COMMISSION ADVISORY
AND COMPLIANCE DIVISION
Energy Branch

RESOLUTION E-3288
September 16, 1992

R E S O L U T I O N

RESOLUTION E-3288. SOUTHERN CALIFORNIA EDISON COMPANY
SUBMITS DATA TO CALCULATE TOTAL RESOURCE COSTS FOR
SHARED SAVINGS PROGRAMS AND PROPOSES A METHOD TO
DETERMINE COSTS AND BENEFITS OF CUSTOMIZED REBATES,
PURSUANT TO DECISIONS 91-12-076 AND 92-02-002.

BY ADVICE LETTER NOs. 934-E and 934-E-A, FILED ON March
3, 1992 and April 10, 1992, respectively.

SUMMARY

1. In this advice letter, Southern California Edison Company
(SCE) seeks Commission approval of 1) the use of all data
necessary to calculate total resource costs (TRC) for all Shared
Savings Programs; 2) a method to determine Customized Rebate
costs and benefits; and 3) appendices that clarify details
associated with the demand-side management (DSM) portion of
Decision (D.) 91-12-076.

2. This resolution approves the utility's Customized Rebate
program savings estimation methodology, recognizes the data
required to perform the TRC test, approves and appends to this
resolution Appendix C of the advice letters, and recognizes the
data and clarifications presented in all other appendices
attached to the advice letters.

3. This resolution recognizes the potential for the utility to
engage in fund shifting that may result in cream skimming or an
inequitable distribution of DSM resources in its service
territory, and cautions that SCE should not shift funds in such
a manner that contradicts the spirit and intent of the
Commission's commitment to equity and goals for DSM.

BACKGROUND

1. In D.90-08-068 the Commission authorized SCE to implement
DSM programs in which SCE shareholders could receive earnings
known as shareholder incentives. Shareholder incentives were
determined by amortizing DSM program costs and allowing
shareholders to earn the company's rate of return over a five-
year amortization period.

2. In SCE's test year 1992 GRC, (Application 90-12-018) SCE
again proposed an incentive mechanism based on amortization.

The Division of Ratepayer Advocates (DRA) and the California
Energy Commission (CEC) supported a shared savings incentive
mechanism and Toward Utility Rate Normalization (TURN) supported
a mechanism with an adjustable rate of return. SCE responded by
filing testimony requesting a shared-savings incentive
mechanism.

3. The Commission determined that all of the proposed
mechanisms included perverse incentives (D.91-12-076 Finding of
Fact 323) and devised its own shared-savings mechanism based on
an S-curve. A unique S-curve is developed for each resource
program by "setting" curve parameters with program-specific
information. To set the S-curve each program must have an
incentive target. This incentive target is based on the utility
administration costs (UAC), utility incentive costs (UIC),
participant costs (PC) and estimated resource benefits
attributable to each program.

4. In D.91-12-076, the Commission adopted utility total costs
(UAC + UIC) and used these values and SCE's forecast resource
benefits and participant costs for the purpose of setting the S-
curves.

5. Although the Commission used these forecast values for
setting the S-Curves, it did not adopt the assumptions
associated with these values. Instead, the Commission ordered
SCE to file an advice letter with the Commission Advisory and
Compliance Division (CACD) that provides all the data necessary
to calculate TRC for each adopted shared-savings measure. The
data required to calculate these TRCs include the total resource
benefits and participant costs for each program.

6. The decision also approves a different incentive mechanism
for SCE's Residential and Non-Residential Energy Management (EM)
Services programs. These programs are eligible for performance-
adder treatment, which provides the utility with an incentive
equal to 2% (Residential) and 5% (Non-Residential) EM Services
program expenses.

7. During the 1992 GRC, DRA argued that the proposed incentive
mechanism required predetermined per unit impact levels to set
the target savings and incentive levels. While it may be
appropriate to use forecast estimates for most programs, it is
not appropriate with a Customized Rebate because the measures
are not pre-qualified. Thus, the costs and benefits of
Customized Rebate programs can only be determined on a case-by-
case basis.

8. In D.92-02-002, the Commission adopted DRA's recommendation
and ordered SCE to file an advice letter that establishes a
method for calculating the costs and benefits of customized
rebates.

