

ORIGINAL

2000 Demand-Side Management Plan



The Reliable One[®]

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Executive Summary

In accordance with Rules 25-17.0021- .005, Florida Administrative Code, the Florida Public Service Commission (PSC) must establish numeric conservation goals for Orlando Utilities Commission (OUC). OUC is submitting proposed numeric conservation goals and the associated demand side management (DSM) plan to the PSC for approval. The development of the goals and conservation plan required thorough analysis and multiple steps.

First, potential DSM measures were compiled. In order to reduce cost, OUC did not evaluate each possible measure. Instead OUC focused on measures that had the highest potential for being cost-effective.

Inputs and assumptions were developed for the potential DSM measures as well as for the economic parameters and the avoided supply side unit. This data was input to a PSC approved model to evaluate the cost-effectiveness of the measures. Cost-effectiveness was determined by running three tests. The three tests run were the Rate Impact Test, the Total Resource Test, and the Participants Test.

OUC requires all measures to pass the Rate Impact Test to be considered cost-effective. From these results, numerical goals were developed for the ten-year period 2001 – 2010.

Of the potential DSM measures tested, none passed the Rate Impact Test. Since every measure failed the cost-effectiveness testing, the proposed numeric goals for residential and commercial and industrial are zero.

Recent Need for Power Dockets for Kissimmee Utility Authority (KUA) and Florida Municipal Power Agency (FMPA) for Cane Island Unit 3 (Docket No. 980802) and the City of Lakeland conversion of McIntosh Unit 5 to combined cycle (Docket No. 990023) evaluated dozens of DSM measures for similarly situated municipal utilities and also found no DSM measures were cost-effective.

Many things have changed since OUC's 1995 goals that tend to decrease the cost-effectiveness of DSM. The efficiency of new generation has increased. The cost of installing new generation has decreased. Fuel costs and fuel cost projections have decreased. Interest rates have fallen. All of these things have resulted in it becoming more difficult for DSM measures to be cost effective.

Because OUC views energy efficiency so importantly, OUC proposes to continue existing programs that have shown high participation and customer demand. The programs are focused on energy efficiency and conservation.

OUC will continue to consider a broad range of residential, commercial and industrial measures to assist OUC customers in the reduction of energy and demand and will continue to monitor the cost-effectiveness and value of these measures.

1.0 Introduction

In accordance with Rules 25-17.0021- .005, Florida Administrative Code, the Florida Public Service Commission (PSC) must establish numeric conservation goals for Orlando Utilities Commission (OUC). Each utility subject to the rule is required to propose numerical goal projections for the ten-year period 2001-2010. The PSC has initiated Docket 990722 – EG to implement the requirements of Rule 25-17.0021 - .005 for OUC. In response to this docket, OUC is submitting proposed numeric conservation goals and the associated demand side management (DSM) plan to the PSC for approval in this report.

In order to reduce cost, OUC did not model each possible DSM measure. OUC's study focused on alternatives that are expected to have the highest potential for being cost-effective. The DSM measures analyzed were compiled from programs deemed cost-effective in OUC's 1995 Demand Side Management Plan, existing OUC measures, and the most cost-effective measure evaluated by Florida's largest investor owned utility, Florida Power & Light.

By testing the most cost-effective measure from FPL, the assumption was made that if the most cost-effective measure for FPL did not prove cost-effective, then FPL's lesser cost-effective measures would also fail the analysis. Using this methodology, OUC has effectively screened all of FPL's measures.

Each potential measure was evaluated using the PSC approved Florida Integrated Resource Evaluator (FIRE) model providing the Rate Impact Test, the Total Resources Test, and the Participant Test. The model evaluates the economic impact of existing and proposed conservation measures by determining the relative cost effectiveness of the measures versus the avoided unit. Based on the cost effectiveness analysis, OUC proposed conservation goals and a corresponding demand side management plan.

This report contains seven sections. The next section presents the overall methodology used to develop the proposed numeric goals and supporting demand side management plan. The third section describes all inputs and assumptions associated with the potential DSM measures, avoided supply side generation and economic parameters. The fourth section describes the methodology and explanation of the results for the cost-effectiveness testing and analysis. The fifth section discusses the numerical results of the analysis. The sixth section describes the development of the proposed numerical

conservation goals. The seventh section describes OUC's proposed demand side management plan.

2.0 Methodology

Several steps were involved in the development of numeric conservation goals and the associated demand side management plan.

First, potential DSM measures for cost-effective analysis were selected. In order to reduce cost, the measures were chosen carefully. OUC did not model each possible DSM measure. Instead, OUC's study focused on alternatives that were expected to have the highest potential for being cost-effective. The DSM measures analyzed were compiled from programs deemed cost-effective in OUC's 1995 Demand Side Management Plan, existing OUC programs, and the most cost-effective measure that was found to be cost-effective by Florida's largest investor owned utility, Florida Power & Light. The potential DSM measures evaluated are listed in Table 3-1.

Second, each potential measure was evaluated for its cost-effectiveness. Measures were evaluated using the PSC approved Florida Integrated Resource Evaluator (FIRE) model which provides output in the form of the Rate Impact Test, the Total Resources Test, and the Participant Test. The model evaluates the economic impact of existing and proposed conservation measures by determining the relative cost effectiveness of the measures versus an avoided supply side resource. The avoided unit is the next unit planned for installation for the utility. FIRE Model methodology is discussed in Section 4.0. Avoided unit assumptions are discussed in Section 3.3.

Third, based on the cost effectiveness analysis, numeric conservation goals were developed. The numeric goals were calculated based on the demand and energy saved by the cost-effective measures. The results of the cost-effective analysis are listed in Table 5-1. The proposed numeric goals are listed in Table 6-1.

Fourth, a conservation plan was developed. Although OUC proposes zero goals, OUC proposes to continue existing conservation programs. The proposed DSM plan is described in Section 7.0.

3.0 Assumptions and Inputs for Cost-Effective Analysis

3.1 Demand-Side Management Measures

The DSM measures tested were taken from three sources: OUC existing DSM measures, measures proposed in OUC's 1995 DSM Plan, and the most cost-effective measure from Florida Power & Light's (FPL) 1999 goals. Each measure and its original source are listed in Table 3-1.

Basic assumptions were made in the development of input data for the measures. The sources for assumptions applying to all measures are shown in Table 3-2.

<ul style="list-style-type: none">- Study Period for economic evaluation set to 20 years.- Fuel Forecast and economic parameters were taken from OUC's 1999 Ten Year Site Plan.- OUC 1999 Utility average system fuel cost of 1.93 cents/kWh was taken from Resource Data International Inc. and escalated at 3.17 percent to 2001\$.- Non-fuel cost in residential customer bill for 1999 is 5.62 cents/kWh (5.95 cents/kWh (2001\$)) based on monthly Typical Electric Bill Tabulation for 1,000 kWh users (Florida Municipal Electric Association Inc.).- Non-fuel cost in commercial customer bill for 1999 is 5.14 cents/kWh (5.45 cents/kWh (2001\$)) based on monthly Typical Electric Bill Tabulation for 30 kW – 6,000 kWh users (Florida Municipal Electric Association Inc.).- Customer Demand Charge for 1999 of \$6.5 /kW/month (\$6.9/kW/month (2001\$)) per OUC.- Transmission Capital Costs of \$78.78/kW (2001\$) were taken from FPL's 1999 goals- Transmission Fixed O&M costs of \$3.08/ kW/ Year (2001\$) were taken from FPL's 1999 goals.- Distribution Capital Costs of \$56.28/kW (2001\$) were taken from FPL's 1999 goals.- Distribution Fixed O&M Costs of \$14.64/kW/Year (2001\$) were taken from FPL's 1999 goals.
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Input data for these measures was compiled from Annual FEECA Reports, OUC's 1995 DSM Plan, OUC's 1999 Ten Year Site Plan, FPL's testimony (Docket 971004-EG) and FPL's supplemental responses for FPL's 1999 Ten Year Site Plan as well as other data provided by OUC. The number of participants for the FPL measure was developed by the ratio between OUC's and FPL's number of customers. The input data used in the FIRE Model is shown in Appendix B

Table 3-1
 DSM Measures

DSM Measure Abbr.	DSM Measures	Program Source
<u>Residential</u>		
REnSur	Energy Survey	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
HPump	Heat Pump	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
Weath	Weatherization	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
LIncome	Low Income Energy Fix-up	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
EWaterH	Efficient Water Heating	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
DLC - 1	Direct Load Control - Main	Annual FEECA Reports/ OUC 1995 DSM Plan
DLC - 2	Direct Load Control - Pool Pumps	Annual FEECA Reports/ OUC 1995 DSM Plan
<u>Commercial/Industrial</u>		
CEnSuv	Commercial Energy Survey	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
CEL	Commercial Lighting	Annual FEECA Reports/ OUC 1995 DSM Plan
CCool	Commercial Cooling	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
OPBC	Off Peak Battery Charging -- FPL	FPL Docket No. 971004-EG & FPL Supplemental Data Request for FPL 1999 Ten-Year Site Plan

3.2 Economic Parameters

The economic parameters used in the evaluation were obtained from OUC's 1999 Ten Year Site Plan and are presented in the following subsections.

3.2.1 Inflation and Escalation Rates

The general inflation rate is 3.0 percent annually. The 3.0 percent is applicable to capital costs, operations and maintenance (O&M) expenses, and various other expenses. Escalation rate for fuel costs is 3.17%

3.2.2 Present Worth Discount Rate

The present worth discount rate applied in the study is equal to the bond interest rate of 5.5%.

3.2.3 OUC Municipal Bond Interest Rate

The long-term municipal bond interest rate is assumed to be 5.5 percent. This rate is based on the current bond rate for OUC.

3.2.4 Interest During Construction Interest Rate

The interest during construction interest rate for OUC is assumed to be equal to the bond rate of 5.5 percent.

3.2.5 Fixed Charge Rate

Based upon a 2.0 percent issuance fee, 1.0 percent annual insurance cost, a bond interest rate of 5.5 percent, and a bond term of 25 years, the annual fixed charge rate is 8.78 percent.

3.3 Avoided Unit

Per OUC's 1999 Ten Year Site Plan, OUC's expansion plan does not require unit additions for the time period of 1999 through 2008. There has been a major change since the submittal of the 1999 Ten Year Site Plan. OUC has sold its Indian River steam units to Reliant. Under this agreement, OUC will purchase power generated from Indian River for four years. At the expiration of the four-year contract, OUC maintains the option of signing a second four-year contract.

OUC will thus have an option of building new generation to be in service when the initial purchase power term expires. For purposes of determining an avoided unit for the DSM evaluations, a new combined cycle has been selected with an in service date that matches the expiration of the first term of the purchase power contract. This represents a conservative choice for an avoided unit. If the optional term of the purchase power

contract is lower in cost than the avoided unit, then DSM measures that are evaluated against the avoided unit will be less cost-effective. On the other hand, if the avoided unit represents the least cost alternative, then the DSM measures will be properly evaluated.

The estimated capital cost for the combined cycle and its projected performance is presented in Table 3-3.

Table 3-3 Generating Unit Characteristics For Avoided Unit	
Item	General Electric 7FA 2 x 1 Combined Cycle
Total Capital Cost, 2001 \$1,000 (1)	\$ 208,003
O&M Cost-Baseload Duty	
Fixed O&M Cost, 2001 \$/kW-y	5.00
Variable O&M Cost, 2001 \$/MWh	1.94
Economic Life	25
Net Plant Capacity (MW) @ ISO	529
Net Heat Rate @ ISO (HHV)	6,704
Equivalent Availability, percent	92.5
Equivalent Forced Outage Rate, percent	4.2
Planned Maintenance Outage, weeks/y	3
Construction Period, months	24
(1) Does not include interest during construction.	

4.0 Cost-Effective Analysis

Each potential measure was evaluated for its cost-effectiveness. Measures were evaluated using the PSC approved Florida Integrated Resource Evaluator (FIRE) model which provides output in the form of the Rate Impact Test, the Total Resources Test, and the Participant Test. The model evaluates the economic impact of existing and proposed conservation programs by determining the relative cost-effectiveness of the programs versus the avoided supply side resource. The avoided unit is the next unit planned for installation for the utility. Based on the cost effectiveness analysis, numeric conservation goals are developed.

4.1 FIRE Model Methodology

In order to evaluate the cost-effectiveness of all existing and potential DSM measures in the reporting format specified by the PSC, the Florida Integrated Resource Evaluator (FIRE) model was used. The FIRE model was designed by Florida Power Corporation and is used by several utilities in Florida. The model evaluates the economic impact of existing and proposed conservation measures by determining the cost effectiveness of the measures versus the avoided unit. Assumptions inherent in the FIRE Model are listed in Table 4-1.

The FIRE Model was designed to evaluate a wide variety of DSM measures. The model uses avoided unit costs, DSM measure costs, operations and maintenance costs, rebates/incentives, and other input variables to calculate the incremental benefits of a DSM measure. These incremental costs are used to perform three cost-effectiveness tests: the Rate Impact Test, the Total Resources Test, and the Participant Test.

4.2 FIRE Model Output

FIRE Model results are output in the form of three cost-effectiveness tests. All the DSM cost effectiveness tests are based on the comparison of discounted present worth benefits to costs for a specific DSM measure. Each test is designed to measure costs and benefits from a different perspective.

The Rate Impact Test is a measure of the expected impact on customer rates resulting from a DSM program. The test statistic is the ratio of the utility's benefits (avoided supply costs and increased revenues) compared to the utility's costs (program

costs, incentives paid, increased supply costs and revenue losses). A value of less than one indicates an upward pressure on rate levels as a result of the DSM program.

The Total Resources Cost Test measures the benefit / cost ratio by comparing the total program benefits (both the participant's and utility's) to the total program costs (equipment costs, supply costs, participant costs).

The Participants Test measures the impact of the DSM program on the participating customer. Benefits to the participant may include bill reductions, incentives paid, and tax credits. Participants' costs may include equipment costs, operation and maintenance expenses, equipment removal, etc. The Participants' Test is important because customers will not participate if the program is not beneficial to them.

All three cost effectiveness tests were calculated for each DSM measure analyzed and considered in our evaluation. OUC views the Rate Impact Test as the primary test for determining the cost effectiveness for DSM measures for its system.

Table 4-1
FIRE Model Assumptions

- System demand is growing. Demand reductions due to DSM will result in reduced need for system expansion.
- Individual demand reductions can be related to reduced need for system generation expansion.
- The generation reduction will be evaluated with respect to specified generation.
- Decreases or increases in revenue due to demand side programs will impact rate levels and will be passed on to all customers.
- Additional conservation taking place after the next deferred generating unit will affect subsequent units.

5.0 Cost-Effective Analysis Results

5.1 Numerical Results

The numerical results from the FIRE Model analysis are listed below in Table 5-1. Descriptions of the measures are listed in Table 3-1 of Section 3.

Table 5-1 FIRE Model Results				
Abbr.	DSM Measure	Cost-Effectiveness Test Rating		
		Rate Impact	Total Resource Cost	Participant Costs
	<u>Residential</u>			
REnSur	Energy Survey	0.22	1.05	1.00
HPump	Heat Pump	0.79	0.24	0.28
Weath	Weatherization	0.34	1.48	11.62
LIncome	Low Income Energy Fix-up	0.19	0.25	1.00
EWaterH	Efficient Water Heating	0.72	0.54	0.75
DLC - 1	Direct Load Control - Main	0.99	1.75	1.00
DLC - 2	Direct Load Control - Pool Pumps	0.52	0.74	1.00
	<u>Commercial/Industrial</u>			
CEnSur	Commercial/Energy Survey	0.42	11.64	1.00
CEL	Commercial Lighting	0.35	0.35	1.01
CCool	Commercial Cooling	0.30	1.86	1.00
OPBC	Off Peak Battery Charging - FPL	0.43	0.65	1.51

5.2 Analysis of Results

Although every DSM measure failed the Rate Impact Test, OUC proposes the continuation of select conservation measures. OUC views energy conservation as an important service to OUC customers and the community. By continuing conservation

programs, OUC maintains interaction with customers and is better able to determine the needs of OUC's customers and the community.

OUC proposes to continue the following residential and commercial/industrial conservation programs and measures:

Residential:

Residential Energy Survey

Residential Heat Pump

Residential Weatherization

Residential Low Income Home Energy Fix-up

Residential Educational Outreach Program

Commercial/Industrial:

Commercial Energy Survey Program

The Educational Outreach Program was not tested because it is an educational program for children. Each of the proposed programs is described in detail in Section 7.0.

6.0 Proposed Numeric Conservation Goals

The proposed numeric conservation goals for OUC are based on the FIRE Model results for the Rate Impact Test. No residential or commercial or industrial measures were found cost-effective for OUC customers. OUC's numeric proposed conservation goals are shown in Table 6-1.

Year	Residential Reduction			Commercial/Industrial Reduction		
	Summer kW	Winter kW	MWh	Summer kW	Winter kW	MWh
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0

Although none of measures passed the Rate Impact Test to qualify as cost-effective, OUC proposes the continuation of OUC's existing programs. The programs are described in Section 7.0.

7.0 Existing Demand Side Management Programs

7.1 Residential Programs

7.1.1 Residential Energy Survey

7.1.1.1 Program Description. This program is designed to provide residential homeowners with recommended energy efficiency measures and practices. The Residential Energy Survey includes complete attic, air duct and air return inspections. Literature on other OUC programs is also provided to the residential customers. The customer is given a choice to receive a low-flow showerhead or compact fluorescent bulb. OUC Energy Analysts are presently using this walk-thru type audit as a means to get OUC customers to participate in other conservation programs and to qualify for appropriate rebates.

7.1.1.2 Program Participation. Participation has averaged over two-thousand energy surveys per year for the past ten years. Feedback from customers that have taken advantage of the survey has been very positive. Residential homeowners are encouraged to participate in this program.

7.1.1.3 Program Benefits. One of the primary benefits of the program is providing education to the customer on energy conservation measures and ways their lifestyle can directly impact their use of energy. Customers will be able to participate in conservation measures that they otherwise might not have been aware. Customers will benefit from the increased energy conservation in their home, which will decrease their electric bills.

7.1.1.5 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community even though not found cost effective.

7.1.2 Residential Heat Pump Program

7.1.2.1 Program Description. This program is designed to minimize thermal losses due to ductwork and insulation. Heat pumps are marketed to the owners of existing residential strip heating systems and older, inefficient central air conditioners and heat pumps. Contractors often install energy efficient heat pumps plus duct repairs and additional insulation as a part of a total energy saving package for customers.

7.1.2.2 Program Participation. Owners of existing residential strip heating systems and older, inefficient central air conditioners are the focus. The program requires heat

pumps with a SEER of 11 (or greater) and a HSPF of 7.0 (or greater) in order to qualify for rebates.

7.1.2.3 Program Benefits. Customers will be able to obtain rebates in terms of equipment SEER levels, tonnage and replaced equipment. Customers will benefit from the increased energy conservation in their home, which will decrease their electric bills.

One of the main benefits of this program is the duct work and insulation level improvements made by contractors when installing the energy efficient heat pumps.

7.1.2.4 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community even though not found cost effective.

7.1.3 Residential Weatherization Program

7.1.3.1 Program Description. This program is designed for existing single family homes and promotes R-19 ceiling insulation (or higher), caulking, weather-stripping, window treatment, water heater insulation and air conditioning heating supply and return air duct repair.

7.1.3.2 Program Participation. This program targets existing single family homes through Residential Energy Surveys, trade shows, exhibits, and neighborhood meetings.

7.1.3.3 Program Benefits. Customers will benefit from the customized weatherization of their homes, which will decrease their electric bills.

Customers are eligible for a \$140 rebate for R-19 ceiling insulation, \$100 rebate for duct repairs and up to \$110 for other conservation measures specified above. In addition, the customer is allowed to carry payments for ceiling insulation on their electric bill for 12 to 24 months. OUC directly pays the total contractor cost for insulation when OUC provides the financing.

7.1.3.4 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. Even though not found cost-effective, OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community.

7.1.4 Low Income Home Energy Fix-up Program

7.1.4.1 Program Description. This program targets low-income residential customers, customers with an annual income of less than \$20,000. Every customer is eligible for an energy audit. Audit recommendations usually require the customer to spend money replacing or adding energy conservation measures. Low-income customers may not have the discretionary income to make these changes.

The program pays 85 percent of the total contract cost for home weatherization for the following measures: upgrading ceiling insulation to R-19, exterior and interior caulking, weather-stripping doors and windows, air conditioning / heating supply and return air duct repairs and water heater insulation. The purpose of the program is to reduce the energy cost for low income households, particularly those households with elderly persons, disabled persons, and children, by improving the energy efficiency of their homes and ensuring a safe and healthy community.

7.1.4.2 Program Participation. Low-income residential customers are encouraged to participate.

7.1.4.3 Program Benefits. Customers will be able to participate in conservation measures that they might not be able to otherwise afford. Eighty-five percent of the bill is picked up by OUC, the other 15 percent can be financed on their monthly electric bill. Low-income customers will benefit from the customized weatherization of their homes, which will decrease their electric bills.

OUC will be helping to lower the bills of low-income customers who may have more difficulty paying their bills. Reducing the bill of the low-income customer may improve the customers ability to pay the bill, thereby decreasing costly service disconnect fees and late charges. OUC believes this will help to achieve and maintain high customer satisfaction.

7.1.4.4 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community even though not found cost effective..

OUC has agreed in a Memorandum of Understanding with the State Department of Consumer Affairs dated March 17, 1995 to continue this program.

7.1.5 Educational Outreach Program. This program is now entering its 15th year of operation. The program is very successful and has won several awards for contributions to education. The program consists of hour long classroom presentations focused on teaching students about energy and water conservation. Students are taught how electricity is generated and are encouraged to perform mini electric and water audits on their own homes.

7.2 Commercial / Industrial Programs

7.2.1 Commercial Energy Survey Program

7.2.1.1 Program Description. This survey is a physical walk-through inspection of the commercial facility. The commercial customer having a Commercial Energy Survey receives a report at the time of the survey. Within 30 days of a detailed audit, the customer receives a written report. Conservation literature is provided to all customers.

7.2.1.2 Program Participation. The program is focused on commercial customers to increase the energy efficiency and energy conservation.

7.2.1.3 Program Benefits. Customers will benefit from the energy conservation, which will decrease their electric bills.

7.2.1.4 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community even though not found cost effective.. .

