

DEC 16 1992

Decision 92-12-050 December 16, 1992

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Order Instituting Rulemaking on the Commission's own motion to establish rules and procedures governing utility demand-side management.

ORIGINAL

(Filed August 7, 1991)

Order Instituting Investigation on the Commission's own motion to establish procedures governing demand-side management and the competitive procurement thereof.

I.91-08-002 (Filed August 7, 1991)

INTERIM OPINION

I. Summary

Today's order addresses two methodological issues held over from recent decisions in this Rulemaking and companion Investigation. The first relates to the application of net-to-gross (NTG) ratios when evaluating third-party bid proposals to replace utility demand-side management (DSM) programs. We determine that NTG ratios should be applied both to the benefits (savings) and costs associated with bid proposals. On the cost side, the NTG ratio should be applied to customer contributions and the component of bidder payments that represents customer incentives or rebates.

The second issue relates to the appropriate baseline reference for fuel substitution programs. We find that the reference baseline for these programs should be the most cost-effective same-fuel substitute technology that is currently cost-effective under the total resource cost test.

## II. Net-To-Gross Ratios In A Bidding Environment

The NTG ratio adjusts estimates of DSM program savings to account for several factors, including the amount of "free riders" that would have implemented the DSM measure without the program. In Decision (D.) 92-09-080, the Commission clarified the definition of total resource costs (TRC) to be used in evaluating bid proposals, which raised the issue of whether and how to apply the NTG ratio to the cost side of the equation:

"In D.92-03-038, we adopted DRA's position that, consistent with recent modifications to the Standard Practice Manual, the NTG ratio should apply to measure costs, as well as to energy savings....However, the issue of how to define total resource costs was not explicitly raised by parties to that phase of the proceeding. As a result, we did not carefully consider whether or how to apply the NTG ratio to total resource costs in a bidding environment. Since our adopted definition of total resource costs does not explicitly include measure costs, it is not clear that the NTG ratio should be considered at all." (D.92-09-080, mimeo., p. 69.)<sup>1</sup>

In response to Ordering Paragraph 16 of D.92-09-080, the following parties filed comments on this NTG issue: Pacific Gas and Electric Company (PG&E), Southern California Edison Company (SCE), San Diego Gas & Electric Company (SDG&E) and Southern California Gas

---

<sup>1</sup> The Standard Practice Manual presents a cost-benefit methodology for the evaluation of DSM programs. It is the product of workshops among the staffs of this Commission and the California Energy Commission, the major utilities and interested parties. Although not officially adopted by this Commission, the Standard Practice Manual methods are widely used by parties to our proceedings.

Company (SoCal).<sup>2</sup> Reply comments were filed by the Division of Ratepayer Advocates (DRA).

A. Positions of the Parties

The utilities support the application of an NTG ratio to both the costs and savings associated with DSM programs. In their view, the two adjustments go hand-in-hand: If savings are reduced to reflect what would have been achieved in the absence of the program, then participant costs must also be reduced to reflect what the participating customer would have spent in absence of the program. To only adjust program savings would understate the net benefits (or benefit-cost ratio) of the program, in their opinion.

In terms of how to apply the NTG ratio to total resource costs for evaluation purposes, SCE recommends that utility payments to bidders and customer contributions be adjusted by an NTG ratio. PG&E agrees with this recommendation for its own "partnership" bid pilot program, but suggests that a no-NTG adjustment might be appropriate for pilots designed to replace utility DSM programs.<sup>3</sup> Under this approach, there would be no NTG adjustments to either the bid proposals or the utility program to be replaced.

SDG&E recommends that the NTG ratio only be applied to the bidders' payments/rebates to customers and customer contributions. In order to implement SDG&E's approach, the bidder would have to disclose how much it planned to contribute to the participating

---

<sup>2</sup> PG&E, SCE, SDG&E, and SoCal are referred to collectively as "the utilities" in this order.

<sup>3</sup> Under PG&E's partnership program, bid proposals are evaluated as cost-effective additions to the utility's existing and planned DSM. In contrast, under SoCal's, SDG&E's and SCE's pilot bid programs, bid proposals are evaluated as cost-effective replacements to utility-sponsored DSM.

customers' measure costs, e.g., via customer rebates or other forms of incentives.

DRA, on the other hand, does not advocate a particular approach at this time. Rather, DRA proposes that the method for applying NTG ratios for bid evaluation and payment purposes be decided by the utility (within its bid evaluation flexibility) and via negotiation with short-listed bidders.

In its comments, SoCal recommends using the method adopted in the Standard Practice Manual, i.e., adjusting measure costs (also referred to as participants' costs) by the NTG ratio. However, as explained in D.92-09-080, bid proposals do not disclose measure costs, per se. Rather, a bid proposal includes a request for utility payment to the bidder (to cover administration, profits, rebates and payments to customers) and includes an estimate of customer out-of-pocket contributions. Measure costs can be derived from that information only if the bidder reveals what portion of utility payments will be used to cover some of the measure costs (e.g., in the form of customer rebates). It is not clear from SoCal's comments whether SoCal advocates requiring that information, as SDG&E does.

#### B. Discussion

We agree with the utilities that NTG adjustments should be made consistently to reflect the benefits and costs of DSM programs. However, only SDG&E's approach would apply NTGs to the cost side in a manner that is consistent with how NTGs are applied to the cost side for utility-sponsored DSM. It is the only approach that satisfies our stated criterion that "...if a NTG ratio is included in the TRC formula, the method selected should not create perverse results, e.g., by creating an advantage to bidders over the utility program even when the projects have identical total costs and benefits." (D.92-09-080, mimeo., p. 69.)

In contrast, SCE'S recommended approach would apply the NTG ratio to certain elements of costs that are not similarly discounted by the NTG ratio for utility-sponsored programs. Under the Standard Practice Manual formula used for utility DSM program evaluation, only customer incentives or rebates and out-of-pocket contributions would be discounted. Hence, SCE's approach would overstate TRC benefit/cost ratios for bidders, relative to utility-sponsored programs, due to the discounting of bidder profits and administrative costs included in bid payments.

PG&E's "no-NTG" approach also has conceptual drawbacks. As PG&E points out, this approach tends to favor programs with larger administrative costs, all other things being equal.<sup>4</sup> PG&E also acknowledges that, the more different the mix of measures and payback periods to be compared, the more the use of an NTG adjustment becomes necessary for valid comparisons.