9. On February 18, 1992, SCE filed advice letter 934-E, which
provides the data required to calculate the TRCs for shared
savings programs and seeks approval of a proposed method of

calculating the costs and benefits of Customized Rebate programs.

10. On April 10, 1992 SCE filed a supplemental advice letter. Advice letter 934-E-A provides updated values for administration costs for direct assistance and Customized Rebate programs.

11. SCE claims that this advice filing will not increase any rate or charge, cause the withdrawal of service, or cause a conflict with any other rate schedule or rules.

NOTICE

The original Advice Letter and Supplement were noticed in accordance with section III of General Order 96-A by publication in the Commission Calendar and distribution to SCE's advice filing service list.

PROTESTS

No protests have been received by the CACD in this advice filing.

DISCUSSION

1. DSM programs are an important means by which the Commission is pursuing its long term goal of ensuring least-cost and environmentally-sensitive energy service to customers of California's investor-owned utilities (IOUs). The Commission has authorized shareholder incentives on DSM programs ". . . to help ensure that the utility is motivated to procure the least-cost resources by providing comparable opportunity for earnings from prudent investments in both demand- and supply-side alternatives" (D.92-02-075, Rule No. 14).

2. D.91-12-076 adopted the S-curve mechanism because it eliminates shortcomings inherent in alternative incentive mechanisms. These shortcomings include fixed rates of return and discontinuities in the effective incentive rates available as utilities increase DSM program performance. Fixed rates of return fail to provide utilities with a strong incentive to meet or exceed expectations of program accomplishments. Discontinuities in effective incentive rates provide utilities with incentives for gaming in their reporting of program accomplishments (participation rates).

3. The S-curve mechanism satisfies the Commission's requirements because it provides penalties for poor performance; low incremental incentive rates at regions of very low and very high performance; increased incentive rates near target savings levels; and smooth transitions between the different program performance regions.

4. The S-curve mechanism is an algebraic function which may be set (calibrated) by changing key parameters. D.91-12-076 orders SCE to set a unique S-curve for each program. An S-curve is set

for a particular program by inputing the UAC, UIC, PC and
resource benefits attributable to the program.

5.   The Commission found SCE's total utility costs reasonable,
and adopted them. Because utility total costs are the sum of
UAC and UIC, these values were then used in setting S-curves.
The Commission used SCE's forecasts of participant costs and
total resource benefits for setting the S-curves, but did not
adopt the assumptions (data) underlying these values because SCE
had not updated this data since 1990 and some assumptions were
poorly supported.

6.   To utilize the S-curve mechanism for determination of SCE's
shareholder incentive the Commission must adopt the assumptions
used to generate participant costs and total resource benefits.
These assumptions include values of marginal costs (avoided
costs), savings per measure, measure life and the net-to-gross
multiplier, and are crucial components for calculation of
program TRCs.

7.   While a significant portion of the 1992 GRC information is
dated (i.e., the estimates were developed in 1990), the utility
has been working to improve its unit energy savings estimates
for various conservation measures. Edison has reached an
agreement with interested parties to replace the outdated 1992
GRC data with updated information by an Advice Letter to be
filed prior to October 1992 for use in establishing the 1993
incentive targets. SCE will review its savings estimates
methodology with interested parties by September 1, 1992 and
will work with the active 1992 GRC parties to review these new
unit energy savings estimates on a continuous basis.

8.   Currently, savings attributed to most DSM programs are
based on standardized measure savings estimates. These
standardized measure savings estimates are then multiplied by
program participation rates and the net-to-gross multiplier.
SCE's Customized Rebate programs differ from its other DSM
programs in that energy savings from these programs are
attributable to a site-specific combination of one or several
energy efficiency measures (EEMs). Because the efficacy of
measure installation is determined on a case-by-case basis, it
is not possible to forecast Customized Rebate program savings by
forecasting program participation rates.

9.   Due to the complex nature of savings associated with these
programs, the methodology for estimation of actual Customized
Rebate savings must be well-documented and thorough. In past
programs conducted by California IOUs, savings attributable to
these programs have been difficult to verify because
documentation has been incomplete and inconsistent.

10.   Appendix B of advice letters 934-E and 934-E-A presents
SCE's proposed methodology for establishing forecast and actual
estimates of load impacts attributable to Customized Rebate
programs.