APPENDIX A
FUEL FORECAST

OUC 1999 Ten Year Site Plan

Fuel Forecast

Delivered Fuel Price Forecast (\$/Mbtu) - Base Case								
Year	Coal		Natural	No. 6	Uranium	Landfill	Petroleum	RDF
	Stanton	McIntosh	Gas	Fuel Oil		Gas	Coke	
1999	1.81	1.85	2.71	2.68	0.56	0.85	1.15	-2.42
2000	1.77	1.92	2.84	2.70	0.57	0.85	1.24	-2.54
2001	1.80	1.99	2.92	2.81	0.58	0.85	1.29	-2.67
2002	1.85	2.06	3.01	2.92	0.60	0.85	1.35	-2.79
2003	1.90	2.13	3.10	3.04	0.61	0.85	1.40	-2.93
2004	1.96	2.21	3.19	3.16	0.63	0.85	1.46	-3.07
2005	2.01	2.29	3.29	3.29	0.64	0.85	1.52	-3.22
2006	2.09	2.37	3.39	3.42	0.66	0.85	1.59	-3.37
2007	2.18	2.46	3.49	3.56	0.68	0.85	1.65	-3.53
2008	2.30	2.56	3.59	3.70	0.68	0.85	1.73	-3.70
AAGR	2.70	3.68	3.17	3.65	2.50	0.00	4.64	-4.83

APPENDIX B

COST EFFECTIVENESS RESULTS FOR DSM MEASURES

APPENDIX B.1

RESIDENTIAL MEASURES

PROGRAM: Res Energy Survey

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	319.1 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	300.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	81.60 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	4.47 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	5.94 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Res. Energy Survey

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	1983	1983	1.71	1.93	1.93	1.92	1	1
2002	3985	3985	1.76	2.00	2.00	1.98	1	1
2003	6007	6007	1.81	2.06	2.06	2.04	1	1
2004	8050	8050	1.87	2.12	2.12	2.10	1	1
2005	10113	10113	1.92	2.19	2.19	2.16	1	1
2006	12197	12197	1.98	2.26	2.26	2.22	1	1
2007	14302	14302	2.04	2.33	2.33	2.29	1	1
2008	16428	16428	2.10	2.41	2.41	2.36	1	1
2009	18575	18575	2.16	2.48	2.48	2.43	1	1
2010	20743	20743	2.23	2.56	2.56	2.50	1	1
2011	22933	22933	2.30	2.64	2.64	2.58	1	1
2012	25145	25145	2.36	2.73	2.73	2.66	1	1
2013	27379	27379	2.44	2.81	2.81	2.74	1	1
2014	29635	29635	2.51	2.90	2.90	2.82	1	1
2015	31914	31914	2.58	2.99	2.99	2.90	1	1
2016	34216	34216	2.66	3.09	3.09	2.99	1	1
2017	36541	36541	2.74	3.19	3.19	3.08	1	1
2018	38889	38889	2.82	3.29	3.29	3.17	1	1
2019	41261	41261	2.91	3.39	3.39	3.27	1	1
2020	43656	43656	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

< -- COST DATA FOR CONSTRUCTION OF PLANT -- >

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Res. Energy Survey

* UNIT SIZE OF AVOIDED GENERATION UNIT = 0 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	0	0	0	0	0	0	0	0
2005	0.0685	0	0	0	0	0	0	0	0
2006	0.0706	0	0	0	0	0	0	0	0
2007	0.0727	0	0	0	0	0	0	0	0
2008	0.0749	0	0	0	0	0	0	0	0
2009	0.0771	0	0	0	0	0	0	0	0
2010	0.0794	0	0	0	0	0	0	0	0
2011	0.0818	0	0	0	0	0	0	0	0
2012	0.0843	0	0	0	0	0	0	0	0
2013	0.0868	0	0	0	0	0	0	0	0
2014	0.0894	0	0	0	0	0	0	0	0
2015	0.0921	0	0	0	0	0	0	0	0
2016	0.0948	0	0	0	0	0	0	0	0
2017	0.0977	0	0	0	0	0	0	0	0
2018	0.1006	0	0	0	0	0	0	0	0
2019	0.1036	0	0	0	0	0	0	0	0
2020	0.1067	0	0	0	0	0	0	0	0
NOMINAL		0	0	0	0	0	0	0	0
NPV		0		0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Res. Energy Survey

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$0

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	6
2002	0	0	0	0	0	0	19
2003	0	0	0	0	0	0	33
2004	0	0	0	0	0	0	48
2005	0	0	0	0	0	0	64
2006	0	0	0	0	0	0	80
2007	0	0	0	0	0	0	99
2008	0	0	0	0	0	0	118
2009	0	0	0	0	0	0	139
2010	0	0	0	0	0	0	161
2011	0	0	0	0	0	0	184
2012	0	0	0	0	0	0	209
2013	0	0	0	0	0	0	236
2014	0	0	0	0	0	0	264
2015	0	0	0	0	0	0	294
2016	0	0	0	0	0	0	326
2017	0	0	0	0	0	0	360
2018	0	0	0	0	0	0	396
2019	0	0	0	0	0	0	434
2020	0	0	0	0	0	0	474
NOMINAL	0	0	0	0	0	0	3,942
NPV	0	0	0	0	0	0	1,963

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	316	6	0	0	6	6
2002	952	19	0	0	19	19
2003	1,594	33	0	0	33	33
2004	2,243	48	0	0	48	48
2005	2,898	64	0	0	64	64
2006	3,560	80	0	0	80	80
2007	4,229	99	0	0	99	99
2008	4,904	118	0	0	118	118
2009	5,586	139	0	0	139	139
2010	6,274	161	0	0	161	161
2011	6,970	184	0	0	184	184
2012	7,672	209	0	0	209	209
2013	8,381	236	0	0	236	236
2014	9,098	264	0	0	264	264
2015	9,822	294	0	0	294	294
2016	10,553	326	0	0	326	326
2017	11,291	360	0	0	360	360
2018	12,037	396	0	0	396	396
2019	12,790	434	0	0	434	434
2020	13,551	474	0	0	474	474
NOMINAL	134,720	3,942	0	0	3,942	3,942
NPV		1,963	0	0	1,963	1,963

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Res. Energy Survey

(1)	(2)----- UTILITY PROGRAM COSTS & REBATES ----->						<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->											(18)
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)	
2001	162	4	166	12	0	12	0	0	0	297	5	18	23	0	0	0	0	
2002	168	14	182	12	0	12	0	0	0	895	16	55	71	0	0	0	0	
2003	175	24	199	12	0	12	0	0	0	1,499	27	95	122	0	0	0	0	
2004	0	34	34	0	0	0	0	0	0	2,109	39	137	177	0	0	0	0	
2005	0	46	46	0	0	0	0	0	0	2,724	53	183	235	0	0	0	0	
2006	0	58	58	0	0	0	0	0	0	3,347	66	231	298	0	0	0	0	
2007	0	71	71	0	0	0	0	0	0	3,975	81	283	364	0	0	0	0	
2008	0	84	84	0	0	0	0	0	0	4,610	97	338	435	0	0	0	0	
2009	0	99	99	0	0	0	0	0	0	5,250	114	396	510	0	0	0	0	
2010	0	115	115	0	0	0	0	0	0	5,898	132	459	590	0	0	0	0	
2011	0	131	131	0	0	0	0	0	0	6,551	151	525	676	0	0	0	0	
2012	0	149	149	0	0	0	0	0	0	7,212	171	595	766	0	0	0	0	
2013	0	167	167	0	0	0	0	0	0	7,879	193	669	862	0	0	0	0	
2014	0	187	187	0	0	0	0	0	0	8,552	215	748	964	0	0	0	0	
2015	0	208	208	0	0	0	0	0	0	9,232	239	832	1,072	0	0	0	0	
2016	0	230	230	0	0	0	0	0	0	9,920	265	921	1,186	0	0	0	0	
2017	0	254	254	0	0	0	0	0	0	10,614	292	1,015	1,307	0	0	0	0	
2018	0	278	278	0	0	0	0	0	0	11,315	321	1,114	1,435	0	0	0	0	
2019	0	305	305	0	0	0	0	0	0	12,023	351	1,220	1,570	0	0	0	0	
2020	0	333	333	0	0	0	0	0	0	12,738	383	1,331	1,714	0	0	0	0	
NOMINAL	505	2,789	3,294	36	0	36	0	0	0	126,637	3,211	11,165	14,376	0	0	0	0	
NPV	479	1,391	1,870	34	0	34	0	0	0		1,602	5,569	7,171		0	0	0	

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS

PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	166	0	0	166	0	0	6	0	6	(160)	(160)
2002	0	182	0	0	182	0	0	19	0	19	(163)	(315)
2003	0	199	0	0	199	0	0	33	0	33	(166)	(464)
2004	0	34	0	0	34	0	0	48	0	48	13	(452)
2005	0	46	0	0	46	0	0	64	0	64	18	(438)
2006	0	58	0	0	58	0	0	80	0	80	23	(421)
2007	0	71	0	0	71	0	0	99	0	99	28	(400)
2008	0	84	0	0	84	0	0	118	0	118	34	(377)
2009	0	99	0	0	99	0	0	139	0	139	40	(351)
2010	0	115	0	0	115	0	0	161	0	161	46	(323)
2011	0	131	0	0	131	0	0	184	0	184	53	(292)
2012	0	149	0	0	149	0	0	209	0	209	61	(258)
2013	0	167	0	0	167	0	0	236	0	236	68	(222)
2014	0	187	0	0	187	0	0	264	0	264	77	(184)
2015	0	208	0	0	208	0	0	294	0	294	86	(143)
2016	0	230	0	0	230	0	0	326	0	326	96	(100)
2017	0	254	0	0	254	0	0	360	0	360	106	(55)
2018	0	278	0	0	278	0	0	396	0	396	117	(8)
2019	0	305	0	0	305	0	0	434	0	434	129	41
2020	0	333	0	0	333	0	0	474	0	474	142	93
NOMINAL	0	3,294	0	0	3,294	0	0	3,942	0	3,942	647	
NPV	0	1,870	0	0	1,870	0	0	1,963	0	1,963	93	

Discount Rate: 5.50%

Benefit/Cost Ratio [col (11) / col (6)]: 1.05

Participants Test

PARTICIPANT COSTS AND BENEFITS
 PROGRAM: Res. Energy Survey

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	23	0	12	0	35	0	0	0	0	35	35
2002	71	0	12	0	83	0	0	0	0	83	113
2003	122	0	12	0	134	0	0	0	0	134	233
2004	177	0	0	0	177	0	0	0	0	177	384
2005	235	0	0	0	235	0	0	0	0	235	574
2006	298	0	0	0	298	0	0	0	0	298	802
2007	364	0	0	0	364	0	0	0	0	364	1,066
2008	435	0	0	0	435	0	0	0	0	435	1,365
2009	510	0	0	0	510	0	0	0	0	510	1,697
2010	590	0	0	0	590	0	0	0	0	590	2,062
2011	676	0	0	0	676	0	0	0	0	676	2,457
2012	766	0	0	0	766	0	0	0	0	766	2,882
2013	862	0	0	0	862	0	0	0	0	862	3,336
2014	964	0	0	0	964	0	0	0	0	964	3,816
2015	1,072	0	0	0	1,072	0	0	0	0	1,072	4,323
2016	1,186	0	0	0	1,186	0	0	0	0	1,186	4,854
2017	1,307	0	0	0	1,307	0	0	0	0	1,307	5,409
2018	1,435	0	0	0	1,435	0	0	0	0	1,435	5,986
2019	1,570	0	0	0	1,570	0	0	0	0	1,570	6,585
2020	1,714	0	0	0	1,714	0	0	0	0	1,714	7,205
NOMINAL	14,376	0	36	0	14,411	0	0	0	0	14,411	
NPV	7,171	0	34	0	7,205	0	0	0	0	7,205	

In-service year of generation unit: 2004
 Discount rate: 5.50%

RATE IMPACT TEST
PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	166	12	23	0	201	6	0	0	0	6	(195)	(195)
2002	0	182	12	71	0	265	19	0	0	0	19	(246)	(428)
2003	0	199	12	122	0	333	33	0	0	0	33	(300)	(697)
2004	0	34	0	177	0	211	48	0	0	0	48	(163)	(836)
2005	0	46	0	235	0	281	64	0	0	0	64	(217)	(1,012)
2006	0	58	0	298	0	355	80	0	0	0	80	(275)	(1,222)
2007	0	71	0	364	0	435	99	0	0	0	99	(336)	(1,466)
2008	0	84	0	435	0	519	118	0	0	0	118	(401)	(1,742)
2009	0	99	0	510	0	609	139	0	0	0	139	(471)	(2,049)
2010	0	115	0	590	0	705	161	0	0	0	161	(544)	(2,385)
2011	0	131	0	676	0	807	184	0	0	0	184	(622)	(2,749)
2012	0	149	0	766	0	915	209	0	0	0	209	(705)	(3,141)
2013	0	167	0	862	0	1,029	236	0	0	0	236	(793)	(3,558)
2014	0	187	0	964	0	1,151	264	0	0	0	264	(887)	(4,000)
2015	0	208	0	1,072	0	1,279	294	0	0	0	294	(985)	(4,466)
2016	0	230	0	1,186	0	1,416	326	0	0	0	326	(1,090)	(4,954)
2017	0	254	0	1,307	0	1,560	360	0	0	0	360	(1,201)	(5,464)
2018	0	278	0	1,435	0	1,713	396	0	0	0	396	(1,318)	(5,994)
2019	0	305	0	1,570	0	1,875	434	0	0	0	434	(1,441)	(6,544)
2020	0	333	0	1,714	0	2,046	474	0	0	0	474	(1,572)	(7,112)
NOMINAL	0	3,294	36	14,376	0	17,706	3,942	0	0	0	3,942	(13,764)	
NPV	0	1,870	34	7,171	0	9,075	1,963	0	0	0	1,963	(7,112)	
Discount rate:				5.50%									
Benefit / Cost Ratio [col (12) / col (7)]:				0.22									

PROGRAM: Res. Heat Pump

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.20 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.30 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,240.4 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,166.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	26.31 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	9.17 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	3,819.24 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	106.09 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Res. Heat Pump

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	343	343	1.71	1.93	1.93	1.92	1	1
2002	361	361	1.76	2.00	2.00	1.98	1	1
2003	379	379	1.81	2.06	2.06	2.04	1	1
2004	398	398	1.87	2.12	2.12	2.10	1	1
2005	418	418	1.92	2.19	2.19	2.16	1	1
2006	439	439	1.98	2.26	2.26	2.22	1	1
2007	460	460	2.04	2.33	2.33	2.29	1	1
2008	484	484	2.10	2.41	2.41	2.36	1	1
2009	508	508	2.16	2.48	2.48	2.43	1	1
2010	533	533	2.23	2.56	2.56	2.50	1	1
2011	560	560	2.30	2.64	2.64	2.58	1	1
2012	588	588	2.36	2.73	2.73	2.66	1	1
2013	617	617	2.44	2.81	2.81	2.74	1	1
2014	648	648	2.51	2.90	2.90	2.82	1	1
2015	681	681	2.58	2.99	2.99	2.90	1	1
2016	715	715	2.66	3.09	3.09	2.99	1	1
2017	750	750	2.74	3.19	3.19	3.08	1	1
2018	788	788	2.82	3.29	3.29	3.17	1	1
2019	828	828	2.91	3.39	3.39	3.27	1	1
2020	869	869	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Res. Heat Pump

* UNIT SIZE OF AVOIDED GENERATION UNIT = 519 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$210

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	14	3,865	3	8	82	81	0	26
2005	0.0685	14	3,865	3	8	85	83	0	27
2006	0.0706	15	3,865	3	9	87	86	0	28
2007	0.0727	15	3,865	3	9	90	89	0	29
2008	0.0749	16	3,865	3	9	93	91	0	30
2009	0.0771	16	3,865	3	10	96	94	0	31
2010	0.0794	17	3,865	3	10	99	97	0	32
2011	0.0818	17	3,865	3	10	102	100	0	33
2012	0.0843	18	3,865	4	10	105	103	0	34
2013	0.0868	18	3,865	4	11	109	106	0	36
2014	0.0894	19	3,865	4	11	112	109	0	37
2015	0.0921	19	3,865	4	11	116	112	0	38
2016	0.0948	20	3,865	4	12	119	116	0	39
2017	0.0977	20	3,865	4	12	123	119	0	41
2018	0.1006	21	3,865	4	12	127	123	0	42
2019	0.1036	22	3,865	4	13	131	126	0	44
2020	0.1067	22	3,865	5	13	135	130	0	45
NOMINAL		304	65,713	62	178	1,812	1,764	0	592
NPV		168		34	99	1,000	975	0	325

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Res. Heat Pump

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$45
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$28

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	4
2002	0	0	0	0	0	0	9
2003	0	0	0	0	0	0	9
2004	3	2	5	2	7	9	10
2005	3	2	5	2	7	9	11
2006	3	2	5	2	8	10	12
2007	3	2	5	2	8	10	13
2008	3	2	5	2	8	10	14
2009	3	2	5	2	8	11	15
2010	4	2	6	2	9	11	17
2011	4	2	6	2	9	11	18
2012	4	2	6	2	9	12	19
2013	4	2	6	2	9	12	21
2014	4	2	6	3	10	12	23
2015	4	2	6	3	10	13	25
2016	4	2	7	3	10	13	27
2017	4	2	7	3	11	13	29
2018	4	3	7	3	11	14	31
2019	5	3	7	3	11	14	34
2020	5	3	7	3	12	15	37
NOMINAL	65	36	101	40	158	199	378
NPV	36	20	56	22	88	110	205

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
 PROGRAM: Res. Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	213	4	0	0	4	4
2002	437	9	0	0	9	9
2003	459	9	0	0	9	9
2004	482	10	0	0	10	10
2005	506	11	0	0	11	11
2006	532	12	0	0	12	12
2007	558	13	0	0	13	13
2008	585	14	0	0	14	14
2009	615	15	0	0	15	15
2010	646	17	0	0	17	17
2011	678	18	0	0	18	18
2012	712	19	0	0	19	19
2013	747	21	0	0	21	21
2014	785	23	0	0	23	23
2015	824	25	0	0	25	25
2016	866	27	0	0	27	27
2017	909	29	0	0	29	29
2018	954	31	0	0	31	31
2019	1,002	34	0	0	34	34
2020	1,053	37	0	0	37	37
NOMINAL	13,561	378	0	0	378	378
NPV		205	0	0	205	205

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Res. Heat Pump

(1)	(2)----- (3)----- (4)----- (5)----- (6)----- (7)----- (8)----- (9)----- (10)----- (11)----- (12)----- (13)----- (14)----- (15)----- (16)----- (17)----- (18)																
	----- UTILITY PROGRAM COSTS & REBATES -----					----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----											
	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
YEAR																	
2001	9	2	11	36	0	36	1,310	0	1,310	200	3	12	15	0	0	0	0
2002	0	3	4	2	0	2	71	0	71	410	7	25	32	0	0	0	0
2003	1	4	4	2	0	2	73	0	73	431	8	27	35	0	0	0	0
2004	0	4	4	0	0	0	79	0	79	453	8	29	38	0	0	0	0
2005	0	4	4	0	0	0	86	0	86	476	9	32	41	0	0	0	0
2006	0	5	5	0	0	0	93	0	93	500	10	35	44	0	0	0	0
2007	0	5	5	0	0	0	96	0	96	524	11	37	48	0	0	0	0
2008	0	5	5	0	0	0	113	0	113	550	12	40	52	0	0	0	0
2009	0	6	6	0	0	0	116	0	116	578	13	44	56	0	0	0	0
2010	0	6	6	0	0	0	125	0	125	607	14	47	61	0	0	0	0
2011	0	7	7	0	0	0	139	0	139	637	15	51	66	0	0	0	0
2012	0	7	7	0	0	0	148	0	148	669	16	55	71	0	0	0	0
2013	0	8	8	0	0	0	158	0	158	703	17	60	77	0	0	0	0
2014	0	9	9	0	0	0	174	0	174	737	19	65	83	0	0	0	0
2015	0	9	9	0	0	0	191	0	191	775	20	70	90	0	0	0	0
2016	0	10	10	0	0	0	202	0	202	814	22	76	97	0	0	0	0
2017	0	11	11	0	0	0	215	0	215	854	23	82	105	0	0	0	0
2018	0	12	12	0	0	0	240	0	240	897	25	88	114	0	0	0	0
2019	0	13	13	0	0	0	260	0	260	942	27	96	123	0	0	0	0
2020	0	14	14	0	0	0	275	0	275	989	30	103	133	0	0	0	0
NOMINAL	10	142	152	40	0	40	4,162	0	4,162	12,747	309	1,074	1,382	0	0	0	0
NPV	10	77	87	40	0	40	2,850	0	2,850		168	585	753		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	11	1,310	0	1,321	0	0	4	0	4	(1,316)	(1,316)
2002	0	4	71	0	75	0	0	9	0	9	(66)	(1,379)
2003	0	4	73	0	77	0	0	9	0	9	(68)	(1,440)
2004	0	4	79	0	83	26	14	10	0	50	(33)	(1,468)
2005	0	4	86	0	90	27	14	11	0	52	(38)	(1,499)
2006	0	5	93	0	98	28	15	12	0	55	(43)	(1,531)
2007	0	5	96	0	101	29	15	13	0	57	(44)	(1,563)
2008	0	5	113	0	118	30	15	14	0	59	(59)	(1,603)
2009	0	6	116	0	122	31	16	15	0	62	(60)	(1,642)
2010	0	6	125	0	131	32	16	17	0	65	(66)	(1,683)
2011	0	7	139	0	145	33	17	18	0	68	(77)	(1,728)
2012	0	7	148	0	155	34	17	19	0	71	(84)	(1,775)
2013	0	8	158	0	166	36	18	21	0	75	(91)	(1,823)
2014	0	9	174	0	182	37	19	23	0	78	(104)	(1,875)
2015	0	9	191	0	200	38	19	25	0	82	(118)	(1,931)
2016	0	10	202	0	212	39	20	27	0	86	(126)	(1,987)
2017	0	11	215	0	225	41	20	29	0	90	(135)	(2,045)
2018	0	12	240	0	252	42	21	31	0	94	(157)	(2,108)
2019	0	13	260	0	273	44	21	34	0	99	(173)	(2,174)
2020	0	14	275	0	288	45	22	37	0	104	(184)	(2,241)
NOMINAL	0	152	4,162	0	4,313	592	300	378	0	1,270	(3,043)	
NPV	0	87	2,850	0	2,937	325	166	205	0	697	(2,241)	

Discount Rate: 5.50%
Benefit:Cost Ratio [col (11) / col (6)]: 0.24

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Res. Heat Pump

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	15	0	36	0	52	1,310	0	0	1,310	(1,258)	(1,258)
2002	32	0	2	0	34	71	0	0	71	(36)	(1,293)
2003	35	0	2	0	37	73	0	0	73	(36)	(1,325)
2004	38	0	0	0	38	79	0	0	79	(41)	(1,360)
2005	41	0	0	0	41	86	0	0	86	(45)	(1,397)
2006	44	0	0	0	44	93	0	0	93	(49)	(1,434)
2007	48	0	0	0	48	96	0	0	96	(48)	(1,468)
2008	52	0	0	0	52	113	0	0	113	(61)	(1,510)
2009	56	0	0	0	56	116	0	0	116	(60)	(1,549)
2010	61	0	0	0	61	125	0	0	125	(64)	(1,589)
2011	66	0	0	0	66	139	0	0	139	(73)	(1,631)
2012	71	0	0	0	71	148	0	0	148	(77)	(1,674)
2013	77	0	0	0	77	158	0	0	158	(81)	(1,717)
2014	83	0	0	0	83	174	0	0	174	(91)	(1,762)
2015	90	0	0	0	90	191	0	0	191	(101)	(1,809)
2016	97	0	0	0	97	202	0	0	202	(105)	(1,856)
2017	105	0	0	0	105	215	0	0	215	(109)	(1,903)
2018	114	0	0	0	114	240	0	0	240	(126)	(1,954)
2019	123	0	0	0	123	260	0	0	260	(137)	(2,006)
2020	133	0	0	0	133	275	0	0	275	(141)	(2,057)
NOMINAL	1,382	0	40	0	1,423	4,162	0	0	4,162	(2,739)	
NPV	753	0	40	0	793	2,850	0	0	2,850	(2,057)	
	In-service year of generation unit:			2004		Benefit/Cost Ratio:		0.28			
	Discount rate:			5.50%							

RATE IMPACT TEST
PROGRAM: Res. Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	11	36	15	0	62	4	0	0	0	4	(58)	(58)
2002	0	4	2	32	0	38	9	0	0	0	9	(29)	(86)
2003	0	4	2	35	0	41	9	0	0	0	9	(32)	(115)
2004	0	4	0	38	0	42	36	14	0	0	50	8	(108)
2005	0	4	0	41	0	45	38	14	0	0	52	7	(102)
2006	0	5	0	44	0	49	40	15	0	0	55	6	(98)
2007	0	5	0	48	0	53	42	15	0	0	57	4	(95)
2008	0	5	0	52	0	57	44	15	0	0	59	2	(93)
2009	0	6	0	56	0	62	46	16	0	0	62	0	(93)
2010	0	6	0	61	0	67	49	16	0	0	65	(2)	(94)
2011	0	7	0	66	0	72	51	17	0	0	68	(4)	(97)
2012	0	7	0	71	0	78	54	17	0	0	71	(7)	(101)
2013	0	8	0	77	0	85	57	18	0	0	75	(10)	(106)
2014	0	9	0	83	0	92	60	19	0	0	78	(14)	(113)
2015	0	9	0	90	0	99	63	19	0	0	82	(17)	(121)
2016	0	10	0	97	0	107	66	20	0	0	86	(21)	(131)
2017	0	11	0	105	0	116	70	20	0	0	90	(26)	(142)
2018	0	12	0	114	0	125	74	21	0	0	94	(31)	(154)
2019	0	13	0	123	0	136	78	21	0	0	99	(36)	(168)
2020	0	14	0	133	0	147	82	22	0	0	104	(43)	(184)
NOMINAL	0	152	40	1,382	0	1,574	970	300	0	0	1,270	(304)	
NPV	0	87	40	753	0	880	531	166	0	0	697	(184)	
				Discount rate:	5.50%								
				Benefit : Cost Ratio [col (12) / col (7)]:	0.79								

