

**Exhibit No. ISO-18**

**UNITED STATES OF AMERICA**  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System            )  
Operator Corporation                    )  
  )

Docket No. ER00-2019-0000

PREPARED DIRECT TESTIMONY OF  
JOHANNES P. PFEIFENBERGER  
ON BEHALF OF THE  
CALIFORNIA INDEPENDENT SYSTEM  
OPERATOR CORPORATION

1    **A.    INTRODUCTION AND SUMMARY**

2

3    **Q.    Please state your name, title and business address.**

4    A.    My name is Johannes P. Pfeifenberger. My business address is 44  
5        Brattle Street, Cambridge, MA, 02138. I am a Principal of The Brattle  
6        Group, an economic consulting firm with offices in Cambridge,  
7        Washington, D.C., San Francisco, and London.

8

9    **Q.    Please summarize your qualifications.**

10   A.    I am an economist with a background in power engineering and over 15  
11        years of experience in the areas of regulated industries, energy policy,

1 and finance. I received a M.A. in Economics and Finance from Brandeis  
2 University and a M.S. in Electrical Engineering with a specialization in  
3 Power Engineering and Energy Economics from the University of  
4 Technology, Vienna, Austria. I am the author and co-author of numerous  
5 articles, reports, and presentations on subject areas related to public utility  
6 regulation and electric utility restructuring, including transmission access,  
7 RTO configuration, and market design matters. I testified on tariff design  
8 and RTO scope and configuration issues before the Federal Energy  
9 Regulatory Commission ("FERC" or "the Commission") in Dockets ER02-  
10 2595-000 and RT01-87-001 on behalf of the Midwest Independent  
11 Transmission System Operator, and on the costs and benefits of the  
12 revised transmission Access Charge methodology, before the Settlement  
13 Judge in this case, Docket ER00-2019-0000, on behalf of the California  
14 Independent System Operator Corporation ("ISO"). Exhibit ISO-19 to this  
15 testimony contains a more complete description of my qualifications.

16  
17 **Q. What is the purpose of your testimony?**

18 **A.** At the request of the California ISO, I am providing an estimate of how the  
19 revised transmission Access Charge methodology ("TAC methodology")  
20 could shift the recovery of transmission costs ("cost shifts") among the  
21 ratepayers in the service territories of current and potential future  
22 Participating Transmission Owners ("Participating TOs" or "PTOs"). In  
23 particular, I am presenting an estimate of the burden and benefit  
24 associated with such cost shifts for the customers of the current and  
25 potential New PTOs in the hypothetical case that all non-jurisdictional

1 utilities in California join the ISO in the beginning of 2004. I also present  
2 cost shift estimates before and after limiting overall cost shift burdens by  
3 means of the "Transition Charge."  
4

5 **Q. Please summarize your conclusions regarding the magnitude of cost**  
6 **shift burdens and benefits that might be associated with the revised**  
7 **TAC methodology.**

8 A. My conclusions regarding cost shift burdens and benefits represent the  
9 difference between: (1) the estimated total annual transmission Access  
10 Charges paid by PTOs' customers under the new TAC methodology; and  
11 (2) the estimated total amount that PTO customers likely would have paid  
12 under the prior utility-specific access charges.  
13

14 In 2001 and 2002, annual cost shifts associated with the revised TAC  
15 methodology were approximately \$7 million—accruing to the City of  
16 Vernon ("Vernon") as a benefit and as a TAC-related burden to the  
17 customers of Pacific Gas and Electric Company ("PG&E"), Southern  
18 California Edison Company ("SCE"), and San Diego Gas & Electric  
19 Company ("SDG&E", collectively the "Original PTOs"). This is shown in  
20 Table 2 of Exhibit ISO-20. Table 2 of Exhibit ISO-20 also shows that the  
21 participation of the four New Participating TOs ("New PTOs") in 2003—the  
22 southern California cities of Anaheim, Azusa, Banning and  
23 Riverside—increases total cost shifts to approximately \$42 million for  
24 2003. Again, this cost shift is realized as a benefit by the New PTOs and  
25 as a burden by customers of the Original PTOs.