11. For forecasting purposes the utility has assumed kilowatt hour (kWh) savings based on expected customer rebates at a rate of one (1) kWh saved for every $0.05 of expected customer rebate.

12. SCE's proposed method of estimating actual load impacts attributable to Customized Rebate programs is based on SCE's New Book of Standards (NBOS). The NBOS is a handbook for SCE field representatives which provides engineering equations and other data necessary to estimate energy savings given the site-specific sensitivity of energy savings for this program. SCE proposes that in circumstances in which this method fails to produce energy savings estimates the utility would conduct independent engineering studies or use technical data provided by the manufacturer of the EEM.

13. Appendix B also presents SCE's proposed plans for documentation of the determination of savings associated with Customized Rebate programs. This appendix specifically indicates that SCE will report:

1. Actual Costs
2. Actual Measures
3. Site-Specific Operating Characteristics
4. Facility Square Footage
5. Energy Usage of the Existing Equipment to be modified or replaced.

Although the appendix indicates that savings estimates will be derived through the technical approaches contained in SCE's NBOS, it fails to indicate any intention of reporting assumptions that underlay these estimates such as hours of operation, measure life, baseline savings per measure and minimum efficiency standards for the equipment. CACD would like the utility to work with it and the DSM advisory committee to develop a detailed proposal for the documentation required to substantiate Customized Rebate program costs and benefits by December 31, 1992.

14. Table E of Appendix A of Advice Letter 934-E and 934-E-A presents SCE's understanding of DSM fund shifting restrictions developed in D.91-12-076. This table indicates the regulatory procedure necessary for different types of fund shifting requests. An advice letter and updating of incentive targets is necessary for shifting funds between program categories and areas; adding new measures; and shifting more than $2.5 million within a category. An application is necessary for increasing DSM funding. The utility's presentation of fund-shifting restrictions is consistent with the decision given the term definitions presented in Appendix C of Advice Letter 934-E and 934-E-A.

15. Each program has a unique S-curve, and incremental benefits associated with performance may be higher for some programs. The fact that some S-curves may offer higher incremental rates of return than others raises concerns about potential utility

incentives to shift funds to maximize shareholder incentives in a manner that results in the creation of lost opportunities or an inequitable distribution of DSM resources across the utility's service area. Although consistent with the decision language, SCE's freedom to shift funds between areas and across and within categories creates this potential. CACD cautions the utility to avoid cream skimming and shifting of funds in a way that contradicts the spirit and intent of the Commission's commitment to equity and goals for DSM.

16. Appendix C presents clarifications regarding the use of the S-curve for incentive payment determination and the determination of performance adder incentives. This appendix also provides definitions for terms used in the decision but not defined therein.

17. The review of S-curve related details provides intuitive and mathematical explanations of the calibration, use, and operation of the S-curve mechanism. Although these explanations may not be indispensable for use of the S-curve, they provide a more detailed account of its use, and will serve to simplify the set-up and use of the S-curve and the regulatory review of S-curve-derived incentives.

18. The Performance Adder portion of Appendix C provides the equation implied by decision language regarding performance adder programs, and identifies and defines the variables used in this equation.

19. The definitional portion of Appendix C clarifies definitions of terms used in D.91-12-076. CACD finds these definitions useful, as the decision and interested parties occasionally use the same term to cite different concepts. Definitions presented in this appendix were created in consultation with DRA, CACD and the M&E advisory committee, and were also presented during the Commission's workshop addressing the S-curve mechanism.

20. SCE has reviewed its TRC data with the DSM advisory committee. The advisory committee suggested some changes in the formatting and classification of this data, but concluded that, given the effects of the adopted shareholder incentive mechanism, the data from SCE's GRC notice of intent (NOI) is the best data available at this time and should be adopted. This recommendation is supplemented with an agreement between the advisory committee and SCE whereby the utility will not support measures that are not found to be cost-effective as newer data becomes available. SCE presents this modified NOI data in Table C of this advice letter for Commission approval.

