REVIEW OF COMMISSION POLICY TOWARD CONSERVATION AND LOAD MANAGEMENT PROGRAMS

Virginia State Corporation Commission
Staff Report
Case No. PUE900070

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I. INTRODUCTION

On January 7, 1991, the Virginia State Corporation Commission established an investigation to consider rules, if appropriate, and Commission policy toward electric and gas utility conservation and load management programs. The principal focus of the proceeding was to determine what Commission policy was necessary to promote optimal investment in demand side resources on the part of utilities in Virginia. The Commission's order identified a number of areas of interest and provided notice to the general public and a schedule for the case. The Commission directed that any interested parties file written comments and that the Commission's Staff analyze these comments and file a report and recommendations by April 26, 1991. This document is the Staff's report.[1]

This report identifies current Commission policy toward conservation and load management (CLM) and examines the impact of such policy on utility efforts to promote demand side programs. The appropriateness of current Commission policy in today's energy and regulatory environment is assessed. A variety of alternatives to current policy are also identified and reviewed. Finally, specific policy recommendations are

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[1]This report was prepared by the Commission's Division of Economics and Finance with the assistance of the Division of Energy Regulation.

made to move toward a comprehensive Commission policy that will better promote cost effective conservation and load management efforts on the part of regulated electric and gas utilities in Virginia.

There are four appendices to the report. A list of parties submitting comments in this proceeding is included as Appendix A. Appendix B provides key definitions and concepts related to utility resource planning and conservation and load management programs. The most recent "Report of the State Corporation Commission Reviewing Existing Conservation Programs of Regulated Virginia Electric and Gas Utilities" is provided as Appendix C. Appendix D provides an overview of current regulatory activity related to utility conservation and load management programs at other state commissions.

II. BACKGROUND

Before addressing current Commission policy and alternative policy, it will be useful to provide general overviews of the energy situation in the State and the conservation and load management activities of utilities operating in Virginia. A brief discussion of national policy to promote conservation and energy efficiency will also provide some context in which to discuss Commission policy.

ENERGY SITUATION IN VIRGINIA

Virginia has a diverse and dynamic energy sector. A thorough discussion of the energy situation in the State would include discussions of such industries as coal, natural gas, petroleum, electricity, and renewable resources. For the purposes of this report, however, a discussion of the energy situation will be limited to the electric and natural gas industries.

Electric Industry

Most of the electric utilities serving Virginia will have a need for additional capacity over the next ten years. Each of these utilities has plans to purchase and/or build capacity as well as manage its load growth with demand side programs. Brief highlights of the plans of major electric utilities operating in Virginia are provided below. More information concerning specific utility conservation and load management programs is provided in Appendix B.

Virginia Power is planning significant capacity additions through the period 1991 - 1999, including a 400 MW Company built facility to come on line in 1997, non-utility generation signed as a result of the Company's bid solicitations and recent arbitrations, two coal-fired units jointly owned with Old Dominion Electric Cooperative, and other projects currently under development or construction. The Company has implemented a variety of conservation and load management programs in the residential, commercial and industrial sectors. Major CLM programs include Energy Saver Homes, water heater controls, residential and commercial thermal storage, standby generation and curtailable service. Demand side programs are expected to reduce winter peak by 390 MW and summer peak by 238 MW in 1991.

American Electric Power (AEP), Appalachian Power's parent company, has planned no new capacity additions for Appalachian Power over the period 1990 - 1999. AEP is constantly evaluating conservation and load management programs for their cost-effectiveness. Currently, Appalachian Power's conservation and load management activities include information dissemination, home audits, and off-peak and Time-of-Day rates. The Company has recently implemented a pilot program in which residential customers are billed using a variable rate based on the demand for power at various times throughout the day.

Potomac Edison is a wholly owned subsidiary of Allegheny Power System (APS). APS is attempting to delay the need for new utility owned generation until 1997 by implementing load modification and conservation programs, purchasing capacity from

non-utility sources, exchanging capacity with a non-affiliated utility and reactivating existing capacity in cold reserve. The Company anticipates the need for a limited amount of peaking capacity during the 1997-99 period. The next base load facility for the APS system should not be needed until 2004. Allegheny Power System has recently developed a plan to comply with the Clean Air Act amendments of 1990 and currently is conducting a comprehensive re-evaluation of all its demand side alternatives.

Delmarva is expanding its load reduction program and continuing to evaluate new opportunities for load reduction programs. At the same time, Delmarva will be adding capacity over the next ten years through a purchase of 48 MW of peaking capacity beginning in 1992, an additional company built combustion turbine, and a planned bid solicitation for 150 MW of base load capacity. Delmarva offers a variety of energy conservation programs to both commercial/industrial customers and residential customers.

Old Dominion Power is a wholly owned subsidiary of Kentucky Utilities (KU) and operates in five counties in southwestern Virginia. Virtually all of KU's electric generation is coal fired. Additional capacity will be needed in the mid-1990's and will likely be provided through purchased power and peaking capacity. Old Dominion Power offers a number of programs designed to use energy efficiently. These include residential/commercial audits, media advertising, consumer literature, and bill inserts promoting energy conservation.

Most retail electric cooperatives serving Virginia have executed all requirements contracts for the purchase of power from Old Dominion Electric Cooperative (ODEC). The future capacity needs of the cooperatives may be filled through purchases from investor owned utilities, ODEC built facilities, or bid projects. The cooperatives are also committed to the promotion of conservation and load management programs. Current CLM programs include load control devices for water heaters and air conditioners, interruptible rates for large power users, residential energy audits, and the distribution of conservation information.

Natural Gas Industry

Most of Virginia's natural gas utilities are expecting continued growth in demand through the mid-1990s. Commonwealth Gas Services and Virginia Natural Gas anticipate particularly strong growth in new customers. However, while most gas distributors expect continued growth in customers, the consumption of natural gas per residential customer is expected to remain steady or decline over the next five years. This trend is attributed in part to the greater efficiency of new gas burning appliances and conservation measures. While most gas distributors expect a general tightening of gas supply over the next five years, no gas shortages are anticipated.

Gas distribution companies offer a number of conservation and load management programs. A sampling of the programs offered by the major gas distribution companies in Virginia is provided below.

Commonwealth Gas Services has implemented conservation and load management programs designed to distribute information to the general public, perform residential energy audits, promote the use of energy-efficient equipment, and bring new and highly efficient gas appliances to the marketplace. The Company is also active in identifying potential cogeneration projects and in providing technical assistance to potential customers to show the benefits of using gas to generate electricity.

Virginia Natural Gas promotes energy conservation and load management through a variety of programs designed to educate residential, commercial and industrial customers about energy conservation techniques and the availability of energy efficient gas appliances and equipment. These programs include energy audits, interruptible rates, and an energy efficient new home program.

Northern Virginia Natural Gas provides information on conservation to customers, conducts research on energy efficient gas appliances, finances weatherization equipment purchases and offers interruptible rates.

Roanoke Gas Company provides energy audits and educational materials. The Company promotes energy efficient gas appliances and other fuel saving devices. In addition, advice on the use of retrofit energy conservation devices is given to all customers.

United Cities Gas Company distributes conservation information to customers, performs conservation surveys, provides computerized energy cost projections to customers, and offers consulting assistance to commercial and industrial customers.

NATIONAL CONSERVATION EFFORTS

The promotion of conservation and energy efficiency has been the subject of considerable Congressional debate over the last twenty years. A number of bills have been passed that in one way or another are meant to promote greater conservation or efficiency in the use of natural gas and/or electricity.

The influence of federal policy on public utility regulation and utility conservation programs can be substantial. The Public Utility Regulatory Policies Act of 1978 (PURPA), for example, directly and comprehensively addressed the need for the promotion of increased conservation of electricity and natural gas. PURPA required state public utility commissions to consider eleven ratemaking and regulatory policy standards. Among the ratemaking standards were those addressing cost of service, declining block rates, time-of-day and seasonal rates, interruptible rates and load management techniques. Regulatory policy standards addressed master metering, automatic adjustment clauses, advertising, information to consumers, and procedures for termination of service. While many of these issues were not new, PURPA forced a reexamination of the issues in the interest of promoting conservation of energy, optimization of the efficiency of the use of resources, and equitable electric and natural gas rates.