DRA's proposed approach (to defer the issue to the utilities) has the apparent drawback of increasing the uncertainty on how bid proposals will be evaluated, and could increase potential contention during the bid selection and/or negotiation stages of these pilots.<sup>5</sup>

---

<sup>4</sup> For example, for a program that has benefits of 2.0 and costs of 1.0, the benefit-cost ratio will always be 2.0 under the no-NTG approach, regardless of the breakdown between customer incentives and "other costs" (e.g., administrative costs). Let's say, however, that Program A has .10 in other costs and .90 in customer incentives, while Program B has .20 in other costs and .80 in customer incentives. With an NTG ratio of 0.7, the benefit-cost ratio for Project A becomes 1.92, while the benefit-cost ratio for Project B becomes 1.84. However, the no-NTG approach would not pick up this differential, and would consider both programs equally cost-effective.

<sup>5</sup> In terms of how to establish measured NTG ratios for use in post-installation measurement, we have already established that the bidder shall propose measurement and verification approaches in its bid proposal, subject to the utility's case-by-case evaluation.

For the reasons stated above, we adopt SDG&E's proposed approach for applying the NTG ratio to the cost side of replacement bid proposals in SDG&E's, SoCal's and SCE's pilot programs. Specifically, SDG&E, SCE and SoCal should require bidders to break down their bids into two components: "customer incentives/rebates" and "other costs." The NTG ratios adopted in D.92-09-080 shall be applied to the customer incentives/rebates component and to estimates of customer contributions.

SCE apparently believes that the information needed to implement SDG&E's approach is not readily available. (See SCE's comments, p. 4.) We disagree. In order to prepare its bid proposal, each bidder will need to develop estimates of how much the proposed DSM measures will cost overall, and what proportion the customer is expected to contribute out-of-pocket (or conversely, the proportion the bidder will pay to the customer). Similarly, utilities regularly prepare estimates of these cost categories in developing their own programs for evaluation by Commission staff and other parties. In order to minimize potential gaming of these estimates, however, bidders should be required to include documentation of the total measure costs (i.e., the sum of estimated customer contributions and rebates or incentives) for utility verification.

For PG&E's partnership bid pilot, however, we will permit PG&E to use the approach presented in its May 21, 1992 compliance filing, which applies the NTG ratio to bidder payments and customer contributions. Given the fact that PG&E's solicitation does not directly compare bid proposals with utility DSM programs, the accuracy and consistency problems noted above will not have a

---

Today's order does not alter that approach. See D.92-09-080, mimeo., p. 88.

significant effect on PG&E's selection process. Moreover, PG&E's solicitation materials have already been issued. (See D.92-09-072, Ordering Paragraph 2.) We see no reason to insist on revising those materials at this juncture.

With regard to the NTG ratio assumptions themselves, our determinations in D.92-03-038 and D.92-09-080 remain unaltered by today's order. In the longer run, as more measurement and verification studies are performed on NTG ratios in general, and those applicable to third-party-provided DSM in particular, we may need to refine our NTG assumptions to ensure that third-party and utility programs are being compared as consistently as possible.

### III. Baseline For Fuel Substitution Programs

In D.92-10-020, we requested comments on the appropriate baseline technology to assume in making comparisons among fuel-substitution DSM programs (e.g., programs to substitute electric heat pumps for gas space heating). Comments on this issue were filed by PG&E, SCE, SDG&E, SoCal and the Natural Resources Defense Council (NRDC). Reply comments were timely filed by PG&E and SoCal. <sup>6</sup>

---

<sup>6</sup> Reply comments were also filed by the American Gas Cooling Center (AGCC) and the Trane Company (Trane), who are not parties to this proceeding. Not only were AGCC's and Trane's comments filed late, but they also failed to address the specific issue identified for further comment in D.92-10-020. Rather, AGCC and Trane argued for our reconsideration of the rules adopted in that order. Under these circumstances, we must reject AGCC's and Trane's late-filed comments.

**A. Positions of the Parties**

The utilities recommend that minimum standards equipment be used as the baseline for making comparisons among fuel options.<sup>7</sup> In instances where minimum standards are unavailable, the utilities present somewhat differing proposals. SCE recommends using existing equipment as the baseline for fuel substitution programs in the residential and commercial sectors. In SCE's view, further workshops are needed to establish baselines for the industrial sector. PG&E and SoCal recommend using "current or standard purchase practices" as the baseline reference, while SDG&E recommends the use of efficiency data compiled in the California Energy Commission's (CEC) Statewide DSM Inventory.<sup>8</sup>

NRDC, on the other hand, recommends that the baseline reference be the most efficient same-fuel substitute technology that is currently cost-effective under the TRC test. If no such technology is available, the baseline reference would be the technology being replaced. The source of efficiency data for these technologies would be the utilities' own DSM program filings and, when available, the CEC's Statewide DSM Inventory.

Finally, SoCal recommends that the rules be clarified to allow consideration of environmental impacts other than air emissions in making fuel substitution comparisons.

---

<sup>7</sup> However, SDG&E recommends (with PG&E's concurrence) that this baseline only apply to equipment in new construction applications or post-failure retrofit situations. For early replacement conditions, SDG&E and PG&E recommend that the baseline be existing equipment, with some allowance for minimum standards beyond the expected service life.

<sup>8</sup> The CEC's statewide DSM inventory will, when fully developed, contain estimates of the unit costs and savings associated with current and potential cost-effective DSM measures. See Public Resources Code § 25401.2.



**B. Discussion**

The comments reflect a fundamental difference in perspective regarding the purpose of ratepayer funding for fuel-substitution programs. SoCal and others believe that the purpose should be to improve upon the efficiencies of same-fuel equipment that customers are most likely to install (e.g., minimum standards where those standards exist). NRDC believes that the purpose should be to improve upon the most efficient same-fuel equipment.

We agree with NRDC that ratepayers should fund fuel-switching only to the extent that fuel-substitution technologies increase net total resource benefits relative to the most efficient, available, same-fuel technologies. To do otherwise would encourage fuel competition in ways that could undermine our resource procurement goals.

For example, under SoCal's proposal, customers with electric appliances would be presented with gas-technology options that are more cost-effective than the status quo (or their standard purchase choice). However, this does not necessarily represent a net resource benefit to all ratepayers, who fund these programs. If SCE can make available efficient electric technologies (for either post-failure or early replacement retrofits) that yield greater net resource benefits, then ratepayers are better off encouraging same-fuel replacement, rather than fuel switching. Similarly, from a total resource perspective, ratepayers may be better off funding a new construction program that encourages the most efficient electric appliances, rather than competing gas technologies (or vice versa).<sup>9</sup>

---

<sup>9</sup> This order does not preclude the utilities from pursuing the development of more efficient fuel-substitution technologies, but rather, speaks only to the issue of what ratepayers should fund with DSM dollars.