1

2           Moreover, in the hypothetical case that the remaining non-jurisdictional  
3           California transmission owners join the ISO in 2004, total cost shifts would  
4           increase to the cost shift limit of \$72 million per year. This is also shown  
5           in Table 2 of Exhibit No. ISO-20. Without the limit on cost shifts, the  
6           estimated burden to the customers of the Original PTOs under the  
7           hypothetical full membership scenario would range from close to \$130  
8           million to over \$170 million per year for the 2004 through 2010 transition  
9           period. This is shown in Table 1 of Exhibit No. ISO-20.

10

11   **B.    BACKGROUND**

12

13   **Q.    When were you first retained by the California ISO in this matter and**  
14   **what role did you play in the development of the revised Access**  
15   **Charge methodology?**

16   A.    I was retained by the California ISO in early 1999 to assist the ISO in  
17         conducting the stakeholder process through which the revised TAC  
18         methodology was developed. Much of my work in the stakeholder  
19         process involved the modeling of various Access Charge and cost shift  
20         mitigation methodologies for the purpose of assessing the benefits and  
21         burdens that a new Access Charge and increased ISO participation would  
22         offer for the customers of various Transmission Owners. I presented the  
23         results of these modeling efforts at numerous TAC working group  
24         stakeholder meetings. After the Commission assigned this case to a  
25         Settlement Judge in May 2000, I continued to provide similar analytical

1 support, including the presentation of cost shift estimates for various  
2 settlement proposals before the parties and the Settlement Judge.

3

4 **Q. Would you please provide a brief overview of the revised TAC**  
5 **methodology?**

6 A. As explained in detail in the testimony of Ms. Deborah A. Le Vine, the  
7 revised TAC methodology assesses the transmission Access Charge  
8 based on the combined High Voltage Transmission Revenue Requirement  
9 (“High Voltage TRR” or “HV TRR”) of all PTOs within several “TAC Areas.”  
10 These TAC Areas are the three major former Control Areas within the  
11 current ISO Control Area—the former Control Areas of the Original  
12 PTOs—plus, should the Los Angeles Department of Water and Power  
13 (“LADWP”) join as a PTO, an additional TAC Area representing the  
14 Control Area of LADWP. Over a ten-year transition period, the High  
15 Voltage Access Charge (“HV Access Charge,” or “HV AC”) for these TAC  
16 Areas is combined gradually to form a single ISO Grid-wide HV Access  
17 Charge. This is accomplished by blending the TAC Areas’ High Voltage  
18 TRR with the ISO Grid-wide sum of all PTOs’ High Voltage TRR, such that  
19 the ISO Grid-wide proportion increases by 10 percent each year.

20

21 This TAC methodology was conditionally accepted by the Commission  
22 subject to hearing and refund, and went into effect as of January 1, 2001,  
23 when Vernon joined the ISO as a New PTO. The new TAC methodology  
24 replaced utility-specific access charges under which each PTO  
25 established their own transmission rates.

1

2           The ISO Grid-wide proportion of the PTOs' High Voltage TRR for 2003 is  
3           now equal to 30 percent. With a continuation of this transition path, 100%  
4           of the HV Access Charge would be ISO Grid-wide by 2010, at which point  
5           the HV Access Charge would be the same across all TAC areas. The ISO  
6           also recently updated the TAC Area rates to reflect the fact that four  
7           additional California Transmission Owners—the Cities of Anaheim, Azusa,  
8           Banning, and Riverside—became PTOs as of January 1, 2003.

