "Bachelors" to "Bachelor's"
2	8	Change "school" to "School"
3	1	Change "management" to "Management"
3	8	Change "imbalance" to "Imbalance"
3	15	Insert "DID" between "WHY" and "THE"
3	22	Change "imbalance" to "Imbalance"
4	8	Change "interface" to "Interface"
4	14	Change "concerns" to "concern"
5	3	Change "Branch Group" to "branch group"
5	7	Insert "and" between "ISO," and "the"
7	8	Insert "an" between "unnecessary" and "complication"
7	11	Insert "a" between "requires" and "manual"
8	8	Change "multiyear" to "multi-year"

8	8	Change “know” to “known”
9	5	Change “unScheduled” to “unscheduled”
10	10	Change “Coodrinator” to “Coordinator”
12	4	Change “regarding” to “regard”
12	12	Change “UTILITIES” to “UTILITIES”
12	15	Delete “Pacific Gas & Electric Company (“PG&E”)” insert “PG&E”
13	2	Change “Day-ahead” to “Day-Ahead”
14	4	Change “Munis” to “munis”
14	4	Change “Non-Munis” to “non-munis”
14	6	Change “Muni” to “muni”
14	9	Change “Lug0-Westwing” to “Lugo-Westwing”
14	22	Delete “SCE.”

Please note that the testimony also has been revised to correct spacing issues. In addition, please note that the header has been revised to show the total number of pages correctly.

Finally, the title page of the testimony has been corrected to reflect the fact that it is cross-answering testimony rather than direct testimony.

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

City of Anaheim, California	)	Docket Nos. EL03-15-000
	)	
City of Riverside, California	)	EL03-20-000

SUMMARY OF CROSS-ANSWERING TESTIMONY OF  
ZIAD ALAYWAN  
ON BEHALF OF THE  
CALIFORNIA INDEPENDENT SYSTEM  
OPERATOR CORPORATION

Mr. Alaywan explains that the ISO network model used currently for Congestion Management is composed of radially connected Congestion Zones as the result of consensus among the many stakeholders in the ISO formation. Simplicity and transparency favored a zonal Congestion Management system. The zonal model only considered major Congestion bottlenecks at Path 15 and several inter-ties with external control areas and separated the system to radially connected Zones. Scheduling restrictions may arise because of Scheduling limitations on one segment of a branch group.

The Scheduling restrictions on the NTS and STS arise because of a number of factors. The NTS and STS are not, however, the only branch groups with such Scheduling restrictions.

In cooperation with the Commission and stakeholders, the ISO has undertaken a

multiyear market redesign process known as MD02. In MD02 Phase 3, the CAISO will implement an integrated forward Energy and Ancillary Services market. The market applications in MD02 Phase 3 will use a Full Network Model ("FNM"), which is a detailed network model for the ISO grid, expanded to include external Scheduling Points connected to the ISO grid through a radial network of tie-lines. The proposed model will provide more Scheduling flexibility, more effective Congestion Management, and more accurate Locational Marginal Pricing.

Mr. Alaywan also explains that the Scheduling priority provided to Anaheim and Riverside at IPP is neither discriminatory nor unique.

Finally, Mr. Alaywan examines the usage of the NTS and STS compared to other transmission lines. He concludes the New Participating TOs do not make greater use of the transmission lines that they place under ISO Operational Control than the Original Participating TOs make of transmission lines they place under the ISO's Operational Control.

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

City of Anaheim, California	)	Docket Nos. EL03-15-000
	)	
City of Riverside, California	)	EL03-20-000

PREPARED CROSS-ANSWERING TESTIMONY OF  
ZIAD ALAYWAN  
ON BEHALF OF THE  
CALIFORNIA INDEPENDENT SYSTEM  
OPERATOR CORPORATION

1 **Q PLEASE STATE YOUR NAME, TITLE, AND BUSINESS ADDRESS.**

2 A My name is Ziad Alaywan. I am the Director Of Market Operations for the  
3 California ISO. My business address is 151 Blue Ravine Rd., Folsom, California  
4 95762.