FINDINGS

1. SCE filed Advice Letter No. 934-E and its supplement Advice Letter No. 934-E-A in compliance with Ordering Paragraph No. 40 of D.91-12-076 and No. 40a of D.92-02-002. These Orders require the utility to provide, respectively, data necessary for

calculation of TRCs for the utility's shared savings DSM programs and a methodology for calculating the costs and benefits of Customized Rebate programs. SCE also seeks approval of language that clarifies details regarding the use of the S-curve mechanism; the determination of performance adder incentives; decision rules regarding the shifting of funds among DSM programs; and terminology used in the decision.

2. The TRC data filed by SCE is the best data available at this time, is reasonable and, therefore, should be approved.

3. SCE's proposed methodology for calculation of forecast and actual Customized Rebate costs and benefits, as presented in Appendix B of this advice letter, is reasonable and should be approved.

4. SCE's plans for documentation of Customized Rebate costs and benefits lacks specificity and fails to explicitly include certain values necessary for verification of the costs and benefits of these programs. Therefore, SCE should be ordered to consult with the CACD and DSM advisory committee and develop a detailed documentation proposal by December 31, 1992.

5. SCE's clarification of fund shifting rules, presented in Table E of Appendix A, is consistent with decision language and should be acknowledged. Due to the program-specific nature of the S-curve incentive mechanism, however, there is a potential for the utility to shift funds in a way that results in cream skimming or an inequitable distribution of DSM resources across the utility's service territory. Therefore, the utility is cautioned that it must not engage in fund shifting that contradicts the spirit and intent of the Commission's committment to equity and goals for DSM.
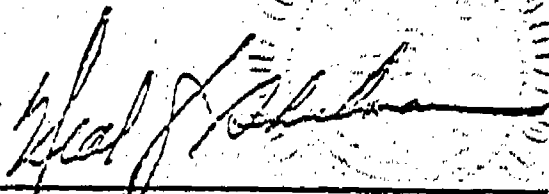
6. Appendix C, which clarifies the use of the S-curve and performance-adder mechanisms for incentive determination and provides definitions of associated terms, is useful and consistent with decision language. Therefore, this appendix should be added as a supplement to this resolution. The entire appendix or portions thereof, however, may be superceded upon completion of the DSM Rulemaking, Rulemaking (R.) 91-08-003.

THEREFORE, IT IS ORDERED that:

1.   The Total Resource Cost data submitted by Southern California Edison in advice letter 934-E and 934-E-A is adopted.

2.   Southern California Edison Company shall calculate forecast and actual costs and benefits of Customized Rebate programs according to the methodology presented in Appendix B of these advice letters.

3.   Southern California Edison Company shall revise the preliminary statements of its tariff sheets to reflect the decision made herein.

4.   Southern California Edison Company shall produce a detailed plan for the documentation of the costs and benefits of Customized Rebate programs by December 31, 1992.

5.   Appendix C of these advice letters, which clarifies the use of the S-curve and performance-adder incentive mechanisms and provides definitions for terms used in D.91-12-076 is appended to this resolution as Appendix I.

6.   The data in the appendices and tables attached to Advice Letters 934-E and 934-E-A but not specifically referred to above is acknowledged.

7.   Advice Letter 934-E-A shall be marked to show that it was approved by Commission Resolution E-3288.

8.   This Resolution is effective today.

I hereby certify that this Resolution was adopted by the Public Utilities commission at its regular meeting on September 16, 1992. The following Commissioners approved it:

NEAL J. SHULMAN
Executive Director

DANIEL Wm. FESSLER
President
JOHN B. OHANIAN
PATRICIA M. ECKERT
NORMAN D. SHUMWAY
Commissioners

APPENDIX I TO RESOLUTION E-3288

Appendix C of Southern California Edison
Advice Letters 934-E and 934-E-A

APPENDIX I

APPENDIX C

CLARIFICATION OF THE EARNINGS MECHANISM IN D. 91-12-076

Edison notes that the Decision No. 91-12-076 left several issues unresolved or unclear. It is not possible to meet the requirement of specifying how earnings are to be calculated for 1992 in this Filing unless Edison proposes the following solutions to these methodological and procedural questions, based on discussions of these issues with most of the participants in Edison's 1992 GRC.

Methodology

1. Edison's Shared Savings program results (i.e., measurement) will include "committed" measures in 1992. Beginning in 1993, Edison and the DRA have agreed to count only "redeemed" or "actual" results.