Our rules should foster an environment where utilities and vendors are encouraged to compete for ratepayer funds in a manner that is in the ratepayers' best interest. By establishing the baseline as NRDC proposes, vendors of fuel-substitution technologies are encouraged to compete against the proper standard, i.e., the most efficient same-fuel equipment available to the customer via the utilities' traditional energy efficiency programs. Program participants will be afforded fuel-substitution choices that make the most sense from a resource procurement standpoint, i.e., that result in increased net total resource benefits to all ratepayers.

Since our adopted rules do not require any interpretation of standard or current market practice for the industrial sector, we do not find it necessary or useful to conduct further workshops at this time, as SCE suggests. With regard to SoCal's comments regarding our rules on environmental externalities, we agree that parties should not be precluded from comparing the non-emission impacts associated with fuel choices. We modify Rule 13 of D.92-10-020 accordingly. (See Ordering Paragraph 2.) The full text of our DSM rules, as modified by today's order, is appended as Attachment 1.

Findings of Fact

1. SCE's proposed approach for applying NTGs to replacement bid proposals would overstate the benefit/cost ratios of those proposals, relative to the utility programs being replaced.

2. PG&E's "no-NTG" approach for replacement bids tends to favor programs with larger administrative costs, all other things being equal.

3. DRA's proposal to defer this issue would increase the uncertainty on how bid proposals will be evaluated, and could increase potential contention during the bid selection and/or negotiation stages of the pilot programs.

4. SDG&E's proposed approach for applying NTGs in a replacement bidding environment is consistent with how NTGs are applied to the cost side of utility DSM programs.

5. In the process of developing their bid proposals, bidders will need to develop the information required to implement SDG&E's proposed approach.

6. PG&E's partnership bid does not directly compare bid proposals with utility DSM programs; therefore, the accuracy and consistency problems associated with SCE's proposed approach will not have a significant effect on PG&E's selection process.

7. PG&E has already issued its request for proposals, using the approach advocated by SCE for replacement bids.

8. Ratepayers may be better off, from a total resource perspective, by funding programs that replace customer equipment with the most efficient, available same-fuel technology, rather than funding fuel-switching efforts, even if fuel-switching is more efficient than choices customers would have made on their own.

9. Using minimum standards equipment or standard purchase practices as the baseline reference for fuel substitution programs may encourage fuel competition in ways that could undermine our resource procurement goals.

10. The comments of AGCC and Trane were late-filed and failed to respond to the specific issue identified for further comment in D.92-10-020.

11. In order to provide the necessary guidance on methodology issues, this order should be effective today.

#### Conclusions of Law

1. SDG&E's proposal for applying NTG ratios in a replacement bid environment is reasonable and should be adopted.

2. Ratepayers should fund fuel-substitution programs only if doing so provides net total resource benefits greater than the most efficient same-fuel equipment available.

3. Consideration of environmental impacts, for the purpose of evaluating fuel substitution programs, should not be limited to air-emissions.

4. Rule 13 of D.92-10-020 should be modified to reflect today's determinations.

INTERIM ORDER

IT IS ORDERED that:

1. The late-filed comments of the American Gas Cooling Center and the Trane Company are rejected.

2. Rule 13 of Decision 92-10-020 shall be modified as follows (additions are underlined):

\*13. Fuel substitution programs may offer resource value and environmental benefits. Fuel-substitution programs should reduce the need for supply without degrading environmental quality.

\*Fuel substitution programs, whether applied to retrofit or new construction applications, must pass the following three-prong test to be considered further for funding:

- (1) The program must not increase source-BTU consumption. Proponents of fuel substitution programs should calculate the source-BTU impacts using the current CEC-established heat rate.
- (2) The program must have a TRC benefit-cost ratio of 1.0 or greater. The TRC test used for this purpose should be developed in a manner consistent with Rules 7-10.
- (3) The program must not adversely impact the environment. To quantify this impact, respondents should compare the environmental costs with and without the program, using the most recently adopted values for residual emissions in the Update. Parties may include environmental impacts beyond the residual emission factors presented in the Update. The burden of proof lies with the sponsoring party to show that the material environmental impacts have been adequately considered in the analysis.

- "(4) For purposes of applying these tests, fuel substitution proponents must compare the technologies offered by their program with the most efficient same-fuel substitute technologies available to prospective participants that would have a TRC benefit-cost ratio of 1.0 or greater. The burden of proof falls on the party sponsoring the analysis to show that the baseline comparison adheres to this requirement.

"We discourage utilities from pursuing fuel substitution programs with a predominantly load building or load retention character. For these types of programs, the utility carries the burden of proof to demonstrate that the benefits of the program justify relaxing our focus on energy efficiency programs."

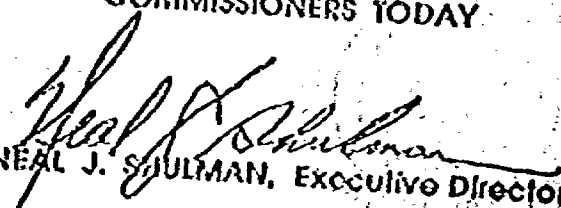
This order is effective today.

Dated December 16, 1992, at San Francisco, California.

DANIEL Wm. FESSLER  
President

JOHN B. OHANIAN  
PATRICIA M. ECKERT  
NORMAN D. SHUMWAY  
Commissioners

I CERTIFY THAT THIS DECISION  
WAS APPROVED BY THE ABOVE  
COMMISSIONERS TODAY

  
NEAL J. SHULMAN, Executive Director

ATTACHMENT 1

Page 1

ADOPTED RULES, TERMS AND DEFINITIONS  
FOR DEMAND-SIDE MANAGEMENT PROGRAMS<sup>1</sup>

I. Resource Planning and DSM Program Definitions

1. This Commission's goal for utility resource procurement is reliable, least cost, environmentally sensitive energy service. Using energy more efficiently constitutes an important means of achieving this goal. The utilities should treat energy efficiency improvements and energy conservation as viable alternatives to supply-side resource options.