5 **Q HAVE YOU HELD PREVIOUS POSITIONS AND RESPONSIBILITIES WITH**  
6 **THE ISO?**

7 A Yes, I have previously held the positions of Manager of Operations and Director  
8 of Operations Engineering and Maintenance.

9 **Q PLEASE DESCRIBE YOUR EDUCATIONAL AND PROFESSIONAL**  
10 **QUALIFICATIONS.**

11 A I have more than 16 years of experience in the energy sector, electric system  
12 operations, restructuring, market design and implementation. In my current  
13 position as Director of Market Operations at the California ISO, I oversee the  
14 implementation and the operation of the Day-Ahead, Hour-Ahead and Real Time  
15 Markets. This includes operation of the Ancillary Services, Congestion  
16 Management, Energy spot Markets, network modeling, and the Firm  
17 Transmission Rights ("FTR") auction. I was one of the first employees hired by  
18 the ISO in June 1997 and was instrumental in start-up of the pioneering  
19 organization with responsibility to implement and operate the ISO markets. Prior  
20 to the formation of the California ISO, I was working for the ISO trustees and led  
21 the effort in putting together the new organization, focused on development and  
22 implementation of the bidding, Scheduling and pricing systems.

1 Prior to my experience at the ISO, I worked at Pacific Gas and Electric  
2 Company ("PG&E") in various positions in system operations, real-time  
3 Dispatch, power plant operation, and transmission planning. From 1993-  
4 1996, I supervised the real-time operations of PG&E Generation,  
5 transmission, and scheduling. I received Bachelor's and Master's  
6 degrees in Electrical Engineering from Montana State University in 1987.  
7 I am also a certified Professional Engineer in the State of California. I  
8 completed an Executive Management program at the Haas School of  
9 Business, University of California, Berkeley, California, 2002.

10 **Q HAVE YOU TESTIFIED PREVIOUSLY BEFORE THIS COMMISSION?**

11 **A** No.

12 **Q WHAT IS THE PURPOSE OF YOUR TESTIMONY?**

13 **A** As discussed in the testimony of Ms. Le Vine, I will provide information in  
14 response to four areas of the testimony of Dr. David Marcus: Scheduling  
15 restrictions on the NTS and STS; the impact of the ISO's market redesign on  
16 those Scheduling restrictions; whether Anaheim and Riverside have  
17 discriminatory access to the NTS and STS; and Anaheim's and Riverside's  
18 usage of the NTS and STS in comparison with other utilities' usage of their  
19 entitlements.

20 **SCHEDULING RESTRICTIONS ON THE NTS AND STS**

21 **Q WHAT IS THE ISO'S NETWORK METHODOLOGY?**

22 **A** The ISO network model used currently for Congestion Management is composed



1 of radially connected Congestion Zones. Congestion Management is performed  
2 in the forward markets only on the Inter-Zonal Interfaces between Congestion  
3 Zones. Intra-zonal Congestion mitigation takes place in real time through out-of-  
4 sequence Dispatch instructions. As a result of this zonal Congestion  
5 Management, the marginal Congestion price between any two Congestion Zones  
6 in the forward markets does not depend on the particular locations of the  
7 Schedule sources or sinks within the relevant Congestion Zones. Similarly, the  
8 ex post Imbalance Energy price is uniform within a given Congestion Zone.

9 **Q WHY DID THE ISO ADOPT THIS METHODOLOGY?**

10 **A** The ISO implemented this methodology as the result of consensus among the  
11 many stakeholders in the ISO formation. Operational experience (from the  
12 utilities at that time) indicated that Intra-Zonal Congestion was infrequent and  
13 inexpensive. Simplicity and transparency thus favored a zonal Congestion  
14 Management system.