Recent environmental legislation may also have a substantial impact on utility conservation programs and public utility commission policies. Subsection 404(f) of the new Clean Air Act allows utilities to take credit for sulfur dioxide emissions

averted by certain qualified energy conservation measures or qualified renewable energy sources. These credits would be available for use by the utility as offsets for emissions from existing and future generating facilities. The period of applicability of allowances under subsection 404 (f) begins January 1, 1992 and ends no later than December 31, 2000. Credits for a total of 300,000 tons of emissions would be available and would be allocated on a first come, first served basis.

Certain conditions would have to be met in order to receive credit for avoided emissions under the Clean Air Act. Among these conditions are that 1) the utility must implement a least cost plan which evaluates a range of resources, including new power supplies, energy conservation, and renewable energy resources; and this plan must be approved by the state regulatory authority; and 2) the state regulatory authority must establish rates and charges which ensure that the net income of the utility would not decrease as a result of specific cost effective conservation measures. This legislation will require utilities and public utility commissions to address these issues.

There is also the possibility that the current debate on a national energy strategy will lead to further legislation that would directly affect utility conservation programs. While the current Administration plan does not focus on conservation efforts, a number of alternative proposals do. The Johnston-Wallop bill, S. 341, would, among other things, require the rates

charged by state regulated electric utilities be set so that a utility's investment in energy conservation and energy efficiency resources is as profitable as its investment in the construction of new generating facilities. The legislation also authorizes the Secretary of Energy to provide grants to state regulatory authorities to encourage the consideration of conservation and other demand side measures as a means of meeting electric supply needs.

III. COMMISSION POLICIES REGARDING CONSERVATION AND LOAD MANAGEMENT

The State Corporation Commission has addressed conservation and load management issues on many occasions over the last decade. It has approved numerous tariffs and experimental programs to promote such utility efforts. The Commission has also addressed CLM issues in hearings associated with the Public Utility Regulatory Policies Act. However, the Commission has not adopted broad policy statements concerning conservation and load management, preferring instead to address such issues on a case by case basis. The Commission's "policy" regarding conservation and load management, therefore, is not a comprehensive policy statement, but rather a collection of orders and administrative practices established in various cases and proceedings over the last twenty years.

It should also be recognized that the Commission's influence on a utility's CLM efforts can be indirect. For example, past Commission decisions regarding advertising expenses, promotional practices and rate base treatment were not meant to define a policy toward utility conservation and load management programs. Nevertheless, such decisions can have a tremendous impact on the nature of a utility's CLM programs and should not be overlooked in discussing regulatory policy.

The Commission policies and Staff practices that most influence electric and gas utility conservation and load management programs are outlined below. For expository purposes, these policies and procedures will be divided into

three categories: 1) Commission orders, 2) Staff reviews of resource plans, and 3) accounting treatment.

COMMISSION ORDERS

Utility conservation and load management programs are most directly affected by Commission orders. Commission orders affecting CLM programs have arisen in several contexts. In many situations an order is issued in response to an application for approval of a rate or customer bill credit associated with a CLM program. Water heater and air conditioner control programs are two examples of programs that require Commission approval because there are associated rates or credits.

A second situation requiring Commission approval occurs when a proposed program would be in violation of the Commission's 1970 order addressing promotional practices. The Commission's policy regarding promotional practices was established in the final order in Case No. 18796, dated April 15, 1970. That order prohibited electric and gas utilities from giving any payment, subsidy, or allowance to influence the installation, sale, purchase or use of any appliance or equipment. The Commission's 1970 order was in response to two main concerns. One concern was the fairness of having a public service company compete with independent contractors in the retail appliance market. Another concern was how the payment by the utility of cash allowances for new appliance installations would be perceived by customers who were not eligible for such payments.

The Commission has also addressed CLM issues in the context of proceedings for construction approval of new generating facilities. The possibility of altering demand to avoid the necessity of constructing new facilities is one of the options considered by the Commission before awarding a certificate of public convenience and necessity. Conservation and load management issues concerning Virginia Power were addressed most comprehensively in a 1988 order approving the Company's construction of four combustion turbines. On September 7, 1988, Virginia Power filed an application for approval of the construction of combustion turbines at its Surry power station. In the final order in that case (Case PUE880083), dated November 17, 1988, Virginia Power was directed to perform comprehensive cost-benefit analyses of 1) expanding its conservation and load management programs and 2) using rate design as a load management tool.

Finally, it should be noted that a number of rate issues related to the promotion of conservation of energy supplied by electric utilities were considered by the State Corporation Commission during PURPA hearings. Section 111 of PURPA established standards for cost of service, declining block rates, time-of-day rates, seasonal rates, interruptible rates and load management techniques. In the early 1980s, the Commission began reviewing these standards for each of the utilities operating in Virginia. The most comprehensive analysis of the PURPA standards was accomplished in Case No. PUE790012, Application of Virginia Electric & Power Co., 1982 S.C.C. Ann. Rep., 435. Ultimately,

the Commission adopted five of the six standards for Virginia Power.

The Commission found that the record in the Virginia Electric and Power Case (Vepco) supported the adoption of the cost of service standard as it tended to advance the objectives of the Act. While the record did not display a consensus of what pricing method should be prescribed, the Commission found flaws with Vepco's marginal cost methodology. The Commission noted that the theoretical appeal of marginal cost pricing might not apply in "real world" utility service pricing.

The Commission related some parties' concerns over declining block rates but found that Vepco's rates were in compliance with the PURPA standard addressing declining block rates. This standard was also adopted.

The Commission held that time-of-day rates should be implemented only after their cost effectiveness for each class has been affirmatively established. Since that view is at variance with the standard, the Commission decided that the time-of-day rate standard should not be adopted as written.

The Commission found that seasonal rates promoted the three purposes of PURPA. At the time of the proceeding, Vepco had already received approval to implement seasonal rates. The seasonal rate standard was adopted.

The Commission also decided to adopt the interruptible rates standard. Further, Vepco was directed to implement on a voluntary basis the interruptible rates it had developed.

Finally, the Commission stated that implementation of the load management techniques standard might not encourage energy conservation in absolute terms, but would not negatively impact PURPA's energy efficiency objective. The Commission stated that this standard should be adopted and that Vepco should continue experimenting with load management techniques.

STAFF REVIEWS OF RESOURCE PLANS

Conservation and load management programs of electric utilities are also subject to periodic review by the Commission Staff outside of a formal hearing process. Electric and gas utilities file information annually concerning existing conservation programs. This information is summarized in a report produced each year by the Division of Energy Regulation.

Most investor owned electric utilities also file 20-Year Resource Plans with the Commission on a biennial basis. An important part of this filing is information concerning the demand side programs currently in place and those being considered by the utility. The Staff provided the Commission a comprehensive review and critique of Virginia Power's CLM programs in December 1989.

REGULATORY TREATMENT OF CLM COSTS

Another important aspect of Commission policy affecting conservation and load management programs is the regulatory treatment of the costs associated with such programs. In general, CLM costs can either be capitalized (rate based) or expensed. Many of the costs associated with CLM programs are

either promotional in nature, such as advertising costs, or administrative. These costs have been expensed and recorded by utilities as periodic costs. Some programs, however, have certain equipment and/or installation costs associated with them which are capitalized since the investment benefits many periods. Virginia Power's water heater control program, for example, had over $10 million in capital costs in 1989.

Commission treatment of advertising costs can be particularly important for those programs that require heavy promotion to be successful. Currently, the accounting treatment of advertising costs differs depending on the purpose of the advertising. (See Virginia Code, Section 56-235.2). In general, advertising that is intended to be educational or to promote conservation of energy is allowed by the Commission and expensed when incurred. However, advertising that simply promotes the use of electricity or the corporation's image has historically been disallowed.

