

G-008/M-89-188 ESTABLISHING 1989-90 CONSERVATION IMPROVEMENT PROGRAM

BEFORE THE MINNESOTA PUBLIC UTILITIES COMMISSION

Barbara Beerhalter	Chair
Cynthia A. Kitlinski	Commissioner
Norma McKanna	Commissioner
Robert J. O'Keefe	Commissioner
Darrel L. Peterson	Commissioner

In the Matter of the Implementation of an Energy Conservation Improvement Program for Minnegasco, Inc.

ISSUE DATE: July 28, 1989

DOCKET NO. G-008/M-89-188

ORDER ESTABLISHING 1989-90
CONSERVATION IMPROVEMENT
PROGRAM

PROCEDURAL HISTORY

On May 1, 1989 Minnegasco, Inc. (Minnegasco or the Company) made its annual Conservation Improvement Program (CIP) filing under Minn. Stat. § 216B.241 (1988) and Minn. Rules, parts 7840.0200 *et seq.* The Company proposed to fund nine individual CIP projects during the 1989-90 CIP year, at a total CIP budget of \$1,524,075.

The Department of Public Service (the Department) filed comments on the Company's proposal on May 31, 1989. The Department recommended approving all projects but one, the Research and Demonstration Project. The Department recommended rejecting one part of that project and requiring further information before acting on the other part. The Department also advocated a budget increase of \$100,000 for the Commercial New Construction Rebate Project, largely to offset the effects of the disapproval of a portion of the Research and Demonstration Project.

No other party commented on the Company's filing.

FINDINGS AND CONCLUSIONS

I. Statutory Background

The CIP statute, Minn. Stat. § 216B.241 (1988), requires all public utilities with annual operating revenues exceeding \$50,000,000 to make significant investments in and expenditures for energy

conservation improvements. CIP utilities are required to make annual filings describing proposed conservation projects for the coming year. Minn. Rules, part 7840.0500. The statute provides that such projects should generally cost less than it would cost the utility to produce or purchase the amount of energy saved. The statute also requires the Commission to give special consideration to the needs of renters and low income households when acting on CIP filings.

II. An Overview of the Program Proposed by the Company

The Company's proposed program consists of nine projects, which are described below.

PROJECTS TO BE CONDUCTED IN COOPERATION WITH THE CITY OF MINNEAPOLIS -- The Company proposed to continue four projects it conducted last year in conjunction with the Energy Office of the City of Minneapolis. The Energy Office coordinates and administers the projects, using local contractors to deliver the services. The projects will serve an estimated 3,700 households and provide conservation improvements in approximately 975 structures. The four projects are described below.

Operation Insulation -- This project offers major weatherization services and is targeted primarily toward renters who pay utilities and live in one to four unit buildings. It will also include several hundred single family homeowners.

The project consists of a free energy audit, a free energy consultation, and the provision of major weatherization services (insulation, "House Doctor" services, upgrading or retrofitting of heating systems) at participants' expense. Low interest loans to finance major weatherization services are available through the Minneapolis Energy Bank.

The Energy Office will promote the project by direct mail. To encourage landlord participation, the mailings will emphasize that buildings where all recommended weatherization services have been completed will be in compliance with the City of Minneapolis Rental Energy Code and will be so certified.

The Company expects this project to serve 1,280 rental households, 425 homeowner households, and 50 non-profit group homes. Approximately 30% of the rental households are expected to have total family incomes under 125% of the federal poverty level. The Company proposes a project budget of \$185,000 and projects energy savings of 12% to 20% from major weatherization services and 8% from House Doctor services.

Project Choice -- This project is designed to provide comprehensive energy services to low income households. Those services vary with individual household needs, but can include any or all of the following: an energy audit, House Doctor services, weatherization services, conservation education, financial counseling, and identification of potential sources of financial aid and energy assistance.

Services are provided free of charge by the Minneapolis Energy Office, the Minneapolis Community Action Agency, the Urban Coalition, the Salvation Army/Heatshare, and the Minneapolis Community Development Agency. Minnegasco will coordinate the project and contribute funding for the workshops, audits, comprehensive plans and budgets, and House Doctor visits.

This project is expected to provide workshops to 1,075 participants, energy audits to 800 households, and energy retrofits to 150 households. All participants will be low income and eligible for energy assistance. The Company expects participants will reduce their gas consumption by an average of 14.1 thousand cubic feet (MCF). The Company has budgeted \$419,825 for the project.

Multifamily Project -- This project is designed to improve the energy efficiency of multifamily buildings with single heating systems. The project consists of workshops for building owners, followed by energy audits, and installation and inspection of energy improvements. The workshops and audits are funded by Minnegasco; conservation measures are paid for by participating building owners.

The Company estimates that the project will benefit 2,550 households, all of them rental households, approximately 765 of them low income. The project's proposed budget is \$89,550.