2. Lost opportunities are those energy efficiency options which offer long-lived, cost-effective savings and which, if not exploited promptly, are lost irretrievably or rendered much more costly to achieve. In developing funding priorities for cost-effective DSM activities, the utilities should consider capturing lost opportunities as an additional ranking criterion for programs with Total Resource Cost benefit-cost ratios greater than 1.0. The utilities should submit a detailed account of strategies designed to capture lost opportunities with any request for shareholder incentive mechanisms and/or for increases in DSM program funding.

---

<sup>1</sup> This attachment reflects the DSM rules, terms, and definitions adopted in D.92-02-075, as corrected in D.92-03-007, and D.92-10-020. Additions to those rules, as adopted in today's order are underlined. (See Rule 13.)

ATTACHMENT 1  
Page 2

3. As defined by the Collaborative, "cream skimming" results in the pursuit of only the lowest cost conservation and load management measures, leaving behind other cost-effective opportunities. Cream skimming becomes a problem when lost opportunities are created in the process. Utilities should pursue the most cost-effective DSM resource programs first, if doing so does not create lost opportunities.

4. To ensure optimal funding of DSM activities requires consistent treatment of programs across utilities and across regulatory forums. Common terms and program definitions help ensure consistent treatment. The utilities should use the definitions included in the Appendix to these rules when characterizing any proposed program. The burden is on the utility to justify any departure from them. This OIR will remain open to accommodate future requests to modify the terms or definitions proposed herein or to add new terms or definitions.

## II. Cost-Effectiveness Indicators

5. The tests in the Standard Practice Manual (SPM) help assess the variety of effects associated with new or expanded DSM programs. The tests in the SPM will serve as the standard for determining DSM program cost-effectiveness until a methodology is

ATTACHMENT 1

Page 3

established that allows for the side-by-side comparison of demand- and supply-side resources. The utilities should perform cost-effectiveness analyses for any proposed DSM program consistent with the indicators and methodologies included in the SPM. The utility should, to the extent practicable, perform each of the tests included in the SPM for any proposed DSM program.

6. This Commission relies on the Total Resource Cost Test (TRC) as the primary indicator of DSM program cost effectiveness. This reflects our view that utility DSM activities should focus on programs that serve as alternatives to supply-side resource options. Energy efficiency programs and load management programs which promote energy efficiency serve as such alternatives because they reliably reduce a utility's fuel and/or capacity needs.

7. To the extent practicable, nonprice factors should be considered along with price factors in utility resource procurement. Insofar as nonprice factors developed in the Biennial Resource Plan Update (Update) for supply-side resources affect DSM programs, the utility should include them in cost-effectiveness analyses consistent with their development in the Update. Electric utilities should use the forum described in Decision 91-10-048 to publish information on transmission and distribution costs. This information should be used consistently across all resource options for the purpose of quantifying avoided transmission and/or distribution costs.

8. Resource value refers to the ability of a DSM program to reliably reduce utilities' fuel and/or capacity needs. For DSM programs designed to defer or avoid these requirements, the resource value associated with such programs should be consistent



ATTACHMENT 1

Page 4

with the avoided costs of electric service adopted in the Update and, when completed, the avoided costs of natural gas service adopted in Investigation 86-06-005. These values should be used in applicable cost-effectiveness analyses and when calculating shareholder incentives. We will address the issue of consistency between resource planning determinations and DSM funding authorizations in this OIR/OII, after CACD's workshop report is submitted (see Sections IV.F and V.B of this order.)

9. Insofar as a DSM program results in indirect costs, they should be considered. The speculative nature of any attempts to quantify indirect costs significantly reduces their applicability as an analytic tool at this time. These costs should therefore not be required in any of the cost-effectiveness tests included in the SPM. The issues related to indirect costs of DSM programs are technical in nature. The SPM working group, which is convened by the CPUC and the CEC, represents the appropriate forum for considering indirect costs as they apply to DSM programs.

10. Shareholder incentives represent a true economic cost in the production of utility DSM programs and should be included as a direct cost in the TRC test, the Rate Impact Measure, and the Utility Cost test. The SPM working group should consider the appropriate treatment of shareholder incentives in the societal test variation, i.e., as a transfer payment or direct cost.

11. The usefulness of the TRC test as a primary indicator of cost-effectiveness is limited for certain programs which do not necessarily focus on the timing or type of resource needs of the utility. Direct Assistance programs address equity concerns; as such, positive cost-effectiveness shall be an important, but not

ATTACHMENT 1

Page 5

the sole, factor used to determine funding levels for these programs. Cost-efficiency is also important in the conduct of Direct Assistance programs. For Information Programs and Energy Management Services, the link between programs and savings is difficult to discern. Strict adherence to the TRC should not be required for these programs.

New Construction Programs should be designed, funded and implemented in a manner which effectively promotes the development of future, higher efficiency standards by the CEC, as well as the objectives of Public Utilities Code § 701.1. In conjunction with the CEC standards, utility New Construction Programs should provide resource benefits in the form of reduced demand to be met by the utility electric and gas systems. Utility New Construction programs should also be designed to minimize lost energy efficiency opportunities.

For each New Construction Program (residential and nonresidential), the TRC test should be the primary indicator of cost-effectiveness for the program as a whole. Each program as a whole must pass the TRC test; individual measures or program elements promoted by each program need not indicate TRC cost-effectiveness. However, fuel substitution activities in the new construction sector must be evaluated using the criteria established in Rule 13. The utilities' cost-effectiveness analyses should be accompanied by source-BTU and other information that will be useful for CEC standard-setting.

ATTACHMENT 1

Page 6

12. Load Building and load retention programs lack resource value, and the TRC does not apply to these programs. Though utility DSM activities should focus on energy efficiency programs and load management programs which promote energy efficiency, the pursuit of certain load building or load retention programs may achieve other policy goals. Proponents of these programs carry the burden of proof to quantify the social or ratepayer benefits, and justify any ratepayer funding for these programs.<sup>2</sup> General conclusions about the net benefits of these types of programs should be backed by program specific analysis. In particular, for load building programs utilities should quantify the programs' net effect on air emissions, including increased emissions from the increased load on the system. The utility should design any load building or load retention program so as to avoid frustrating this Commission's goal of encouraging energy efficiency and energy conservation. We intend to adopt more specific evaluation and funding guidelines for these types of programs in a later phase of these proceedings.

13. Fuel substitution programs may offer resource value and environmental benefits. Fuel-substitution programs should reduce the need for supply without degrading environmental quality.

---

<sup>2</sup> Proponents of fuel substitution programs with a predominantly load building or load retention character must, however, demonstrate that the program is source-fuel efficient and does not degrade the environment, pursuant to Rule 13.