PROGRAM: Res. Weatherization

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.18 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	685.1 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	644.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	26.31 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	9.17 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	53.05 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	116.70 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Res Weatherization

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KIV EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	802	802	1.71	1.93	1.93	1.92	1	1
2002	842	842	1.76	2.00	2.00	1.98	1	1
2003	884	884	1.81	2.06	2.06	2.04	1	1
2004	929	929	1.87	2.12	2.12	2.10	1	1
2005	975	975	1.92	2.19	2.19	2.16	1	1
2006	1024	1024	1.98	2.26	2.26	2.22	1	1
2007	1075	1075	2.04	2.33	2.33	2.29	1	1
2008	1129	1129	2.10	2.41	2.41	2.36	1	1
2009	1185	1185	2.16	2.48	2.48	2.43	1	1
2010	1245	1245	2.23	2.56	2.56	2.50	1	1
2011	1307	1307	2.30	2.64	2.64	2.58	1	1
2012	1372	1372	2.36	2.73	2.73	2.66	1	1
2013	1441	1441	2.44	2.81	2.81	2.74	1	1
2014	1513	1513	2.51	2.90	2.90	2.82	1	1
2015	1589	1589	2.58	2.99	2.99	2.90	1	1
2016	1668	1668	2.66	3.09	3.09	2.99	1	1
2017	1752	1752	2.74	3.19	3.19	3.08	1	1
2018	1839	1839	2.82	3.29	3.29	3.17	1	1
2019	1932	1932	2.91	3.39	3.39	3.27	1	1
2020	2028	2028	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%		
2000	-4	0.0%	0.0%	1	1
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Res. Weatherization

* UNIT SIZE OF AVOIDED GENERATION UNIT = 182 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$73

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST \$(000)	(2A)* AVOIDED ANNUAL KWH GEN (000)	(3) AVOIDED UNIT FIXED O&M COST \$(000)	(4) AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	(5) AVOIDED GEN UNIT FUEL COST \$(000)	(6) REPLACEMENT FUEL COST \$(000)	(6A) AVOIDED PURCHASED CAPACITY COSTS \$(000)	(7) AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	5	1,353	1	3	29	28	0	9
2005	0.0685	5	1,353	1	3	30	29	0	9
2006	0.0706	5	1,353	1	3	31	30	0	10
2007	0.0727	5	1,353	1	3	32	31	0	10
2008	0.0749	5	1,353	1	3	33	32	0	10
2009	0.0771	6	1,353	1	3	34	33	0	11
2010	0.0794	6	1,353	1	3	35	34	0	11
2011	0.0818	6	1,353	1	4	36	35	0	12
2012	0.0843	6	1,353	1	4	37	36	0	12
2013	0.0868	6	1,353	1	4	38	37	0	12
2014	0.0894	7	1,353	1	4	39	38	0	13
2015	0.0921	7	1,353	1	4	41	39	0	13
2016	0.0948	7	1,353	1	4	42	40	0	14
2017	0.0977	7	1,353	1	4	43	42	0	14
2018	0.1006	7	1,353	2	4	44	43	0	15
2019	0.1036	8	1,353	2	4	46	44	0	15
2020	0.1067	8	1,353	2	5	47	46	0	16
NOMINAL		106	23,008	22	62	635	618	0	207
NPV		59		12	35	350	341	0	114

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Res. Weatherization

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$16
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$10

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	5
2002	0	0	0	0	0	0	11
2003	0	0	0	0	0	0	12
2004	1	1	2	1	3	3	13
2005	1	1	2	1	3	3	14
2006	1	1	2	1	3	3	15
2007	1	1	2	1	3	3	17
2008	1	1	2	1	3	4	18
2009	1	1	2	1	3	4	20
2010	1	1	2	1	3	4	21
2011	1	1	2	1	3	4	23
2012	1	1	2	1	3	4	25
2013	1	1	2	1	3	4	27
2014	1	1	2	1	3	4	29
2015	1	1	2	1	4	4	32
2016	1	1	2	1	4	5	34
2017	2	1	2	1	4	5	37
2018	2	1	2	1	4	5	40
2019	2	1	3	1	4	5	44
2020	2	1	3	1	4	5	47
NOMINAL	23	13	35	14	55	70	487
NPV	13	7	20	8	31	38	265

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Res. Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	275	5	0	0	5	5
2002	563	11	0	0	11	11
2003	591	12	0	0	12	12
2004	621	13	0	0	13	13
2005	652	14	0	0	14	14
2006	685	15	0	0	15	15
2007	719	17	0	0	17	17
2008	755	18	0	0	18	18
2009	793	20	0	0	20	20
2010	832	21	0	0	21	21
2011	874	23	0	0	23	23
2012	918	25	0	0	25	25
2013	964	27	0	0	27	27
2014	1,012	29	0	0	29	29
2015	1,063	32	0	0	32	32
2016	1,116	34	0	0	34	34
2017	1,172	37	0	0	37	37
2018	1,230	40	0	0	40	40
2019	1,292	44	0	0	44	44
2020	1,357	47	0	0	47	47
NOMINAL	17,482	487	0	0	487	487
NPV		265	0	0	265	265

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Res. Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	21	4	25	94	0	94	43	0	43	258	4	15	20	0	0	0	0
2002	1	8	9	5	0	5	2	0	2	529	9	32	42	0	0	0	0
2003	1	8	10	5	0	5	2	0	2	556	10	35	45	0	0	0	0
2004	0	9	9	0	0	0	3	0	3	584	11	38	49	0	0	0	0
2005	0	10	10	0	0	0	3	0	3	613	12	41	53	0	0	0	0
2006	0	11	11	0	0	0	3	0	3	644	13	44	57	0	0	0	0
2007	0	11	11	0	0	0	3	0	3	676	14	48	62	0	0	0	0
2008	0	12	12	0	0	0	4	0	4	710	15	52	67	0	0	0	0
2009	0	13	13	0	0	0	4	0	4	745	16	56	72	0	0	0	0
2010	0	15	15	0	0	0	4	0	4	782	17	61	78	0	0	0	0
2011	0	16	16	0	0	0	4	0	4	822	19	66	85	0	0	0	0
2012	0	17	17	0	0	0	5	0	5	863	20	71	92	0	0	0	0
2013	0	18	18	0	0	0	5	0	5	906	22	77	99	0	0	0	0
2014	0	20	20	0	0	0	6	0	6	951	24	83	107	0	0	0	0
2015	0	22	22	0	0	0	6	0	6	999	26	90	116	0	0	0	0
2016	0	23	23	0	0	0	7	0	7	1,049	28	97	125	0	0	0	0
2017	0	25	25	0	0	0	7	0	7	1,101	30	105	136	0	0	0	0
2018	0	27	27	0	0	0	8	0	8	1,156	33	114	147	0	0	0	0
2019	0	29	29	0	0	0	8	0	8	1,214	35	123	159	0	0	0	0
2020	0	32	32	0	0	0	9	0	9	1,275	38	133	172	0	0	0	0
NOMINAL	23	331	354	103	0	103	135	0	135	16,433	398	1,384	1,782	0	0	0	0
NPV	23	180	203	102	0	102	92	0	92		217	754	971		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	25	43	0	67	0	0	5	0	5	(62)	(62)
2002	0	9	2	0	11	0	0	11	0	11	0	(62)
2003	0	10	2	0	12	0	0	12	0	12	0	(62)
2004	0	9	3	0	12	9	5	13	0	27	15	(48)
2005	0	10	3	0	13	9	5	14	0	29	16	(35)
2006	0	11	3	0	14	10	5	15	0	30	17	(23)
2007	0	11	3	0	15	10	5	17	0	32	17	(10)
2008	0	12	4	0	16	10	5	18	0	34	18	2
2009	0	13	4	0	17	11	6	20	0	36	19	15
2010	0	15	4	0	19	11	6	21	0	38	20	27
2011	0	16	4	0	20	12	6	23	0	41	21	39
2012	0	17	5	0	22	12	6	25	0	43	21	51
2013	0	18	5	0	24	12	6	27	0	46	22	62
2014	0	20	6	0	25	13	6	29	0	49	23	74
2015	0	22	6	0	28	13	7	32	0	52	24	85
2016	0	23	7	0	30	14	7	34	0	55	25	97
2017	0	25	7	0	32	14	7	37	0	59	26	108
2018	0	27	8	0	35	15	7	40	0	63	28	119
2019	0	29	8	0	38	15	8	44	0	67	29	130
2020	0	32	9	0	41	16	8	47	0	71	30	141
NOMINAL	0	354	135	0	489	207	105	487	0	800	311	
NPV	0	203	92	0	296	114	58	265	0	437	141	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 1.48

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Res. Weatherization

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	20	0	94	0	113	43	0	0	43	71	71
2002	42	0	5	0	47	2	0	0	2	44	113
2003	45	0	5	0	50	2	0	0	2	48	156
2004	49	0	0	0	49	3	0	0	3	46	195
2005	53	0	0	0	53	3	0	0	3	50	236
2006	57	0	0	0	57	3	0	0	3	54	277
2007	62	0	0	0	62	3	0	0	3	59	320
2008	67	0	0	0	67	4	0	0	4	63	363
2009	72	0	0	0	72	4	0	0	4	69	408
2010	78	0	0	0	78	4	0	0	4	74	454
2011	85	0	0	0	85	4	0	0	4	80	501
2012	92	0	0	0	92	5	0	0	5	87	549
2013	99	0	0	0	99	5	0	0	5	94	599
2014	107	0	0	0	107	6	0	0	6	102	649
2015	116	0	0	0	116	6	0	0	6	110	701
2016	125	0	0	0	125	7	0	0	7	119	754
2017	136	0	0	0	136	7	0	0	7	128	809
2018	147	0	0	0	147	8	0	0	8	139	865
2019	159	0	0	0	159	8	0	0	8	150	922
2020	172	0	0	0	172	9	0	0	9	163	981
NOMINAL	1,782	0	103	0	1,885	135	0	0	135	1,750	
NPV	971	0	102	0	1,073	92	0	0	92	981	

In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 11.62

PROGRAM: Low Income Energy Fix Up

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.18 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	212.8 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	200.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	666.10 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	22.38 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Low Income Energy Fix Up

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	317	317	1.71	1.93	1.93	1.92	1	1
2002	333	333	1.76	2.00	2.00	1.98	1	1
2003	350	350	1.81	2.06	2.06	2.04	1	1
2004	367	367	1.87	2.12	2.12	2.10	1	1
2005	385	385	1.92	2.19	2.19	2.16	1	1
2006	405	405	1.98	2.26	2.26	2.22	1	1
2007	425	425	2.04	2.33	2.33	2.29	1	1
2008	446	446	2.10	2.41	2.41	2.36	1	1
2009	469	469	2.16	2.48	2.48	2.43	1	1
2010	492	492	2.23	2.56	2.56	2.50	1	1
2011	517	517	2.30	2.64	2.64	2.58	1	1
2012	543	543	2.36	2.73	2.73	2.66	1	1
2013	570	570	2.44	2.81	2.81	2.74	1	1
2014	598	598	2.51	2.90	2.90	2.82	1	1
2015	628	628	2.58	2.99	2.99	2.90	1	1
2016	660	660	2.66	3.09	3.09	2.99	1	1
2017	693	693	2.74	3.19	3.19	3.08	1	1
2018	727	727	2.82	3.29	3.29	3.17	1	1
2019	764	764	2.91	3.39	3.39	3.27	1	1
2020	802	802	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

AVOIDED GENERATION UNIT BENEFITS
 PROGRAM: Low Income Energy Fix Up

* UNIT SIZE OF AVOIDED GENERATION UNIT = 72 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$29

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) AVOIDED GEN UNIT CAPACITY COST \$(000)	(2A)* AVOIDED ANNUAL UNIT KWH GEN (000)	(3) AVOIDED UNIT FIXED O&M COST \$(000)	(4) AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	(5) AVOIDED GEN UNIT FUEL COST \$(000)	(6) REPLACEMENT FUEL COST \$(000)	(6A) AVOIDED PURCHASED CAPACITY COSTS \$(000)	(7) AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	2	535	0	1	11	11	0	4
2005	0.0685	2	535	0	1	12	12	0	4
2006	0.0706	2	535	0	1	12	12	0	4
2007	0.0727	2	535	0	1	12	12	0	4
2008	0.0749	2	535	0	1	13	13	0	4
2009	0.0771	2	535	0	1	13	13	0	4
2010	0.0794	2	535	0	1	14	13	0	4
2011	0.0818	2	535	0	1	14	14	0	5
2012	0.0843	2	535	0	1	15	14	0	5
2013	0.0868	3	535	1	1	15	15	0	5
2014	0.0894	3	535	1	2	16	15	0	5
2015	0.0921	3	535	1	2	16	16	0	5
2016	0.0948	3	535	1	2	17	16	0	5
2017	0.0977	3	535	1	2	17	16	0	6
2018	0.1006	3	535	1	2	18	17	0	6
2019	0.1036	3	535	1	2	18	17	0	6
2020	0.1067	3	535	1	2	19	18	0	6
NOMINAL		42	9,089	9	25	251	244	0	82
NPV		23		5	14	138	135	0	45

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Low Income Energy Fix Up

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$6
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$4

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	1
2002	0	0	0	0	0	0	1
2003	0	0	0	0	0	0	1
2004	0	0	1	0	1	1	2
2005	0	0	1	0	1	1	2
2006	0	0	1	0	1	1	2
2007	0	0	1	0	1	1	2
2008	0	0	1	0	1	1	2
2009	0	0	1	0	1	1	2
2010	0	0	1	0	1	2	3
2011	1	0	1	0	1	2	3
2012	1	0	1	0	1	2	3
2013	1	0	1	0	1	2	3
2014	1	0	1	0	1	2	4
2015	1	0	1	0	1	2	4
2016	1	0	1	0	1	2	4
2017	1	0	1	0	1	2	5
2018	1	0	1	0	2	2	5
2019	1	0	1	0	2	2	5
2020	1	0	1	0	2	2	6
NOMINAL	9	5	14	6	22	28	60
NPV	5	3	8	3	12	15	33

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
 PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	34	1	0	0	1	1
2002	69	1	0	0	1	1
2003	73	1	0	0	1	1
2004	76	2	0	0	2	2
2005	80	2	0	0	2	2
2006	84	2	0	0	2	2
2007	88	2	0	0	2	2
2008	93	2	0	0	2	2
2009	97	2	0	0	2	2
2010	102	3	0	0	3	3
2011	107	3	0	0	3	3
2012	113	3	0	0	3	3
2013	118	3	0	0	3	3
2014	124	4	0	0	4	4
2015	130	4	0	0	4	4
2016	137	4	0	0	4	4
2017	144	5	0	0	5	5
2018	151	5	0	0	5	5
2019	159	5	0	0	5	5
2020	167	6	0	0	6	6
NOMINAL	2,147	60	0	0	60	60
NPV		33	0	0	33	33

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	211	4	215	0	0	0	0	0	0	32	1	2	2	0	0	0	0
2002	11	7	18	0	0	0	0	0	0	65	1	4	5	0	0	0	0
2003	12	8	20	0	0	0	0	0	0	68	1	4	6	0	0	0	0
2004	0	9	9	0	0	0	0	0	0	72	1	5	6	0	0	0	0
2005	0	9	9	0	0	0	0	0	0	75	1	5	6	0	0	0	0
2006	0	10	10	0	0	0	0	0	0	79	2	5	7	0	0	0	0
2007	0	11	11	0	0	0	0	0	0	83	2	6	8	0	0	0	0
2008	0	12	12	0	0	0	0	0	0	87	2	6	8	0	0	0	0
2009	0	13	13	0	0	0	0	0	0	92	2	7	9	0	0	0	0
2010	0	14	14	0	0	0	0	0	0	96	2	7	10	0	0	0	0
2011	0	15	15	0	0	0	0	0	0	101	2	8	10	0	0	0	0
2012	0	16	16	0	0	0	0	0	0	106	3	9	11	0	0	0	0
2013	0	18	18	0	0	0	0	0	0	111	3	9	12	0	0	0	0
2014	0	19	19	0	0	0	0	0	0	117	3	10	13	0	0	0	0
2015	0	21	21	0	0	0	0	0	0	123	3	11	14	0	0	0	0
2016	0	22	22	0	0	0	0	0	0	129	3	12	15	0	0	0	0
2017	0	24	24	0	0	0	0	0	0	135	4	13	17	0	0	0	0
2018	0	26	26	0	0	0	0	0	0	142	4	14	18	0	0	0	0
2019	0	28	28	0	0	0	0	0	0	149	4	15	19	0	0	0	0
2020	0	31	31	0	0	0	0	0	0	157	5	16	21	0	0	0	0
NOMINAL	234	319	553	0	0	0	0	0	0	2,018	49	170	219	0	0	0	0
NPV	232	174	406	0	0	0	0	0	0		27	93	119		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	215	0	0	215	0	0	1	0	1	(214)	(214)
2002	0	18	0	0	18	0	0	1	0	1	(17)	(230)
2003	0	20	0	0	20	0	0	1	0	1	(19)	(247)
2004	0	9	0	0	9	4	2	2	0	7	(2)	(248)
2005	0	9	0	0	9	4	2	2	0	7	(2)	(250)
2006	0	10	0	0	10	4	2	2	0	8	(2)	(252)
2007	0	11	0	0	11	4	2	2	0	8	(3)	(254)
2008	0	12	0	0	12	4	2	2	0	9	(3)	(256)
2009	0	13	0	0	13	4	2	2	0	9	(4)	(259)
2010	0	14	0	0	14	4	2	3	0	9	(5)	(262)
2011	0	15	0	0	15	5	2	3	0	10	(5)	(265)
2012	0	16	0	0	16	5	2	3	0	10	(6)	(269)
2013	0	18	0	0	18	5	2	3	0	11	(7)	(272)
2014	0	19	0	0	19	5	3	4	0	11	(8)	(276)
2015	0	21	0	0	21	5	3	4	0	12	(9)	(280)
2016	0	22	0	0	22	5	3	4	0	12	(10)	(285)
2017	0	24	0	0	24	6	3	5	0	13	(11)	(290)
2018	0	26	0	0	26	6	3	5	0	14	(13)	(295)
2019	0	28	0	0	28	6	3	5	0	14	(14)	(300)
2020	0	31	0	0	31	6	3	6	0	15	(16)	(306)
NOMINAL	0	553	0	0	553	82	41	60	0	183	(370)	
NPV	0	406	0	0	406	45	23	33	0	100	(306)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.25

Participants Test

PARTICIPANT COSTS AND BENEFITS
 PROGRAM: Low Income Energy Fix Up

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	2	0	0	0	2	0	0	0	0	2	2
2002	5	0	0	0	5	0	0	0	0	5	7
2003	6	0	0	0	6	0	0	0	0	6	12
2004	6	0	0	0	6	0	0	0	0	6	17
2005	6	0	0	0	6	0	0	0	0	6	23
2006	7	0	0	0	7	0	0	0	0	7	28
2007	8	0	0	0	8	0	0	0	0	8	34
2008	8	0	0	0	8	0	0	0	0	8	39
2009	9	0	0	0	9	0	0	0	0	9	45
2010	10	0	0	0	10	0	0	0	0	10	51
2011	10	0	0	0	10	0	0	0	0	10	57
2012	11	0	0	0	11	0	0	0	0	11	63
2013	12	0	0	0	12	0	0	0	0	12	70
2014	13	0	0	0	13	0	0	0	0	13	76
2015	14	0	0	0	14	0	0	0	0	14	83
2016	15	0	0	0	15	0	0	0	0	15	90
2017	17	0	0	0	17	0	0	0	0	17	97
2018	18	0	0	0	18	0	0	0	0	18	104
2019	19	0	0	0	19	0	0	0	0	19	112
2020	21	0	0	0	21	0	0	0	0	21	119

NOMINAL 219 0 0 0 219 0 0 0 0 219

NPV 119 0 0 0 119 0 0 0 0 119

In-service year of generation unit: 2004
 Discount rate: 5.50%

Benefit/Cost Ratio: 1.00

RATE IMPACT TEST
PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	215	0	2	0	217	1	0	0	0	1	(216)	(216)
2002	0	18	0	5	0	24	1	0	0	0	1	(22)	(238)
2003	0	20	0	6	0	26	1	0	0	0	1	(24)	(259)
2004	0	9	0	6	0	15	5	2	0	0	7	(8)	(266)
2005	0	9	0	6	0	16	5	2	0	0	7	(9)	(273)
2006	0	10	0	7	0	17	6	2	0	0	8	(9)	(280)
2007	0	11	0	8	0	19	6	2	0	0	8	(11)	(288)
2008	0	12	0	8	0	20	6	2	0	0	9	(12)	(296)
2009	0	13	0	9	0	22	7	2	0	0	9	(13)	(304)
2010	0	14	0	10	0	24	7	2	0	0	9	(14)	(313)
2011	0	15	0	10	0	26	7	2	0	0	10	(16)	(322)
2012	0	16	0	11	0	28	8	2	0	0	10	(17)	(332)
2013	0	18	0	12	0	30	8	2	0	0	11	(19)	(342)
2014	0	19	0	13	0	32	9	3	0	0	11	(21)	(352)
2015	0	21	0	14	0	35	9	3	0	0	12	(23)	(363)
2016	0	22	0	15	0	38	10	3	0	0	12	(25)	(375)
2017	0	24	0	17	0	41	10	3	0	0	13	(28)	(387)
2018	0	26	0	18	0	44	11	3	0	0	14	(31)	(399)
2019	0	28	0	19	0	48	11	3	0	0	14	(33)	(412)
2020	0	31	0	21	0	52	12	3	0	0	15	(37)	(425)
NOMINAL	0	553	0	219	0	772	142	41	0	0	183	(589)	
NPV	0	406	0	119	0	526	78	23	0	0	100	(425)	
				Discount rate:	5.50%								
				Benefit / Cost Ratio [col (12) / col (7)]:	0.19								

PROGRAM: Res. Efficiency Water Heating

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.50 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.54 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	702.1 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	660.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	0.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	800.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	53.05 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Res_Efficiency Water Heating

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	343	343	1.71	1.93	1.93	1.92	1	1
2002	361	361	1.76	2.00	2.00	1.98	1	1
2003	379	379	1.81	2.06	2.06	2.04	1	1
2004	398	398	1.87	2.12	2.12	2.10	1	1
2005	418	418	1.92	2.19	2.19	2.16	1	1
2006	439	439	1.98	2.26	2.26	2.22	1	1
2007	460	460	2.04	2.33	2.33	2.29	1	1
2008	484	484	2.10	2.41	2.41	2.36	1	1
2009	508	508	2.16	2.48	2.48	2.43	1	1
2010	533	533	2.23	2.56	2.56	2.50	1	1
2011	560	560	2.30	2.64	2.64	2.58	1	1
2012	588	588	2.36	2.73	2.73	2.66	1	1
2013	617	617	2.44	2.81	2.81	2.74	1	1
2014	648	648	2.51	2.90	2.90	2.82	1	1
2015	681	681	2.58	2.99	2.99	2.90	1	1
2016	715	715	2.66	3.09	3.09	2.99	1	1
2017	750	750	2.74	3.19	3.19	3.08	1	1
2018	788	788	2.82	3.29	3.29	3.17	1	1
2019	828	828	2.91	3.39	3.39	3.27	1	1
2020	869	869	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

< -- COST DATA FOR CONSTRUCTION OF PLANT -- >

TEMP DATA/NOT USED

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Res. Efficiency Water Heating