9

10   **Q.    You previously mentioned a “Transition Charge.” Please explain the**  
11   **function and purpose of this charge.**

12    A.    As also explained in Ms. Le Vine's testimony, the TAC methodology  
13           includes a Transition Charge which, for the duration of the ten-year  
14           transition period, limits the cost shift burden that the TAC methodology  
15           could impose on PTOs' customers. As currently implemented, the  
16           Transition Charge ensures that the customers of any New PTO are held  
17           harmless from any cost shift burdens that may be imposed by the TAC  
18           methodology. Moreover, the Transition Charge also assures that the  
19           annual cost shift burden imposed on the customers of the Original PTOs is  
20           capped at \$32 million for PG&E and SCE and at \$8 million for SDG&E.  
21           Finally, the Transition Charge is designed such that, during the transition  
22           period, the customers of the three Original PTOs bear their collective cost  
23           shift burden in proportion to these limits.

24

1 **C. DISCUSSION OF COST SHIFT ESTIMATES**

2

3 **Q. Have you prepared an exhibit that summarizes estimated cost shift**  
4 **burdens and benefits associated with the revised TAC methodology?**

5 A. Yes, I have. Exhibit ISO-20 to my testimony provides a summary of  
6 estimated cost shift burdens and benefits associated with the revised TAC  
7 methodology relative to the previous utility-specific rates. The exhibit  
8 contains two tables, each of which shows estimated cost shifts for the  
9 ISO's New PTOs, the Original PTOs, and other California Transmission  
10 Owners. Table 1 summarizes these estimated cost shift burdens (positive  
11 numeric values) and benefits (negative numeric values) before application  
12 of the Transition Charge, and Table 2 summarizes the cost shift estimates  
13 after application of the Transition Charge.

14

15 The two tables show cost shift estimates for the years 2001 through 2003  
16 based on actual ISO participation, and for the years 2004, 2007, 2010 (the  
17 last year of the transition period), and 2011 (the first full year after the  
18 transition period) under a hypothetical "full membership" scenario. This  
19 "full membership" scenario assumes that all other California  
20 TOs—including governmental entities such as the LADWP—join the ISO  
21 as of January 1, 2004.

22

23 At the bottom of each table, estimated total cost shifts are summarized for  
24 four subgroups of the current and potential future PTOs: the Original  
25 PTOs ("OPTO"); the potential New PTOs in the Northern TAC Area



1 (Area 1) comprising the former Control Area of PG&E; the New and  
2 potential New PTOs in the East/Central TAC Area (Area 2) comprising the  
3 former Control Area of SCE; and the potential New PTOs in the  
4 West/Central TAC Area (Area 3) comprising the Control Area of LADWP.  
5 The fourth Area, the Southern TAC Area comprising the former SDG&E  
6 Control Area, does not currently contain other Transmission Owners.  
7

8 **Q. How was this exhibit prepared?**

9 A. Exhibit ISO-20 was prepared based on the detailed calculations and data  
10 presented in Exhibits ISO-21 and ISO-22. The data for 2001-2003 is  
11 based on the filed cost and load information from the ISO and its eight  
12 Existing PTOs. The cost shift calculations for 2004 and subsequent years  
13 are based on the filed 2003 data for the Existing PTOs, and estimated  
14 2003 data for the potential New PTOs. For each of the TAC Areas, I have  
15 also estimated the aggregate cost and load data for those potential New  
16 PTOs which have not provided any data (or have provided insufficient  
17 data) in their discovery responses as of February 12, 2003. I discuss  
18 these exhibits in more detail at the end of my testimony.  
19

20 **Q. What do these cost shift estimates represent and what are some of**  
21 **the data used in deriving these results?**

22 A. These cost shift estimates represent the difference between (1) the total  
23 annual transmission Access Charges paid by PTOs' customers under the  
24 new TAC methodology, and (2) the total amount the PTOs' customers  
25 likely would have paid under the previous utility-specific access charge.