Research and Testing Project -- This project is conducted in conjunction with the Energy Office of the City of Minneapolis. Its purpose is to collect data on conservation issues and technologies, to increase the effectiveness of the Company's conservation efforts.

This year's research topics will be high efficiency furnace and boiler options for 1 to 4 unit buildings, control of water heater and recirculation loop temperature, double integrated appliances, and gas booster heaters. The Company has budgeted \$135,000 for this project.

PROJECTS TO BE CONDUCTED IN CONJUNCTION WITH OTHER COMMUNITIES AND COMMUNITY ORGANIZATIONS

-- The Company also proposed the five projects described below, to be conducted in conjunction with other communities and community organizations. All projects except the Research and Demonstration Project are continuations of projects offered during the 1988-89 CIP year.

Home Energy Check-up Project -- This project provides conservation education and low cost conservation materials to renters and low income customers. Services include an energy audit, which focuses on low-cost, easy-installation conservation measures; provision and installation of low cost infiltration materials; identification of any major weatherization projects appropriate for the dwelling and discussion of any available funding sources; and a follow-up contact to address any remaining questions or concerns.

The project is administered by local Community Energy Councils. The Company anticipates entering into contracts with Community Energy Councils in the following counties and municipalities: Cokato, Luverne, Benson, Brainerd, Lester Prairie, Little Falls, Shakopee, Willmar, Pipestone, Bloomington, Baxter, Carver County, Washington County, Kandiyohi County, and Stearns County.

The Company expects to serve 2,040 participants, all of them low income, and to achieve average energy savings of 1.8% to 3.2% per participant. A total budget of \$167,400 is proposed.

Project AIR -- This project is designed to reduce air filtration in homes by weatherstripping, applying void filler, insulating attic accesses, and similar low cost infiltration procedures. The goal is to reduce air filtration by a household average of 40%. The project is administered by cities and counties, and participation is limited to low income households.

The Company expects to offer Project AIR to 470 participants in the following cities and counties: Brooklyn Park, Hopkins, Edina, Mound, St. Louis Park, Spring Park, Wayzata, Shorewood, Minnetonka, Golden Valley, Crystal, Brooklyn Center, New Hope, Hastings, and Richfield. The total proposed budget is \$171,775.

Partners Project -- During the last CIP year the Company offered a project identical to Project Choice, described above, in four suburban communities. Minnegasco has concluded the project was not as successful in these smaller communities as in the city. The Company does not propose to offer it again. The Company does, however, propose to budget \$5,900 to complete its evaluation of the project and to prepare a project manual, for the use of community organizations which may wish to operate, refine, or adapt such projects in the future.

New Construction Rebate Project -- This project will provide cash rebates to builders or developers whose new commercial buildings meet specified energy efficiency standards. Eligible buildings include office buildings, retail and wholesale establishments, multifamily buildings of over

four residential units, and buildings housing service operations, with the exclusion of buildings used for manufacturing, processing, prefabrication, warehousing, medical care, food service, and hotel/motel operations.

The energy efficiency standards prescribed are roughly twice as stringent as those currently in the Minnesota Energy Code. Rebates can range up to \$7,500 per building, depending on the size of the building and other factors. The Company projects an average consumption reduction of 1,464 MCFs per participant and an average peak day use reduction of 1,640 MCFs per participant.

This project will be marketed and administered directly by the Company and is budgeted at \$125,000.

Research and Demonstration Project -- This project would involve research on two topics: the substitution of compressed natural gas and liquefied natural gas for gasoline in mass transit vehicles and the use of dual fuel systems by municipalities to reduce peak usage. The first project is proposed to last two years. Data would be collected sequentially on the costs, efficiencies, and environmental effects of fueling mass transit vehicles with gasoline, compressed natural gas, and liquefied natural gas. The proposed budget is \$90,000.

The second research project is designed to help the City of Luverne examine the potential benefits of using dual fuel supplies to reduce its summer and winter gas and electric peaks. The City is considering installing dual heating and cooling systems, one gas and one electric, so that it can reduce its winter peak through partial reliance on electric heat and its summer peak through partial reliance on gas air conditioning. The Company would conduct an engineering study to quantify the benefits likely to result from such a system. The study would be completed during the 1989-90 CIP year at a cost of \$10,000.

III. Commission Action

Research and Demonstration Project Modified -- As discussed above, part of this project is to consist of research on the use of compressed natural gas (CNG) and liquefied natural gas (LNG) to fuel mass transit vehicles. The Commission agrees with the Department that this portion of the project, however worthwhile, should not be funded with CIP monies.