* UNIT SIZE OF AVOIDED GENERATION UNIT = 216 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$87

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	6	1,611	1	3	34	34	0	11
2005	0.0685	6	1,611	1	4	35	35	0	11
2006	0.0706	6	1,611	1	4	36	36	0	12
2007	0.0727	6	1,611	1	4	38	37	0	12
2008	0.0749	7	1,611	1	4	39	38	0	12
2009	0.0771	7	1,611	1	4	40	39	0	13
2010	0.0794	7	1,611	1	4	41	40	0	13
2011	0.0818	7	1,611	1	4	43	42	0	14
2012	0.0843	7	1,611	1	4	44	43	0	14
2013	0.0868	8	1,611	2	4	45	44	0	15
2014	0.0894	8	1,611	2	5	47	45	0	15
2015	0.0921	8	1,611	2	5	48	47	0	16
2016	0.0948	8	1,611	2	5	50	48	0	16
2017	0.0977	9	1,611	2	5	51	50	0	17
2018	0.1006	9	1,611	2	5	53	51	0	18
2019	0.1036	9	1,611	2	5	55	53	0	18
2020	0.1067	9	1,611	2	5	56	54	0	19
NOMINAL		126	27,380	26	74	755	735	0	247
NPV		70		14	41	417	406	0	136

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Res. Efficiency Water Heating

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$19
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$12

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	2
2002	0	0	0	0	0	0	5
2003	0	0	0	0	0	0	5
2004	1	1	2	1	3	4	6
2005	1	1	2	1	3	4	6
2006	1	1	2	1	3	4	7
2007	1	1	2	1	3	4	7
2008	1	1	2	1	3	4	8
2009	1	1	2	1	4	4	9
2010	1	1	2	1	4	5	9
2011	2	1	2	1	4	5	10
2012	2	1	2	1	4	5	11
2013	2	1	3	1	4	5	12
2014	2	1	3	1	4	5	13
2015	2	1	3	1	4	5	14
2016	2	1	3	1	4	5	15
2017	2	1	3	1	4	6	16
2018	2	1	3	1	5	6	18
2019	2	1	3	1	5	6	19
2020	2	1	3	1	5	6	21
NOMINAL	27	15	42	17	66	83	214
NPV	15	8	23	9	36	46	116

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	120	2	0	0	2	2
2002	247	5	0	0	5	5
2003	260	5	0	0	5	5
2004	273	6	0	0	6	6
2005	286	6	0	0	6	6
2006	301	7	0	0	7	7
2007	316	7	0	0	7	7
2008	331	8	0	0	8	8
2009	348	9	0	0	9	9
2010	365	9	0	0	9	9
2011	384	10	0	0	10	10
2012	403	11	0	0	11	11
2013	423	12	0	0	12	12
2014	444	13	0	0	13	13
2015	467	14	0	0	14	14
2016	490	15	0	0	15	15
2017	514	16	0	0	16	16
2018	540	18	0	0	18	18
2019	567	19	0	0	19	19
2020	596	21	0	0	21	21
NOMINAL	7,676	214	0	0	214	214
NPV		116	0	0	116	116

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS GAIN
 PROGRAM: Res_Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	0	0	0	18	0	18	274	0	274	113	2	7	9	0	0	0	0
2002	0	0	0	1	0	1	15	0	15	232	4	14	18	0	0	0	0
2003	0	0	0	1	0	1	15	0	15	244	4	15	20	0	0	0	0
2004	0	0	0	0	0	0	17	0	17	256	5	17	21	0	0	0	0
2005	0	0	0	0	0	0	18	0	18	269	5	18	23	0	0	0	0
2006	0	0	0	0	0	0	19	0	19	283	6	20	25	0	0	0	0
2007	0	0	0	0	0	0	20	0	20	297	6	21	27	0	0	0	0
2008	0	0	0	0	0	0	24	0	24	312	7	23	29	0	0	0	0
2009	0	0	0	0	0	0	24	0	24	327	7	25	32	0	0	0	0
2010	0	0	0	0	0	0	26	0	26	344	8	27	34	0	0	0	0
2011	0	0	0	0	0	0	29	0	29	361	8	29	37	0	0	0	0
2012	0	0	0	0	0	0	31	0	31	379	9	31	40	0	0	0	0
2013	0	0	0	0	0	0	33	0	33	398	10	34	44	0	0	0	0
2014	0	0	0	0	0	0	36	0	36	417	11	37	47	0	0	0	0
2015	0	0	0	0	0	0	40	0	40	439	11	40	51	0	0	0	0
2016	0	0	0	0	0	0	42	0	42	461	12	43	55	0	0	0	0
2017	0	0	0	0	0	0	45	0	45	483	13	46	60	0	0	0	0
2018	0	0	0	0	0	0	50	0	50	508	14	50	64	0	0	0	0
2019	0	0	0	0	0	0	54	0	54	533	16	54	70	0	0	0	0
2020	0	0	0	0	0	0	58	0	58	560	17	59	75	0	0	0	0
NOMINAL	0	0	0	20	0	20	872	0	872	7,215	175	608	782	0	0	0	0
NPV	0	0	0	20	0	20	597	0	597		95	331	426		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	274	0	274	0	0	2	0	2	(272)	(272)
2002	0	0	15	0	15	0	0	5	0	5	(10)	(281)
2003	0	0	15	0	15	0	0	5	0	5	(10)	(290)
2004	0	0	17	0	17	11	6	6	0	22	6	(285)
2005	0	0	18	0	18	11	6	6	0	23	5	(281)
2006	0	0	19	0	19	12	6	7	0	25	5	(277)
2007	0	0	20	0	20	12	6	7	0	26	6	(273)
2008	0	0	24	0	24	12	6	8	0	27	3	(271)
2009	0	0	24	0	24	13	7	9	0	28	4	(268)
2010	0	0	26	0	26	13	7	9	0	30	3	(266)
2011	0	0	29	0	29	14	7	10	0	31	2	(265)
2012	0	0	31	0	31	14	7	11	0	33	2	(264)
2013	0	0	33	0	33	15	7	12	0	34	1	(264)
2014	0	0	36	0	36	15	8	13	0	36	(0)	(264)
2015	0	0	40	0	40	16	8	14	0	38	(2)	(265)
2016	0	0	42	0	42	16	8	15	0	40	(3)	(266)
2017	0	0	45	0	45	17	8	16	0	42	(3)	(267)
2018	0	0	50	0	50	18	9	18	0	44	(6)	(270)
2019	0	0	54	0	54	18	9	19	0	46	(8)	(273)
2020	0	0	58	0	58	19	9	21	0	49	(9)	(276)
NOMINAL	0	0	872	0	872	247	125	214	0	586	(286)	
NPV	0	0	597	0	597	136	69	116	0	321	(276)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.54

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	CUSTOMER EQUIPMENT COSTS \$(000)	CUSTOMER O & M COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	9	0	18	0	27	274	0	0	274	(248)	(248)
2002	18	0	1	0	19	15	0	0	15	4	(243)
2003	20	0	1	0	21	15	0	0	15	6	(238)
2004	21	0	0	0	21	17	0	0	17	5	(234)
2005	23	0	0	0	23	18	0	0	18	5	(230)
2006	25	0	0	0	25	19	0	0	19	6	(226)
2007	27	0	0	0	27	20	0	0	20	7	(220)
2008	29	0	0	0	29	24	0	0	24	6	(216)
2009	32	0	0	0	32	24	0	0	24	7	(212)
2010	34	0	0	0	34	26	0	0	26	8	(206)
2011	37	0	0	0	37	29	0	0	29	8	(202)
2012	40	0	0	0	40	31	0	0	31	9	(196)
2013	44	0	0	0	44	33	0	0	33	10	(191)
2014	47	0	0	0	47	36	0	0	36	11	(186)
2015	51	0	0	0	51	40	0	0	40	11	(181)
2016	55	0	0	0	55	42	0	0	42	13	(175)
2017	60	0	0	0	60	45	0	0	45	15	(169)
2018	64	0	0	0	64	50	0	0	50	14	(163)
2019	70	0	0	0	70	54	0	0	54	15	(157)
2020	75	0	0	0	75	58	0	0	58	18	(151)
NOMINAL	782	0	20	0	803	872	0	0	872	(69)	
NPV	426	0	20	0	446	597	0	0	597	(151)	
	In-service year of generation unit:			2004			Benefit/Cost Ratio:		0.75		
	Discount rate:			5.50%							

RATE IMPACT TEST
PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	0	18	9	0	27	2	0	0	0	2	(25)	(25)
2002	0	0	1	18	0	19	5	0	0	0	5	(14)	(38)
2003	0	0	1	20	0	21	5	0	0	0	5	(15)	(52)
2004	0	0	0	21	0	21	17	6	0	0	22	1	(51)
2005	0	0	0	23	0	23	18	6	0	0	23	0	(51)
2006	0	0	0	25	0	25	18	6	0	0	25	(1)	(52)
2007	0	0	0	27	0	27	19	6	0	0	26	(2)	(53)
2008	0	0	0	29	0	29	20	6	0	0	27	(3)	(55)
2009	0	0	0	32	0	32	22	7	0	0	28	(4)	(57)
2010	0	0	0	34	0	34	23	7	0	0	30	(5)	(60)
2011	0	0	0	37	0	37	24	7	0	0	31	(6)	(63)
2012	0	0	0	40	0	40	25	7	0	0	33	(8)	(68)
2013	0	0	0	44	0	44	27	7	0	0	34	(9)	(73)
2014	0	0	0	47	0	47	28	8	0	0	36	(11)	(78)
2015	0	0	0	51	0	51	30	8	0	0	38	(13)	(84)
2016	0	0	0	55	0	55	32	8	0	0	40	(15)	(91)
2017	0	0	0	60	0	60	33	8	0	0	42	(18)	(99)
2018	0	0	0	64	0	64	35	9	0	0	44	(20)	(107)
2019	0	0	0	70	0	70	37	9	0	0	46	(23)	(116)
2020	0	0	0	75	0	75	40	9	0	0	49	(26)	(125)
NOMINAL	0	0	20	782	0	803	461	125	0	0	586	(217)	
NPV	0	0	20	426	0	446	252	69	0	0	321	(125)	
				Discount rate:	5.50%								
				Benefit / Cost Ratio [col (12) / col (7)]:	0.72								

APPENDIX B.2

COMMERCIAL/INDUSTRIAL MEASURES

PROGRAM: Updated DLC-1A

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	2.24 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	2.43 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	219.54 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	47.13 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	57.31 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KVA	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM, Updated DLC-1A

* Avoided Generation Unit. CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KIV EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	1770	1770	1.71	1.93	1.93	1.92	1	1
2002	2360	2360	1.76	2.00	2.00	1.98	1	1
2003	3034	3034	1.81	2.06	2.06	2.04	1	1
2004	3792	3792	1.87	2.12	2.12	2.10	1	1
2005	4474	4474	1.92	2.19	2.19	2.16	1	1
2006	5081	5081	1.98	2.26	2.26	2.22	1	1
2007	5612	5612	2.04	2.33	2.33	2.29	1	1
2008	6067	6067	2.10	2.41	2.41	2.36	1	1
2009	6656	6656	2.16	2.48	2.48	2.43	1	1
2010	6749	6749	2.23	2.56	2.56	2.50	1	1
2011	6976	6976	2.30	2.64	2.64	2.58	1	1
2012	7128	7128	2.36	2.73	2.73	2.66	1	1
2013	7204	7204	2.44	2.81	2.81	2.74	1	1
2014	7204	7204	2.51	2.90	2.90	2.82	1	1
2015	7204	7204	2.58	2.99	2.99	2.90	1	1
2016	7204	7204	2.66	3.09	3.09	2.99	1	1
2017	7204	7204	2.74	3.19	3.19	3.08	1	1
2018	7204	7204	2.82	3.29	3.29	3.17	1	1
2019	7204	7204	2.91	3.39	3.39	3.27	1	1
2020	7204	7204	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				---	---			---	---	---
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

< -- COST DATA FOR CONSTRUCTION OF PLANT -- >

TEMP DATA/NOT USED

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

AVOIDED GENERATION UNIT BENEFITS
 PROGRAM: Updated DLC-1A

* UNIT SIZE OF AVOIDED GENERATION UNIT = 9,233 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$3,730

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	248	68,747	51	146	1,460	1,442	0	463
2005	0.0685	256	68,747	52	150	1,506	1,485	0	479
2006	0.0706	263	68,747	54	155	1,554	1,529	0	496
2007	0.0727	271	68,747	55	159	1,603	1,575	0	514
2008	0.0749	279	68,747	57	164	1,654	1,623	0	532
2009	0.0771	288	68,747	59	169	1,707	1,671	0	551
2010	0.0794	296	68,747	60	174	1,761	1,721	0	570
2011	0.0818	305	68,747	62	179	1,816	1,773	0	590
2012	0.0843	314	68,747	64	185	1,874	1,826	0	611
2013	0.0868	324	68,747	66	190	1,933	1,881	0	632
2014	0.0894	333	68,747	68	196	1,995	1,937	0	655
2015	0.0921	343	68,747	70	202	2,058	1,995	0	678
2016	0.0948	354	68,747	72	208	2,123	2,055	0	702
2017	0.0977	364	68,747	74	214	2,191	2,117	0	726
2018	0.1006	375	68,747	76	221	2,260	2,181	0	752
2019	0.1036	386	68,747	79	227	2,332	2,246	0	778
2020	0.1067	398	68,747	81	234	2,405	2,313	0	805
NOMINAL		5,398	1,168,693	1,099	3,174	32,232	31,371	0	10,533
NPV		2,985		608	1,755	17,785	17,346	0	5,786

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Updated DLC-1A

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$795
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$418

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	53	25	78	28	109	137	0
2005	54	26	80	29	112	141	0
2006	56	26	82	29	115	145	0
2007	58	27	85	30	119	149	0
2008	60	28	87	31	122	154	0
2009	61	29	90	32	126	158	0
2010	63	30	93	33	130	163	0
2011	65	31	96	34	134	168	0
2012	67	31	98	35	138	173	0
2013	69	32	101	36	142	178	0
2014	71	33	104	37	146	183	0
2015	73	34	108	38	151	189	0
2016	75	35	111	40	155	195	0
2017	78	36	114	41	160	200	0
2018	80	38	118	42	164	207	0
2019	82	39	121	43	169	213	0
2020	85	40	125	45	174	219	0
NOMINAL	1,150	540	1,691	605	2,366	2,971	0
NPV	636	299	935	335	1,308	1,643	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
 PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE' INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	389	42	430	0	51	51	0	0	0	0	0	0	0	0	0	0	0
2002	133	100	234	0	118	118	0	0	0	0	0	0	0	0	0	0	0
2003	157	135	292	0	155	155	0	0	0	0	0	0	0	0	0	0	0
2004	0	176	176	0	196	196	0	0	0	0	0	0	0	0	0	0	0
2005	0	219	219	0	237	237	0	0	0	0	0	0	0	0	0	0	0
2006	0	261	261	0	274	274	0	0	0	0	0	0	0	0	0	0	0
2007	0	301	301	0	306	306	0	0	0	0	0	0	0	0	0	0	0
2008	0	338	338	0	335	335	0	0	0	0	0	0	0	0	0	0	0
2009	0	380	380	0	365	365	0	0	0	0	0	0	0	0	0	0	0
2010	0	412	412	0	384	384	0	0	0	0	0	0	0	0	0	0	0
2011	0	435	435	0	393	393	0	0	0	0	0	0	0	0	0	0	0
2012	0	460	460	0	404	404	0	0	0	0	0	0	0	0	0	0	0
2013	0	482	482	0	411	411	0	0	0	0	0	0	0	0	0	0	0
2014	0	499	499	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2015	0	514	514	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2016	0	529	529	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2017	0	545	545	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2018	0	561	561	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2019	0	578	578	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2020	0	595	595	0	413	413	0	0	0	0	0	0	0	0	0	0	0
NOMINAL	679	7,561	8,240	0	6,518	6,518	0	0	0	0	0	0	0	0	0	0	0
NPV	656	4,122	4,778	0	3,701	3,701	0	0	0	0	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	430	0	0	430	0	0	0	0	0	(430)	(430)
2002	0	234	0	0	234	0	0	0	0	0	(234)	(652)
2003	0	292	0	0	292	0	0	0	0	0	(292)	(914)
2004	0	176	0	0	176	463	214	0	0	677	501	(487)
2005	0	219	0	0	219	479	221	0	0	700	481	(99)
2006	0	261	0	0	261	496	227	0	0	723	462	255
2007	0	301	0	0	301	514	234	0	0	748	447	579
2008	0	338	0	0	338	532	241	0	0	773	434	877
2009	0	380	0	0	380	551	248	0	0	799	419	1,150
2010	0	412	0	0	412	570	256	0	0	826	414	1,406
2011	0	435	0	0	435	590	263	0	0	854	419	1,651
2012	0	460	0	0	460	611	271	0	0	882	422	1,885
2013	0	482	0	0	482	632	280	0	0	912	430	2,112
2014	0	499	0	0	499	655	288	0	0	943	444	2,333
2015	0	514	0	0	514	678	297	0	0	974	461	2,551
2016	0	529	0	0	529	702	305	0	0	1,007	478	2,765
2017	0	545	0	0	545	726	315	0	0	1,041	496	2,975
2018	0	561	0	0	561	752	324	0	0	1,076	515	3,183
2019	0	578	0	0	578	778	334	0	0	1,112	534	3,386
2020	0	595	0	0	595	805	344	0	0	1,149	554	3,586
NOMINAL	0	8,240	0	0	8,240	10,533	4,662	0	0	15,195	6,954	
NPV	0	4,778	0	0	4,778	5,786	2,578	0	0	8,364	3,586	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 1.75

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Updated DLC-1A

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	51	0	51	0	0	0	0	51	51
2002	0	0	118	0	118	0	0	0	0	118	163
2003	0	0	155	0	155	0	0	0	0	155	302
2004	0	0	196	0	196	0	0	0	0	196	468
2005	0	0	237	0	237	0	0	0	0	237	660
2006	0	0	274	0	274	0	0	0	0	274	869
2007	0	0	306	0	306	0	0	0	0	306	1,091
2008	0	0	335	0	335	0	0	0	0	335	1,321
2009	0	0	365	0	365	0	0	0	0	365	1,559
2010	0	0	384	0	384	0	0	0	0	384	1,796
2011	0	0	393	0	393	0	0	0	0	393	2,026
2012	0	0	404	0	404	0	0	0	0	404	2,251
2013	0	0	411	0	411	0	0	0	0	411	2,467
2014	0	0	413	0	413	0	0	0	0	413	2,672
2015	0	0	413	0	413	0	0	0	0	413	2,868
2016	0	0	413	0	413	0	0	0	0	413	3,053
2017	0	0	413	0	413	0	0	0	0	413	3,228
2018	0	0	413	0	413	0	0	0	0	413	3,394
2019	0	0	413	0	413	0	0	0	0	413	3,551
2020	0	0	413	0	413	0	0	0	0	413	3,701
NOMINAL	0	0	6,518	0	6,518	0	0	0	0	6,518	
NPV	0	0	3,701	0	3,701	0	0	0	0	3,701	
	In-service year of generation unit:			2004		Benefit/Cost Ratio:		1.00			
	Discount rate:			5.50%							

RATE IMPACT TEST
PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	430	51	0	0	481	0	0	0	0	0	(481)	(481)
2002	0	234	118	0	0	352	0	0	0	0	0	(352)	(815)
2003	0	292	155	0	0	446	0	0	0	0	0	(446)	(1,216)
2004	0	176	196	0	0	371	463	214	0	0	677	306	(955)
2005	0	219	237	0	0	456	479	221	0	0	700	244	(759)
2006	0	261	274	0	0	535	496	227	0	0	723	189	(614)
2007	0	301	306	0	0	607	514	234	0	0	748	140	(512)
2008	0	338	335	0	0	673	532	241	0	0	773	100	(444)
2009	0	380	365	0	0	744	551	248	0	0	799	55	(408)
2010	0	412	384	0	0	796	570	256	0	0	826	29	(390)
2011	0	435	393	0	0	828	590	263	0	0	854	26	(375)
2012	0	460	404	0	0	864	611	271	0	0	882	18	(365)
2013	0	482	411	0	0	892	632	280	0	0	912	20	(355)
2014	0	499	413	0	0	911	655	288	0	0	943	31	(339)
2015	0	514	413	0	0	926	678	297	0	0	974	48	(317)
2016	0	529	413	0	0	942	702	305	0	0	1,007	65	(288)
2017	0	545	413	0	0	958	726	315	0	0	1,041	83	(252)
2018	0	561	413	0	0	974	752	324	0	0	1,076	102	(211)
2019	0	578	413	0	0	991	778	334	0	0	1,112	121	(165)
2020	0	595	413	0	0	1,008	805	344	0	0	1,149	141	(114)
NOMINAL	0	8,240	6,518	0	0	14,758	10,533	4,662	0	0	15,195	437	
NPV	0	4,778	3,701	0	0	8,478	5,786	2,578	0	0	8,364	(114)	
				Discount rate:	5.50%								
				Benefit / Cost Ratio [col (12) / col (7)]:	0.99								

PROGRAM: Updated DLC-2

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KIV REDUCTION AT THE METER	0.75 KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.82 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	219.54 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	31.39 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	21.49 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Updated DLC-2

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	498	498	1.71	1.93	1.93	1.92	1	1
2002	697	697	1.76	2.00	2.00	1.98	1	1
2003	930	930	1.81	2.06	2.06	2.04	1	1
2004	1196	1196	1.87	2.12	2.12	2.10	1	1
2005	1495	1495	1.92	2.19	2.19	2.16	1	1
2006	1761	1761	1.98	2.26	2.26	2.22	1	1
2007	1994	1994	2.04	2.33	2.33	2.29	1	1
2008	2193	2193	2.10	2.41	2.41	2.36	1	1
2009	2359	2359	2.16	2.48	2.48	2.43	1	1
2010	2592	2592	2.23	2.56	2.56	2.50	1	1
2011	2658	2658	2.30	2.64	2.64	2.58	1	1
2012	2691	2691	2.36	2.73	2.73	2.66	1	1
2013	2691	2691	2.44	2.81	2.81	2.74	1	1
2014	2691	2691	2.51	2.90	2.90	2.82	1	1
2015	2691	2691	2.58	2.99	2.99	2.90	1	1
2016	2691	2691	2.66	3.09	3.09	2.99	1	1
2017	2691	2691	2.74	3.19	3.19	3.08	1	1
2018	2691	2691	2.82	3.29	3.29	3.17	1	1
2019	2691	2691	2.91	3.39	3.39	3.27	1	1
2020	2691	2691	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

AVOIDED GENERATION UNIT BENEFITS
 PROGRAM: Updated DLC-2

* UNIT SIZE OF AVOIDED GENERATION UNIT = 975 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$394

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	26	7,260	5	15	154	152	0	49
2005	0.0685	27	7,260	5	16	159	157	0	51
2006	0.0706	28	7,260	6	16	164	162	0	52
2007	0.0727	29	7,260	6	17	169	166	0	54
2008	0.0749	29	7,260	6	17	175	171	0	56
2009	0.0771	30	7,260	6	18	180	176	0	58
2010	0.0794	31	7,260	6	18	186	182	0	60
2011	0.0818	32	7,260	7	19	192	187	0	62
2012	0.0843	33	7,260	7	20	198	193	0	65
2013	0.0868	34	7,260	7	20	204	199	0	67
2014	0.0894	35	7,260	7	21	211	205	0	69
2015	0.0921	36	7,260	7	21	217	211	0	72
2016	0.0948	37	7,260	8	22	224	217	0	74
2017	0.0977	38	7,260	8	23	231	224	0	77
2018	0.1006	40	7,260	8	23	239	230	0	79
2019	0.1036	41	7,260	8	24	246	237	0	82
2020	0.1067	42	7,260	9	25	254	244	0	85
NOMINAL		570	123,417	116	335	3,404	3,313	0	1,112
NPV		315		64	185	1,878	1,832	0	611