1       The TAC Area and ISO Grid-wide components of the new TAC are  
2       calculated by aggregating the HV TRR and Gross Load of the individual  
3       PTOs. To calculate these cost shift amounts, access charges under the  
4       new TAC methodology and the old utility-specific rates are determined for  
5       each year based on the PTOs' TRR and Gross Load.

6  
7       **Q.    How is the cost of *new* transmission facilities treated in the**  
8       **determination of cost shift burdens and benefits?**

9       A.    The determination of cost shifts reflects the fact that, under the new TAC  
10       methodology, the revenue requirements associated with new HV  
11       Transmission Facilities and capacity additions to Existing Transmission  
12       Facilities are added directly into the ISO Grid-wide component of the  
13       Access Charge. In addition, the cost shift and Transition Charge  
14       calculations are based solely on the HV TRR associated with Existing HV  
15       Transmission Facilities. This implicitly means that the costs of *new* HV  
16       Transmission Facilities, such as the proposed Path 15 upgrade, are  
17       assumed to be allocated the same under the new TAC methodology and  
18       the previous utility-specific access charge.

19  
20       **Q.    Why didn't you reflect the costs of constructing new transmission**  
21       **facilities in the cost shift calculations?**

22       A.    My approach is consistent with the determination of the Transition Charge  
23       as the ISO suggests it should be modified, and as is described in the  
24       testimony of Ms. Deborah A. Le Vine. Moreover, to reflect the costs of  
25       constructing New HV Transmission Facilities in the cost shift calculations,

1 I would have had to make arbitrary guesses about how currently planned  
2 New HV Transmission Facilities will be financed and how the additional  
3 transmission costs for these facilities would have been allocated to  
4 customers under the prior utility-specific rates. For example, it is  
5 contemplated that a large portion of the planned Path 15 upgrade will be  
6 financed by Trans-Elect NTD Path 15, LLC ("TransElect"). As a third-party  
7 transmission owner without Gross Load of its own, it is unclear how  
8 TransElect would have recovered its costs under the prior utility-specific  
9 transmission tariff from the other PTOs and their customers.

10

11 **Q. Please discuss in greater detail the summary results of Table 1,**  
12 showing cost shifts before application of the Transition Charge.

13 A. The data in Table 1 of Exhibit ISO-20 shows the estimated cost shifts that  
14 result from blending the HV TRR of entities with differing transmission  
15 costs. The bottom rows of Table 1 show the total amounts of costs shifted  
16 through the blending of these HV TRR. As noted, the cost shifts shown in  
17 Table 1 are measured prior to application of the Transition Charge.

18

19 For 2003, reflecting current ISO participation and the fact that 30% of total  
20 HVTRR is transitioned to the ISO Grid-wide portion of the Access Charge,  
21 the total costs shifted between customers of the Original and New PTOs  
22 are approximately \$42 million.

23

24 The hypothetically assumed participation of all other governmental entities  
25 in 2004 increases the estimated total cost shift to approximately \$127

1 million. As a larger proportion of the assumed New PTOs' HVTRR is  
2 blended into the ISO Grid-wide component of the Access Charge in the  
3 following years, total cost shifts increase to approximately \$149 million by  
4 2007 and to \$171 million by 2010.

5

6 **Q. Who are the main beneficiaries of cost shifts associated with the**  
7 **implementation of the TAC methodology?**

8 A. The New PTOs are the main beneficiaries. Table 1 shows that Vernon,  
9 Anaheim, Azusa, Banning and Riverside will realize a collective cost shift  
10 benefit of approximately \$42 million in 2003. Under the full membership  
11 scenario starting in 2004, the assumed New PTOs would also be  
12 expected to experience significant cost shift benefits. By far the largest  
13 beneficiary would be the LADWP. Prior to application of the Transition  
14 Charge, LADWP would realize an estimated cost shift benefit of  
15 approximately \$25 million in 2004—which would increase to \$74 million for  
16 2010 as the ISO Grid-wide proportion of the Access Charge reaches 100  
17 percent.