15 **Q WHY DID THE ISO ADOPT A RADIAL BRANCH GROUP METHODOLOGY**  
16 **FOR INTER-ZONAL SCHEDULING AND CONGESTION MANAGEMENT?**

17 **A** Consistent with this goal of simplicity and transparency, the zonal model only  
18 considered major Congestion bottlenecks at Path 15 and several inter-ties with  
19 external control areas. These constraint paths, the branch groups, separated the  
20 system into radially connected Zones. This resulted in transparent Congestion  
21 prices that were independent from Schedule source and sink locations within  
22 Congestion Zones, and transparent ex post Imbalance Energy prices that were

1 uniform within a given Congestion Zone. Path 26, another constrained path that  
2 was later added to the list, maintained the radial zonal configuration and the  
3 transparency in Congestion and ex post prices. At the time, these advantages  
4 suggested that this would be a reasonable approach to Congestion  
5 Management.

6 **Q ARE ALL THE BRANCH GROUPS RADIAL?**

7 A Yes. The internal branch groups, Path 15 and Path 26, are radial Inter-Zonal  
8 Interface connections between Congestion Zones. The inter-ties with external  
9 control areas are also radial to be consistent with WECC scheduling practices  
10 where imports to and exports from the ISO are Scheduled individually at each  
11 inter-tie, rather than as a net interchange.

12 **Q HAVE THERE TURNED OUT TO BE DRAWBACKS ASSOCIATED WITH THE**  
13 **RADIAL BRANCH GROUP MODEL THE ISO HAS USED?**

14 A Yes. Of particular concern for this proceeding are Scheduling restrictions that  
15 may arise because of Scheduling limitations on one segment of a branch group.  
16 The Scheduling restrictions imposed on the NTS and STS are described in  
17 Commission Staff testimony. It is my understanding that Scheduling restrictions  
18 on the NTS and STS have been a contentious issue in this proceeding.

19 **Q WHAT IS THE REASON FOR THE SCHEDULING RESTRICTIONS ON THE**  
20 **NTS AND STS?**

21 A These restriction arise because of a number of factors. All the Energy from NTS  
22 and STS must flow on STS; therefore its Operating Transmission Capacity

1 (“OTC”) is the limiting factor. The available STS capacity is 534 MW. The STS  
2 OTC is divided between the IPP, the Mona, and the Gonder OTCs so that each  
3 can be represented as though it were a single branch group with its own  
4 individual OTC. This allows the ISO to fix curtailments to the right segment and  
5 to apply necessary management to the individual points. Since the only Energy  
6 that can be injected at IPP is IPP Generation, the IPP Branch Group OTC  
7 capacity is established to allow the Generation Schedules into ISO, and the  
8 remainder of the 534 MW STS rating is distributed between Mona and Gonder  
9 OTC capacities.

10 The three branch groups form essentially a “T” shaped transmission  
11 system. In contrast to the Eldorado Branch Group, which puts Four Corners,  
12 Moenkopi, and Eldorado Schedules into one total OTC, the STS/NTS group is  
13 divided into separate branch groups with their own individual OTCs. Perhaps  
14 IPP could have been treated as one branch group with one total, but the ISO  
15 determined that it would be too hard to manage because the ISO could not  
16 control the redistribution of OTC when there is a curtailment. The prime  
17 restriction on the Schedules is the capacity of the STS (534 MW), which is  
18 distributed for maximum efficiency among the three branch groups (Mona,  
19 Gonder, IPP). The limitations of the ISO Congestion Management model limited  
20 us from letting some branch groups in the Mead-Phoenix system connect to each  
21 other.

1 **Q WERE THERE OTHER FACTORS THAT RESTRICTED SCHEDULES ON THE**  
2 **NTS AND STS?**

3 A Yes, although only some of those factors restricted Schedules beyond what  
4 might have been possible prior to Anaheim and Riverside becoming Participating  
5 TOs. The restriction against exporting at IPP is that there is no take-out there  
6 (no Load) plus the interpretation of rights at the time of implementation was that  
7 there was no provision in the agreements being converted for south to north  
8 Schedules on the STS. The restriction against exports at Mona is strictly due to  
9 the interpretation of the rights at the time of implementation. The restriction  
10 against exports at Gonder resulted from an effort to simplify the system as much  
11 as possible in order to make the implementation as soon as possible. The  
12 implementation would have further complicated efforts to manually monitor the  
13 inadmissible Schedules, and wouldn't have offered much immediately  
14 appreciable New Firm Use, so it was postponed for later consideration. Some  
15 restrictions are due to line capacity, some are due to contract limitations, some  
16 are due to the balance between simplicity and utility.