The CIP statute authorizes the Commission to require utilities to make investments in and expenditures for "energy conservation improvements," which the statute defines as follows:

. . . the purchase or installation of any device, method or material that increases the efficiency in the use of electricity or natural gas including, but not limited to:

- (1) insulation and ventilation;
- (2) storm or thermal doors or windows;
- (3) caulking and weatherstripping;
- (4) furnace efficiency modifications;
- (5) thermostat or lighting controls;
- (6) awnings; or

(7) systems to turn off or vary the delivery of energy. The term "energy conservation improvement" includes any device or method which creates, converts or actively uses energy from renewable sources such as solar, wind and biomass providing such device or method conforms with national or state performance and quality standards whenever applicable.

Minn. Stat. § 216B.241, subd. 1 (b) (1988).

The Commission believes that the CNG and LNG research portions of this project fall too far outside the range of conservation activities encompassed by the statute to qualify for CIP funding. It is clear from the statute that the purpose of the CIP program is to encourage efficiency in current applications of electricity and natural gas. Although there may be great social value, and even significant conservation potential, in substituting natural gas products for gasoline, such projects are not eligible for CIP funding. They may of course qualify for inclusion in the Company's general research and development budget or for other sources of funding. They will, however, be rejected for inclusion in the Company's CIP budget.

The Commission agrees with the Department that the proposed engineering study on municipal use of dual heating and cooling systems does qualify for CIP funding. The Department recommended

withholding judgment on the project, pending the Company's provision of further cost-effectiveness data. The Commission accepts the Company's explanation that determining cost-effectiveness is one of the purposes of the project and that all available cost-effectiveness data has been submitted.

The Commission believes the research the Company proposes to conduct is valuable enough to justify proceeding on the basis of available information. Reducing peak consumption is a key component of any serious conservation effort; municipal customers account for significant amounts of peak usage. This project could provide information about controlling and reducing peak consumption which would be useful in a variety of contexts. The project should proceed.

Additional Budget Amounts Allocated to New Construction Rebate Project -- The Commission agrees with the Department that the shortfall in the Company's CIP budget resulting from disapproval of the CNG and LNG research project should be offset by an increase in the budget of the New Construction Rebate Project. The New Construction Rebate Project appears to be the most cost-effective of the Company's projects. It should result in substantial energy savings and bring tangible long-term benefits to large numbers of customers. Furthermore, it appears that the project can be expanded without a significant increase in administrative costs. The Commission will therefore require a \$100,000 increase in the budget for the New Construction Rebate Project.

Evaluation of the Program as a Whole -- The Commission finds that the Conservation Improvement Program proposed by the Company, as modified herein, meets the requirements of the CIP statute and rules. It represents a significant investment and expenditure on the part of the Company, it gives due consideration to the needs of renters and low income ratepayers, and it meets prevailing standards of cost-effectiveness. Each consideration will be discussed in turn.

Significant Investment and Expenditure -- Minn. Rules, part 7840.1150 sets forth factors to be considered in determining whether a Company's CIP meets the statutory requirement of being a significant investment in and expenditure for conservation. Minnegasco's CIP fares well when evaluated under these criteria.

The Company's CIP reflects a comprehensive approach to conservation, including educational and research components as well as the direct provision of conservation services. It is geographically balanced, targeting four projects, with a combined budget of \$829,375, toward Minneapolis ratepayers and five projects, with a combined budget of \$585,375, toward non-Minneapolis ratepayers. The total budget of \$1,534,750 is reasonable in relation to Company revenues, constituting approximately 0.34% of 1988 gross revenues.

The program focuses appropriately on the residential and commercial customer classes. Ratepayers in these classes have substantial conservation potential and typically lack the incentive, resources, and expertise to carry out effective conservation measures on their own. It is reasonable to address their conservation needs before those of large volume customers, for whom energy conservation is likely to be a business priority.

The program will deliver valuable conservation services to approximately 7,135 households statewide. Roughly 1% of the Company's Minnesota customers will receive direct conservation benefits. The program is expected to result in energy savings of approximately 1.7 million MCF over the lives of the conservation improvements it will deliver. Clearly, the program will make a meaningful contribution to energy conservation in Minnesota.

The Commission finds that the Company's CIP meets the "significant investment and expenditure" requirements of Minn. Stat. § 216B.241 (1988).

Special Consideration for Rental and Low Income Households -- The CIP statute requires that the Commission "give special consideration to the needs of renters and low income families and individuals. . . ." Minn. Stat. § 216B.241, subd. 2 (1988). The Commission believes that Minnegasco's CIP makes adequate provision for the special needs of renters and low income households.

Approximately 4,600 low income and 4,700 rental households will receive services under the program. Both the Minneapolis and non-Minneapolis portions of the program contain projects targeted exclusively at low income people, Project Choice, the Home Energy Check-up Project, Project AIR, the Partners Project. These projects provide comprehensive energy services free of charge, are administered by community agencies with close ties to the low income community, and include services of special value to low income people, such as referrals to potential sources of financial aid and energy assistance. The Commission concludes that Minnegasco's CIP meets the statutory requirement of demonstrating special consideration for the needs of rental and low income households.