Advertising practices of utilities have been addressed comprehensively by the Commission in two proceedings. On March 28, 1975 the Commission directed gas, telephone, and electric utilities to file reports describing their advertising practices and expenditures. The Commission issued an order and opinion on September 4, 1975 in the case (Case No. 19523). The Commission concluded that no advertising practice had come to its attention which should be lawfully proscribed. Utility management was considered to have acted responsibly in modifying advertising practices in response to conditions of the period.

It was stated, however, that utilities would continue to bear the burden of justifying their advertising expenses for ratemaking purposes.

The advertising practices of electric and gas utilities were the subject of further proceedings in 1980. In February 1980, rulemaking proceedings were established to consider the Advertising Standard under the Public Utilities Regulatory Policies Act. In the final order in Case No. PUE800021, dated November 10, 1980, the Commission rejected PURPA's standard governing advertising practices. A major concern of the Commission was the "vagueness and ambiguity found in the language of the Advertising Standard." The Commission decided that its current policy more effectively advanced the purposes of efficiency, conservation and equitable rates than did the PURPA Advertising Standard.

IV. THE NEED FOR POLICY MODIFICATIONS

The State Corporation Commission's policy regarding utility conservation and load management programs can be an important component of the energy policy of Virginia in the 1990s. The Staff believes that the Commission should take steps now to assure that its policy fully promotes cost effective conservation and load management programs on the part of electric and gas utilities operating in Virginia. As the Commission recognized in its order establishing this proceeding, there is the "potential for energy efficiency and conservation measures to meet a significant portion of the projected growth in energy demand in Virginia." This potential can be achieved if the Commission adopts a comprehensive policy to encourage cost effective conservation and load management.

The need for policy modifications is based not so much on any one factor but rather a combination of factors. First, the Staff believes that there are aspects of Commission policy that act as direct impediments to the development of cost effective demand side programs. Current restrictions on promotional allowances are an example.

Second, there are aspects of the traditional cost recovery and rate setting process that may act to discourage utility investments in conservation and efficiency. The potential for "lost revenues" and the ratemaking treatment of the costs associated with CLM programs fall into this category. These factors are certainly not unique to this

Commission's policy; they are inherent within the framework of public utility regulation as it has developed in this country.

There are also continuing developments at the federal level which may have undesired consequences for states that do not modify policy regarding electric utility planning and cost recovery. These include the 1990 Amendments to the Clean Air Act and proposals for changes to national energy policy.

The final major factor motivating the Staff's recommendation for policy change involves market failure issues and the pricing of natural gas and electricity. The rates set for gas and electricity do not send price signals to consumers that promote optimal levels of conservation and energy efficiency. Rates are set by the Commission to meet multiple objectives including rate and revenue stability, recovery of revenue requirements, avoidance of undue discrimination and administrative simplicity. While there are many reasons for current rate setting practices, such practices can distort energy markets. The presence of inappropriate price signals and certain market barriers to energy efficiency investments are legitimate reasons to consider policy changes to promote additional investment in conservation and efficiency.

The remainder of this report will examine various aspects of Commission policy regarding CLM and discuss and evaluate policy options. Numerous issues have been raised by participants in this proceeding and many of these issues are quite complex.

While the report does not address all the issues raised by parties, it does begin to address what the Staff considers to be the major issues.

V. KEY POLICY ISSUES REGARDING CONSERVATION AND LOAD MANAGEMENT IN VIRGINIA

Staff has identified what it considers to be the more important policy issues that have arisen concerning utility conservation and load management programs. Many of these issues were discussed to varying extent by the parties submitting comments in this proceeding. The fundamental issue to be addressed is whether or not current Commission policy is promoting optimal investment in demand side resources on the part of utilities in the state. If the Commission determines that its policy is not promoting optimal investment in demand side resources, it should address what policy changes are needed to promote optimal investment. Key issues are the following:

PROMOTIONAL ALLOWANCES AND ADVERTISING

The Commission's 1970 order regarding promotional allowances limits the options available to utilities to promote conservation and load management programs. The policy needs to be reexamined in light of the utility and regulatory environment that exists in the 1990s.

COST RECOVERY OF DEMAND SIDE PROGRAM COSTS

Regulatory treatment of the costs associated with demand side programs is extremely important. Traditional techniques for recovering costs can inhibit utility enthusiasm for such programs. Staff considers the "lost revenues" issue and the issue of rate basing versus expensing to be of particular interest.

ENVIRONMENTAL/SOCIETAL COSTS

This issue involves the extent to which environmental and other societal benefits of conservation programs are included in cost/benefit analyses of such programs. Environmental considerations are extremely important in Virginia in light of extensive plans for construction of new generating facilities in the State.

RATE DESIGN

Rate design can play a key role in a comprehensive strategy to promote cost effective conservation programs. Utility consumers respond to the level and structure of the rates they are charged. The importance of price signals should not be overlooked. The effectiveness of Commission rate policy in promoting energy efficiency needs careful examination.

DEMAND SIDE BIDDING

While there has been significant progress in the development of bidding programs for non-utility generation in Virginia, there has been no experience with demand side bidding. The possibility of developing demand side bidding programs is an issue that should be explored.

COMMISSION REVIEW OF CLM PROGRAMS

This issue concerns the nature of the Commission's review and oversight of utility long term resource plans including conservation and load management programs.

UTILITY INCENTIVES FOR CONSERVATION

There are a variety of ways in which the Commission can provide a positive incentive for a utility to invest in conservation and energy efficiency. This issue involves whether incentives are needed, and if they are needed, how incentives should be structured.

OTHER ISSUES

The Staff believes the issues identified above are the key policy issues that need to be addressed by the Commission in this proceeding. However, there are several other issues that are also important and are discussed briefly in this report. These include CLM program cost effectiveness and measurement issues and the need for accurate consumer information about efficiency and conservation options.

VI. DISCUSSION OF POLICY ISSUES

This section discusses the issues identified in the previous section, and where appropriate, presents a number of alternative policies to better promote cost effective conservation and load management. These proposed policy changes address most of the issues identified earlier in the report. Specific policy recommendations are made in some areas. However, in other areas several policy alternatives are identified for the Commission's consideration.

The Staff considers this proceeding to be only the first step in addressing the many CLM issues that have arisen. The Staff's report will identify those areas where it is possible to make changes now. Future proceedings will certainly be needed to address other issues in adequate depth. This report will also outline those issues that need further examination.

PROMOTIONAL ALLOWANCES AND ADVERTISING PRACTICES

In its Order initiating this investigation, the Commission posed specific questions regarding the role of utilities in promoting appliances and equipment. Although the Commission's questions dealt primarily with promotional allowances - direct payments or subsidies to influence the installation, sale or purchase of energy using equipment - a related issue is promotional advertising. Since promotional allowances and promotional advertising are often heavily used in marketing CLM programs, the regulatory treatment of these activities can affect the willingness of utilities to undertake particular CLM programs.

The Commission's policy toward promotional practices of utilities is very important given the competition that now exists between the electric and gas industries. Competition for residential customers has been particularly strong. Utilities will likely continue to want to promote their product in an effort to maintain or increase market shares. Any discussion of policy reform should recognize the realities of today's more competitive electric and gas markets.

Promotional Allowances

The Commission's current policy on promotional allowances was adopted in an Order dated April 15, 1970, in Case No. 18796. In pertinent part, the Order states:

> No electric or gas utility shall give or offer to give any payment, subsidy or allowance, directly or indirectly, or through a third party, to influence the installation, sale, purchase or use of any appliance or equipment.

As is evident, the current policy does not distinguish between allowances for energy conservation equipment and promotional payments designed to increase energy sales or market share. In essence, any promotional allowance for any reason is effectively prohibited for rate recovery purposes under current policy. However, the Commission's current promotional allowance policy does not prohibit certain "below-the-line" utility activities, such as appliance merchandising. Utilities can, of course, request a waiver of the Commission's promotional allowance policy for a specific program, but in practice have rarely done so. The policy does not currently provide any guidance or criteria for waivers.