17 **Q BESIDES SCHEDULING RESTRICTIONS, ARE THERE OTHER**  
18 **DRAWBACKS ASSOCIATED WITH THE CHOSEN MODEL?**

19 A Yes, these include for example the following:

- 20 • The radial inter-ties ignore alternate transmission paths into the ISO, such as the  
21 Mead 500/230 kV transformer followed by the Mead 230 kV transmission line to  
22 El Dorado 230 kV, or the Marketplace-McCullough-El Dorado 500 kV lines. This  
23 artificially restricts the import capability from the new Scheduling Points into the  
24 ISO.

- 1 • Import Schedules from the new Scheduling Points into the ISO are not possible  
2 when any network link in the transmission path to Lugo 500 kV is out of service.  
3 For example, the outage of the Marketplace-Adelanto 500 kV line will prohibit  
4 import Schedules from Marketplace 500 kV or Westwing 500 kV. If the  
5 Victorville-Lugo 500 kV line is out, no import Schedule is possible from any of the  
6 new Scheduling Points.
- 7 • Wheeling transactions between the new Scheduling Points must be Scheduled  
8 as matching imports into and exports out of the ISO. This is an unnecessary  
9 complication and it requires a manual Scheduling workaround when the  
10 Victorville-Lugo 500 kV line is out.
- 11 • The new zero-impedance inter-ties do not account for transmission losses, which  
12 requires a separate calculation for the Tie Meter Multipliers (“TMMs”) at the new  
13 Scheduling Points by adding fixed percentages to the Victorville 500 kV TMM.

14  
15 **Q ARE THE NTS AND STS THE ONLY BRANCH GROUP ON WHICH THE ISO’S**  
16 **NETWORK MODEL RESULTS IN SCHEDULING RESTRICTIONS?**

17 **A** No. For example, Generation at Four Corners affects Scheduling capacity on  
18 Moenkopi-Four Corners; Diablo Canyon and Helms affect Path 15; and there are  
19 restrictions on Path 26. The Eldorado Branch Group capacity is 1,555 MW  
20 maximum, but is reduced to 740 MW when Unit 5 is off line. The Path 15 Branch  
21 Group capacity is 3,950 MW maximum, but is reduced for Diablo or Helms  
22 limitations or with northern Generation limitations. The Path 26 Branch Group  
23 capacity is 3,000 MW maximum but is also affected by other Generation factors.

24 **Q WITH THESE DRAWBACKS, WHY DID THE ISO MODEL THE NTS AND STS**  
25 **AS IT DID?**

26 **A** As discussed above, many of the restrictions furthered simplicity and expedited  
27 the availability of the new capacity. After full consideration, the ISO and the new  
28 PTO’s determined that the current model for the NTS and STS best fit the ISO’s

1 existing branch group network model and the software developed to  
2 accommodate that model. This ensured consistency with the rest of the inter-ties  
3 and the WECC rules.

4 **MARKET REDESIGN**

5 **Q IS THE ISO TAKING ANY ACTION TO ADDRESS THE DRAWBACKS OF ITS**  
6 **CURRENT NETWORK MODEL?**

7 **A** Yes, in cooperation with the Commission and stakeholders, the ISO has  
8 undertaken a multi-year market redesign process known as MD02. In MD02  
9 Phase 3, the CAISO will implement an integrated forward Energy and Ancillary  
10 Services market. The market applications in MD02 Phase-3 will use a Full  
11 Network Model ("FNM"), which is a detailed network model for the ISO grid,  
12 expanded to include external Scheduling Points connected to the ISO grid  
13 through a radial network of tie-lines. Exhibit ISO-9 shows the proposed network  
14 model extension in the FNM to represent the New PTO transmission rights in  
15 MD02 Phase-3. This network model is based on the physical network, but without  
16 the Mead 500/230 kV transformer and with a normally open switch on the  
17 Marketplace-McCullough 500 kV transmission line. These changes are  
18 necessary for a radial tie-line network of Scheduling Points.