ATTACHMENT 1

Page 7

Fuel-substitution programs, whether applied to retrofit or new construction applications, must pass the following three-prong test to be considered further for funding:

- (1) The program must not increase source-BTU consumption. Proponents of fuel substitution programs should calculate the source-BTU impacts using the current CEC-established heat rate.
- (2) The program must have a TRC benefit-cost ratio of 1.0 or greater. The TRC test used for this purpose should be developed in a manner consistent with Rules 7-10.
- (3) The program must not adversely impact the environment. To quantify this impact, respondents should compare the environmental costs with and without the program, using the most recently adopted values for residual emissions in the Update. Parties may include environmental impacts beyond the residual emission factors presented in the Update. The burden of proof lies with the sponsoring party to show that the material environmental impacts have been adequately considered in the analysis.
- (4) For purposes of applying these tests, fuel substitution proponents must compare the technologies offered by their program with the most efficient same-fuel substitute technologies available to prospective participants that would have a TRC benefit-cost ratio of 1.0 or greater. The burden of proof falls on the party sponsoring the analysis to show that the baseline comparison adheres to this requirement.

We discourage utilities from pursuing fuel substitution programs with a predominantly load building or load retention character. For these types of programs, the utility carries the burden of proof to demonstrate that the benefits of the program justify relaxing our focus on energy efficiency programs.

ATTACHMENT 1

Page 8

V. Shareholder Incentives

14. The Electric Revenue Adjustment Mechanism and Core Fixed Cost Account remove significant ratemaking disincentives for utilities to invest in demand-side management. To further ensure that demand-side management programs which result in, or promote, energy efficiency are not disadvantaged in utility resource procurement decisions, we initiated a pilot program of shareholder incentives in D.90-08-068. Shareholder incentives can help ensure that the utility is motivated to procure the least-cost resources by providing a comparable opportunity for earnings from prudent investments in both demand- and supply-side alternatives. We will examine the effectiveness of the specific incentive mechanisms adopted in D.90-08-068, the longer term role of shareholder incentives in resource procurement and revisit the issue of earnings comparability after CACD's report to the Legislature is submitted in late 1992.

15. The differences among utility shareholder incentive mechanisms approved in D.90-08-068 should eventually converge toward a more uniform, statewide approach. Pending CACD's report on shareholder incentives, it is appropriate to establish a limited number of guiding principles governing future shareholder incentives. These principles should apply to shareholder incentive mechanisms proposed after the final adoption of this rulemaking.

16. Shareholder incentive mechanisms should be designed to encourage energy efficiency and load management programs that promote energy efficiency. Load building and load retention programs should not be eligible for shareholder incentives. Fuel

ATTACHMENT 1

Page 9

substitution programs should also be ineligible pending resolution of the technical issues associated with assessing the benefits to ratepayers of these programs.

17. Shareholder incentive mechanisms should balance risk and reward. Coupling rewards for good performance with penalties for poor performance represents a reasonable way of achieving that balance. Any proposed shareholder incentive mechanism should therefore include minimum performance requirements and accompanying penalty features. The utilities should focus minimum performance requirements on efforts to achieve cost-effective energy efficiency opportunities, and in particular, on those which represent potential lost opportunities.

18. Shareholder earnings derived from a shared-savings approach to incentives reflect the value of the energy saved. Incentive mechanisms that determine earnings based solely on program expenditures are unrelated to that value. Thus, for programs whose savings can be reasonably estimated, a shared-savings approach is superior. Shareholder incentive mechanisms should be based on a shared-savings approach for programs whose savings can be reasonably estimated. We will defer the application of shared savings to SoCal's programs until after gas marginal costs are adopted in I.86-06-005.

19. As an interim policy, shareholders' rate of return on DSM programs should be no greater (and could be lower) than shareholders' rate of return on utility-constructed plants. On an interim basis, this policy should be applied to specific shareholder incentive mechanisms, as follows:

ATTACHMENT 1

Page 10

- o For incentive mechanisms based on program expenditures, such as SoCal Gas' current variable rate of return mechanism, the earnings rate on program costs should not exceed (and could be lower than) the authorized rate of return on utility constructed plants;
- o For shared-savings mechanisms using an "S-curve" function, such as the mechanism adopted for SCE in its recent GRC, the incentive payment target should be calculated using forecasted utility expenses at 100% of forecasted net savings, times a rate that is no higher (and could be lower) than the authorized rate of return on utility constructed plants; and
- o For "flat rate" shared-savings mechanisms, such as the ones adopted for SDG&E and PG&E in D.90-08-068, the shared savings rate should not exceed (and could be lower than) the authorized rate of return on utility constructed plants.

We will revisit the issue of comparable earnings and earnings limits/caps in a later phase of this proceeding, after CACD's report has been submitted.

#### VI. Measurement, Evaluation, and Accounting

20. The stable development of DSM programs that deliver reliable energy savings for California's ratepayers depends on well-designed methods of program measurement and evaluation. Thoughtful measurement and evaluation practices are required to gauge utility performance, verify energy savings, and improve the design and success of future DSM programs. The utilities should make program measurement and evaluation a priority.

ATTACHMENT 1

Page 11

21. It is reasonable to base shareholder incentives on prespecified savings until we can implement a shift from prespecified savings estimates to ex post verification made after program implementation. Though prespecified savings estimates increase risks to ratepayers, the measurement protocols developed as part of the Blueprint help mitigate these risks. To implement the shift to ex post verification, we will conduct a consolidated measurement and evaluation (M&E) phase in this Rulemaking and Companion Investigation. This M&E phase will serve as the forum for addressing the following types of measurement-related issues:

- o Pre-Implementation Measurement. The acceptable methods and procedures for estimating, prior to program implementation, the various program impact parameters for DSM programs. These include the load impacts (and its components), participation level, utility costs, total costs and useful lives of DSM measures.
- o Post-Implementation Measurement. The acceptable methods and procedures for measuring DSM program impacts after program implementation. This includes developing guidelines for M&E activities beyond current activities.
- o Incorporating the Results of Measurement Studies. Using the results of M&E activities to (1) refine pre- and post-implementation measurement protocols, (2) adjust forecasts of DSM program savings, and (3) adjust shareholder earnings under a shared-savings mechanism.

We intend to base payments of shareholder incentives on post-installation verified savings, for all shared-savings programs authorized as of January 1, 1994, using the protocols adopted in the M&E phase. Verification may be in the form of metered results, sample bill analysis, or other post-installation measurement



ATTACHMENT 1

Page 12

methods that we deem appropriate. As part of the M&E phase, we will consider procedural options for refining and updating M&E protocols on an on-going basis.