18

19 **Q. Why are these estimated cost shift benefits prior to application of the**  
20 **Transition Charge so sizable for some of the potential New PTOs?**

21 A. Some of these potential New PTOs have fairly high transmission costs.  
22 By contributing these high-cost Transmission Facilities to the ISO Grid and  
23 blending them into the TAC Area and ISO Grid-wide portions of the  
24 Access Charge, these potential New PTOs realize significant benefits on  
25 behalf of their customers. Rather than collecting the cost of their own HV

1 Transmission from their customers, the New PTOs would reduce the cost  
2 of supplying these customers to the ISO's lower HV Access Charge.

3

4 Just how high the transmission costs of these potential New PTOs are is  
5 illustrated by the transmission rates that LADWP has posted on its OASIS  
6 site. The Open Access Transmission Tariff rate for LADWP's non-firm  
7 hourly transmission service is \$9/MWh, or approximately four times higher  
8 than the ISO's current HV Access Charge. Even LADWP's average cost  
9 of HV Transmission Facilities is approximately \$6.50/MWh (as shown in  
10 Exhibit ISO-21, page 3 of Table 1), or more than three times the average  
11 costs for the Original PTOs.

12

13 **Q. Which entities bear most of the cost shift burden?**

14 A. Table 1 shows that all of this future cost shift burden would likely be borne  
15 by the customers of the Original PTOs. This burden on the Original PTOs'  
16 customers amounts to \$42 million in 2003 and increases to \$127 million in  
17 2004 based on the hypothetically assumed full membership scenario. As  
18 the ISO Grid-wide Access Charge is phased in, the estimated cost shift  
19 burden on customers of the Original PTOs would increase to \$149 million  
20 for 2007 and to \$171 million in 2010. Moreover, prior to application of the  
21 Transition Charge, these cost shift burdens, would be borne mostly by  
22 PG&E and SCE.

23

1 **Q. Please summarize how these estimated cost shifts are modified by**  
2 **the Transition Charge.**

3 A. The Transition Charge ensures that, during the transition period, the TAC  
4 methodology: (1) allows New Participating TOs to retain some of the cost-  
5 shift benefits in order to attract new participants; (2) holds financially  
6 harmless the customers of any New Participating TOs which would  
7 otherwise be burdened by the TAC cost shifts associated with ISO  
8 participation; (3) limits the cost shift burden to \$32 million a year for the  
9 customers of PG&E and SCE, and to \$8 million for SDG&E; and (4) if the  
10 total cost shift burden to the customers of the Original PTOs is less than  
11 the \$72 million limit, reallocates the Original PTOs total cost shift burden  
12 so that the resulting cost shifts for customers of PG&E, SCE, and SDG&E  
13 are proportionate to their individual limits.

14

15 Table 2 of Exhibit ISO-20 summarizes cost shift burdens and benefits after  
16 the protections provided by the Transition Charge. As the table shows,  
17 payment of the Transition Charge reduces to zero any cost shift burden  
18 that would otherwise be imposed on the customers of potential new PTOs.

19 Table 2 also shows that for the years 2004 through 2010, the Transition  
20 Charge limits the cost shift burden for the customers of the Original PTOs  
21 to a total of \$72 million, or equal to \$32 million to PG&E and SCE, and to  
22 \$8 million for SDG&E.