19 **Q WILL THE TIE-LINES STILL BE MODELLED RADIALLY?**

20 **A** Yes. This is the most reasonable approach. A radial inter-tie model ignores loop  
21 flow in the ISO Controlled Grid from ISO Schedules due to external network  
22 parallel paths, and also loop flows from WECC Schedules that do not involve the

1 ISO. The effects of that loop flow on the transfer capability of a particular path  
2 depend on the direction of the loop flow in comparison with the net Schedule  
3 direction on that path, which in turn depend on the Generation and Load patterns  
4 throughout the WECC and the conditions of the inter-connected network.  
5 Nevertheless, WECC Scheduling rules prohibit using unscheduled loop flow in a  
6 counter flow direction to increase the transfer capability of a WECC path.  
7 Therefore, the effect of considering loop flows in Scheduling and Dispatch can  
8 only be detrimental to the available power transfer capability. Consequently, the  
9 current radial inter-tie model, also referred to as the "open loop model," results in  
10 aggressive Scheduling, i.e., it maximizes the potential transfer capability  
11 available for Scheduling. The FNM may include an external network equivalent  
12 to model loop flow in the distant future after Scheduling agreements with external  
13 control areas are appropriately revised and adequate Scheduling information  
14 becomes available to determine loop flow with reasonable accuracy.

15 **Q IF BOTH MODELS ARE RADIAL, WHAT IS THE ADVANTAGE OF THE NEW**  
16 **APPROACH?**

17 **A** Under MD02, as currently proposed, the network would be expanded to include  
18 external Scheduling Points. Multiple Scheduling Points would be interconnected  
19 to the ISO Controlled Grid in a fashion consistent with the actual transmission  
20 network. The proposed model will provide more Scheduling flexibility, more  
21 effective Congestion Management, and more accurate Locational Marginal  
22 Pricing.

1           Since the proposed tie-line network is radial, it can be added to the current  
2 radial zonal network model used by the ISO's software without many  
3 modifications. The only problem is that the Ancillary Services procurement  
4 application cannot handle Ancillary Services bids from Scheduling Points not  
5 directly connected to the CAISO grid through an inter-tie. Therefore, Ancillary  
6 Services bids would only be supported at Victorville 500 kV or at McCullough 500  
7 kV. Incorporating the proposed tie-line network model in the current system  
8 would allow Market Participants to take advantage of the increased Scheduling  
9 flexibility and accuracy that it provides before the MD02 Phase-3 implementation.  
10 Thus, once LMP is in place, a Scheduling Coordinator can Schedule from  
11 Gonder to Mona and will be charged for Congestion and losses accordingly.

12 **Q    ARE THERE OTHER SPECIFIC ADVANTAGES OF THE MD02 MODEL?**

13 **A**Yes. They include the following:

- 14       •    The full New PTO contractual rights can be represented on the radial tie-  
15           line network since Congestion Management will be performed by the  
16           market applications on all network branches of the FNM, including these  
17           tie-lines individually.
- 18       •    Mead 500 kV can be used as an additional Scheduling Point.
- 19       •    Wheeling transactions between Scheduling Points can be Scheduled  
20           directly (e.g., a wheeling Schedule from Gonder to Mona).
- 21       •    In the event of an outage on the Victorville-Lugo 500 kV line, the switch  
22           on the Marketplace-McCullough 500 kV line can be closed to allow for an  
23           alternate transmission path for imports into the CAISO grid through the  
24           McCullough-El Dorado 500 kV inter-tie.
- 25       •    The actual transmission lines can be used in the network model with their



1 physical line parameters, including resistance, thereby providing an  
2 automatic and accurate way for considering transmission losses (the  
3 marginal cost of losses will be a component of the LMP). The only  
4 exception is the IPP-Adelanto  $\pm 500$  kV HVDC link, which can be replaced  
5 by an equivalent AC transmission line with appropriate resistance to  
6 simulate the associated DC losses.