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Updated DLC-2

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$84
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$43

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	6	3	8	3	11	14	0
2005	6	3	8	3	11	14	0
2006	6	3	9	3	12	15	0
2007	6	3	9	3	12	15	0
2008	6	3	9	3	13	16	0
2009	6	3	9	3	13	16	0
2010	7	3	10	3	13	17	0
2011	7	3	10	4	14	17	0
2012	7	3	10	4	14	18	0
2013	7	3	11	4	15	18	0
2014	8	3	11	4	15	19	0
2015	8	4	11	4	15	19	0
2016	8	4	12	4	16	20	0
2017	8	4	12	4	16	21	0
2018	8	4	12	4	17	21	0
2019	9	4	13	4	17	22	0
2020	9	4	13	5	18	22	0
NOMINAL	121	55	177	62	243	305	0
NPV	67	31	98	34	134	169	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	109	8	117	0	5	5	0	0	0	0	0	0	0	0	0	0	0
2002	45	19	64	0	13	13	0	0	0	0	0	0	0	0	0	0	0
2003	54	27	81	0	17	17	0	0	0	0	0	0	0	0	0	0	0
2004	0	36	36	0	23	23	0	0	0	0	0	0	0	0	0	0	0
2005	0	48	48	0	29	29	0	0	0	0	0	0	0	0	0	0	0
2006	0	59	59	0	35	35	0	0	0	0	0	0	0	0	0	0	0
2007	0	70	70	0	40	40	0	0	0	0	0	0	0	0	0	0	0
2008	0	81	81	0	45	45	0	0	0	0	0	0	0	0	0	0	0
2009	0	90	90	0	49	49	0	0	0	0	0	0	0	0	0	0	0
2010	0	101	101	0	53	53	0	0	0	0	0	0	0	0	0	0	0
2011	0	111	111	0	56	56	0	0	0	0	0	0	0	0	0	0	0
2012	0	116	116	0	57	57	0	0	0	0	0	0	0	0	0	0	0
2013	0	120	120	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2014	0	124	124	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2015	0	128	128	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2016	0	132	132	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2017	0	136	136	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2018	0	140	140	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2019	0	144	144	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2020	0	148	148	0	58	58	0	0	0	0	0	0	0	0	0	0	0
NOMINAL	209	1,838	2,047	0	887	887	0	0	0	0	0	0	0	0	0	0	0
NPV	201	989	1,190	0	496	496	0	0	0	0	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
 PROGRAM: Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	117	0	0	117	0	0	0	0	0	(117)	(117)
2002	0	64	0	0	64	0	0	0	0	0	(64)	(178)
2003	0	81	0	0	81	0	0	0	0	0	(81)	(251)
2004	0	36	0	0	36	49	22	0	0	71	35	(222)
2005	0	48	0	0	48	51	23	0	0	73	26	(201)
2006	0	59	0	0	59	52	23	0	0	76	17	(188)
2007	0	70	0	0	70	54	24	0	0	78	8	(182)
2008	0	81	0	0	81	56	25	0	0	81	0	(182)
2009	0	90	0	0	90	58	26	0	0	84	(7)	(186)
2010	0	101	0	0	101	60	26	0	0	87	(15)	(196)
2011	0	111	0	0	111	62	27	0	0	90	(21)	(208)
2012	0	116	0	0	116	65	28	0	0	93	(24)	(221)
2013	0	120	0	0	120	67	29	0	0	96	(25)	(234)
2014	0	124	0	0	124	69	30	0	0	99	(25)	(247)
2015	0	128	0	0	128	72	31	0	0	102	(26)	(259)
2016	0	132	0	0	132	74	32	0	0	106	(26)	(270)
2017	0	136	0	0	136	77	33	0	0	109	(26)	(281)
2018	0	140	0	0	140	79	33	0	0	113	(27)	(292)
2019	0	144	0	0	144	82	34	0	0	117	(27)	(303)
2020	0	148	0	0	148	85	36	0	0	121	(28)	(313)
NOMINAL	0	2,047	0	0	2,047	1,112	482	0	0	1,594	(453)	
NPV	0	1,190	0	0	1,190	611	266	0	0	877	(313)	

Discount Rate: 5.50%
 Benefit/Cost Ratio [col (11) / col (6)]: 0.74

Participants Test

PARTICIPANT COSTS AND BENEFITS
 PROGRAM: Updated DLC-2

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	5	0	5	0	0	0	0	5	5
2002	0	0	13	0	13	0	0	0	0	13	18
2003	0	0	17	0	17	0	0	0	0	17	33
2004	0	0	23	0	23	0	0	0	0	23	53
2005	0	0	29	0	29	0	0	0	0	29	76
2006	0	0	35	0	35	0	0	0	0	35	103
2007	0	0	40	0	40	0	0	0	0	40	132
2008	0	0	45	0	45	0	0	0	0	45	163
2009	0	0	49	0	49	0	0	0	0	49	195
2010	0	0	53	0	53	0	0	0	0	53	228
2011	0	0	56	0	56	0	0	0	0	56	261
2012	0	0	57	0	57	0	0	0	0	57	293
2013	0	0	58	0	58	0	0	0	0	58	323
2014	0	0	58	0	58	0	0	0	0	58	352
2015	0	0	58	0	58	0	0	0	0	58	379
2016	0	0	58	0	58	0	0	0	0	58	405
2017	0	0	58	0	58	0	0	0	0	58	430
2018	0	0	58	0	58	0	0	0	0	58	453
2019	0	0	58	0	58	0	0	0	0	58	475
2020	0	0	58	0	58	0	0	0	0	58	496

NOMINAL	0	0	887	0	887	0	0	0	0	887
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NPV	0	0	496	0	496	0	0	0	0	496
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In-service year of generation unit: 2004
 Discount rate: 5.50%

Benefit/Cost Ratio: 1.00

PROGRAM: Comm Energy Survey

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	5.50	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	5.98	KW GEN/CUST
(3) KLV LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	3,563.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	3,350.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	5.46	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	25.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	3,000.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.450	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	6.90	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Comm. Energy Survey

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	367	367	1.71	1.93	1.93	1.92	1	1
2002	440	440	1.76	2.00	2.00	1.98	1	1
2003	513	513	1.81	2.06	2.06	2.04	1	1
2004	587	587	1.87	2.12	2.12	2.10	1	1
2005	660	660	1.92	2.19	2.19	2.16	1	1
2006	733	733	1.98	2.26	2.26	2.22	1	1
2007	807	807	2.04	2.33	2.33	2.29	1	1
2008	880	880	2.10	2.41	2.41	2.36	1	1
2009	953	953	2.16	2.48	2.48	2.43	1	1
2010	1026	1026	2.23	2.56	2.56	2.50	1	1
2011	1100	1100	2.30	2.64	2.64	2.58	1	1
2012	1173	1173	2.36	2.73	2.73	2.66	1	1
2013	1246	1246	2.44	2.81	2.81	2.74	1	1
2014	1320	1320	2.51	2.90	2.90	2.82	1	1
2015	1320	1320	2.58	2.99	2.99	2.90	1	1
2016	1320	1320	2.66	3.09	3.09	2.99	1	1
2017	1320	1320	2.74	3.19	3.19	3.08	1	1
2018	1320	1320	2.82	3.29	3.29	3.17	1	1
2019	1320	1320	2.91	3.39	3.39	3.27	1	1
2020	1320	1320	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

< - COST DATA FOR CONSTRUCTION OF PLANT - >

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Comm. Energy Survey

* UNIT SIZE OF AVOIDED GENERATION UNIT = 3,509 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$1,418

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	94	26,130	19	55	555	548	0	176
2005	0.0685	97	26,130	20	57	573	564	0	182
2006	0.0706	100	26,130	20	59	591	581	0	189
2007	0.0727	103	26,130	21	61	609	599	0	195
2008	0.0749	106	26,130	22	62	629	617	0	202
2009	0.0771	109	26,130	22	64	649	635	0	209
2010	0.0794	113	26,130	23	66	669	654	0	217
2011	0.0818	116	26,130	24	68	690	674	0	224
2012	0.0843	119	26,130	24	70	712	694	0	232
2013	0.0868	123	26,130	25	72	735	715	0	240
2014	0.0894	127	26,130	26	74	758	736	0	249
2015	0.0921	131	26,130	27	77	782	758	0	258
2016	0.0948	134	26,130	27	79	807	781	0	267
2017	0.0977	138	26,130	28	81	833	805	0	276
2018	0.1006	143	26,130	29	84	859	829	0	286
2019	0.1036	147	26,130	30	86	886	854	0	296
2020	0.1067	151	26,130	31	89	914	879	0	306
NOMINAL		2,052	444,207	418	1,206	12,251	11,924	0	4,003
NPV		1,135		231	667	6,760	6,593	0	2,199

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Comm. Energy Survey

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$302
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$174

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	13
2002	0	0	0	0	0	0	29
2003	0	0	0	0	0	0	35
2004	20	10	30	12	45	57	42
2005	21	11	31	12	46	58	49
2006	21	11	32	12	48	60	56
2007	22	11	33	13	49	62	64
2008	23	12	34	13	51	64	72
2009	23	12	35	13	52	66	81
2010	24	12	36	14	54	68	90
2011	25	13	37	14	56	70	100
2012	25	13	39	15	57	72	110
2013	26	13	40	15	59	74	121
2014	27	14	41	16	61	76	133
2015	28	14	42	16	62	78	141
2016	29	15	43	16	64	81	145
2017	30	15	45	17	66	83	150
2018	30	16	46	17	68	86	155
2019	31	16	47	18	70	88	160
2020	32	17	49	19	72	91	165
NOMINAL	437	224	662	251	982	1,233	1,910
NPV	242	124	366	139	543	682	1,021

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
 PROGRAM: Comm. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	654	13	0	0	13	13
2002	1,438	29	0	0	29	29
2003	1,698	35	0	0	35	35
2004	1,960	42	0	0	42	42
2005	2,222	49	0	0	49	49
2006	2,482	56	0	0	56	56
2007	2,744	64	0	0	64	64
2008	3,006	72	0	0	72	72
2009	3,266	81	0	0	81	81
2010	3,526	90	0	0	90	90
2011	3,788	100	0	0	100	100
2012	4,050	110	0	0	110	110
2013	4,310	121	0	0	121	121
2014	4,572	133	0	0	133	133
2015	4,704	141	0	0	141	141
2016	4,704	145	0	0	145	145
2017	4,704	150	0	0	150	150
2018	4,704	155	0	0	155	155
2019	4,704	160	0	0	160	160
2020	4,704	165	0	0	165	165
NOMINAL	67,944	1,910	0	0	1,910	1,910
NPV		1,021	0	0	1,021	1,021

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV' LOSS/GAIN
 PROGRAM: Comm. Energy Survey

(1)	(2)----- UTILITY PROGRAM COSTS & REBATES ----->						<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->											(18)
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT IN BILL \$(000)	INC. IN CUST KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)	
2001	2	5	7	1,101	0	1,101	0	0	0	615	11	117	128	0	0	0	0	
2002	0	10	11	219	0	219	0	0	0	1,352	24	260	283	0	0	0	0	
2003	0	13	13	219	0	219	0	0	0	1,596	29	309	338	0	0	0	0	
2004	0	15	15	0	0	0	0	0	0	1,843	35	360	395	0	0	0	0	
2005	0	18	18	0	0	0	0	0	0	2,089	40	412	452	0	0	0	0	
2006	0	20	20	0	0	0	0	0	0	2,333	46	464	511	0	0	0	0	
2007	0	23	23	0	0	0	0	0	0	2,580	53	518	571	0	0	0	0	
2008	0	26	26	0	0	0	0	0	0	2,826	60	573	633	0	0	0	0	
2009	0	29	29	0	0	0	0	0	0	3,070	67	629	696	0	0	0	0	
2010	0	32	32	0	0	0	0	0	0	3,315	74	686	760	0	0	0	0	
2011	0	36	36	0	0	0	0	0	0	3,561	82	745	827	0	0	0	0	
2012	0	39	39	0	0	0	0	0	0	3,807	90	804	895	0	0	0	0	
2013	0	43	43	0	0	0	0	0	0	4,052	99	865	964	0	0	0	0	
2014	0	47	47	0	0	0	0	0	0	4,298	108	928	1,036	0	0	0	0	
2015	0	50	50	0	0	0	0	0	0	4,422	115	965	1,080	0	0	0	0	
2016	0	51	51	0	0	0	0	0	0	4,422	118	976	1,094	0	0	0	0	
2017	0	53	53	0	0	0	0	0	0	4,422	122	987	1,109	0	0	0	0	
2018	0	55	55	0	0	0	0	0	0	4,422	125	999	1,124	0	0	0	0	
2019	0	56	56	0	0	0	0	0	0	4,422	129	1,011	1,140	0	0	0	0	
2020	0	58	58	0	0	0	0	0	0	4,422	133	1,023	1,156	0	0	0	0	
NOMINAL	3	679	682	1,539	0	1,539	0	0	0	63,868	1,559	13,633	15,192	0	0	0	0	
NPV	3	364	367	1,505	0	1,505	0	0	0		836	7,509	8,345		0	0	0	

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Comm. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	7	0	0	7	0	0	13	0	13	6	6
2002	0	11	0	0	11	0	0	29	0	29	18	23
2003	0	13	0	0	13	0	0	35	0	35	22	43
2004	0	15	0	0	15	176	87	42	0	305	290	289
2005	0	18	0	0	18	182	90	49	0	321	303	534
2006	0	20	0	0	20	189	92	56	0	337	317	776
2007	0	23	0	0	23	195	95	64	0	354	331	1,017
2008	0	26	0	0	26	202	98	72	0	372	347	1,255
2009	0	29	0	0	29	209	101	81	0	391	362	1,491
2010	0	32	0	0	32	217	104	90	0	411	379	1,725
2011	0	36	0	0	36	224	107	100	0	431	396	1,957
2012	0	39	0	0	39	232	110	110	0	453	414	2,186
2013	0	43	0	0	43	240	114	121	0	475	432	2,413
2014	0	47	0	0	47	249	117	133	0	499	451	2,638
2015	0	50	0	0	50	258	121	141	0	519	469	2,860
2016	0	51	0	0	51	267	124	145	0	536	485	3,077
2017	0	53	0	0	53	276	128	150	0	554	501	3,290
2018	0	55	0	0	55	286	132	155	0	572	518	3,498
2019	0	56	0	0	56	296	136	160	0	591	535	3,702
2020	0	58	0	0	58	306	140	165	0	610	553	3,902
NOMINAL	0	682	0	0	682	4,003	1,895	1,910	0	7,808	7,127	
NPV	0	367	0	0	367	2,199	1,048	1,021	0	4,269	3,902	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 11.64

PARTICIPANT COSTS AND BENEFITS
 PROGRAM: Comm. Energy Survey

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)	
2001	128	0	1,101	0	1,229	0	0	0	0	1,229	1,229	
2002	283	0	219	0	502	0	0	0	0	502	1,705	
2003	338	0	219	0	557	0	0	0	0	557	2,205	
2004	395	0	0	0	395	0	0	0	0	395	2,541	
2005	452	0	0	0	452	0	0	0	0	452	2,906	
2006	511	0	0	0	511	0	0	0	0	511	3,297	
2007	571	0	0	0	571	0	0	0	0	571	3,711	
2008	633	0	0	0	633	0	0	0	0	633	4,146	
2009	696	0	0	0	696	0	0	0	0	696	4,600	
2010	760	0	0	0	760	0	0	0	0	760	5,069	
2011	827	0	0	0	827	0	0	0	0	827	5,553	
2012	895	0	0	0	895	0	0	0	0	895	6,050	
2013	964	0	0	0	964	0	0	0	0	964	6,557	
2014	1,036	0	0	0	1,036	0	0	0	0	1,036	7,073	
2015	1,080	0	0	0	1,080	0	0	0	0	1,080	7,584	
2016	1,094	0	0	0	1,094	0	0	0	0	1,094	8,074	
2017	1,109	0	0	0	1,109	0	0	0	0	1,109	8,545	
2018	1,124	0	0	0	1,124	0	0	0	0	1,124	8,997	
2019	1,140	0	0	0	1,140	0	0	0	0	1,140	9,432	
2020	1,156	0	0	0	1,156	0	0	0	0	1,156	9,850	
NOMINAL	15,192	0	1,539	0	16,731	0	0	0	0	16,731		
NPV	8,345	0	1,505	0	9,850	0	0	0	0	9,850		
In-service year of generation unit:				2004	Benefit/Cost Ratio:			1.00				
Discount rate:				5.50%								

PROGRAM: Comm Lighting

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.90	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.98	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,063.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,000.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	26.31	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	33.95	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	1,592.06	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	90.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.450	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	6.90	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Comm Lighting

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	367	367	1.71	1.93	1.93	1.92	1	1
2002	440	440	1.76	2.00	2.00	1.98	1	1
2003	513	513	1.81	2.06	2.06	2.04	1	1
2004	587	587	1.87	2.12	2.12	2.10	1	1
2005	660	660	1.92	2.19	2.19	2.16	1	1
2006	733	733	1.98	2.26	2.26	2.22	1	1
2007	807	807	2.04	2.33	2.33	2.29	1	1
2008	880	880	2.10	2.41	2.41	2.36	1	1
2009	953	953	2.16	2.48	2.48	2.43	1	1
2010	1026	1026	2.23	2.56	2.56	2.50	1	1
2011	1100	1100	2.30	2.64	2.64	2.58	1	1
2012	1173	1173	2.36	2.73	2.73	2.66	1	1
2013	1246	1246	2.44	2.81	2.81	2.74	1	1
2014	1320	1320	2.51	2.90	2.90	2.82	1	1
2015	1320	1320	2.58	2.99	2.99	2.90	1	1
2016	1320	1320	2.66	3.09	3.09	2.99	1	1
2017	1320	1320	2.74	3.19	3.19	3.08	1	1
2018	1320	1320	2.82	3.29	3.29	3.17	1	1
2019	1320	1320	2.91	3.39	3.39	3.27	1	1
2020	1320	1320	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%		
2000	-4	0.0%		0.0%	1	1
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Comm. Lighting

* UNIT SIZE OF AVOIDED GENERATION UNIT = 574 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$232

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	15	4,276	3	9	91	90	0	29
2005	0.0685	16	4,276	3	9	94	92	0	30
2006	0.0706	16	4,276	3	10	97	95	0	31
2007	0.0727	17	4,276	3	10	100	98	0	32
2008	0.0749	17	4,276	4	10	103	101	0	33
2009	0.0771	18	4,276	4	11	106	104	0	34
2010	0.0794	18	4,276	4	11	110	107	0	35
2011	0.0818	19	4,276	4	11	113	110	0	37
2012	0.0843	20	4,276	4	11	117	114	0	38
2013	0.0868	20	4,276	4	12	120	117	0	39
2014	0.0894	21	4,276	4	12	124	120	0	41
2015	0.0921	21	4,276	4	13	128	124	0	42
2016	0.0948	22	4,276	4	13	132	128	0	44
2017	0.0977	23	4,276	5	13	136	132	0	45
2018	0.1006	23	4,276	5	14	141	136	0	47
2019	0.1036	24	4,276	5	14	145	140	0	48
2020	0.1067	25	4,276	5	15	150	144	0	50
NOMINAL		336	72,688	68	197	2,005	1,951	0	655
NPV		186		38	109	1,106	1,079	0	360

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Comm. Lighting

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$49

* INSERVICE COSTS OF AVOIDED DIST. (000) = \$28

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	4
2002	0	0	0	0	0	0	9
2003	0	0	0	0	0	0	10
2004	3	2	5	2	7	9	12
2005	3	2	5	2	8	10	15
2006	3	2	5	2	8	10	17
2007	4	2	5	2	8	10	19
2008	4	2	6	2	8	10	22
2009	4	2	6	2	9	11	24
2010	4	2	6	2	9	11	27
2011	4	2	6	2	9	11	30
2012	4	2	6	2	9	12	33
2013	4	2	6	2	10	12	36
2014	4	2	7	3	10	12	40
2015	5	2	7	3	10	13	42
2016	5	2	7	3	11	13	43
2017	5	2	7	3	11	14	45
2018	5	3	8	3	11	14	46
2019	5	3	8	3	12	14	48
2020	5	3	8	3	12	15	49
NOMINAL	72	37	108	41	161	202	570
NPV	40	20	60	23	89	112	305

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Comm. Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	195	4	0	0	4	4
2002	429	9	0	0	9	9
2003	507	10	0	0	10	10
2004	585	12	0	0	12	12
2005	663	15	0	0	15	15
2006	741	17	0	0	17	17
2007	819	19	0	0	19	19
2008	897	22	0	0	22	22
2009	975	24	0	0	24	24
2010	1,053	27	0	0	27	27
2011	1,131	30	0	0	30	30
2012	1,209	33	0	0	33	33
2013	1,287	36	0	0	36	36
2014	1,365	40	0	0	40	40
2015	1,404	42	0	0	42	42
2016	1,404	43	0	0	43	43
2017	1,404	45	0	0	45	45
2018	1,404	46	0	0	46	46
2019	1,404	48	0	0	48	48
2020	1,404	49	0	0	49	49
NOMINAL	20,282	570	0	0	570	570
NPV		305	0	0	305	305

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Comm Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	10	6	16	33	0	33	584	0	584	184	3	24	27	0	0	0	0
2002	2	14	16	7	0	7	120	0	120	404	7	53	60	0	0	0	0
2003	2	17	19	7	0	7	123	0	123	477	9	63	72	0	0	0	0
2004	0	20	20	0	0	0	129	0	129	550	10	74	84	0	0	0	0
2005	0	24	24	0	0	0	131	0	131	624	12	85	97	0	0	0	0
2006	0	27	27	0	0	0	135	0	135	697	14	96	110	0	0	0	0
2007	0	31	31	0	0	0	141	0	141	770	16	107	123	0	0	0	0
2008	0	35	35	0	0	0	143	0	143	844	18	119	137	0	0	0	0
2009	0	39	39	0	0	0	147	0	147	917	20	132	151	0	0	0	0
2010	0	44	44	0	0	0	152	0	152	990	22	144	166	0	0	0	0
2011	0	48	48	0	0	0	158	0	158	1,063	24	157	182	0	0	0	0
2012	0	53	53	0	0	0	161	0	161	1,137	27	170	197	0	0	0	0
2013	0	59	59	0	0	0	166	0	166	1,210	30	184	214	0	0	0	0
2014	0	64	64	0	0	0	173	0	173	1,283	32	198	231	0	0	0	0
2015	0	68	68	0	0	0	0	0	0	1,320	34	207	241	0	0	0	0
2016	0	70	70	0	0	0	0	0	0	1,320	35	210	246	0	0	0	0
2017	0	72	72	0	0	0	0	0	0	1,320	36	214	250	0	0	0	0
2018	0	74	74	0	0	0	0	0	0	1,320	37	217	255	0	0	0	0
2019	0	76	76	0	0	0	0	0	0	1,320	39	221	259	0	0	0	0
2020	0	79	79	0	0	0	0	0	0	1,320	40	224	264	0	0	0	0
NOMINAL	14	922	935	46	0	46	2,462	0	2,462	19,065	465	2,899	3,365	0	0	0	0
NPV	13	494	507	45	0	45	1,872	0	1,872		249	1,587	1,837		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
 PROGRAM: Comm. Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	16	584	0	600	0	0	4	0	4	(596)	(596)
2002	0	16	120	0	136	0	0	9	0	9	(127)	(717)
2003	0	19	123	0	142	0	0	10	0	10	(132)	(836)
2004	0	20	129	0	149	29	14	12	0	55	(94)	(915)
2005	0	24	131	0	155	30	15	15	0	59	(96)	(993)
2006	0	27	135	0	162	31	15	17	0	63	(99)	(1,069)
2007	0	31	141	0	172	32	16	19	0	67	(105)	(1,145)
2008	0	35	143	0	178	33	16	22	0	71	(107)	(1,219)
2009	0	39	147	0	187	34	17	24	0	75	(112)	(1,292)
2010	0	44	152	0	195	35	17	27	0	79	(116)	(1,363)
2011	0	48	158	0	207	37	18	30	0	84	(123)	(1,435)
2012	0	53	161	0	214	38	18	33	0	89	(125)	(1,505)
2013	0	59	166	0	224	39	19	36	0	94	(130)	(1,573)
2014	0	64	173	0	237	41	19	40	0	99	(138)	(1,642)
2015	0	68	0	0	68	42	20	42	0	104	36	(1,625)
2016	0	70	0	0	70	44	20	43	0	107	38	(1,608)
2017	0	72	0	0	72	45	21	45	0	111	39	(1,591)
2018	0	74	0	0	74	47	22	46	0	114	40	(1,575)
2019	0	76	0	0	76	48	22	48	0	118	42	(1,559)
2020	0	79	0	0	79	50	23	49	0	122	44	(1,543)
NOMINAL	0	935	2,462	0	3,397	655	310	570	0	1,535	(1,862)	
NPV	0	507	1,872	0	2,380	360	171	305	0	836	(1,543)	