Potomac Edison's January 1990 application for an add-on heat pump program and Virginia Power's 1990 incentive proposal for higher efficiency heat pumps have focused attention on the constraints imposed by the Commission's 1970 Order. In addition, there has been significant interest recently in the use of natural gas as an alternative to gasoline for motor fuel. The current policy could limit how gas powered vehicles might be promoted.

Most parties commenting in this proceeding generally support the utilities' use of promotional allowances for "cost-effective" CLM programs. However, many of the comments also expressed concerns about particular aspects of utilities' use of such allowances. Among gas companies, for instance, both Commonwealth Gas Services and Virginia Natural Gas argued that the use of promotional allowances should not be permitted to inappropriately influence existing competition among energy suppliers. The Attorney General believes promotional allowances should be permitted "only under narrow and defined circumstances", and noted a number of concerns about the use of promotional allowances. These concerns include: promoting utility load building programs to the detriment of ratepayers; making payments to customers who would have purchased the equipment anyway; adversely affecting competition among suppliers and manufacturers of appliances; adversely affecting the competition among the utility's commercial customers by providing subsidized equipment for some customers, but not others; and questions about how such payments should be recovered from ratepayers. The Virginia

Committee for Fair Utility Rates also expressed concerns about interclass and intraclass rate impacts of CLM promotional programs. Several of the parties commented that the Commission should establish standards for the use of promotional allowances, adopt criteria for determining cost effectiveness, and provide for prior Commission approval of specific programs.

The Commission also asked whether payments, subsidies or allowances should be allowed for programs that promote a cleaner environment. Some parties, including the Sierra Club, Natural Resources Defense Council, Environmental Protection Agency, and Virginia's Secretary of Natural Resources, support the use of promotional allowances for this purpose. Many utilities commented that any such program should be required to be cost beneficial, in the same manner as any other program.

In general, other states' policies prohibit or discourage promotional allowances for utility programs designed simply to increase sales or market share, but permit or encourage promotional incentives for energy conservation and load management programs. Some states prohibit all promotional allowances. In contrast, a few state commissions have ordered utilities to establish or consider establishing incentive programs for specific CLM measures.

The Staff believes that the Commission's policy on promotional allowances should be designed to permit the use of payments to encourage energy conservation, including the sale or installation of certain types of high efficiency appliances and equipment. Promotional allowances may also be appropriate for

encouraging new energy efficient technologies. Any use of promotional allowances should be part of an approved CLM or new technology program and meet appropriate cost effectiveness criteria. The Staff believes that promotional programs designed to promote a cleaner environment should be permitted so long as they are cost effective.

However, the Staff does not believe promotional payments should be permitted for programs designed primarily to increase load or sales, or capture additional market share. The potential competitive effects of the use of promotional allowances, alluded to by Virginia Natural Gas and Commonwealth Gas Services in their comments, is an important issue given the increased competition between electric and gas utilities. Some "energy efficiency" programs may be proposed which are in reality aimed at increasing market share at the expense of alternative energy suppliers. The task of distinguishing between what is energy efficiency and what is competitive marketing is made more difficult by the fact that the promotion of certain equipment may inherently have elements of both. In these situations, the Staff believes that the utility proposing the promotional allowance program should have the responsibility of showing that the energy efficiency benefits significantly outweigh any competitive marketing aspects of the program.

If the Commission decides to permit the use of promotional allowances for CLM programs, the Staff supports certain restrictions and standards. First, utility use of promotional payments or allowances should not put private businesses at a

competitive disadvantage. For example, a utility should design any appliance rebate program in a way that would include, rather than exclude, existing appliance dealers. Second, any utility promotional allowance program should be non-discriminatory, i.e., any customer in the target rate class should be eligible to take advantage of the program. Third, the energy efficiency ratings of any equipment promoted through the use of allowances or payments should exceed the federal standards contained in the National Appliance Energy Conservation Act (Public Law 100-12) and associated regulations, where applicable. Finally, any utility proposing a promotional program that competes with other energy suppliers should have the burden of estimating the impact and demonstrating that the program is in the overall public interest.

Staff is proposing rules governing the use of promotional allowances. These rules are shown in Attachment I to this report. The proposed rules are based on the Commission's current promotional allowance policy, as modified to incorporate the changes previously discussed. Changes and additions are shown in bold type in the proposed rules. If the Commission decides not to pre-approve utility CLM programs, then these proposed rules should be modified to clearly define acceptable CLM programs.

Promotional Advertising Practices

Promotional advertising by public utilities in Virginia is governed both by Commission policy and state law. Section 56-235.2 of the Virginia Code states, in part:

> Any rate, toll, charge or schedule of any public utility operating in this Commonwealth shall be considered to be just and reasonable only if:...(1a) the investor-owned public electric utility has demonstrated that no part of such rates, tolls, charges or schedules includes costs for advertisement, except for advertisements either required by law or rule or regulation, or for advertisements which solely promote the public interest, conservation or more efficient use of energy...

This portion of the Virginia Code applies to electric utilities only. Nothing in current state law proscribes advertising by gas utilities. In each case, however, the Commission permits utilities to recover reasonable advertising expenses for CLM programs.

The Staff believes that current Commission practice, and state law, regarding the types of advertising expenses that can be recovered through rates pose no barrier to utilities pursuing investments in CLM resources.

COST RECOVERY OF DEMAND SIDE PROGRAM COSTS

The manner in which the costs of demand side programs are recovered can have a tremendous impact on the willingness of a utility to undertake such programs. There are many issues associated with the traditional techniques for recovering costs. The discussion here will focus on two major issues: recovery of direct CLM program costs and "lost revenues."

Recovery of Direct CLM Program Costs

In its order initiating this proceeding, the Commission asked specific questions about alternative methods of cost recovery for direct CLM program expenditures and about whether the accounting treatment of CLM costs should be modified. These

questions are intertwined; any change in the ratemaking treatment of CLM program costs would necessarily affect the associated accounting treatment of those costs. The Commission identified two alternatives to the current ratemaking recovery of CLM program expenses. One alternative is to capitalize or "rate base" a greater portion of costs associated with CLM resources. The other alternative is to allow CLM program expenses to be recovered through some type of automatic adjustment clause.

Currently, most costs related to CLM programs are expensed because the types of costs incurred for CLM programs are generally considered as benefiting only one accounting period under Generally Accepted Accounting Principles (GAAP). An example is advertising expenses. Certain CLM costs may be capitalized or rate based if they are considered longer term assets that benefit more than one accounting period. An example of a CLM cost that is currently rate based is the equipment associated with water heater control programs.

Several arguments have been advanced for more extensive rate basing of energy conservation expenditures. The most basic argument is that conservation assets and acquisition costs are really no different than capital investment in generating resources. Long-term benefits result from demand side as well as supply side programs. Therefore, the rate recovery treatment should be similar. In the case of utility plant and equipment, costs are typically capitalized and recovered over the life of the plant. The costs associated with these supply side options include depreciation and an appropriate return on investment. In

expensing most of the costs of demand side options, it is inherently assumed that there are few long-term benefits associated with these options. This difference in accounting treatment may act to discourage energy conservation and load management investment. It is argued that rate basing CLM program costs would more properly match costs with benefits, and would allow the utility to earn a return on its conservation investment just as it earns a return on its generating resources.

The Commission has provided utilities an incentive to invest in generating capacity in the past by including Construction Work in Progress (CWIP) in rate base to allow a return on this investment. More recently, the Commission has permitted the CWIP balance to be updated in order to allow a return on investments made after the end of the test period. The Commission could consider a similar mechanism for investments in demand side resources to provide utilities with an incentive to promote CLM investments.

The option to rate base demand side investments may very well be considered a financial incentive by some utilities. Utilities that fear a slower growing rate base or even a decline in rate base may be reluctant to substitute new generating facilities with less capital intensive demand side programs. An increasing rate base generally means higher growth and higher profits.