- 7 • The Scheduling rule of WAPA where netting of Schedules on the  
8 Westwing-Marketplace 500 kV transmission path is not allowed can be  
9 enforced by splitting each of the Mead 500 kV and Westwing 500 kV  
10 buses to two separate buses on two parallel Westwing-Marketplace  
11 500 kV transmission paths. In this way, import and export constraints on  
12 the Marketplace-Mead and Mead-Westwing 500 kV transmission lines can  
13 be separated, effectively prohibiting netting of import and export  
14 Schedules.  
15

#### 16 **DISCRIMINATORY ACCESS**

17 **Q DR. MARCUS SUGGESTS THAT BETWEEN CAPACITY RESERVED FOR**  
18 **THE LUGO IPP BRANCH GROUP AND FTRS, ANAHEIM AND RIVERSIDE**  
19 **HAVE DISCRIMINATORY ACCESS TO THE NTS AND STS. DO YOU**  
20 **AGREE?**

21 **A** No. As Ms. Le Vine explains, Anaheim and Riverside are entitled to the FTRs  
22 under the ISO Tariff.

23 **Q ISN'T IT TRUE, HOWEVER, THAT ONLY ANAHEIM AND RIVERSIDE CAN**  
24 **SCHEDULE AT IPP?**

25 **A** Yes, but that is not an indication that Market Participants are deprived of the use  
26 of the NTS or STS. There is no Load at IPP, so it cannot be a take out point for  
27 exports. Schedules through IPP will use the Lugo, Gonder and Mona Scheduling  
28 points. The only ISO import that could be Scheduled at IPP would be Energy

1 from the Intermountain Generating Station, and only Anaheim and Riverside  
2 have entitlement to that Energy.

3 **Q IS THIS CIRCUMSTANCE UNIQUE?**

4 **A** No. Similar circumstances exist with regard to Southern California Edison's  
5 ("SCE") rights at Four Corners.

6 **USAGE OF THE NTS AND STS**

7 **Q IT HAS BEEN SUGGESTED THAT ANAHEIM AND RIVERSIDE SHOULD NOT**  
8 **BE ALLOWED TO INCLUDE THE ENTIRE REVENUE REQUIREMENT FOR**  
9 **THE NTS AND STS IN THEIR TRANSMISSION REVENUE REQUIREMENTS**  
10 **BECAUSE THEY ARE THE PREDOMINANT USERS OF THE NTS AND STS.**  
11 **HAVE YOU ANALYZED HOW THE NEW PARTICIPATING TOS' USAGE OF**  
12 **THEIR FACILITIES COMPARES WITH OTHER UTILITIES' USAGE OF**  
13 **SIMILARLY SITUATED TRANSMISSION FACILITIES?**

14 **A** Yes. Two examples are STS and NTS, the California Oregon Intertie ("COI") and  
15 Palo Verde. Before the ISO went operational, PG&E, SCE and San Diego Gas &  
16 Electric Company ("SDG&E") had 1,150 MW, 989 MW and 161 MW of rights on  
17 COI, respectively. Prior to ISO operation, SCE had 1,172 MW of rights from Palo  
18 Verde to the Devers switchyard in the summer months (April 1 to October 31)  
19 and 1,147 MW of rights from Palo Verde to the Devers switchyard in the winter  
20 months (November 1 to March 31) and SDG&E had 970 MW of rights from Palo  
21 Verde to the North Gila switchyard. I examined the utilities' use of those  
22 facilities.