Discount Rate: 5.50%
 Benefit/Cost Ratio [col (11) / col (6)]: 0.35

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Comm. Lighting

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	27	0	33	0	60	584	0	0	584	(524)	(524)
2002	60	0	7	0	66	120	0	0	120	(53)	(575)
2003	72	0	7	0	78	123	0	0	123	(45)	(615)
2004	84	0	0	0	84	129	0	0	129	(45)	(654)
2005	97	0	0	0	97	131	0	0	131	(34)	(681)
2006	110	0	0	0	110	135	0	0	135	(25)	(700)
2007	123	0	0	0	123	141	0	0	141	(17)	(713)
2008	137	0	0	0	137	143	0	0	143	(6)	(717)
2009	151	0	0	0	151	147	0	0	147	4	(714)
2010	166	0	0	0	166	152	0	0	152	15	(705)
2011	182	0	0	0	182	158	0	0	158	23	(692)
2012	197	0	0	0	197	161	0	0	161	36	(671)
2013	214	0	0	0	214	166	0	0	166	48	(646)
2014	231	0	0	0	231	173	0	0	173	58	(617)
2015	241	0	0	0	241	0	0	0	0	241	(503)
2016	246	0	0	0	246	0	0	0	0	246	(393)
2017	250	0	0	0	250	0	0	0	0	250	(287)
2018	255	0	0	0	255	0	0	0	0	255	(185)
2019	259	0	0	0	259	0	0	0	0	259	(86)
2020	264	0	0	0	264	0	0	0	0	264	10
NOMINAL	3,365	0	46	0	3,411	2,462	0	0	2,462	949	
NPV	1,837	0	45	0	1,882	1,872	0	0	1,872	10	

In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.01

PROGRAM Comm. Cooling

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.00 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.09 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	4,076.6 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	3,832.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	5.46 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	64.66 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.450 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	6.90 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Comm Cooling

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	367	367	1.71	1.93	1.93	1.92	1	1
2002	440	440	1.76	2.00	2.00	1.98	1	1
2003	513	513	1.81	2.06	2.06	2.04	1	1
2004	587	587	1.87	2.12	2.12	2.10	1	1
2005	660	660	1.92	2.19	2.19	2.16	1	1
2006	733	733	1.98	2.26	2.26	2.22	1	1
2007	807	807	2.04	2.33	2.33	2.29	1	1
2008	880	880	2.10	2.41	2.41	2.36	1	1
2009	953	953	2.16	2.48	2.48	2.43	1	1
2010	1026	1026	2.23	2.56	2.56	2.50	1	1
2011	1100	1100	2.30	2.64	2.64	2.58	1	1
2012	1173	1173	2.36	2.73	2.73	2.66	1	1
2013	1246	1246	2.44	2.81	2.81	2.74	1	1
2014	1320	1320	2.51	2.90	2.90	2.82	1	1
2015	1320	1320	2.58	2.99	2.99	2.90	1	1
2016	1320	1320	2.66	3.09	3.09	2.99	1	1
2017	1320	1320	2.74	3.19	3.19	3.08	1	1
2018	1320	1320	2.82	3.29	3.29	3.17	1	1
2019	1320	1320	2.91	3.39	3.39	3.27	1	1
2020	1320	1320	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%		
2000	-4	0.0%		0.0%	1	1
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

AVOIDED GENERATION UNIT BENEFITS
 PROGRAM: Comm. Cooling

* UNIT SIZE OF AVOIDED GENERATION UNIT = 638 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$258

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	17	4,751	3	10	101	100	0	32
2005	0.0685	18	4,751	4	10	104	103	0	33
2006	0.0706	18	4,751	4	11	107	106	0	34
2007	0.0727	19	4,751	4	11	111	109	0	35
2008	0.0749	19	4,751	4	11	114	112	0	37
2009	0.0771	20	4,751	4	12	118	115	0	38
2010	0.0794	20	4,751	4	12	122	119	0	39
2011	0.0818	21	4,751	4	12	126	123	0	41
2012	0.0843	22	4,751	4	13	130	126	0	42
2013	0.0868	22	4,751	5	13	134	130	0	44
2014	0.0894	23	4,751	5	14	138	134	0	45
2015	0.0921	24	4,751	5	14	142	138	0	47
2016	0.0948	24	4,751	5	14	147	142	0	48
2017	0.0977	25	4,751	5	15	151	146	0	50
2018	0.1006	26	4,751	5	15	156	151	0	52
2019	0.1036	27	4,751	5	16	161	155	0	54
2020	0.1067	28	4,751	6	16	166	160	0	56
NOMINAL		373	80,765	76	219	2,227	2,168	0	728
NPV		206		42	121	1,229	1,199	0	400

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Comm. Cooling

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$55
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$32

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	14
2002	0	0	0	0	0	0	33
2003	0	0	0	0	0	0	40
2004	4	2	6	2	8	10	48
2005	4	2	6	2	8	11	56
2006	4	2	6	2	9	11	64
2007	4	2	6	2	9	11	73
2008	4	2	6	2	9	12	83
2009	4	2	6	2	10	12	93
2010	4	2	7	3	10	12	103
2011	4	2	7	3	10	13	114
2012	5	2	7	3	10	13	126
2013	5	2	7	3	11	13	139
2014	5	3	8	3	11	14	152
2015	5	3	8	3	12	15	161
2016	5	3	8	3	12	15	166
2017	5	3	8	3	12	15	171
2018	6	3	9	3	13	16	177
2019	6	3	9	3	13	16	183
2020	6	3	9	3	13	17	188
NOMINAL	80	41	120	46	179	224	2,184
NPV	44	23	67	25	99	124	1,168

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Comm. Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	748	14	0	0	14	14
2002	1,645	33	0	0	33	33
2003	1,942	40	0	0	40	40
2004	2,242	48	0	0	48	48
2005	2,542	56	0	0	56	56
2006	2,839	64	0	0	64	64
2007	3,139	73	0	0	73	73
2008	3,439	83	0	0	83	83
2009	3,736	93	0	0	93	93
2010	4,034	103	0	0	103	103
2011	4,333	114	0	0	114	114
2012	4,633	126	0	0	126	126
2013	4,931	139	0	0	139	139
2014	5,230	152	0	0	152	152
2015	5,381	161	0	0	161	161
2016	5,381	166	0	0	166	166
2017	5,381	171	0	0	171	171
2018	5,381	177	0	0	177	177
2019	5,381	183	0	0	183	183
2020	5,381	188	0	0	188	188
NOMINAL	77,720	2,184	0	0	2,184	2,184
NPV		1,168	0	0	1,168	1,168

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Comm Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES -----							----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	2	12	14	37	0	37	0	0	0	703	12	54	66	0	0	0	0
2002	0	27	27	7	0	7	0	0	0	1,546	27	120	147	0	0	0	0
2003	0	33	33	7	0	7	0	0	0	1,826	33	145	178	0	0	0	0
2004	0	39	39	0	0	0	0	0	0	2,108	39	171	210	0	0	0	0
2005	0	45	45	0	0	0	0	0	0	2,389	46	198	244	0	0	0	0
2006	0	52	52	0	0	0	0	0	0	2,669	53	226	279	0	0	0	0
2007	0	59	59	0	0	0	0	0	0	2,951	60	256	316	0	0	0	0
2008	0	67	67	0	0	0	0	0	0	3,232	68	286	355	0	0	0	0
2009	0	75	75	0	0	0	0	0	0	3,512	76	318	395	0	0	0	0
2010	0	83	83	0	0	0	0	0	0	3,792	85	351	436	0	0	0	0
2011	0	92	92	0	0	0	0	0	0	4,073	94	386	480	0	0	0	0
2012	0	102	102	0	0	0	0	0	0	4,355	103	423	526	0	0	0	0
2013	0	112	112	0	0	0	0	0	0	4,635	113	460	573	0	0	0	0
2014	0	122	122	0	0	0	0	0	0	4,916	124	500	623	0	0	0	0
2015	0	129	129	0	0	0	0	0	0	5,058	131	526	657	0	0	0	0
2016	0	133	133	0	0	0	0	0	0	5,058	135	539	674	0	0	0	0
2017	0	137	137	0	0	0	0	0	0	5,058	139	552	691	0	0	0	0
2018	0	141	141	0	0	0	0	0	0	5,058	143	565	708	0	0	0	0
2019	0	145	145	0	0	0	0	0	0	5,058	148	579	726	0	0	0	0
2020	0	150	150	0	0	0	0	0	0	5,058	152	593	745	0	0	0	0
NOMINAL	3	1,756	1,758	51	0	51	0	0	0	73,057	1,783	7,247	9,030	0	0	0	0
NPV	3	941	944	50	0	50	0	0	0		956	3,921	4,877		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
 PROGRAM: Comm. Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	14	0	0	14	0	0	14	0	14	1	1
2002	0	27	0	0	27	0	0	33	0	33	6	6
2003	0	33	0	0	33	0	0	40	0	40	7	12
2004	0	39	0	0	39	32	16	48	0	95	57	60
2005	0	45	0	0	45	33	16	56	0	105	60	108
2006	0	52	0	0	52	34	17	64	0	115	63	157
2007	0	59	0	0	59	35	17	73	0	126	67	205
2008	0	67	0	0	67	37	18	83	0	137	70	253
2009	0	75	0	0	75	38	18	93	0	149	74	301
2010	0	83	0	0	83	39	19	103	0	162	78	350
2011	0	92	0	0	92	41	19	114	0	175	82	398
2012	0	102	0	0	102	42	20	126	0	189	87	446
2013	0	112	0	0	112	44	21	139	0	203	92	494
2014	0	122	0	0	122	45	21	152	0	218	96	542
2015	0	129	0	0	129	47	22	161	0	230	101	590
2016	0	133	0	0	133	48	23	166	0	237	104	637
2017	0	137	0	0	137	50	23	171	0	245	108	682
2018	0	141	0	0	141	52	24	177	0	253	112	727
2019	0	145	0	0	145	54	25	183	0	261	116	772
2020	0	150	0	0	150	56	25	188	0	269	120	815
NOMINAL	0	1,758	0	0	1,758	728	345	2,184	0	3,257	1,498	
NPV	0	944	0	0	944	400	191	1,168	0	1,759	815	

Discount Rate: 5.50%
 Benefit/Cost Ratio [col (11) / col (6)]: 1.86

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Comm. Cooling

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	66	0	37	0	102	0	0	0	0	102	102
2002	147	0	7	0	155	0	0	0	0	155	249
2003	178	0	7	0	185	0	0	0	0	185	416
2004	210	0	0	0	210	0	0	0	0	210	595
2005	244	0	0	0	244	0	0	0	0	244	792
2006	279	0	0	0	279	0	0	0	0	279	1,006
2007	316	0	0	0	316	0	0	0	0	316	1,235
2008	355	0	0	0	355	0	0	0	0	355	1,479
2009	395	0	0	0	395	0	0	0	0	395	1,736
2010	436	0	0	0	436	0	0	0	0	436	2,005
2011	480	0	0	0	480	0	0	0	0	480	2,286
2012	526	0	0	0	526	0	0	0	0	526	2,578
2013	573	0	0	0	573	0	0	0	0	573	2,880
2014	623	0	0	0	623	0	0	0	0	623	3,191
2015	657	0	0	0	657	0	0	0	0	657	3,501
2016	674	0	0	0	674	0	0	0	0	674	3,803
2017	691	0	0	0	691	0	0	0	0	691	4,096
2018	708	0	0	0	708	0	0	0	0	708	4,381
2019	726	0	0	0	726	0	0	0	0	726	4,658
2020	745	0	0	0	745	0	0	0	0	745	4,927
NOMINAL	9,030	0	51	0	9,081	0	0	0	0	9,081	
NPV	4,877	0	50	0	4,927	0	0	0	0	4,927	

In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.00

APPENDIX B.3

FLORIDA POWER & LIGHT MEASURE

PROGRAM: OPBC

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.00 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.09 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	66.84 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	258.86 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	0.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.446 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	6.90 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: OPBC

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	2	2	1.71	1.93	1.93	1.92	1	1
2002	2	2	1.76	2.00	2.00	1.98	1	1
2003	2	2	1.81	2.06	2.06	2.04	1	1
2004	3	3	1.87	2.12	2.12	2.10	1	1
2005	3	3	1.92	2.19	2.19	2.16	1	1
2006	3	3	1.98	2.26	2.26	2.22	1	1
2007	4	4	2.04	2.33	2.33	2.29	1	1
2008	4	4	2.10	2.41	2.41	2.36	1	1
2009	5	5	2.16	2.48	2.48	2.43	1	1
2010	6	6	2.23	2.56	2.56	2.50	1	1
2011	7	7	2.30	2.64	2.64	2.58	1	1
2012	8	8	2.36	2.73	2.73	2.66	1	1
2013	9	9	2.44	2.81	2.81	2.74	1	1
2014	10	10	2.51	2.90	2.90	2.82	1	1
2015	11	11	2.58	2.99	2.99	2.90	1	1
2016	13	13	2.66	3.09	3.09	2.99	1	1
2017	15	15	2.74	3.19	3.19	3.08	1	1
2018	17	17	2.82	3.29	3.29	3.17	1	1
2019	20	20	2.91	3.39	3.39	3.27	1	1
2020	22	22	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

< -- COST DATA FOR CONSTRUCTION OF PLANT -- >

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: OPBC

* UNIT SIZE OF AVOIDED GENERATION UNIT = 3 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$1

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	0	24	0	0	1	1	0	0
2005	0.0685	0	24	0	0	1	1	0	0
2006	0.0706	0	24	0	0	1	1	0	0
2007	0.0727	0	24	0	0	1	1	0	0
2008	0.0749	0	24	0	0	1	1	0	0
2009	0.0771	0	24	0	0	1	1	0	0
2010	0.0794	0	24	0	0	1	1	0	0
2011	0.0818	0	24	0	0	1	1	0	0
2012	0.0843	0	24	0	0	1	1	0	0
2013	0.0868	0	24	0	0	1	1	0	0
2014	0.0894	0	24	0	0	1	1	0	0
2015	0.0921	0	24	0	0	1	1	0	0
2016	0.0948	0	24	0	0	1	1	0	0
2017	0.0977	0	24	0	0	1	1	0	0
2018	0.1006	0	24	0	0	1	1	0	0
2019	0.1036	0	24	0	0	1	1	0	0
2020	0.1067	0	24	0	0	1	1	0	0
NOMINAL		2	413	0	1	11	11	0	4
NPV		1		0	1	6	6	0	2

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: OPBC

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0

* INSERVICE COSTS OF AVOIDED DIST. (000) = \$0

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0
NOMINAL	0	0	1	0	1	1	0
NPV	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2016	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0
2017	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0
2018	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0
2019	0	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0
2020	0	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0
NOMINAL	0	0	0	0	0	0	8	0	8	0	0	13	13	0	0	0	0
NPV	0	0	0	0	0	0	4	0	4	0	0	6	6	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	1	0	1	0	0	0	0	0	(1)	(1)
2002	0	0	0	0	0	0	0	0	0	0	0	(1)
2003	0	0	0	0	0	0	0	0	0	0	0	(1)
2004	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2005	0	0	0	0	0	0	0	0	0	0	0	(1)
2006	0	0	0	0	0	0	0	0	0	0	0	(0)
2007	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2008	0	0	0	0	0	0	0	0	0	0	0	(0)
2009	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2010	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2011	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2012	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2013	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2014	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2015	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2016	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2017	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2018	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2019	0	0	1	0	1	0	0	0	0	0	(1)	(1)
2020	0	0	1	0	1	0	0	0	0	0	(1)	(2)
NOMINAL	0	0	8	0	8	4	1	0	0	5	(3)	
NPV	0	0	4	0	4	2	1	0	0	3	(2)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.65

PARTICIPANT COSTS AND BENEFITS
 PROGRAM: OPBC

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	0	0	0	1	0	0	1	(0)	(0)
2002	0	0	0	0	0	0	0	0	0	0	(0)
2003	0	0	0	0	0	0	0	0	0	0	(0)
2004	0	0	0	0	0	0	0	0	0	(0)	(0)
2005	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	(0)	0
2008	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	1
2011	1	0	0	0	1	0	0	0	0	0	1
2012	1	0	0	0	1	0	0	0	0	0	1
2013	1	0	0	0	1	0	0	0	0	0	1
2014	1	0	0	0	1	0	0	0	0	0	1
2015	1	0	0	0	1	0	0	0	0	0	1
2016	1	0	0	0	1	1	0	0	1	0	1
2017	1	0	0	0	1	1	0	0	1	0	2
2018	1	0	0	0	1	1	0	0	1	0	2
2019	2	0	0	0	2	1	0	0	1	0	2
2020	2	0	0	0	2	1	0	0	1	1	2

NOMINAL 13 0 0 0 13 8 0 0 8 4

NPV 6 0 0 0 6 4 0 0 4 2

In-service year of generation unit: 2004
 Discount rate: 5.50%
 Benefit/Cost Ratio: 1.51

Rate Impact Test

RATE IMPACT TEST
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2002	0	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2003	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2004	0	0	0	0	0	0	0	0	0	0	0	0	(1)
2005	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2006	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2007	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2008	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2009	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2010	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2011	0	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2012	0	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2013	0	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2014	0	0	0	1	0	1	0	0	0	0	0	(0)	(2)
2015	0	0	0	1	0	1	0	0	0	0	0	(1)	(2)
2016	0	0	0	1	0	1	0	0	0	0	0	(1)	(2)
2017	0	0	0	1	0	1	0	0	0	0	0	(1)	(2)
2018	0	0	0	1	0	1	0	0	0	0	0	(1)	(3)
2019	0	0	0	2	0	2	0	0	0	0	0	(1)	(3)
2020	0	0	0	2	0	2	0	0	0	0	0	(1)	(4)
NOMINAL	0	0	0	13	0	13	4	1	0	0	5	(8)	
NPV	0	0	0	6	0	7	2	1	0	0	3	(4)	

Discount rate: 5.50%
Benefit / Cost Ratio [col (12) / col (7)]: 0.43

2000 Demand-Side Management Plan



The Reliable One

Docket No. 990722-EG
November 15, 1999

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 990722-EG EXHIBIT NO. 1
COMPANY/
WITNESS: OUC
DATE: 2-21-00

DOCUMENT NUMBER-DATE

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Executive Summary

In accordance with Rules 25-17.0021-.005, Florida Administrative Code, the Florida Public Service Commission (PSC) must establish numeric conservation goals for Orlando Utilities Commission (OUC). OUC is submitting proposed numeric conservation goals and the associated demand side management (DSM) plan to the PSC for approval. The development of the goals and conservation plan required thorough analysis and multiple steps.

First, potential DSM measures were compiled. In order to reduce cost, OUC did not evaluate each possible measure. Instead OUC focused on measures that had the highest potential for being cost-effective.

Inputs and assumptions were developed for the potential DSM measures as well as for the economic parameters and the avoided supply side unit. This data was input to a PSC approved model to evaluate the cost-effectiveness of the measures. Cost-effectiveness was determined by running three tests. The three tests run were the Rate Impact Test, the Total Resource Test, and the Participants Test.

OUC requires all measures to pass the Rate Impact Test to be considered cost-effective. From these results, numerical goals were developed for the ten-year period 2001 – 2010.

Of the potential DSM measures tested, none passed the Rate Impact Test. Since every measure failed the cost-effectiveness testing, the proposed numeric goals for residential and commercial and industrial are zero.

Recent Need for Power Dockets for Kissimmee Utility Authority (KUA) and Florida Municipal Power Agency (FMPA) for Cane Island Unit 3 (Docket No. 980802) and the City of Lakeland conversion of McIntosh Unit 5 to combined cycle (Docket No. 990023) evaluated dozens of DSM measures for similarly situated municipal utilities and also found no DSM measures were cost-effective.

Many things have changed since OUC's 1995 goals that tend to decrease the cost-effectiveness of DSM. The efficiency of new generation has increased. The cost of installing new generation has decreased. Fuel costs and fuel cost projections have decreased. Interest rates have fallen. All of these things have resulted in it becoming more difficult for DSM measures to be cost effective.

Because OUC views energy efficiency so importantly, OUC proposes to continue existing programs that have shown high participation and customer demand. The programs are focused on energy efficiency and conservation.

OUC will continue to consider a broad range of residential, commercial and industrial measures to assist OUC customers in the reduction of energy and demand and will continue to monitor the cost-effectiveness and value of these measures.

1.0 Introduction

In accordance with Rules 25-17.0021- .005, Florida Administrative Code, the Florida Public Service Commission (PSC) must establish numeric conservation goals for Orlando Utilities Commission (OUC). Each utility subject to the rule is required to propose numerical goal projections for the ten-year period 2001-2010. The PSC has initiated Docket 990722 – EG to implement the requirements of Rule 25-17.0021 - .005 for OUC. In response to this docket, OUC is submitting proposed numeric conservation goals and the associated demand side management (DSM) plan to the PSC for approval in this report.

In order to reduce cost, OUC did not model each possible DSM measure. OUC's study focused on alternatives that are expected to have the highest potential for being cost-effective. The DSM measures analyzed were compiled from programs deemed cost-effective in OUC's 1995 Demand Side Management Plan, existing OUC measures, and the most cost-effective measure evaluated by Florida's largest investor owned utility, Florida Power & Light.

By testing the most cost-effective measure from FPL, the assumption was made that if the most cost-effective measure for FPL did not prove cost-effective, then FPL's lesser cost-effective measures would also fail the analysis. Using this methodology, OUC has effectively screened all of FPL's measures.

Each potential measure was evaluated using the PSC approved Florida Integrated Resource Evaluator (FIRE) model providing the Rate Impact Test, the Total Resources Test, and the Participant Test. The model evaluates the economic impact of existing and proposed conservation measures by determining the relative cost effectiveness of the measures versus the avoided unit. Based on the cost effectiveness analysis, OUC proposed conservation goals and a corresponding demand side management plan.

This report contains seven sections. The next section presents the overall methodology used to develop the proposed numeric goals and supporting demand side management plan. The third section describes all inputs and assumptions associated with the potential DSM measures, avoided supply side generation and economic parameters. The fourth section describes the methodology and explanation of the results for the cost-effectiveness testing and analysis. The fifth section discusses the numerical results of the analysis. The sixth section describes the development of the proposed numerical

conservation goals. The seventh section describes OUC's proposed demand side management plan.

2.0 Methodology

Several steps were involved in the development of numeric conservation goals and the associated demand side management plan.

First, potential DSM measures for cost-effective analysis were selected. In order to reduce cost, the measures were chosen carefully. OUC did not model each possible DSM measure. Instead, OUC's study focused on alternatives that were expected to have the highest potential for being cost-effective. The DSM measures analyzed were compiled from programs deemed cost-effective in OUC's 1995 Demand Side Management Plan, existing OUC programs, and the most cost-effective measure that was found to be cost-effective by Florida's largest investor owned utility, Florida Power & Light. The potential DSM measures evaluated are listed in Table 3-1.