On the other hand, a utility may prefer to expense CLM costs and receive a quicker cost recovery. This may be particularly advantageous if the utility is also permitted to use deferred or

memorandum accounting to track actual program expenses. Currently, for example, the Commission permits utilities to use certain deferred and memorandum accounting mechanisms in recovering purchased power costs. This treatment does not appear to be a disincentive for the purchased power option.

Certain purchased power costs, including all energy costs and the capacity costs associated with economy purchases, receive deferred accounting treatment because they are recovered through the fuel factor. The amount expensed is analyzed, and an amount is deferred based on the difference between what was built into the fuel factor and the amount actually incurred. This provides for dollar for dollar recovery of energy and economy capacity costs. On the face of it, dollar for dollar recovery of these supply side expenditures creates a disincentive to invest in demand side options.

Demand side programs may be further disadvantaged by the use of memorandum accounting mechanisms for purchased power capacity costs as is done for Virginia Power. In fact, memorandum accounting of this nature may provide utilities with an opportunity to over recover purchased power capacity costs. This opportunity for over recovery may cause utilities to prefer purchased power over either demand side or Company build options.

The Staff believes that the cost recovery practices of the Commission should place demand side options at least on a par with supply side options. Since investment in utility owned supply side options are generally rate based, we believe that a utility should have the option to propose rate basing comparable

investments on the demand side as well. It should be noted, as Appalachian Power did in its comments, that rate basing some CLM program costs would create a "regulatory asset." According to the Statement of Financial Accounting Standards No. 71, Accounting for the Effects of Certain Types of Regulation, creating a regulatory asset requires that there be a reasonable assurance of rate recovery. This suggests that some type of prior Commission approval of such CLM programs may be necessary. The Commission may also want to consider permitting CLM program cost recovery similar to current treatment of purchased power costs.

Many of the utilities that filed comments argued that the question of rate basing versus expensing depended on the nature of the program costs or type of CLM program. The Staff agrees with this point and believes that, as a practical matter, specific program cost recovery methods will have to be decided based on actual proposals.

Another method for recovering CLM program costs is to permit them to flow through an automatic adjustment clause. Automatic recovery could be accomplished by allowing CLM costs to flow through the fuel factor or by establishing a separate factor for energy conservation expenditures. The Staff does not believe that automatic adjustment clauses are appropriate for CLM program cost recovery. The Commission's general policy regarding the use of automatic adjustment clauses was stated in Application of Old Dominion Power Co., 1984 S.C.C. 408, aff'd., Old Dominion Power Company vs. State Corporation Commission. In rejecting

the Company's request for a purchased power adjustment clause, the Commission said "the purpose of an automatic adjustment clause is to allow a utility to adjust, without a rate proceeding, its revenues in response to changes in the cost of a relatively volatile, major expense item.....over which it has little control." CLM program expenses are neither major nor volatile, nor beyond the utility's control. Furthermore, automatic cost recovery would tend to remove CLM program expenses from the comprehensive review procedures employed in general rate cases - a result the Staff views as undesirable.

Adjustments for "Lost Revenues"

Many parties in this proceeding commented on the linkage between sales and profits inherent in traditional ratemaking and the implications of this linkage for utility conservation programs. In particular, by promoting conservation the utility is foregoing a profit on sales that would otherwise have been made. In a rate case, a utility's revenue requirement is calculated based on annualized test year sales adjusted for growth. If actual sales are greater than expected sales embedded in rates, profits will be higher as long as marginal revenues exceed short run marginal costs. However, if conservation efforts reduce sales below the level assumed in setting rates, profits will be lower. The extent of the impact on profits will depend on the level of conservation savings and the opportunity to sell displaced KWH elsewhere. Revenues will

be "lost" until the next rate case, when rates are reset to reflect new test year revenues and expenses.

Parties commenting in this proceeding have expressed different views on the issue of lost revenues. Virginia Power and Appalachian Power, for example, believe that some adjustment for "lost revenues" should be allowed in setting rates. Comments received from the Secretary of Natural Resources and many environmental and conservation groups also state the need for a utility to recover lost revenues associated with conservation programs. Other groups disagree. The Virginia Committee for Fair Utility Rates and the Office of the Attorney General, for example, argue that a mechanism for lost revenue recovery is not justified.

The earnings implications of conservation activities is an issue that is being addressed elsewhere in the country. In fact, the National Association of Regulatory Utility Commissioners (NARUC) has urged its member state commissions to consider the loss of earnings potential associated with the use of demand side resources and to ensure that the implementation of a utility's least cost plan is its most profitable course of action. Revisions to the Clean Air Act concerning credits available for emissions averted by certain energy conservation measures have also focused attention on the "lost revenue" issue. Several states have already developed lost revenue recovery mechanisms to reduce the potential for lower profits.

There are a variety of methods for addressing the lost revenue problem. One approach is to consider net revenue losses

as a cost of acquiring conservation resources. This cost could then be deferred and amortized and recovered in a utility's base rates.

Another approach is to defer lost net revenues and allow rate recovery through an automatic adjustment to the utility's tariff. This approach would be similar to the purchased gas cost adjustment of gas distribution companies.

A third approach is an ERAM type mechanism. This approach is based on the Electric Revenue Adjustment Mechanism (ERAM) used in California for many years. It is intended to completely decouple earnings from KWH sales. Under this approach, a non-fuel revenue target is established in a rate case. Differences in revenues either above or below the target level are added to an adjustment account. ERAM rates based on the balance of this account are then added to or subtracted from base rates on monthly bills. Thus, sales increases above forecast levels do not add to profits and sales decreases below forecast levels do not decrease profits.

A fourth policy alternative is to move more toward a future test year by adjusting test year revenues for expected CLM revenue effects. This could involve using either projections or more liberal adjustments of historic test year data. The potential for lost revenue is reduced somewhat by the use of a forward looking test year and by more frequent rate cases. In Wisconsin, for example, annual rate cases and the use of projected test years have tended to make the issue of lost revenues for CLM programs less important. However, projected

test years and frequent rate cases do not completely solve the incentive problem since every KWH conserved still reduces earnings after rates have been set.

There are a number of other options for addressing the lost revenue problem. Some of the accounting and ratemaking techniques for direct cost recovery discussed earlier, such as memorandum accounting, could potentially be applied to lost revenues as well.

Any recovery mechanism for lost sales would require estimates of KWH savings and lost revenues due to conservation efforts on the part of the utility. Quantifying the savings actually realized by a conservation program would be difficult. The savings must be attributed to the efforts of the utility, not by customers themselves or independent third parties. Furthermore, it is possible that a KWH saved through a conservation program could be sold to another customer, for example through off system sales. Any calculation for net revenue loss should include the possibility of sales to other customers.

The Staff recognizes that lost revenues may be a disincentive for utility investment in certain conservation programs. While the Staff does not recommend a specific adjustment mechanism for recovering "lost revenues", we do recommend flexibility in the ratemaking treatment of CLM costs in order to mitigate the effects of a loss of revenues. A utility that is concerned with potential lost revenues associated with a particular demand side program should be able to propose an

alternative cost recovery mechanism, but it must bear the burden of proof regarding the extent of lost revenues to be recovered.

ENVIRONMENTAL AND SOCIETAL COSTS

Perhaps the most controversial issue in this proceeding is the extent to which environmental and societal externalities should be considered when developing policy regarding conservation and load management. Increasing attention is being paid to the plans of public utilities in Virginia and how utility activities affect the environment. Although the Commission does not have environmental regulatory authority, the policy it establishes can have a significant impact on air and water quality in the state. In carrying out its charge to promote the public interest it does include environmental factors in its decision making.