23

24 **Q. Does the \$72 million limit on total costs shifted to the customers of**  
25 **the Original PTOs create a burden for New PTOs?**

1 A. No. The Transition Charge holds New PTOs harmless and only limits the  
2 cost shift burden for the Original PTOs by proportionally reducing (but not  
3 eliminating) the gains realized by New PTOs with cost shift benefits. For  
4 example, in the hypothetical full membership scenario of 2004, the  
5 Transition Charge would reduce Anaheim's cost shift benefit from more  
6 than \$16 million (before Transition Charge) to about \$9 million (after  
7 Transition Charge). Similarly, Riverside's 2004 cost shift benefit would be  
8 reduced from more than \$14 million to roughly \$8 million, and LADWP's  
9 2004 cost shift benefit would be reduced from \$25 million to \$14 million.  
10 Although the Transition Charge reduces the benefits that New PTOs  
11 would otherwise achieve under a full membership scenario, it clearly  
12 leaves the New PTOs with substantial annual benefits. Moreover, as the  
13 contrast between the cost shifts based on actual ISO participation in 2003  
14 and hypothetical full participation in 2004 shows, only significantly  
15 increased ISO participation would likely trigger the \$72 million collective  
16 cost shift limit for the Original PTOs and, as a consequence, require that  
17 New PTOs reduce their otherwise more significant cost shift benefits.  
18  
19 Finally, for the years 2001 through 2003, Table 2 of Exhibit ISO-20 also  
20 shows that the Transition Charge distributes the cost shifts imposed on  
21 the Original PTOs in proportion to the \$32 million cost shift cap for PG&E  
22 and SCE, and \$8 million for SDG&E. For example, comparing the 2002  
23 cost shifts for the Original PTOs in Table 1 and Table 2 shows that SCE's  
24 burden of \$14 million, PG&E's gain of \$5 million, and SDG&E's gain of  
25 \$1.3 million (Table 1) is rebalanced through the Transition Charge such

1           that the cost shift burden is \$3.4 million for PG&E and SCE, and  
2           approximately \$0.8 million for SDG&E (Table 2).

3

4   **Q.    Could application of the Transition Charge mean that New PTOs**  
5   **might not fully recover their Transmission Revenue Requirements?**

6   **A.**   No, not at all. The new TAC methodology is based on the full recovery of  
7           all Original and New PTOs' Transmission Revenue Requirements. What  
8           changes is merely how these transmission costs are recovered from  
9           customers.

10

11           For example, Table 1 shows that Riverside's cost shift benefit before  
12           application of the Transition Charge is estimated to be more than \$14  
13           million in 2004. This simply means that more than \$14 million of  
14           Riverside's HV TRR is paid by customers other than Riverside's own  
15           ratepayers. Table 2 shows that application of the Transition Charge  
16           reduces Riverside's cost shift benefit to approximately \$ 8 million. But this  
17           simply means that application of the Transition Charge has reduced to \$ 8  
18           million the portion of Riverside's HV TRR that is paid by others. Instead of  
19           seeing a \$14 million reduction in total 2004 transmission charges,  
20           Riverside's customers "only" realize an \$8 million annual benefit. In total,  
21           however, Riverside continues to recover its entire HV TRR through the  
22           ISO's revenue distributions. And as long as Riverside passes on to its  
23           customers both the HV Access Charge and the Transition Charge, there  
24           will be no cost recovery deficiencies. In addition, Riverside's customers  
25           will save approximately \$8 million in annual transmission costs.



1

2 **Q. Does the new TAC methodology prevent cost shifts greater than \$72**  
3 **million after the transition period ends in 2010?**

4 A. No. Table 2 of Exhibit ISO-20 shows that at the end of the transition  
5 period, the estimated cost shift burden for the customers of the Original  
6 PTOs increases from the capped amount of \$72 million in 2010 to over  
7 \$170 million in 2011. This potential future effect would have been reduced  
8 if the TAC methodology had included the mitigation measure initially  
9 proposed by the ISO under which, during the transition period, the New  
10 PTOs would dedicate their cost shift benefits to “buy down” the cost of  
11 their HV Transmission Facilities. This proposed “buy down” measure  
12 would have reduced the TRRs of high-cost transmission assets over the  
13 course of the Transition Period, providing for a potentially smoother  
14 transition from the end of the transition period in 2010, to the first year  
15 after the transition period, 2011. However, the buy down feature of the  
16 revised TAC methodology was rejected in the Commission’s May, 2000  
17 order.