Second, each potential measure was evaluated for its cost-effectiveness. Measures were evaluated using the PSC approved Florida Integrated Resource Evaluator (FIRE) model which provides output in the form of the Rate Impact Test, the Total Resources Test, and the Participant Test. The model evaluates the economic impact of existing and proposed conservation measures by determining the relative cost effectiveness of the measures versus an avoided supply side resource. The avoided unit is the next unit planned for installation for the utility. FIRE Model methodology is discussed in Section 4.0. Avoided unit assumptions are discussed in Section 3.3.

Third, based on the cost effectiveness analysis, numeric conservation goals were developed. The numeric goals were calculated based on the demand and energy saved by the cost-effective measures. The results of the cost-effective analysis are listed in Table 5-1. The proposed numeric goals are listed in Table 6-1.

Fourth, a conservation plan was developed. Although OUC proposes zero goals, OUC proposes to continue existing conservation programs. The proposed DSM plan is described in Section 7.0.

3.0 Assumptions and Inputs for Cost-Effective Analysis

3.1 Demand-Side Management Measures

The DSM measures tested were taken from three sources: OUC existing DSM measures, measures proposed in OUC's 1995 DSM Plan, and the most cost-effective measure from Florida Power & Light's (FPL) 1999 goals. Each measure and its original source are listed in Table 3-1.

Basic assumptions were made in the development of input data for the measures. The sources for assumptions applying to all measures are shown in Table 3-2.

Table 3-2
Source for Data Input Assumptions for DSM Measures

- Study Period for economic evaluation set to 20 years.
- Fuel Forecast and economic parameters were taken from OUC's 1999 Ten Year Site Plan.
- OUC 1999 Utility average system fuel cost of 1.93 cents/kWh was taken from Resource Data International Inc. and escalated at 3.17 percent to 2001\$.
- Non-fuel cost in residential customer bill for 1999 is 5.62 cents/kWh (5.95 cents/kWh (2001\$)) based on monthly Typical Electric Bill Tabulation for 1,000 kWh users (Florida Municipal Electric Association Inc.).
- Non-fuel cost in commercial customer bill for 1999 is 5.14 cents/kWh (5.45 cents/kWh (2001\$)) based on monthly Typical Electric Bill Tabulation for 30 kW - 6,000 kWh users (Florida Municipal Electric Association Inc.).
- Customer Demand Charge for 1999 of \$6.5 /kW/month (\$6.9/kW/month (2001\$)) per OUC.
- Transmission Capital Costs of \$78.78/kW (2001\$) were taken from FPL's 1999 goals
- Transmission Fixed O&M costs of \$3.08/ kW/ Year (2001\$) were taken from FPL's 1999 goals.
- Distribution Capital Costs of \$56.28/kW (2001\$) were taken from FPL's 1999 goals.
- Distribution Fixed O&M Costs of \$14.64/kW/Year (2001\$) were taken from FPL's 1999 goals.

Input data for these measures was compiled from Annual FEECA Reports, OUC's 1995 DSM Plan, OUC's 1999 Ten Year Site Plan, FPL's testimony (Docket 971004-EG) and FPL's supplemental responses for FPL's 1999 Ten Year Site Plan as well as other data provided by OUC. The number of participants for the FPL measure was developed by the ratio between OUC's and FPL's number of customers. The input data used in the FIRE Model is shown in Appendix B

Table 3-1
 DSM Measures

DSM Measure Abbr.	DSM Measures	Program Source
<u>Residential</u>		
REnSur	Energy Survey	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
HPump	Heat Pump	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
Weath	Weatherization	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
LIncome	Low Income Energy Fix-up	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
EWaterH	Efficient Water Heating	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
DLC - 1	Direct Load Control - Main	Annual FEECA Reports/ OUC 1995 DSM Plan
DLC - 2	Direct Load Control - Pool Pumps	Annual FEECA Reports/ OUC 1995 DSM Plan
<u>Commercial/Industrial</u>		
CEnSuv	Commercial Energy Survey	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
CEL	Commercial Lighting	Annual FEECA Reports/ OUC 1995 DSM Plan
CCool	Commercial Cooling	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
OPBC	Off Peak Battery Charging - FPL	FPL Docket No. 971004-EG & FPL Supplemental Data Request for FPL 1999 Ten-Year Site Plan

3.2 Economic Parameters

The economic parameters used in the evaluation were obtained from OUC's 1999 Ten Year Site Plan and are presented in the following subsections.

3.2.1 Inflation and Escalation Rates

The general inflation rate is 3.0 percent annually. The 3.0 percent is applicable to capital costs, operations and maintenance (O&M) expenses, and various other expenses. Escalation rate for fuel costs is 3.17%

3.2.2 Present Worth Discount Rate

The present worth discount rate applied in the study is equal to the bond interest rate of 5.5%.

3.2.3 OUC Municipal Bond Interest Rate

The long-term municipal bond interest rate is assumed to be 5.5 percent. This rate is based on the current bond rate for OUC.

3.2.4 Interest During Construction Interest Rate

The interest during construction interest rate for OUC is assumed to be equal to the bond rate of 5.5 percent.

3.2.5 Fixed Charge Rate

Based upon a 2.0 percent issuance fee, 1.0 percent annual insurance cost, a bond interest rate of 5.5 percent, and a bond term of 25 years, the annual fixed charge rate is 8.78 percent.

3.3 Avoided Unit

Per OUC's 1999 Ten Year Site Plan, OUC's expansion plan does not require unit additions for the time period of 1999 through 2008. There has been a major change since the submittal of the 1999 Ten Year Site Plan. OUC has sold its Indian River steam units to Reliant. Under this agreement, OUC will purchase power generated from Indian River for four years. At the expiration of the four-year contract, OUC maintains the option of signing a second four-year contract.

OUC will thus have an option of building new generation to be in service when the initial purchase power term expires. For purposes of determining an avoided unit for the DSM evaluations, a new combined cycle has been selected with an in service date that matches the expiration of the first term of the purchase power contract. This represents a conservative choice for an avoided unit. If the optional term of the purchase power

contract is lower in cost than the avoided unit, then DSM measures that are evaluated against the avoided unit will be less cost-effective. On the other hand, if the avoided unit represents the least cost alternative, then the DSM measures will be properly evaluated.

The estimated capital cost for the combined cycle and its projected performance is presented in Table 3-3.

Table 3-3 Generating Unit Characteristics For Avoided Unit	
Item	General Electric 7FA 2 x 1 Combined Cycle
Total Capital Cost, 2001 \$1,000 (1)	\$ 208,003
O&M Cost-Baseload Duty	
Fixed O&M Cost, 2001 \$/kW-y	5.00
Variable O&M Cost, 2001 \$/MWh	1.94
Economic Life	25
Net Plant Capacity (MW) @ ISO	529
Net Heat Rate @ ISO (HHV)	6,704
Equivalent Availability, percent	92.5
Equivalent Forced Outage Rate, percent	4.2
Planned Maintenance Outage, weeks/y	3
Construction Period, months	24
(1) Does not include interest during construction.	

4.0 Cost-Effective Analysis

Each potential measure was evaluated for its cost-effectiveness. Measures were evaluated using the PSC approved Florida Integrated Resource Evaluator (FIRE) model which provides output in the form of the Rate Impact Test, the Total Resources Test, and the Participant Test. The model evaluates the economic impact of existing and proposed conservation programs by determining the relative cost-effectiveness of the programs versus the avoided supply side resource. The avoided unit is the next unit planned for installation for the utility. Based on the cost effectiveness analysis, numeric conservation goals are developed.

4.1 FIRE Model Methodology

In order to evaluate the cost-effectiveness of all existing and potential DSM measures in the reporting format specified by the PSC, the Florida Integrated Resource Evaluator (FIRE) model was used. The FIRE model was designed by Florida Power Corporation and is used by several utilities in Florida. The model evaluates the economic impact of existing and proposed conservation measures by determining the cost effectiveness of the measures versus the avoided unit. Assumptions inherent in the FIRE Model are listed in Table 4-1.

The FIRE Model was designed to evaluate a wide variety of DSM measures. The model uses avoided unit costs, DSM measure costs, operations and maintenance costs, rebates/incentives, and other input variables to calculate the incremental benefits of a DSM measure. These incremental costs are used to perform three cost-effectiveness tests: the Rate Impact Test, the Total Resources Test, and the Participant Test.

4.2 FIRE Model Output

FIRE Model results are output in the form of three cost-effectiveness tests. All the DSM cost effectiveness tests are based on the comparison of discounted present worth benefits to costs for a specific DSM measure. Each test is designed to measure costs and benefits from a different perspective.

The Rate Impact Test is a measure of the expected impact on customer rates resulting from a DSM program. The test statistic is the ratio of the utility's benefits (avoided supply costs and increased revenues) compared to the utility's costs (program

costs, incentives paid, increased supply costs and revenue losses). A value of less than one indicates an upward pressure on rate levels as a result of the DSM program.

The Total Resources Cost Test measures the benefit / cost ratio by comparing the total program benefits (both the participant's and utility's) to the total program costs (equipment costs, supply costs, participant costs).

The Participants Test measures the impact of the DSM program on the participating customer. Benefits to the participant may include bill reductions, incentives paid, and tax credits. Participants' costs may include equipment costs, operation and maintenance expenses, equipment removal, etc. The Participants' Test is important because customers will not participate if the program is not beneficial to them.

All three cost effectiveness tests were calculated for each DSM measure analyzed and considered in our evaluation. OUC views the Rate Impact Test as the primary test for determining the cost effectiveness for DSM measures for its system.

Table 4-1
FIRE Model Assumptions

- System demand is growing. Demand reductions due to DSM will result in reduced need for system expansion.
- Individual demand reductions can be related to reduced need for system generation expansion.
- The generation reduction will be evaluated with respect to specified generation.
- Decreases or increases in revenue due to demand side programs will impact rate levels and will be passed on to all customers.
- Additional conservation taking place after the next deferred generating unit will affect subsequent units.

5.0 Cost-Effective Analysis Results

5.1 Numerical Results

The numerical results from the FIRE Model analysis are listed below in Table 5-1. Descriptions of the measures are listed in Table 3-1 of Section 3.

Table 5-1 FIRE Model Results				
Abbr.	DSM Measure	Cost-Effectiveness Test Rating		
		Rate Impact	Total Resource Cost	Participant Costs
	<u>Residential</u>			
REnSur	Energy Survey	0.22	1.05	1.00
HPump	Heat Pump	0.79	0.24	0.28
Weath	Weatherization	0.34	1.48	11.62
LIncome	Low Income Energy Fix-up	0.19	0.25	1.00
EWaterH	Efficient Water Heating	0.72	0.54	0.75
DLC - 1	Direct Load Control - Main	0.99	1.75	1.00
DLC - 2	Direct Load Control - Pool Pumps	0.52	0.74	1.00
	<u>Commercial/Industrial</u>			
CEnSur	Commercial/Energy Survey	0.42	11.64	1.00
CEL	Commercial Lighting	0.35	0.35	1.01
CCool	Commercial Cooling	0.30	1.86	1.00
OPBC	Off Peak Battery Charging - FPL	0.43	0.65	1.51

5.2 Analysis of Results

Although every DSM measure failed the Rate Impact Test, OUC proposes the continuation of select conservation measures. OUC views energy conservation as an important service to OUC customers and the community. By continuing conservation

programs, OUC maintains interaction with customers and is better able to determine the needs of OUC's customers and the community.

OUC proposes to continue the following residential and commercial/industrial conservation programs and measures:

Residential:

Residential Energy Survey

Residential Heat Pump

Residential Weatherization

Residential Low Income Home Energy Fix-up

Residential Educational Outreach Program

Commercial/Industrial:

Commercial Energy Survey Program

The Educational Outreach Program was not tested because it is an educational program for children. Each of the proposed programs is described in detail in Section 7.0.

6.0 Proposed Numeric Conservation Goals

The proposed numeric conservation goals for OUC are based on the FIRE Model results for the Rate Impact Test. No residential or commercial or industrial measures were found cost-effective for OUC customers. OUC's numeric proposed conservation goals are shown in Table 6-1.

Year	Residential Reduction			Commercial/Industrial Reduction		
	Summer kW	Winter kW	MWh	Summer kW	Winter kW	MWh
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0

Although none of measures passed the Rate Impact Test to qualify as cost-effective, OUC proposes the continuation of OUC's existing programs. The programs are described in Section 7.0.

7.0 Existing Demand Side Management Programs

7.1 Residential Programs

7.1.1 Residential Energy Survey

7.1.1.1 Program Description. This program is designed to provide residential homeowners with recommended energy efficiency measures and practices. The Residential Energy Survey includes complete attic, air duct and air return inspections. Literature on other OUC programs is also provided to the residential customers. The customer is given a choice to receive a low-flow showerhead or compact fluorescent bulb. OUC Energy Analysts are presently using this walk-thru type audit as a means to get OUC customers to participate in other conservation programs and to qualify for appropriate rebates.

7.1.1.2 Program Participation. Participation has averaged over two-thousand energy surveys per year for the past ten years. Feedback from customers that have taken advantage of the survey has been very positive. Residential homeowners are encouraged to participate in this program.

7.1.1.3 Program Benefits. One of the primary benefits of the program is providing education to the customer on energy conservation measures and ways their lifestyle can directly impact their use of energy. Customers will be able to participate in conservation measures that they otherwise might not have been aware. Customers will benefit from the increased energy conservation in their home, which will decrease their electric bills.

7.1.1.5 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community even though not found cost effective.

7.1.2 Residential Heat Pump Program

7.1.2.1 Program Description. This program is designed to minimize thermal losses due to ductwork and insulation. Heat pumps are marketed to the owners of existing residential strip heating systems and older, inefficient central air conditioners and heat pumps. Contractors often install energy efficient heat pumps plus duct repairs and additional insulation as a part of a total energy saving package for customers.

7.1.2.2 Program Participation. Owners of existing residential strip heating systems and older, inefficient central air conditioners are the focus. The program requires heat

pumps with a SEER of 11 (or greater) and a HSPF of 7.0 (or greater) in order to qualify for rebates.

7.1.2.3 Program Benefits. Customers will be able to obtain rebates in terms of equipment SEER levels, tonnage and replaced equipment. Customers will benefit from the increased energy conservation in their home, which will decrease their electric bills.

One of the main benefits of this program is the duct work and insulation level improvements made by contractors when installing the energy efficient heat pumps.

7.1.2.4 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community even though not found cost effective.

7.1.3 Residential Weatherization Program

7.1.3.1 Program Description. This program is designed for existing single family homes and promotes R-19 ceiling insulation (or higher), caulking, weather-stripping, window treatment, water heater insulation and air conditioning heating supply and return air duct repair.

7.1.3.2 Program Participation. This program targets existing single family homes through Residential Energy Surveys, trade shows, exhibits, and neighborhood meetings.

7.1.3.3 Program Benefits. Customers will benefit from the customized weatherization of their homes, which will decrease their electric bills.

Customers are eligible for a \$140 rebate for R-19 ceiling insulation, \$100 rebate for duct repairs and up to \$110 for other conservation measures specified above. In addition, the customer is allowed to carry payments for ceiling insulation on their electric bill for 12 to 24 months. OUC directly pays the total contractor cost for insulation when OUC provides the financing.

7.1.3.4 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. Even though not found cost-effective, OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community.

7.1.4 Low Income Home Energy Fix-up Program

7.1.4.1 Program Description. This program targets low-income residential customers, customers with an annual income of less than \$20,000. Every customer is eligible for an energy audit. Audit recommendations usually require the customer to spend money replacing or adding energy conservation measures. Low-income customers may not have the discretionary income to make these changes.

The program pays 85 percent of the total contract cost for home weatherization for the following measures: upgrading ceiling insulation to R-19, exterior and interior caulking, weather-stripping doors and windows, air conditioning / heating supply and return air duct repairs and water heater insulation. The purpose of the program is to reduce the energy cost for low income households, particularly those households with elderly persons, disabled persons, and children, by improving the energy efficiency of their homes and ensuring a safe and healthy community.

7.1.4.2 Program Participation. Low-income residential customers are encouraged to participate.

7.1.4.3 Program Benefits. Customers will be able to participate in conservation measures that they might not be able to otherwise afford. Eighty-five percent of the bill is picked up by OUC, the other 15 percent can be financed on their monthly electric bill. Low-income customers will benefit from the customized weatherization of their homes, which will decrease their electric bills.

OUC will be helping to lower the bills of low-income customers who may have more difficulty paying their bills. Reducing the bill of the low-income customer may improve the customers ability to pay the bill, thereby decreasing costly service disconnect fees and late charges. OUC believes this will help to achieve and maintain high customer satisfaction.

7.1.4.4 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community even though not found cost effective..

OUC has agreed in a Memorandum of Understanding with the State Department of Consumer Affairs dated March 17, 1995 to continue this program.

7.1.5 Educational Outreach Program. This program is now entering its 15th year of operation. The program is very successful and has won several awards for contributions to education. The program consists of hour long classroom presentations focused on teaching students about energy and water conservation. Students are taught how electricity is generated and are encouraged to perform mini electric and water audits on their own homes.

7.2 Commercial / Industrial Programs

7.2.1 Commercial Energy Survey Program

7.2.1.1 Program Description. This survey is a physical walk-through inspection of the commercial facility. The commercial customer having a Commercial Energy Survey receives a report at the time of the survey. Within 30 days of a detailed audit, the customer receives a written report. Conservation literature is provided to all customers.

7.2.1.2 Program Participation. The program is focused on commercial customers to increase the energy efficiency and energy conservation.

7.2.1.3 Program Benefits. Customers will benefit from the energy conservation, which will decrease their electric bills.

7.2.1.4 Cost Effectiveness Evaluation. OUC has used the Commission approved cost-effectiveness methodologies required by Rule 25-17.008 to determine the cost effectiveness of this program. The cost effectiveness analysis can be found in Appendix B. OUC has chosen to continue the program due to positive responses from customers and potential benefit to the community even though not found cost effective. . .

APPENDIX A
FUEL FORECAST

OUC 1999 Ten Year Site Plan

Fuel Forecast

Delivered Fuel Price Forecast (\$/Mbtu) - Base Case								
Year	Coal		Natural	No. 6	Uranium	Landfill	Petroleum	RDF
	Stanton	McIntosh	Gas	Fuel Oil		Gas	Coke	
1999	1.81	1.85	2.71	2.68	0.56	0.85	1.15	-2.42
2000	1.77	1.92	2.84	2.70	0.57	0.85	1.24	-2.54
2001	1.80	1.99	2.92	2.81	0.58	0.85	1.29	-2.67
2002	1.85	2.06	3.01	2.92	0.60	0.85	1.35	-2.79
2003	1.90	2.13	3.10	3.04	0.61	0.85	1.40	-2.93
2004	1.96	2.21	3.19	3.16	0.63	0.85	1.46	-3.07
2005	2.01	2.29	3.29	3.29	0.64	0.85	1.52	-3.22
2006	2.09	2.37	3.39	3.42	0.66	0.85	1.59	-3.37
2007	2.18	2.46	3.49	3.56	0.68	0.85	1.65	-3.53
2008	2.30	2.56	3.59	3.70	0.68	0.85	1.73	-3.70
AAGR	2.70	3.68	3.17	3.65	2.50	0.00	4.64	-4.83

APPENDIX B

COST EFFECTIVENESS RESULTS FOR DSM MEASURES

APPENDIX B.1

RESIDENTIAL MEASURES

PROGRAM: Res. Energy Survey

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	319.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	300.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	81.60	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	4.47	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	5.94	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Res. Energy Survey

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	1983	1983	1.71	1.93	1.93	1.92	1	1
2002	3985	3985	1.76	2.00	2.00	1.98	1	1
2003	6007	6007	1.81	2.06	2.06	2.04	1	1
2004	8050	8050	1.87	2.12	2.12	2.10	1	1
2005	10113	10113	1.92	2.19	2.19	2.16	1	1
2006	12197	12197	1.98	2.26	2.26	2.22	1	1
2007	14302	14302	2.04	2.33	2.33	2.29	1	1
2008	16428	16428	2.10	2.41	2.41	2.36	1	1
2009	18575	18575	2.16	2.48	2.48	2.43	1	1
2010	20743	20743	2.23	2.56	2.56	2.50	1	1
2011	22933	22933	2.30	2.64	2.64	2.58	1	1
2012	25145	25145	2.36	2.73	2.73	2.66	1	1
2013	27379	27379	2.44	2.81	2.81	2.74	1	1
2014	29635	29635	2.51	2.90	2.90	2.82	1	1
2015	31914	31914	2.58	2.99	2.99	2.90	1	1
2016	34216	34216	2.66	3.09	3.09	2.99	1	1
2017	36541	36541	2.74	3.19	3.19	3.08	1	1
2018	38889	38889	2.82	3.29	3.29	3.17	1	1
2019	41261	41261	2.91	3.39	3.39	3.27	1	1
2020	43656	43656	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

< -- COST DATA FOR CONSTRUCTION OF PLANT -- >

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Res. Energy Survey

* UNIT SIZE OF AVOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN UNIT (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	0	0	0	0	0	0	0	0
2005	0.0685	0	0	0	0	0	0	0	0
2006	0.0706	0	0	0	0	0	0	0	0
2007	0.0727	0	0	0	0	0	0	0	0
2008	0.0749	0	0	0	0	0	0	0	0
2009	0.0771	0	0	0	0	0	0	0	0
2010	0.0794	0	0	0	0	0	0	0	0
2011	0.0818	0	0	0	0	0	0	0	0
2012	0.0843	0	0	0	0	0	0	0	0
2013	0.0868	0	0	0	0	0	0	0	0
2014	0.0894	0	0	0	0	0	0	0	0
2015	0.0921	0	0	0	0	0	0	0	0
2016	0.0948	0	0	0	0	0	0	0	0
2017	0.0977	0	0	0	0	0	0	0	0
2018	0.1006	0	0	0	0	0	0	0	0
2019	0.1036	0	0	0	0	0	0	0	0
2020	0.1067	0	0	0	0	0	0	0	0
NOMINAL		0	0	0	0	0	0	0	0
NPV		0		0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

6007

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Res. Energy Survey

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$0

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	6
2002	0	0	0	0	0	0	19
2003	0	0	0	0	0	0	33
2004	0	0	0	0	0	0	48
2005	0	0	0	0	0	0	64
2006	0	0	0	0	0	0	80
2007	0	0	0	0	0	0	99
2008	0	0	0	0	0	0	118
2009	0	0	0	0	0	0	139
2010	0	0	0	0	0	0	161
2011	0	0	0	0	0	0	184
2012	0	0	0	0	0	0	209
2013	0	0	0	0	0	0	236
2014	0	0	0	0	0	0	264
2015	0	0	0	0	0	0	294
2016	0	0	0	0	0	0	326
2017	0	0	0	0	0	0	360
2018	0	0	0	0	0	0	396
2019	0	0	0	0	0	0	434
2020	0	0	0	0	0	0	474
NOMINAL	0	0	0	0	0	0	3,942
NPV	0	0	0	0	0	0	1,963

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	316	6	0	0	6	6
2002	952	19	0	0	19	19
2003	1,594	33	0	0	33	33
2004	2,243	48	0	0	48	48
2005	2,898	64	0	0	64	64
2006	3,560	80	0	0	80	80
2007	4,229	99	0	0	99	99
2008	4,904	118	0	0	118	118
2009	5,586	139	0	0	139	139
2010	6,274	161	0	0	161	161
2011	6,970	184	0	0	184	184
2012	7,672	209	0	0	209	209
2013	8,381	236	0	0	236	236
2014	9,098	264	0	0	264	264
2015	9,822	294	0	0	294	294
2016	10,553	326	0	0	326	326
2017	11,291	360	0	0	360	360
2018	12,037	396	0	0	396	396
2019	12,790	434	0	0	434	434
2020	13,551	474	0	0	474	474
NOMINAL	134,720	3,942	0	0	3,942	3,942
NPV		1,963	0	0	1,963	1,963