Virginia electric utilities are currently analyzing strategies for complying with the 1990 Clean Air Act amendments. These programs have, for the most part, not been incorporated directly into the generation of long-term resource plans. Certain planning assumptions associated with clean air strategies are being reflected. For example, the assumptions may reflect the installation of a scrubber at a particular unit or the burning of compliance coal at another unit. However, the long-term resource planning processes of most electric utilities do not directly reflect an internal optimization of the clean air compliance options. Modeling constraints currently limit this direct incorporation. Consequently, clean air compliance strategies are typically fixed in the generation of resource

plans even though CLM programs may alter the optimal compliance plan. While it may not be practical to totally integrate Clean Air Act considerations into the resource planning process given the state of the art and the uncertainties surrounding the regulations implementing the Clean Air Act, the Staff believes that electric utilities should strive to directly incorporate clean air considerations into the resource planning process. The incorporation of those considerations should continue to evolve with modeling techniques, implementation of rules regarding the Clean Air Act and developments in allowance trading.

The issue of environmental externalities involves those environmental costs that are not currently absorbed or internalized by the utility. In essence, explicit quantification of environmental externalities in utilities' planning processes serves to tilt economic evaluation in favor of more environmentally benign technologies. It presents two fundamental questions for the Commission. Should this Commission require utilities to "internalize" environmental externalities when evaluating resource options? How should the costs be quantified if it is determined that certain costs should be internalized?

The environmental and societal benefits associated with demand side programs are often touted as important reasons for selecting such programs over supply side alternatives. However, the extent to which environmental and other societal externalities should be included in the cost/benefit analyses of CLM programs is controversial. Virginia Power, for example,

states that "it is not practical or appropriate for a utility, in the absence of some policy guidance, to include social externalities generally in its cost/benefit analysis." On the other hand, the Secretary of Natural Resources, as well as environmental groups, have urged the Commission to adopt policy that explicitly recognizes environmental externalities and the benefits of demand side programs.

Two basic arguments have been advanced for not incorporating environmental externalities and/or other societal benefits into the cost/benefit analysis of CLM programs. First, it is argued that such decisions should be made by federal or state legislative bodies, not by the Commission. Second, it is considered extremely difficult, if not impossible, to quantify the costs of environmental and other societal benefits.

Proponents of a cleaner environment argue that environmental externalities should be incorporated into a cost/benefit evaluation of demand side programs. While often difficult to measure, it is argued that such costs are clearly not zero. Several parties cited the growing number of state public utility commissions that have developed procedures to incorporate externalities into their program evaluation procedures.

The Commission should carefully consider its role in addressing environmental issues. The Commission clearly has an obligation to consider environmental factors in acting on behalf of the public interest. However, a policy change that acts to

internalize broad environmental or other societal benefits or costs could have far ranging implications. Such change may be better initiated by the General Assembly rather than the Commission.

If the Commission decides that environmental externalities should be considered in a utility's cost/benefit analyses, it must then consider an appropriate methodology for quantifying such costs. A variety of approaches to estimation have been used in various parts of the country. While some approaches are certainly preferable to others, no one approach has emerged as superior. Significant uncertainty surrounds all estimates of the costs of environmental externalities.

The Staff believes the environmental externality issue can be addressed in two stages. First, the Commission should determine whether or not externalities should be incorporated in a utility's cost/benefit methodology. That decision can be made within the scope of this proceeding. If the decision is made to incorporate externalities, then the issue of appropriate methodologies would be considered later. The Commission could either establish another proceeding or perhaps establish a task force to address the issue.

RATE DESIGN

Rate design can be a powerful tool in achieving conservation and load management objectives. A comprehensive rate design strategy should enhance and complement a utility's conservation and load management programs.

The importance of price signals in promoting efficiency in energy use must not be overlooked. Utilities should consider strategic rate setting along with other options in meeting conservation and load management objectives. The planning of rates must be integrated with the planning of demand side programs.

In general, rates are based on embedded costs in Virginia as they are in most states. From an economic efficiency perspective, rates based on embedded cost do not send as good a price signal as rates based on marginal costs. There may also be a certain degree of cross-subsidization among rate classes in many of the rates charged by Virginia electric and gas utilities. However, the Commission has pursued a general policy of emphasizing cost-based rates over the past few years, thus minimizing cross-subsidies.

A wide variety of rate design strategies are available to promote more efficient use of electricity. Many of these strategies attempt to send better price signals by basing rates more on the marginal cost of providing electricity rather than the embedded cost. Virginia Power and Appalachian Power, for example, both have available rate schedules based in part on marginal cost principles. However, such rate schedules are optional and only a limited number of customers subscribe.

Several parties commenting in this proceeding identified the importance of price signals in promoting conservation. The Office of the Attorney General encouraged the Commission to give closer scrutiny to cost allocation methods and rate design

techniques. The Virginia Committee for Fair Utility Rates also identified the need for accurate price signals and argued for the elimination of subsidies in rate setting.

Staff believes that any Commission policy changes to promote conservation and load management should be accompanied by a commitment to assess the role of rate design in promoting conservation and efficiency. The Commission has wide latitude and plenary authority in setting utility rates. A proactive policy to encourage conservation and efficiency through innovative rate design may be the single most influential policy change that the Commission can make.

One approach to promoting conservation and efficiency is for the Commission to explore ways to greatly increase the number of customers on rate schedules that send better price signals or to make such schedules mandatory for certain customer groups. It should also encourage utilities to continue to improve costing methodologies and to offer innovative new rates to encourage conservation and efficiency.

The Commission can recognize the importance of rate design in promoting conservation and efficiency in this proceeding. However, many of the rate design details must wait until future rate cases where rate design issues are addressed.

DEMAND SIDE BIDDING

Several of the parties commenting in this proceeding brought up the issue of demand side bidding. The Attorney General commented that utilities that have already taken advantage of the Commission's bidding procedure for electric generation should be

well positioned to incorporate CLM bidding programs into future planning. The Virginia Committee also supported the inclusion of CLM options in utilities' bidding programs. Both Transphase Systems, Inc., (Transphase) and SYCOM Enterprises (SYCOM), companies that have been awarded contracts in demand side or all-source bidding programs in other states, provided extensive comments on the benefits and potential risks of such programs.

Many of the arguments favoring the use of demand side bidding mirror those put forth to support bidding for supply side capacity. Demand side bidding, like supply side bidding, injects a marketplace pricing discipline into the utility resource acquisition process. The presence of a number of competing CLM program suppliers may help to lower costs, encourage technological innovation, and provide an independent check on utility cost estimates. To the extent that a utility seeks outside suppliers for CLM program services, a demand side bidding program would provide a structured solicitation and evaluation process that is more efficient for the utility and fairer to potential suppliers.

Some of the difficulties associated with demand side bidding were discussed by SYCOM and Transphase in their comments. One problem is the measurement of the results of third party demand side programs to assure that actual savings are achieved. Both SYCOM and Transphase argue that rigorous measurement provisions should be part of any demand side bid. It should also be noted that measurement is a problem associated with many CLM programs, including those sponsored by utilities.

A related problem is whether third party CLM programs will materialize as expected and perform as promised over the long term. While this problem is similar to concerns about third party power generation, the risk may be somewhat reduced for demand side projects since they typically represent much smaller capacity and energy increments. On the other hand, capacity available from third party supply side projects is more easily measured, and potentially more certain, than that of many demand side projects. For supply side projects, current techniques to mitigate performance risk include financial and technical screening of the developer and the project, performance based contracts, and the inclusion of attrition estimates in planning assumptions.

The issue of demand side bidding has been raised before in the context of a Commission proceeding to develop bidding rules. In comments filed September 17, 1990, in Case No. PUE900029, Ex Parte: In the matter of adopting Commission rules for electric capacity bidding programs, Virginia Power made the following observations on demand side bidding:

> Virginia Power has studied demand-side bidding at some length, and those studies are continuing. At present it does not appear that such bidding would provide any advantages over the Company's current method of planning and implementing demand-side programs, which includes requesting bids for goods and services that are needed for those programs. Given the uncertainty as to whether demand-side bidding will produce benefits, and the possibility that it would greatly complicate the bidding and bid evaluation process, such bidding clearly should not be required at present.

The Commission's current bidding rules, adopted by Order dated November 28, 1990, in Case No. PUE900029, certainly permit utilities to conduct demand side bidding programs. However, unlike some other state jurisdictions, neither demand side bidding nor supply side bidding is required in Virginia.