18

19 **D. DATA AND METHODOLOGY**

20

21 **Q. Please explain how you calculated the cost shift estimates presented**  
22 **in Tables 1 and 2 of Exhibit ISO-20.**

23 A. The cost shift estimates in the summary tables of Exhibit ISO-20 are  
24 based on the calculations presented in Exhibit ISO-21. This exhibit  
25 consists of three tables: Table 1, which presents load, transmission cost,

1 and average transmission cost information; Table 2, which calculates the  
2 HV Access Charges under the revised TAC methodology; and Table 3  
3 which calculates cost shift estimates before and after application of the  
4 Transition Charge. The sources and assumptions associated with load  
5 and transmission cost data assembled in Table 1 of Exhibit ISO-21 are  
6 documented in Exhibit ISO-22.

7

8 **Q. Please discuss Table 1 of Exhibit ISO-21 and how you collected the**  
9 **load and transmission cost data shown in that table and your Exhibit**  
10 **ISO-22.**

11 A. Table 1 of Exhibit ISO-21 shows for Existing and potential New PTOs the  
12 Gross Loads, HV TRR for Existing and New Transmission Facilities, and  
13 average HV transmission costs. Gross Loads are shown on page 1 of  
14 Table 1, the Transmission Owner's HV TRRs for both Existing and New  
15 Transmission Facilities are shown on page 2 of Table 1, the HV TRR for  
16 only Existing Transmission Facilities is shown on page 4 of Table 1, and  
17 the average transmission costs per MWh of Gross Load are shown on  
18 page 3 (for Existing and New Transmission Facilities) and page 5 (only for  
19 Existing Transmission Facilities).

20

21 The cost and load data shown in Table 1 of Exhibit ISO-21 are based on  
22 the sources and assumptions documented in Exhibit ISO-22. As noted  
23 above, the data for Existing PTOs reflects the filed HV TRR and Gross  
24 Load information for 2001 through 2003 and is taken directly from the  
25 ISO's informational filings with the Commission. All data for the 2004 and

1 subsequent years' cost shift calculations reflect loads and costs as of  
2 2003. As a result, the cost shift calculations for 2004 and subsequent  
3 years only reflect the effect of blending 2003 loads and transmission costs  
4 into the ISO Grid-wide HV Access Charge over the course of the transition  
5 period. However, to illustrate how the addition of major new Transmission  
6 Facilities will be reflected in the Access Charges under the new TAC  
7 methodology, I have included projected costs for the Path 15 upgrade  
8 currently under consideration, and proposed to be financed by TransElect  
9 and PG&E.

10

11 The Gross Load and HV transmission cost information for the individually-  
12 listed potential New PTOs also reflect 2003 values and is based on data  
13 submitted by the respective Transmission Owners in response to the  
14 ISO's discovery requests, supplemented with publicly available  
15 information as necessary. The Load and HV transmission cost data for  
16 the "Other PTOs" in TAC Areas 1, 2 and 3 are based on 2003 estimates  
17 derived mostly from public sources because sufficient data was not  
18 available for these entities from their responses to the ISO's discovery  
19 requests.

20

21 To derive the cost data for the "other" potential New PTOs in TAC Areas 2  
22 and 3 (SCE's former Control Area and LADWP's Control Area), I have  
23 assumed that the average HV transmission costs of these potential New  
24 PTOs is equal to the average HV transmission costs of the five existing  
25 New PTOs in TAC Area 2. The transmission cost data for the "other"

1 potential New PTOs in TAC Area 1 is derived in large part from the annual  
2 cost of the jointly-owned California-Oregon Transmission Project ("COTP")  
3 and additional transmission costs derived from the Sacramento Municipal  
4 Utility District's ("SMUD's") posted rates for transmission service between  
5 various transmission nodes in northern California. The notes in Exhibit  
6 ISO-22 further document the data sources and specific assumptions used  
7 to derive these data and estimates.