1 **Q WHAT WAS THE UTILITIES' USE OF THESE FACILITIES?**

2 A Table 1 in Exhibit ISO-10 provides monthly aggregate Day-Ahead Schedules for  
3 the year of 2003 for PG&E, SCE and SDG&E for the COI and Palo Verde Branch  
4 Groups. SDG&E did not Schedule on COI for the year of 2003 and thus is not  
5 explicitly shown, as well, PG&E did not Schedule on Palo Verde for the year of  
6 2003 and thus is not explicitly shown

7 **Q HOW DID YOU COMPARE THE NEW PARTICIPATING TOS' USE OF THEIR**  
8 **FACILITIES?**

9 A Table 2 provides utilization percentages by PG&E, SCE and SDG&E on COI and  
10 Palo Verde. The utilization factor takes into account the rights that PG&E, SCE  
11 and SDG&E had on these transmission interfaces prior to ISO operation. Since  
12 SDG&E did not Schedule on COI for the year 2003, there is no utilization factor  
13 presented. Since PG&E did not Schedule on Palo Verde for the year 2003, there  
14 is no utilization factor presented. The utilization factor for a given month per  
15 branch group per entity is defined as (Monthly aggregate Schedule) / (rights \*  
16 days in month \* 24 hours in a day). As an example, for the month of February  
17 SCE has original rights on Palo Verde of 1,147 MW. The Utilization would be  
18  $(452,181) / (1,147 * 28 * 24) = 58.7\%$  where 452,181 MWh is from Table 1 for  
19 SCE on the Palo Verde Branch Group for the month of February. There are 28  
20 days in February and thus  $28 * 24 = 672$  hours in February. The February  
21 aggregate amount of the previous rights on Palo Verde for SCE would be  $1,147 *  
22 672 = 770,784$  MWh.

1           Table 3 holds the utilization percentages for Schedules across 4 of the  
2 newly added branch groups that are part of the new transmission from the new  
3 Participating TOs. The data includes the Schedules for the 5 new PTOs (i.e., the  
4 munis) and all other Schedules (i.e., non-munis) summed over each month of  
5 2003. The table provides the utilization factor for the muni's Schedule. This  
6 utilization factor is calculated by dividing the monthly aggregated muni Schedule  
7 by the total muni rights for that branch group aggregated over each month. The  
8 total muni rights over each branch group are 370 MW for Lugo-IPP; 360 MW for  
9 LUGO-Marketplace; 160 MW for Lugo-Mona; and 93 MW for Lugo-Westwing.  
10 For example, for the Lugo-Marketplace Branch Group (LUGOMKTPC\_BG) for  
11 March, the total muni Schedule is 10,480 MW and the total rights over this  
12 branch group over the month of March is  $(31 * 24 * 247) = 183,768$  MWh. The  
13 utilization factor is  $13,879/183,768 = 5.7\%$ .

14 **Q   WHAT WERE THE RESULTS OF YOUR COMPARISON?**

15 **A**   The data show that although PG&E pays for Palo Verde through the Access  
16 Charge, it does not Schedule at Palo Verde; similarly, SDG&E pays for COI  
17 through the Access Charge but does not Schedule at COI. Based on the data in  
18 Table 2, SCE uses on average 70% (sum of the monthly utilization percentages  
19 divided by 12 months) of Palo Verde transmission based on their rights prior to  
20 the start of the ISO. The SCE usage on Palo Verde in comparison with their old  
21 rights is similar to the new Participating TO's (Anaheim, Riverside, Azusa,  
22 Banning and Vernon) usage of their transmission. In fact, SCE is Scheduling a

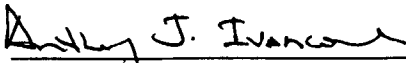
1 higher percentage on Palo Verde than the new PTO's Schedule on their new  
2 facilities.

3 **Q THANK YOU. I HAVE NO MORE QUESTIONS.**

## CERTIFICATE OF SERVICE

I hereby certify I have this day served this document upon all those on the official service list maintained by the Secretary for this proceeding.

Dated Folsom, CA, this 8<sup>th</sup> day of April, 2004.

  
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Anthony J. Ivancovich