The Staff does not believe that the Commission should mandate that utilities use bidding, either for demand or supply side resources. Nevertheless, the Staff recommends that the Commission require Virginia Power to add a demand side bidding program to its experimental programs. The Commission encourages utility experimentation with special rates and demand side programs. Virginia Power has experimented with a number of programs in the last five years. Its rates for curtailable service, standby generation, and thermal storage all began as experiments so that the company could acquire operating experience. It currently is experimenting with a daily variable pricing rate (Schedule 10) and an air conditioning control program.

A number of utilities have already developed demand side bidding programs. Central Maine Power, Bonneville Power Administration, and Consolidated Edison are among several electric utilities that have solicited demand side bids. Some utilities have adopted demand side bidding in response to state commission policy; other utilities have done so on their own initiative. As of February 1991, projects totaling peak reductions of close to 200 MW were under development nationwide.

The advantages of demand side bidding are also recognized by Dominion Energy, an unregulated subsidiary of Dominion Resources, Inc.,and affiliate of Virginia Electric and Power. Dominion Energy has organized a group that will respond to utility requests for bids for demand side services.

Virginia Power has had extensive experience with supply side bidding and contracting for non-utility generation over the last four years. It is possible that much of the experience gained with supply side bidding can be transferred to demand side bidding. In Staff's view, many of the problems associated with demand side bidding are related to implementation - particularly questions about CLM program measurement and verification. An experimental demand side bidding program would bring these questions into sharp focus and offer the potential for developing better evaluation techniques. Any improvements in the measurement of CLM program results gained as a result of a demand side bidding program could be beneficial to the utility's own CLM programs as well. For these reasons Staff believes it is time to consider expanding the use of bidding programs to consider demand side bids, at least on an experimental basis, either in conjunction with supply side bidding or as a stand-alone process. Rather than assume that demand side bidding is somehow unworkable in Virginia, the Staff believes a better approach is to test it.

COMMISSION REVIEW AND APPROVAL OF CLM PROGRAMS

The proper role of the Commission and its Staff in reviewing and providing oversight of a utility's demand side

activities is a fundamental issue. Thus far, the Commission has refrained from conducting public hearings and formally approving utilities' long range resource plans. As discussed earlier, while certain CLM programs are approved by the Commission, there is no formal approval of the utility's total CLM program. There has also been no comprehensive policy guidance from the Commission on utility methodologies for conducting cost/benefit analysis.

Several parties to this proceeding have commented on the need for formal Commission approval of utility CLM programs. Potomac Edison, for example, states that the Commission should approve each CLM program before implementation. This approval would include any cost recovery mechanism associated with the program. Washington Gas Light likewise argued the need for Commission approval of CLM plans. They also identified a need for the Commission to address cost/benefit methodology.

The extent of Commission oversight of utility CLM programs is an issue that should be decided by the Commission in this proceeding. Commission oversight of utility resource planning, including demand side activities, has clearly increased in recent years. However, increased oversight has not been extended to include formal, comprehensive Commission reviews of utility demand side programs and evaluation techniques.

The Staff believes that formal Commission proceedings for review and approval of demand side programs are needed for several reasons. Formal proceedings would promote a comprehensive review of a utility's demand side strategy

and plans for implementation. Utility cost/benefit techniques would be scrutinized and perhaps improved as a result of the process. Pre-approval of specific programs would also act to reduce the uncertainty of the utility regarding cost recovery. Finally, it should be noted that "least cost" electric utility plans would have to be formally approved by this Commission in order for an electric utility to receive credits under Section 404(f) of the new Clean Air Act. Thus the Commission may be forced by federal legislation to approve or disapprove not just demand side programs but comprehensive resource plans if electric utilities are to receive any allowances under that section of the Act.

Commission review and approval of demand side programs could be accomplished in several different ways. One approach would be to require Commission review and approval of each new program prior to implementation. New utility programs would be reviewed on a case by case basis. The utility would be required to demonstrate the cost effectiveness of the proposed program and the superiority of the proposed program to other demand side as well as supply side options.

A second approach would be to periodically review a utility's entire demand side program. Utility demand side plans could, for example, be reviewed and subjected to approval on a biennial basis. Both approaches should allow for public hearings and participation by parties that may be affected by the proposed programs.

CLM PROGRAM COST EFFECTIVENESS AND MEASUREMENT

Parties commenting in this proceeding clearly support the development and implementation of "cost-effective" utility CLM programs. Less clear is any consensus on how cost-effectiveness is defined, and from whose perspective. The methods utilities use to determine the costs and benefits of various CLM programs are extremely important. How costs and benefits are defined and allocated, what criteria are used to accept or reject specific programs, and what costs and benefits are included in the analysis will determine the cost effectiveness of a program. Changes in any one of these factors can affect the analysis outcome, and ultimately, CLM program decisions.

Several of the parties commenting in this proceeding suggested that the Commission either establish standards for cost/benefit analysis or otherwise adopt an approved methodology. The Staff believes there is a great deal of merit in the general idea behind these proposals. A set of standards or an approved methodological approach would provide utilities and other interested parties with a common framework for cost/benefit analysis. However, the Staff does not believe that information presented thus far in this proceeding supplies a sufficient basis to make any recommendations on specific methods. Any standards or methodologies developed would have to recognize the differences between utilities operating in Virginia. Because of the highly technical nature of many of the issues surrounding cost/benefit analysis, the Staff recommends that such issues be considered separately and at a later time.

A related issue is the measurement of CLM program results. It appears that two fundamental views of program measurement underlie many of the comments submitted in this proceeding. One view is that CLM program results will somehow be measured in some unspecified way; the other view is that precise measurement is almost impossible. Staff does not believe that either view is completely satisfactory. Obviously, the results of some CLM programs can be measured very well. An example is utility water heater control programs. However, the results of other programs can only be estimated. In some cases, it may be technically possible to gather more precise data, but the costs of doing so far outweigh the benefits of the increased precision.

Good measurement of CLM program results is important for the obvious reason that it allows utilities and others to see what works. However, there is a more fundamental reason to insist on good measurement efforts. If the measurement and verification of CLM program results are not rigorous, CLM programs will not be seriously considered as alternatives to supply side options.

Over time, improvements in the measurement of CLM programs should be expected. The increase in CLM program activity nationwide should result in improved measurement techniques and expanded data bases for comparison purposes. Furthermore, measurement efforts that may not be cost effective for a single utility or program could be undertaken through pooled efforts. This kind of research work is already underway.

DISTRIBUTION OF INFORMATION

While not identified as a key policy issue, the importance

of accurate information about efficiency and conservation options should be recognized. The lack of accurate information can represent a significant market barrier to consumer investment in greater efficiency and conservation. The Staff believes that steps can be taken to assure that consumers of natural gas and electricity receive unbiased information about the energy efficiency and conservation options available to them.

All electric and gas utilities operating in Virginia currently disseminate information in some form concerning conservation and energy efficiency. Such measures typically include bill inserts, in-office brochures, and consumer newsletters. The larger utilities will also provide speakers on various energy use and conservation topics to civic, school and community groups. These and other utility information activities are important channels for providing information to consumers. However, despite the efforts of utilities and other organizations, timely and complete information concerning conservation and energy efficiency options available to consumers may still not be adequately reaching the public.

The Staff solicits ideas concerning ways to promote greater awareness of conservation and energy efficiency options available to consumers.

UTILITY INCENTIVES

Much of the discussion thus far has been concerned with removing what the Staff considers to be disincentives for conservation and efficiency. These disincentives include

potential lost revenues, unequal accounting treatment for supply and demand side resources, and promotional allowance restrictions. For a number of reasons, the Commission may want to promote conservation and efficiency by not only removing disincentives but also providing positive incentives.

A number of incentives are available to promote conservation activities. Two of the more common approaches are 1) a rate of return adjustment for investments in conservation and 2) a shared savings mechanism. While environmental groups in general supported the concept of such incentives for conservation, other groups were opposed. The Virginia Committee for Fair Utility Rates and the Office of the Attorney General both argued against rate of return adjustments and shared savings mechanisms.