8  
9 **Q. Please explain how you calculated the HV Access Charges under the  
10 new TAC methodology as shown in Table 2 of Exhibit ISO-21.**

11 **A.** Page 1 of Table 2 of Exhibit ISO-21 shows how HV Access Charges were  
12 calculated for each of the TAC Areas based on PTO's Gross Load and  
13 TRR associated with Existing and New Transmission Facilities. This page  
14 1 of Table 2 also shows how, over the course of the transition period, the  
15 TAC Area portion of these transmission costs and loads are blended  
16 gradually into an ISO Grid-wide HV Access Charge. Page 2 of Table 2  
17 shows the same calculations for only Existing Transmission Facilities.  
18 How these HV Access Charges by TAC Area apply to the various PTOs is  
19 then shown in pages 3 and 4. Finally, Table 2 contains pages 5 through 9  
20 with calculations to determine the various aggregations of loads and  
21 transmission costs used in the calculations of the HV Access Charge as  
22 shown on pages 1 and 2 of Table 2.

23  
24 **Q. Please explain how you calculated the estimated cost shifts burdens  
25 and benefits shown in Table 3 of Exhibit ISO-21.**

1 A. The cost shift and Transition Charge calculations are shown in Table 3.  
2 The first page in Table 3 of Exhibit ISO-21 calculates estimated cost shift  
3 benefits and burdens as the difference between the total HV transmission  
4 costs faced by the PTOs' customers (*i.e.*, Gross Load) under the new TAC  
5 methodology and the total HV Access Charge that the PTO's customers  
6 (*i.e.*, Gross Load) would have paid under the previous utility-specific rates.  
7 As noted, this calculation is based only on the costs of Existing  
8 Transmission Facilities.

9  
10 Page 2 of Table 3 shows the limits on cost shifts as set by (1) the "hold  
11 harmless" provision for New PTOs (*i.e.*, no burden); and (2) the caps on  
12 cost shifts for the Original PTOs (*i.e.*, a cost shift burden of no more than  
13 \$32 million for PG&E and SCE and \$8 million for SDG&E). Page 3 shows  
14 the Transition Charges necessary to keep cost shifts to the previously  
15 discussed limits. And page 4 of Table 3 shows cost shift burdens and  
16 benefits after application of the Transition Charge. Pages 5 and 6 of  
17 Table 3 show Transition Charges and cost shifts after application of the  
18 Transition Charge on a \$/MWh basis. Page 7 shows cost shifts as a  
19 percentage of the PTOs' total transmission costs. Finally, pages 8  
20 through 13 contain intermediate calculations used in the determination of  
21 the Transition Charge.

22  
23 **Q. Does this conclude your testimony?**

24 A. Yes, it does.

UNITED STATES OF AMERICA  
BEFORE THE  
FEDERAL ENERGY REGULATORY COMMISSION

California Independent System )  
Operator Corporation )

Docket No. ER00-2019-000

City of Cambridge )  
County of Middlesex )  
Commonwealth of Massachusetts )

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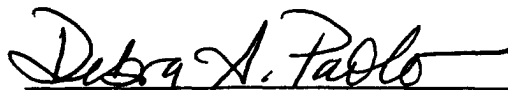
**AFFIDAVIT OF WITNESS**

I, Johannes P. Pfeifenger, being duly sworn, depose and say that I have read the foregoing questions and answers labeled as my testimony; that if asked the same questions my answers in response would be as shown; and the facts contained in my answers are true and correct to the best of my knowledge, information, and belief.

Executed on this 12 day of February, 2003.

  
Johannes P. Pfeifenger

Subscribed and sworn to before  
me this 12 day of February, 2003.

  
Notary Public  
Commonwealth of Massachusetts  
My commission expires October 23, 2009