Cost Effectiveness Concerns -- The CIP statute provides that the Commission may require a utility to fund an energy conservation improvement whenever the cost of the improvement will be less than the cost of producing or purchasing the amount of energy the improvement will save. The statute also provides, however, that the Commission shall require all utilities with annual operating revenues exceeding \$50,000,000 to make energy conservation improvements, whether such improvements can meet this cost-effectiveness test or not. Minn. Stat. § 216B.241, subd. 2 (1988).

Evaluating cost-effectiveness has proven to be one of the most challenging features of the CIP review process. The statutory test, "total cost to the utility less than the cost to the utility to produce or purchase an equivalent amount of new supply of energy," has sparked controversy, particularly over whether "total cost" does or does not include revenues lost due to energy saved.

The Commission has acted on the assumption that conservation and the development of cost-effectiveness methodologies should proceed simultaneously. This was intended to allow the Commission to apply the best available knowledge on cost-effectiveness in acting on each year's CIP filings, while giving cost-effectiveness investigators actual data on the effectiveness of various conservation strategies. Gas utilities have therefore been operating Conservation Improvement Programs while working with the Department, Commission staff, and one another to refine useful cost-effectiveness models. This consultative process is now substantially complete.

Five cost-effectiveness tests have evolved from this process: the cost comparison test, the utility/rate impact test, the participant test, the revenue requirements test, and the nonparticipant test. The Commission believes these five tests provide a serviceable, comprehensive framework within which to examine the cost-effectiveness of proposed projects. Using more than one test realistically reflects the complexity of cost-effectiveness issues, and the necessity to examine cost-effectiveness from more than one perspective to gain an accurate understanding of the costs and benefits of any particular project.

The Company and the Department have subjected Minnegasco's proposed projects to these tests and have found the approved projects within acceptable cost-effectiveness norms. The Commission agrees, and would add that even these five tests do not succeed in quantifying all the benefits likely to result from these projects.

As the Commission noted in last year's Minnegasco CIP Order, studies have shown that low income ratepayers who participate in Project Choice have lower arrearages, less need for Fuel Assistance, and fewer shut-off notices the following heating season. This is not only financially advantageous to the utility, non-participating ratepayers, and taxpayers generally, but it also enhances the quality of life in participating households by reducing the incidence of utility-related crises and the amount of money which must be allocated for utility expenses. Similarly, CIP participants report increased comfort levels and higher property values as important results of their participation. In the Matter of the Implementation of an Energy Conservation Program for Minnegasco, Inc. ORDER APPROVING CONSERVATION IMPROVEMENT PROGRAM AND REQUIRING ADDITIONAL FILINGS (September 19, 1988), at 10.

CIP projects also benefit society generally, in ways which are no less real for being unquantifiable. They clearly raise public and utility awareness of conservation issues. They have ecological benefits. They benefit the local economy by allowing the diversion of energy dollars for other purposes. They help create the potential for long term price stability by limiting the need for new supplies. They provide data on usage patterns and particular conservation strategies which will increase in importance as conservation moves up on the national, state, and local agendas.

The Commission concludes that the projects approved herein meet reasonable and prevailing cost-effectiveness standards.

ORDER

1. The Commission approves the Company's CIP proposal, as modified herein. The approved plan consists of the following projects funded at the levels indicated:

Minneapolis Projects

Operation Insulation	\$185,000
Multifamily Project	\$ 89,550
Project Choice	\$419,825
Research and Testing	\$135,000

Non-Minneapolis Projects

Home Energy Check-up	\$167,400
Project AIR	\$171,775
Partners Project	\$ 11,200
New Construction Rebate	\$225,000
Research and Demonstration	\$ 10,000

Program Administration \$120,000

Total Budget \$1,534,750

2. In the event that any portion of the program approved herein cannot be carried out, the Company shall submit a new project filing as soon as practicable.
3. The Company shall file status reports on all projects approved herein on or before January 1, 1990.
4. The status reports on current CIP projects, the evaluation of the Home Energy Check-up Project, and the Company's plan for integrating CIP savings with its supply/demand planning process, filed on May 1, 1989, are accepted.
5. To the maximum extent practicable the Company shall ensure that all CIP participants have free choice of the devices, methods, materials, sellers, installers, and contractors used in making conservation improvements to their property.
6. The Company shall serve the Department and any other party requesting service with all filings made hereunder. The Department and any other commenting party shall file any comments on such filings within 15 days of service.
7. This Order shall become effective immediately.

BY ORDER OF THE COMMISSION

Mary Ellen Hennen
Executive Secretary

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