Rate of return adjustments provide incentives by adjusting a utility's allowed rate of return in its next rate case based on its performance in achieving energy efficiency and conservation. A rate of return mechanism can be structured several ways. For example, the adjusted rate of return can be applied to the total utility rate base or it can be applied only to the investment in demand side programs. The measure of "performance" can also vary. Performance can be measured by the achievement of certain goals for MW reductions or program participation, by the realization of a certain level of demand side program spending, or by reductions in consumer bills. Finally, the adjustment can be structured so that it provides only a reward for achievement or provides both rewards for good performance and penalties for poor performance.

A shared savings mechanism would allow stockholders to realize some portion of the cost savings realized by demand side programs. In order to implement a shared savings mechanism, the cost savings associated with a particular program must be explicitly identified. Cost savings are typically identified as the difference between the cost of a demand side program and the utility's avoided cost.

Incentives such as rate of return adjustments and shared savings mechanisms may be necessary to fully promote cost effective demand side programs in Virginia. However, the Staff does not recommend the implementation of such incentives at this time for two reasons. First, we believe that consideration of incentives should be deferred until policy decisions on the issues discussed earlier in this section are made. If policies regarding cost recovery and promotional allowances, for example, are changed, there may be much less of a need for the development of an incentive mechanism. Second, the scope of this proceeding may be too broad to allow proper consideration of incentive mechanisms. Such incentives need to be carefully structured to be truly effective. Poorly designed incentives can be difficult to administer and may lead to unpredictable results. Poor design can also result in manipulation of the incentive by utilities. Given the complexity of incentive issues, we believe they would be better addressed in separate proceedings at a later time.

VII. SUMMARY AND RECOMMENDATIONS

This report represents the Commission Staff's initial proposals to revise Commission policy in order to better promote cost effective conservation and load management in Virginia. With the exception of promotional allowances, the Staff is not proposing detailed rules. In many instances the proposals serve only as broad guidelines for policy change. The Staff has attempted to identify the more critical policy issues and recommend various approaches to begin to resolve these issues.

We believe that a number of policy changes can be made within the scope of this proceeding. These policy change proposals include the following.

1) The Commission's policy regarding promotional allowances should be modified. The Staff's proposed policy is provided as Attachment 1.

2) The potential disincentives associated with current Commission procedures for the recovery of costs associated with conservation and load management programs should be recognized. The Commission should commit to remove any disincentives and develop cost recovery practices that place demand side options at least on a par with supply side options. Utilities should be directed to file specific proposals for cost recovery mechanisms that would remove perceived disincentives for the development of cost effective conservation and load management programs.

3) Utility demand side programs should be subject to formal approval by the Commission.

4) The Commission should make a determination as to whether environmental and/or other societal externalities are to be considered in a utility's cost/benefit analysis of demand side programs.

5) The Commission should recognize the importance of rate design in promoting efficiency and conservation. There should be a commitment to review the impact of rates on conservation and load management efforts in future utility rate cases.

6) Virginia Power should be required to develop an experimental demand side bidding program.

The Staff believes certain other policy and methodological issues that have arisen in this proceeding require more in-depth analysis before specific recommendations can be offered. The details of alternative methodologies for cost/benefit analysis, for example, is an important issue. However, the record in this proceeding suggests that a more rigorous technical examination of these methods is needed before a decision can be made on the most appropriate alternatives. In fact, the Commission may want to establish a separate working group to evaluate and recommend a preferred cost/benefit analysis approach, in a manner similar to the Commission's use of a task force to recommend an avoided cost methodology. Likewise, if the Commission determines that environmental externalities should be quantified in utilities' resource plans, then a reasonable methodology would have to be developed. Again, a task force approach might be helpful.

The Staff believes that consideration of any specific CLM program cost recovery proposals or alternative rate design methods will have to be made within the context of future utility proceedings. While the Commission may establish policy guidelines within this proceeding, decisions for each utility should be made on a case-by-case basis.

Finally, the Staff recommends that incentives such as adjustments to rates of return and shared savings mechanisms also not be considered at this time. These incentives may eventually be appropriate to consider, but we believe that other policy issues are currently of higher priority. Some experience should be acquired with the policy changes recommended in this report before further utility incentives are considered.

ATTACHMENT I

PROPOSED RULES GOVERNING UTILITY PROMOTIONAL ALLOWANCES

VIRGINIA STATE CORPORATION COMMISSION

I. Purpose

The purpose of these rules is to establish the conditions under which electric and gas utilities operating in Virginia may offer promotional allowances to customers. Any utility proposing a promotional allowance program shall demonstrate that such program is reasonably calculated to promote the maximum effective conservation and use of energy and capital resources in providing energy services. Promotional allowance programs shall be justified from a ratepayer benefit and utility cost standpoint.

II. Prohibited Promotional Allowances

A. Except as provided for under Section III, no electric or gas utility shall give or offer to give any payment, subsidy or allowance, directly or indirectly, or through a third party, to influence the installation, sale, purchase, or use of any appliance or equipment.

B. No electric utility shall give or offer to give any monetary or other allowance or credits based on anticipated revenues for the installation of underground service. Schedules of charges for underground service based on revenue-cost ratios or cost differentials shall be filed with the Commission.

III. Permitted Activities

A. Unless otherwise specifically prohibited in writing by the Commission, the following activities are not prohibited by these rules:

1) Advertising by a utility in its own name, consistent with Virginia Code Section 56-235.2.

2) Joint advertising with others, if the utility is prominently identified as a sponsor of the advertisement, consistent with Virginia Code Section 56-235.2.

3) Financing the purchase of appliances by utilities so long as the interest rate or carrying charge to the purchaser is not less than the interest rate paid by the utility for short term debt.

4) Merchandising of appliances or equipment by utilities.

5) Inspection and adjustment of appliances by utilities. Repairs and other maintenance to appliances and equipment if charges are at cost, or above.

6) Donation or lending of appliances by utilities to schools for instructional purposes.

7) Technical assistance offered to customers by employees of utilities.

8) Incentives to full time employees of utilities.

B. Promotional allowance programs designed to achieve energy conservation, load reduction, or improved energy efficiency are permitted under these rules, subject to the prior approval of the Commission. Any promotional allowance program proposed under this Section shall comply with the standards contained in Section IV.

IV. Promotional Allowance Program Standards

A. Any utility offering a promotional allowance program shall adhere to the following standards:

1) The promotional allowance program shall not vary the rates, charges and schedules of the tariff under which service is rendered to the customer.

2) A utility may not, directly or indirectly, offer or grant to a customer any form of promotional allowance except as is uniformly and contemporaneously extended to all customers in the same reasonably defined class.

3) Any utility promotional allowance program should be designed in such a manner so as to minimize the potential for placing private businesses at an undue competitive disadvantage.

4) To the extent applicable, any appliances or equipment promoted by a utility under a promotional allowance program shall have energy efficiency ratings which exceed current federal

standards as contained in the National Appliance Energy Conservation Act (Public Law 100-12), or any subsequent amendments thereof. The Commission may, at its discretion, impose other standards for appliances or equipment promoted under a utility promotional allowance program.

5) Any utility proposing a promotional allowance program which would impact the sales levels of alternative energy suppliers shall:

a. Estimate the impact of the program on alternative energy suppliers, and

b. Demonstrate that the program serves the overall public interest.

V. Waivers

A. A utility may file for exemptions from any or all of these rules. In making its decision regarding exemptions, the Commission will consider the size of the utility's operations in Virginia, the requirements of other regulatory bodies having jurisdiction over the utility, and the specific Virginia statutory authority under which the utility operates.

VI. Commission Authority

A. Notwithstanding any of the provisions of these rules, the Commission may authorize an otherwise prohibited promotional allowance program if the Commission finds that it is in the public interest.

B. Nothing in the provisions of these rules shall preclude the Commission from investigating, formally or informally, a utility promotional activity and, if it determines the activity to be adverse to the public interest, modifying or eliminating the activity.