2. The Shared Savings Target Incentive (TI) for each program is calculated by adding forecasted Utility Incentive Costs (UIC$_f$) and forecasted Utility Administrative Costs (UAC$_f$) and multiplying the sum by the authorized rate of return (ROR) for 1992 (see Table A).

$$T_1 = (UIC_f + UAC_f) \times ROR$$

3. The Performance Adder (P+) for Residential and Nonresidential survey programs will be calculated by multiplying the corresponding adder by the actual (recorded) Utility Administrative Costs (UAC$_a$). For Residential Energy Management Services, the adder is 2%; for Nonresidential Energy Management Services the adder is 5%.

$$P+_{res.} = UAC_a \times 0.02: \quad P+_{nonres.} = UAC_a \times 0.05$$

4. For each Shared Savings program, there are three factors to determine the shape of the S-Curve. From Table A, these factors are TEIR, MINR, and MAXR. TEIR stands for Total Effective Incentive Rate and equals Target Incentive (TI) divided by forecast Incentive Basis (IB$_f$). MINR represents the minimum incentive rate which applies when performance is less than 75% or greater than 125%. MINR is derived to equal eight multiplied by TEIR and divided by thirteen. MAXR is equal to the maximum incentive rate that applies when performance equals 100%. The ratio of MAXR to MINR is agreed to be 10:1 for all programs. Thus,

$$TEIR = TI/IB_f$$

$$MINR = \frac{8\ TEIR}{13}$$

$$MAXR = 10 \times MINR$$

5. Appendix G of the Decision separated Edison's Nonresidential Energy Efficiency Category into separate Programs--Commercial, Industrial, and Agricultural. This breakdown was from the DRA's comments to the ALJ's draft decision, which in turn drew upon data request responses from Edison and GRC Exhibits. In this Advice Filing, Edison has made a similar calculation and presents these numbers in Table A of Appendix A.

6. The DRA recommends using the marginal cost stream filed with the GRC in the original NOI because it is consistent with the material used throughout the GRC in discussing DSM programs. If, as a result of using more recent marginal information, some programs do not pass the TRC test, that program will be limited to application in the field only when it is cost effective to do so. Further: Edison will provide a listing of such programs.

7. Edison believes that its 1993 and 1994 targets will need to be reset from the GRC targets. Edison will file an Advice Letter or Application (if there is an overall funding increase requested for 1993 and 1994) before October 1992 to (a) revalue the parameters in the 1993 forecast (i.e., unit definitions, participation levels, unit savings estimates, rebate levels, etc.) and (b) shift (or add by Application) funds between and within Rate Case Areas, Funding Categories, and/or Programs.

Definitions

A consistent set of definitions is needed to provide foundation for describing the incentive procedures and the details supporting quantification of TRC, shifting of funds, and other factors impacting Edison's overall DSM effort. The following standard definitions will be used:

1. General Rate Case Area of Funding (AREA): The total DSM program is divided into three funding areas, encompassing the authorized expenditures and plans for Residential, Non Residential and Load Management Efforts.

2. Incentive Category (CATEGORY): Each area is separated into three Incentive Categories:

    1. Shared Savings
    2. Performance Adder
    3. Expensed

3. Programs (PROGRAM): The Shared Savings "Category" is separated into seven (7) Programs:

    1. Residential New Construction Program
    2. Residential Appliance Efficiency Program
    3. Industrial Energy Efficiency Program
    4. Commercial Energy Efficiency Program
    5. Agricultural Energy Efficiency Program
    6. Non-Residential New Construction Program
    7. Direct Assistance Program

    Each of these programs has a forecast "Incentive Basis" (IB) which will provide the basis for judging performance.

4. Measure (MEASURE): Each Program is made up of individual hardware marketing efforts. There are anywhere from two to twenty Measures for each program. There are no targets for Measures, but the program results for any one year are generated by the prespecified savings per Measure, the value of the savings and the number of units actually delivered to customers for each Measure.

5. Unit (UNIT): The key factor in Quantification of forecast performance is the estimate of the number of Units delivered for each Measure. Units are sometimes described as "customers" and at other times "tons". The Units must be specific in advance in order to set the basis for performance.

(END OF APPENDIX I)