22. It is important that forecasts of DSM savings be reliable in meeting California's energy needs. Rigorous measurement and evaluation enhances the reliability of these forecasts. The utility will include a comprehensive and aggressive measurement plan with any request for DSM funding which includes shareholder incentives. For programs authorized for 1992 and 1993, this plan should be consistent, at a minimum, with the protocols contained in Appendix A of the Collaborative Blueprint. For programs authorized for 1994 and beyond, this plan should be consistent with the protocols adopted in the M&E phase of these proceedings.

23. The utility should explicitly quantify the following for any proposed shareholder mechanism:

- o The rate effects of both the program incentive and program costs to which the incentive will apply;
- o The program's net resource savings; and
- o The timing of both rate effects and resource savings.

24. The DSM Advisory Committees provide an informal forum for parties to review utility programs and to work with the utility on any proposed changes to its programs. These activities can augment effective program implementation. The utilities should continue the Advisory Committees. For the Committees to be effective, the utilities should clearly define the role of the Committee and the input it seeks; provide the Committee with comprehensive information on program implementation activities; notify Committee

ATTACHMENT 1  
Page 13

members in a timely fashion of proposed program changes; provide adequate information supporting such changes; and coordinate Committee activities with current and anticipated regulatory proceedings and other review procedures. To this end, respondents should establish a single clearinghouse for all Advisory Committee noticing and scheduling, as described in Section IV.H of this order.

25. We intend to improve the consistency with which DSM programs are treated across utilities and across regulatory forums by initiating the consolidated M&E phase described in Rule 21 and by addressing generic policy and methodological issues in this Rulemaking and Companion Investigation. Determinations made in these proceedings should be used in any subsequent utility-specific proceedings. We may also consider further consolidation of DSM-related issues at a later stage of these proceedings, after our generic investigation on ratemaking (R.90-02-008/I.90-08-006) is completed.

#### VII. Bidding

26. Introducing competition into the utility's acquisition of demand-side resources offers great potential for achieving our goal of reliable, least cost, environmentally sensitive energy service.

27. The utilities will work with the Division of Strategic Planning (DSP) to develop and implement several DSM pilot bids. PG&E has volunteered to conduct a pilot bid based on a partnership approach. Public Utilities Code § 747 requires this Commission to test at least one DSM-only bid, an integrated

ATTACHMENT 1  
Page 14

resource bidding pilot, and a DSM bidding pilot for gas utilities. As one of their DSM-only bid pilots, respondents should test at least one replacement bid. CACD will perform an evaluation of the pilots, in consultation with the California Energy Commission. This Commission will submit its report, with any recommendations, to the Legislature by January 1, 1993.

28. The bid pilots should be designed to ensure that 1) the procurement process is fair, 2) contract terms equitably share risks, and 3) utility market power is mitigated. To the extent practicable, the bidding pilots should incorporate both price- and non-price factors for all DSM programs.

29. Each of the pilots, including PG&E's, will be addressed in the investigation opened in conjunction with this rulemaking.

ATTACHMENT 1  
Page 15

APPENDIX  
Page 1

DSM PROGRAM TERMS AND DEFINITIONS

**Lost Opportunities**

Efficiency measures which offer long-lived, cost-effective savings that are fleeting in nature. A lost opportunity occurs when a customer does not install an energy efficiency measure that is cost-effective at the time, but whose installation is unlikely to be cost-effective later.

**Cream Skimming**

Cream skimming results in the pursuit of a limited set of the most cost-effective measures, leaving behind other cost-effective opportunities. Cream skimming becomes a problem when lost opportunities are created in the process.

**Resource Value**

An estimate of the reliable energy (e.g., kWh, therms) and capacity (e.g., kW, Mcfd) reductions resulting from a DSM program. The calculation of resource value and associated benefits should be consistent with the avoided costs of electric service adopted in the Biennial Resource Plan Update and, when completed, the avoided costs of natural gas service adopted in Investigation 86-06-005.

**Uneconomic Bypass**

Customer power generation or supply at a cost less than utility retail tariffs, but above utility marginal cost to serve. Electric bypass deferrals may or may not include a corresponding opportunity cost due to the potential loss in natural gas sales. An opportunity cost is realized if the customer would have installed natural gas-fired generation equipment to produce electricity for the customer's use.

**ATTACHMENT 1**

Page 16

**APPENDIX**

Page 2

**I. Conservation and Energy Efficiency Programs**

Conservation programs are defined as programs which have the effect of reducing consumption of at least one fuel during the hours of operation of the equipment or building affected by the measure. Energy efficiency programs are defined as programs which reduce energy use for a comparable level of service.

**Residential Conservation and Energy Efficiency**

**Residential Information Programs:** Programs intended to provide customers with information regarding generic (not customer-specific) conservation opportunities. For these programs, the information is unsolicited by the customer. Programs which provide incentives in the form of unsolicited coupons for discounts on low cost measures are included.

**Residential Energy Management Services:** Programs intended to provide customer assistance in the form of information on the relative costs and benefits to the customer of installing measures or adopting practices which can reduce the customer's utility bills. The information is solicited by the customer and recommendations are based on the customer's recent billing history and/or customer-specific information regarding appliance and building characteristics.

**Residential Weatherization Retrofit Incentives:** Programs which provide financial incentives (rebates, low-interest loans) to install weatherization measures in existing buildings. Incentives are predominantly weatherization measures that affect the building shell. Incentive payments for other measures (nonbuilding shell) are included, usually when provided in connection with building shell materials.

ATTACHMENT 1

Page 17

APPENDIX

Page 3

**Residential New Construction:** Programs which provide financial incentives or significant technical assistance to builders of new residential structures, with the primary purpose of exceeding existing energy efficiency Title 24 standards. Program activities include fuel substitution activities when promoted as an integrated package of measures which promote electric and gas energy efficiency. If the building type is not subject to Title 24 standards, New Construction programs should offer financial incentives or technical assistance to exceed energy efficiency over currently acceptable standard practice for these facilities. New Construction programs include education and support activities for designers, architects, building officials, and other parties who may influence the supply of and demand for buildings that are more efficient than Title 24 requires (or current practice if Title 24 does not apply).

**Appliance Efficiency Incentives:** Programs which provide incentives to customers in existing residential structures. The incentives are intended to lead to the installation of a more efficient appliance than would have been installed in the absence of the program. Incentives are paid (to manufacturers, salespersons, or customers) for the replacement of an existing appliance or the installation of a new appliance in an existing residential building.

**Direct Assistance:** Programs which are intended to provide assistance to low income or other "target" customer groups. Assistance consists primarily of full subsidies of the conservation measures. The primary purpose of the program is to serve an equity objective in assisting customers who are highly unlikely or unable to participate in other residential programs.

**Master Meter:** Program intended to reduce energy usage in existing residential structures which have master meters by replacing the master meter with individual meters.

**Other Residential Conservation Programs:** Any residential conservation program or program activities not defined above.

ATTACHMENT 1  
Page 18

APPENDIX  
Page 4

**Nonresidential Conservation and Energy Efficiency**

**Nonresidential Information Programs:** Programs intended to provide customers with information regarding generic (not customer-specific) conservation opportunities. For these programs, the information is unsolicited by the customer. Programs which provide incentives in the form of unsolicited coupons for discounts on low cost measures are included.

**Commercial Energy Management Services:** Services to customers in commercial buildings which provide customer assistance in the form of information on the relative costs and benefits to the customer of installing measures or adopting practices which can reduce the customer's utility bills. The information is solicited by the customer and is based on the customer's recent billing history and/or customer-specific information regarding appliance and building characteristics.

**Industrial Energy Management Services:** Services to customers in industrial facilities which provide customer assistance in the form of information on the relative costs and benefits to the customer of installing measures or adopting practices which can reduce the customer's utility bills. The information is solicited by the customer and is based on the customer's recent billing history and/or customer-specific information regarding appliance and building characteristics.

**Agricultural Energy Management Services:** Services to customers in agricultural facilities which provide customer assistance in the form of information on the relative costs and benefits to the customer of installing measures or adopting practices which can reduce the customer's utility bills. The information is solicited by the customer and is based on the customer's recent billing history and/or customer-specific information regarding appliance and building characteristics.

**ATTACHMENT 1**

Page 19

**APPENDIX**

Page 5

**Commercial Energy Efficiency Incentives:** Programs which provide incentives to customers in existing commercial buildings. The incentives are intended to lead to the installation of a more efficient device(s) or systems utilizing the same energy source than would have been installed in the absence of the program.

**Industrial Energy Efficiency Incentives:** Programs which provide incentives to customers in existing industrial facilities. The incentives are intended to lead to the installation of a more efficient device(s) or systems utilizing the same energy source than would have been installed in the absence of the program.

**Agricultural Energy Efficiency Incentives:** Programs which provide incentives to customers in existing agricultural facilities. The incentives are intended to lead to the installation of a more efficient device(s) or systems utilizing the same energy source than would have been installed in the absence of the program.

**Nonresidential New Construction:** Programs which provide financial incentives or significant technical assistance to builders of new nonresidential structures, with the primary purpose of exceeding existing energy efficiency Title 24 standards. Program activities include fuel substitution activities when promoted as an integrated package of measures which promote electric and gas energy efficiency. If the building type is not subject to Title 24 standards, New Construction programs should offer financial incentives or technical assistance to exceed energy efficiency over currently acceptable standard practice for these facilities. New Construction programs include education and support activities for designers, architects, building officials, and other parties who may influence the supply of and demand for buildings that are more efficient than Title 24 requires (or current practice if Title 24 does not apply.)



ATTACHMENT 1

Page 20

APPENDIX

Page 6

**Street Lighting Conversion:** Programs designed to replace less efficient lighting equipment with more efficient lighting equipment in utility-owned street lights.

**Other Nonresidential Conservation/Energy Efficiency Programs:** Any nonresidential conservation program or program activities not defined above.

**System Efficiency**

**Conservation Voltage Reduction:** Programs which improve utility generation system efficiency by regulating the voltage levels of delivered electricity.

**Other System Efficiency Programs:** Any other program intended to improve the efficiency of utility-owned transmission or distribution facilities.

II. Load Management

Load management programs are defined as any program which reduces electric peak demand or has the primary effect of shifting electric demand from the hours of peak demand to non-peak time periods, with a neutral effect on or negligible increase in electricity use.

**Residential Air Conditioner Cycling:** Programs which involve the installation of cycling devices on residential air conditioning equipment. Air conditioning loads are interrupted ("cycled" or "shed") by the utility at times of peak load.

**Residential Time-of-Use:** Programs intended to reduce customer bills and shift hours of operation of appliances to off peak periods through the installation of a time-of-use meter and the availability of time-differentiated rates.

**Pool Pump Timer:** Programs which involve the promotion of shifting pool pump hours of operation from on-peak to off-peak periods.

ATTACHMENT 1  
Page 21

APPENDIX  
Page 7

**Nonresidential Air Conditioner Cycling:** Programs which involve the installation of cycling devices on air conditioning equipment in nonresidential buildings. Air conditioning loads are interrupted ("cycled" or "shed") by the utility at times of peak load.

**Nonresidential Time-of-Use:** Program intended to reduce customer bills and shift hours of operation of equipment from on-peak to off-peak periods through the installation of a time-of-use meter and the availability of time-differentiated rates. Mandatory TOU participation is not included.

**Thermal Energy Storage:** Programs which provide financial incentives to customers or builders to install thermal storage equipment and materials capable of fully or partially storing thermal energy during nonpeak periods for use during peak demand periods.

**Interruptible/Curtailable:** Programs which provide financial incentives in the form of reduced billing charges to customers in exchange for the capability of utility-initiated interruption or curtailment of service. Terms of the reduced service agreement (frequency, duration, penalty clauses, incentive levels, cost of equipment) are agreed to by contract.

**Other Load Management:** Any other load management program not defined above.

### III. Fuel Substitution

Fuel Substitution programs are defined as programs which are intended to substitute energy using equipment of one energy source with a competing energy source.<sup>3</sup>

---

<sup>3</sup> "Energy source" currently refers only to utility-supplied electricity and natural gas. As the analytical constraints become less restrictive for evaluating alternative fuels, this stipulation may be broadened accordingly.

**ATTACHMENT 1**

Page 22

**APPENDIX**

Page 8

**Electric Fuel Substitution:** Programs which promote the customer's choice of electric service for an appliance, group of appliances, or building rather than the choice of service from a different fuel. These programs increase customers' electric usage and decrease usage of utility-supplied natural gas. Electric fuel substitution includes Bypass Deferral Special Contracts which cause the deferral or avoidance of the installation of gas-fired equipment which would have been used to produce electricity for the customer's use, and are negotiated and established pursuant to CPUC procedures. Contract provisions may include a discounted rate, conservation and/or load management incentives, or a combination of rate and conservation/load management incentives.

**Gas Fuel Substitution:** Programs which promote the customer's choice of natural gas service for an appliance, group of appliances, or building rather than the choice of service from a different energy source. These programs increase customer usage of natural gas and decrease usage of an alternative fuel.

**IV. Load Retention and Load Building**

Load retention consists of programs which provide an incentive or substantial technical assistance and which defer or change a customer decision to terminate or reduce utility service. In addition to retaining utility-supplied gas and electric loads, the program may cause a change in the mix of electric and gas loads. Load retention activities which are directed primarily towards electric loads are classified as "Electric Load Retention" programs. Load retention activities which are directed primarily towards natural gas loads are classified as "Gas Load Retention" programs.

ATTACHMENT 1

Page 23

APPENDIX

Page 9

Load building programs are defined as programs which have the effect of increasing the annual sales/consumption of one or both utility-supplied fuels without decreasing the consumption of either fuel. Load building activities which are directed primarily toward electric load are classified as "Electric Load

Building" programs. Load building activities which are directly primarily toward natural gas loads are classified as "Gas Load Building" programs.

V. Measurement and Evaluation Programs

Measurement and Evaluation activities are defined as programs and activities intended to establish or improve the ability to measure and evaluate the impacts of demand-side management programs, collectively or individually.

Load Metering: Activities related to the collection, analysis and reporting of data obtained through the use of metering devices. Includes metering at the level of appliances within buildings as well as total building metering and class load metering. Metering activities are conducted on samples of customers for the primary purpose of obtaining consumption and demand estimates which are representative of a customer class, not of DSM program participants.

Customer Surveys: Activities related to the collection, analysis and reporting of data obtained from customer contacts (e.g. mail, telephone, on-site) regarding building characteristics, appliance holdings, energy efficiency measures in place, customer attitudes, or other information related to current or future energy usage patterns. Survey activities are conducted on samples of customers for the primary purpose of obtaining information about customers which are representative of a customer class not of DSM program participants.

ATTACHMENT 1  
Page 24

APPENDIX  
Page 10

**New Technology Testing:** Activities related to the measurement and assessment of demand-side technologies for possible inclusion in future C&LM programs. Costs associated with in-site testing and evaluation of measures or devices in a pilot program are included.

**Program Evaluation:** Activities related to the collection, analysis, and reporting of data for purposes of measuring program impacts from past, existing or potential program impacts. Activities include program-specific evaluations as well as activities which evaluate more generic issues which are relevant to more than one program. Costs associated with the preparation of this Reporting Requirements Manual to the CPUC are included as a separate program within this category.

**Other Measurement:** Activities not listed above which contribute to the measurement of past, current, or future demand side program impacts.

**VI. Other DSM Activities**

Other DSM activities are defined as a residual category to capture expenditures which cannot be meaningfully included in the previously-defined DSM program categories. A primary element includes general administrative and support costs which cannot readily be attributable to the implementation of any specific DSM program.

**Program Element Definitions**

**Description:** "Program element" refers to either customer classes within sectors or to end uses/measures within customer classes or customer sub-classes.

Customer classes are defined by either rate schedule, SIC code, or energy consumption characteristics. "End use" refers to the purpose for which energy is used (see below); "measure" refers to specific customer actions which reduce or otherwise modify energy end use patterns.

ATTACHMENT 1  
Page 25

APPENDIX  
Page 11

**Customer Sub-Class Program Element Definitions:** For the residential sector the following three types of program element sub-class designations should be used:

Single Family(SF)  
Multi-Family(MF)  
Mobile Home (MH)

For the nonresidential sector, sub-class program elements consist of customers classified by SIC code and size (consumption/demand). The size program element designations are as follows:

Large (greater than 500 kw)  
Medium (less than 500 kw and more than 49 kw)  
Small (less than 50 kw)

Customer SIC-based program elements consist of the further disaggregation of "industrial" (per the program definition) into the four sub-class designations used by the CEC in the CFM process (TCU, Assembly, Process, and Mining/Extraction) and disaggregation of the Commercial Buildings into the 10 SIC-based building types used by the CEC.

**End Use Program Element Definitions:** Recommended end use definitions/acronyms for the residential sector are as follows:

SPHT(e)=space heating, electric;  
SPHT(HP)=space heating, heat pump;  
SPHT(g)=space heating, natural gas;  
SPCL(C)=central electric air conditioner;  
SPCL(Ev)=evaporative cooler;  
SPCL(HP)=space cooling, heat pump;  
SPCL(W)=window air conditioner;  
WATHT(e)=electric water heating;  
WATHT(g)=gas water heating;  
REFR=refrigerator;  
FREEZ=freezer;  
COOK(e)=electric range;  
COOK(g)=gas range;  
LGHT=lighting;  
PLPMP=pool pump;  
SPCL(g)=space cooling, natural gas;  
SPCL(gHP)=space cooling, natural gas heat pump;  
SPHT(gHP)=space heating, natural gas heat pump.

ATTACHMENT 1

Page 26

APPENDIX

Page 12

Recommended end use designations/acronyms for the commercial building sector are as follows:

LGHT(I)=indoor lighting;  
LGHT(O)=outdoor lighting;  
AC(e)=air conditioning, electric;  
AC(g)=air conditioning, natural gas;  
VENT=ventilation(motors/fans to operate HVAC equip);  
SPHT(e)=electric space heating;  
SPHT(g)=natural gas space heating;  
WATHT(e)=electric water heating;  
WATHT(g)=natural gas water heating;  
REPR=refrigeration  
COOK(e)=electric cooking;  
COOK(g)=natural gas cooking;  
MISC(e)=miscellaneous electric;  
MISC(g)=miscellaneous natural gas;  
SPCL(g)=space cooling, natural gas;  
SPCL(gHP)=space cooling, natural gas heat pump;  
SPHT(gHP)=space heating, natural gas heat pump.

**Other Terms:**

**Useful Life:** The length of time (years) for which the load impacts of a DSM measure/device is expected to last.

**Load Impact Adjustments:** Refers to any adjustments made to load impacts for purposes of valuing the impacts in the context of cost-effectiveness evaluation. The primary example would be the use of "Net-to-Gross" factors, as defined and used in the Standard Practice Manual for Economic Analysis of Demand-Side Management Programs, December, 1987. Other examples would include estimates of the amount and rate or decay in effectiveness of the measures, and therefore the decline in load impacts over time.

(END OF ATTACHMENT 1)