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES -----							----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----										
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	162	4	166	12	0	12	0	0	0	297	5	18	23	0	0	0	0
2002	168	14	182	12	0	12	0	0	0	895	16	55	71	0	0	0	0
2003	175	24	199	12	0	12	0	0	0	1,499	27	95	122	0	0	0	0
2004	0	34	34	0	0	0	0	0	0	2,109	39	137	177	0	0	0	0
2005	0	46	46	0	0	0	0	0	0	2,724	53	183	235	0	0	0	0
2006	0	58	58	0	0	0	0	0	0	3,347	66	231	298	0	0	0	0
2007	0	71	71	0	0	0	0	0	0	3,975	81	283	364	0	0	0	0
2008	0	84	84	0	0	0	0	0	0	4,610	97	338	435	0	0	0	0
2009	0	99	99	0	0	0	0	0	0	5,250	114	396	510	0	0	0	0
2010	0	115	115	0	0	0	0	0	0	5,898	132	459	590	0	0	0	0
2011	0	131	131	0	0	0	0	0	0	6,551	151	525	676	0	0	0	0
2012	0	149	149	0	0	0	0	0	0	7,212	171	595	766	0	0	0	0
2013	0	167	167	0	0	0	0	0	0	7,879	193	669	862	0	0	0	0
2014	0	187	187	0	0	0	0	0	0	8,552	215	748	964	0	0	0	0
2015	0	208	208	0	0	0	0	0	0	9,232	239	832	1,072	0	0	0	0
2016	0	230	230	0	0	0	0	0	0	9,920	265	921	1,186	0	0	0	0
2017	0	254	254	0	0	0	0	0	0	10,614	292	1,015	1,307	0	0	0	0
2018	0	278	278	0	0	0	0	0	0	11,315	321	1,114	1,435	0	0	0	0
2019	0	305	305	0	0	0	0	0	0	12,023	351	1,220	1,570	0	0	0	0
2020	0	333	333	0	0	0	0	0	0	12,738	383	1,331	1,714	0	0	0	0
NOMINAL	505	2,789	3,294	36	0	36	0	0	0	126,637	3,211	11,165	14,376	0	0	0	0
NPV	479	1,391	1,870	34	0	34	0	0	0		1,602	5,569	7,171		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	166	0	0	166	0	0	6	0	6	(160)	(160)
2002	0	182	0	0	182	0	0	19	0	19	(163)	(315)
2003	0	199	0	0	199	0	0	33	0	33	(166)	(464)
2004	0	34	0	0	34	0	0	48	0	48	13	(452)
2005	0	46	0	0	46	0	0	64	0	64	18	(438)
2006	0	58	0	0	58	0	0	80	0	80	23	(421)
2007	0	71	0	0	71	0	0	99	0	99	28	(400)
2008	0	84	0	0	84	0	0	118	0	118	34	(377)
2009	0	99	0	0	99	0	0	139	0	139	40	(351)
2010	0	115	0	0	115	0	0	161	0	161	46	(323)
2011	0	131	0	0	131	0	0	184	0	184	53	(292)
2012	0	149	0	0	149	0	0	209	0	209	61	(258)
2013	0	167	0	0	167	0	0	236	0	236	68	(222)
2014	0	187	0	0	187	0	0	264	0	264	77	(184)
2015	0	208	0	0	208	0	0	294	0	294	86	(143)
2016	0	230	0	0	230	0	0	326	0	326	96	(100)
2017	0	254	0	0	254	0	0	360	0	360	106	(55)
2018	0	278	0	0	278	0	0	396	0	396	117	(8)
2019	0	305	0	0	305	0	0	434	0	434	129	41
2020	0	333	0	0	333	0	0	474	0	474	142	93
NOMINAL	0	3,294	0	0	3,294	0	0	3,942	0	3,942	647	
NPV	0	1,870	0	0	1,870	0	0	1,963	0	1,963	93	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 1.05

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Res. Energy Survey

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	23	0	12	0	35	0	0	0	0	35	35
2002	71	0	12	0	83	0	0	0	0	83	113
2003	122	0	12	0	134	0	0	0	0	134	233
2004	177	0	0	0	177	0	0	0	0	177	384
2005	235	0	0	0	235	0	0	0	0	235	574
2006	298	0	0	0	298	0	0	0	0	298	802
2007	364	0	0	0	364	0	0	0	0	364	1,066
2008	435	0	0	0	435	0	0	0	0	435	1,365
2009	510	0	0	0	510	0	0	0	0	510	1,697
2010	590	0	0	0	590	0	0	0	0	590	2,062
2011	676	0	0	0	676	0	0	0	0	676	2,457
2012	766	0	0	0	766	0	0	0	0	766	2,882
2013	862	0	0	0	862	0	0	0	0	862	3,336
2014	964	0	0	0	964	0	0	0	0	964	3,816
2015	1,072	0	0	0	1,072	0	0	0	0	1,072	4,323
2016	1,186	0	0	0	1,186	0	0	0	0	1,186	4,854
2017	1,307	0	0	0	1,307	0	0	0	0	1,307	5,409
2018	1,435	0	0	0	1,435	0	0	0	0	1,435	5,986
2019	1,570	0	0	0	1,570	0	0	0	0	1,570	6,585
2020	1,714	0	0	0	1,714	0	0	0	0	1,714	7,205
NOMINAL	14,376	0	36	0	14,411	0	0	0	0	14,411	
NPV	7,171	0	34	0	7,205	0	0	0	0	7,205	

In-service year of generation unit: 2004
Discount rate: 5.50%

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	166	12	23	0	201	6	0	0	0	6	(195)	(195)
2002	0	182	12	71	0	265	19	0	0	0	19	(246)	(428)
2003	0	199	12	122	0	333	33	0	0	0	33	(300)	(697)
2004	0	34	0	177	0	211	48	0	0	0	48	(163)	(836)
2005	0	46	0	235	0	281	64	0	0	0	64	(217)	(1,012)
2006	0	58	0	298	0	355	80	0	0	0	80	(275)	(1,222)
2007	0	71	0	364	0	435	99	0	0	0	99	(336)	(1,466)
2008	0	84	0	435	0	519	118	0	0	0	118	(401)	(1,742)
2009	0	99	0	510	0	609	139	0	0	0	139	(471)	(2,049)
2010	0	115	0	590	0	705	161	0	0	0	161	(544)	(2,385)
2011	0	131	0	676	0	807	184	0	0	0	184	(622)	(2,749)
2012	0	149	0	766	0	915	209	0	0	0	209	(705)	(3,141)
2013	0	167	0	862	0	1,029	236	0	0	0	236	(793)	(3,558)
2014	0	187	0	964	0	1,151	264	0	0	0	264	(887)	(4,000)
2015	0	208	0	1,072	0	1,279	294	0	0	0	294	(985)	(4,466)
2016	0	230	0	1,186	0	1,416	326	0	0	0	326	(1,090)	(4,954)
2017	0	254	0	1,307	0	1,560	360	0	0	0	360	(1,201)	(5,464)
2018	0	278	0	1,435	0	1,713	396	0	0	0	396	(1,318)	(5,994)
2019	0	305	0	1,570	0	1,875	434	0	0	0	434	(1,441)	(6,544)
2020	0	333	0	1,714	0	2,046	474	0	0	0	474	(1,572)	(7,112)
NOMINAL	0	3,294	36	14,376	0	17,706	3,942	0	0	0	3,942	(13,764)	
NPV	0	1,870	34	7,171	0	9,075	1,963	0	0	0	1,963	(7,112)	
				Discount rate:	5.50%								
				Benefit / Cost Ratio [col (12) / col (7)]:	0.22								

PROGRAM: Res. Heat Pump

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.20	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.30	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,240.4	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,166.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	26.31	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	9.17	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	3,819.24	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	106.09	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Res. Heat Pump

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	343	343	1.71	1.93	1.93	1.92	1	1
2002	361	361	1.76	2.00	2.00	1.98	1	1
2003	379	379	1.81	2.06	2.06	2.04	1	1
2004	398	398	1.87	2.12	2.12	2.10	1	1
2005	418	418	1.92	2.19	2.19	2.16	1	1
2006	439	439	1.98	2.26	2.26	2.22	1	1
2007	460	460	2.04	2.33	2.33	2.29	1	1
2008	484	484	2.10	2.41	2.41	2.36	1	1
2009	508	508	2.16	2.48	2.48	2.43	1	1
2010	533	533	2.23	2.56	2.56	2.50	1	1
2011	560	560	2.30	2.64	2.64	2.58	1	1
2012	588	588	2.36	2.73	2.73	2.66	1	1
2013	617	617	2.44	2.81	2.81	2.74	1	1
2014	648	648	2.51	2.90	2.90	2.82	1	1
2015	681	681	2.58	2.99	2.99	2.90	1	1
2016	715	715	2.66	3.09	3.09	2.99	1	1
2017	750	750	2.74	3.19	3.19	3.08	1	1
2018	788	788	2.82	3.29	3.29	3.17	1	1
2019	828	828	2.91	3.39	3.39	3.27	1	1
2020	869	869	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Res. Heat Pump

* UNIT SIZE OF AVOIDED GENERATION UNIT = 519 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$210

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	14	3,865	3	8	82	81	0	26
2005	0.0685	14	3,865	3	8	85	83	0	27
2006	0.0706	15	3,865	3	9	87	86	0	28
2007	0.0727	15	3,865	3	9	90	89	0	29
2008	0.0749	16	3,865	3	9	93	91	0	30
2009	0.0771	16	3,865	3	10	96	94	0	31
2010	0.0794	17	3,865	3	10	99	97	0	32
2011	0.0818	17	3,865	3	10	102	100	0	33
2012	0.0843	18	3,865	4	10	105	103	0	34
2013	0.0868	18	3,865	4	11	109	106	0	36
2014	0.0894	19	3,865	4	11	112	109	0	37
2015	0.0921	19	3,865	4	11	116	112	0	38
2016	0.0948	20	3,865	4	12	119	116	0	39
2017	0.0977	20	3,865	4	12	123	119	0	41
2018	0.1006	21	3,865	4	12	127	123	0	42
2019	0.1036	22	3,865	4	13	131	126	0	44
2020	0.1067	22	3,865	5	13	135	130	0	45
NOMINAL		304	65,713	62	178	1,812	1,764	0	592
NPV		168		34	99	1,000	975	0	325

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Res. Heat Pump

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$45
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$28

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	4
2002	0	0	0	0	0	0	9
2003	0	0	0	0	0	0	9
2004	3	2	5	2	7	9	10
2005	3	2	5	2	7	9	11
2006	3	2	5	2	8	10	12
2007	3	2	5	2	8	10	13
2008	3	2	5	2	8	10	14
2009	3	2	5	2	8	11	15
2010	4	2	6	2	9	11	17
2011	4	2	6	2	9	11	18
2012	4	2	6	2	9	12	19
2013	4	2	6	2	9	12	21
2014	4	2	6	3	10	12	23
2015	4	2	6	3	10	13	25
2016	4	2	7	3	10	13	27
2017	4	2	7	3	11	13	29
2018	4	3	7	3	11	14	31
2019	5	3	7	3	11	14	34
2020	5	3	7	3	12	15	37
NOMINAL	65	36	101	40	158	199	378
NPV	36	20	56	22	88	110	205

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Res. Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	213	4	0	0	4	4
2002	437	9	0	0	9	9
2003	459	9	0	0	9	9
2004	482	10	0	0	10	10
2005	506	11	0	0	11	11
2006	532	12	0	0	12	12
2007	558	13	0	0	13	13
2008	585	14	0	0	14	14
2009	615	15	0	0	15	15
2010	646	17	0	0	17	17
2011	678	18	0	0	18	18
2012	712	19	0	0	19	19
2013	747	21	0	0	21	21
2014	785	23	0	0	23	23
2015	824	25	0	0	25	25
2016	866	27	0	0	27	27
2017	909	29	0	0	29	29
2018	954	31	0	0	31	31
2019	1,002	34	0	0	34	34
2020	1,053	37	0	0	37	37
NOMINAL	13,561	378	0	0	378	378
NPV		205	0	0	205	205

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Res Heat Pump

(1)	(2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18)																	
	----- UTILITY PROGRAM COSTS & REBATES -----						----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----											
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)	
2001	9	2	11	36	0	36	1,310	0	1,310	200	3	12	15	0	0	0	0	
2002	0	3	4	2	0	2	71	0	71	410	7	25	32	0	0	0	0	
2003	1	4	4	2	0	2	73	0	73	431	8	27	35	0	0	0	0	
2004	0	4	4	0	0	0	79	0	79	453	8	29	38	0	0	0	0	
2005	0	4	4	0	0	0	86	0	86	476	9	32	41	0	0	0	0	
2006	0	5	5	0	0	0	93	0	93	500	10	35	44	0	0	0	0	
2007	0	5	5	0	0	0	96	0	96	524	11	37	48	0	0	0	0	
2008	0	5	5	0	0	0	113	0	113	550	12	40	52	0	0	0	0	
2009	0	6	6	0	0	0	116	0	116	578	13	44	56	0	0	0	0	
2010	0	6	6	0	0	0	125	0	125	607	14	47	61	0	0	0	0	
2011	0	7	7	0	0	0	139	0	139	637	15	51	66	0	0	0	0	
2012	0	7	7	0	0	0	148	0	148	669	16	55	71	0	0	0	0	
2013	0	8	8	0	0	0	158	0	158	703	17	60	77	0	0	0	0	
2014	0	9	9	0	0	0	174	0	174	737	19	65	83	0	0	0	0	
2015	0	9	9	0	0	0	191	0	191	775	20	70	90	0	0	0	0	
2016	0	10	10	0	0	0	202	0	202	814	22	76	97	0	0	0	0	
2017	0	11	11	0	0	0	215	0	215	854	23	82	105	0	0	0	0	
2018	0	12	12	0	0	0	240	0	240	897	25	88	114	0	0	0	0	
2019	0	13	13	0	0	0	260	0	260	942	27	96	123	0	0	0	0	
2020	0	14	14	0	0	0	275	0	275	989	30	103	133	0	0	0	0	
NOMINAL	10	142	152	40	0	40	4,162	0	4,162	12,747	309	1,074	1,382	0	0	0	0	
NPV	10	77	87	40	0	40	2,850	0	2,850		168	585	753		0	0	0	

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	11	1,310	0	1,321	0	0	4	0	4	(1,316)	(1,316)
2002	0	4	71	0	75	0	0	9	0	9	(66)	(1,379)
2003	0	4	73	0	77	0	0	9	0	9	(68)	(1,440)
2004	0	4	79	0	83	26	14	10	0	50	(33)	(1,468)
2005	0	4	86	0	90	27	14	11	0	52	(38)	(1,499)
2006	0	5	93	0	98	28	15	12	0	55	(43)	(1,531)
2007	0	5	96	0	101	29	15	13	0	57	(44)	(1,563)
2008	0	5	113	0	118	30	15	14	0	59	(59)	(1,603)
2009	0	6	116	0	122	31	16	15	0	62	(60)	(1,642)
2010	0	6	125	0	131	32	16	17	0	65	(66)	(1,683)
2011	0	7	139	0	145	33	17	18	0	68	(77)	(1,728)
2012	0	7	148	0	155	34	17	19	0	71	(84)	(1,775)
2013	0	8	158	0	166	36	18	21	0	75	(91)	(1,823)
2014	0	9	174	0	182	37	19	23	0	78	(104)	(1,875)
2015	0	9	191	0	200	38	19	25	0	82	(118)	(1,931)
2016	0	10	202	0	212	39	20	27	0	86	(126)	(1,987)
2017	0	11	215	0	225	41	20	29	0	90	(135)	(2,045)
2018	0	12	240	0	252	42	21	31	0	94	(157)	(2,108)
2019	0	13	260	0	273	44	21	34	0	99	(173)	(2,174)
2020	0	14	275	0	288	45	22	37	0	104	(184)	(2,241)
NOMINAL	0	152	4,162	0	4,313	592	300	378	0	1,270	(3,043)	
NPV	0	87	2,850	0	2,937	325	166	205	0	697	(2,241)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.24

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Res. Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	11	36	15	0	62	4	0	0	0	4	(58)	(58)
2002	0	4	2	32	0	38	9	0	0	0	9	(29)	(86)
2003	0	4	2	35	0	41	9	0	0	0	9	(32)	(115)
2004	0	4	0	38	0	42	36	14	0	0	50	8	(108)
2005	0	4	0	41	0	45	38	14	0	0	52	7	(102)
2006	0	5	0	44	0	49	40	15	0	0	55	6	(98)
2007	0	5	0	48	0	53	42	15	0	0	57	4	(95)
2008	0	5	0	52	0	57	44	15	0	0	59	2	(93)
2009	0	6	0	56	0	62	46	16	0	0	62	0	(93)
2010	0	6	0	61	0	67	49	16	0	0	65	(2)	(94)
2011	0	7	0	66	0	72	51	17	0	0	68	(4)	(97)
2012	0	7	0	71	0	78	54	17	0	0	71	(7)	(101)
2013	0	8	0	77	0	85	57	18	0	0	75	(10)	(106)
2014	0	9	0	83	0	92	60	19	0	0	78	(14)	(113)
2015	0	9	0	90	0	99	63	19	0	0	82	(17)	(121)
2016	0	10	0	97	0	107	66	20	0	0	86	(21)	(131)
2017	0	11	0	105	0	116	70	20	0	0	90	(26)	(142)
2018	0	12	0	114	0	125	74	21	0	0	94	(31)	(154)
2019	0	13	0	123	0	136	78	21	0	0	99	(36)	(168)
2020	0	14	0	133	0	147	82	22	0	0	104	(43)	(184)
NOMINAL	0	152	40	1,382	0	1,574	970	300	0	0	1,270	(304)	
NPV	0	87	40	753	0	880	531	166	0	0	697	(184)	
				Discount rate:		5.50%							
				Benefit / Cost Ratio [col (12) / col (7)]:		0.79							

PROGRAM: Res Weatherization

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.18 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	685.1 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	644.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	26.31 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	9.17 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	53.05 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	116.70 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Res. Weatherization

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	802	802	1.71	1.93	1.93	1.92	1	1
2002	842	842	1.76	2.00	2.00	1.98	1	1
2003	884	884	1.81	2.06	2.06	2.04	1	1
2004	929	929	1.87	2.12	2.12	2.10	1	1
2005	975	975	1.92	2.19	2.19	2.16	1	1
2006	1024	1024	1.98	2.26	2.26	2.22	1	1
2007	1075	1075	2.04	2.33	2.33	2.29	1	1
2008	1129	1129	2.10	2.41	2.41	2.36	1	1
2009	1185	1185	2.16	2.48	2.48	2.43	1	1
2010	1245	1245	2.23	2.56	2.56	2.50	1	1
2011	1307	1307	2.30	2.64	2.64	2.58	1	1
2012	1372	1372	2.36	2.73	2.73	2.66	1	1
2013	1441	1441	2.44	2.81	2.81	2.74	1	1
2014	1513	1513	2.51	2.90	2.90	2.82	1	1
2015	1589	1589	2.58	2.99	2.99	2.90	1	1
2016	1668	1668	2.66	3.09	3.09	2.99	1	1
2017	1752	1752	2.74	3.19	3.19	3.08	1	1
2018	1839	1839	2.82	3.29	3.29	3.17	1	1
2019	1932	1932	2.91	3.39	3.39	3.27	1	1
2020	2028	2028	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Res. Weatherization

* UNIT SIZE OF AVOIDED GENERATION UNIT = 182 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$73

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	5	1,353	1	3	29	28	0	9
2005	0.0685	5	1,353	1	3	30	29	0	9
2006	0.0706	5	1,353	1	3	31	30	0	10
2007	0.0727	5	1,353	1	3	32	31	0	10
2008	0.0749	5	1,353	1	3	33	32	0	10
2009	0.0771	6	1,353	1	3	34	33	0	11
2010	0.0794	6	1,353	1	3	35	34	0	11
2011	0.0818	6	1,353	1	4	36	35	0	12
2012	0.0843	6	1,353	1	4	37	36	0	12
2013	0.0868	6	1,353	1	4	38	37	0	12
2014	0.0894	7	1,353	1	4	39	38	0	13
2015	0.0921	7	1,353	1	4	41	39	0	13
2016	0.0948	7	1,353	1	4	42	40	0	14
2017	0.0977	7	1,353	1	4	43	42	0	14
2018	0.1006	7	1,353	2	4	44	43	0	15
2019	0.1036	8	1,353	2	4	46	44	0	15
2020	0.1067	8	1,353	2	5	47	46	0	16
NOMINAL		106	23,008	22	62	635	618	0	207
NPV		59		12	35	350	341	0	114

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Res. Weatherization

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$16

* INSERVICE COSTS OF AVOIDED DIST. (000) = \$10

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	5
2002	0	0	0	0	0	0	11
2003	0	0	0	0	0	0	12
2004	1	1	2	1	3	3	13
2005	1	1	2	1	3	3	14
2006	1	1	2	1	3	3	15
2007	1	1	2	1	3	3	17
2008	1	1	2	1	3	4	18
2009	1	1	2	1	3	4	20
2010	1	1	2	1	3	4	21
2011	1	1	2	1	3	4	23
2012	1	1	2	1	3	4	25
2013	1	1	2	1	3	4	27
2014	1	1	2	1	3	4	29
2015	1	1	2	1	4	4	32
2016	1	1	2	1	4	5	34
2017	2	1	2	1	4	5	37
2018	2	1	2	1	4	5	40
2019	2	1	3	1	4	5	44
2020	2	1	3	1	4	5	47
NOMINAL	23	13	35	14	55	70	487
NPV	13	7	20	8	31	38	265

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Res. Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	275	5	0	0	5	5
2002	563	11	0	0	11	11
2003	591	12	0	0	12	12
2004	621	13	0	0	13	13
2005	652	14	0	0	14	14
2006	685	15	0	0	15	15
2007	719	17	0	0	17	17
2008	755	18	0	0	18	18
2009	793	20	0	0	20	20
2010	832	21	0	0	21	21
2011	874	23	0	0	23	23
2012	918	25	0	0	25	25
2013	964	27	0	0	27	27
2014	1,012	29	0	0	29	29
2015	1,063	32	0	0	32	32
2016	1,116	34	0	0	34	34
2017	1,172	37	0	0	37	37
2018	1,230	40	0	0	40	40
2019	1,292	44	0	0	44	44
2020	1,357	47	0	0	47	47
NOMINAL	17,482	487	0	0	487	487
NPV		265	0	0	265	265

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Res Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES -----							----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	21	4	25	94	0	94	43	0	43	258	4	15	20	0	0	0	0
2002	1	8	9	5	0	5	2	0	2	529	9	32	42	0	0	0	0
2003	1	8	10	5	0	5	2	0	2	556	10	35	45	0	0	0	0
2004	0	9	9	0	0	0	3	0	3	584	11	38	49	0	0	0	0
2005	0	10	10	0	0	0	3	0	3	613	12	41	53	0	0	0	0
2006	0	11	11	0	0	0	3	0	3	644	13	44	57	0	0	0	0
2007	0	11	11	0	0	0	3	0	3	676	14	48	62	0	0	0	0
2008	0	12	12	0	0	0	4	0	4	710	15	52	67	0	0	0	0
2009	0	13	13	0	0	0	4	0	4	745	16	56	72	0	0	0	0
2010	0	15	15	0	0	0	4	0	4	782	17	61	78	0	0	0	0
2011	0	16	16	0	0	0	4	0	4	822	19	66	85	0	0	0	0
2012	0	17	17	0	0	0	5	0	5	863	20	71	92	0	0	0	0
2013	0	18	18	0	0	0	5	0	5	906	22	77	99	0	0	0	0
2014	0	20	20	0	0	0	6	0	6	951	24	83	107	0	0	0	0
2015	0	22	22	0	0	0	6	0	6	999	26	90	116	0	0	0	0
2016	0	23	23	0	0	0	7	0	7	1,049	28	97	125	0	0	0	0
2017	0	25	25	0	0	0	7	0	7	1,101	30	105	136	0	0	0	0
2018	0	27	27	0	0	0	8	0	8	1,156	33	114	147	0	0	0	0
2019	0	29	29	0	0	0	8	0	8	1,214	35	123	159	0	0	0	0
2020	0	32	32	0	0	0	9	0	9	1,275	38	133	172	0	0	0	0
NOMINAL	23	331	354	103	0	103	135	0	135	16,433	398	1,384	1,782	0	0	0	0
NPV	23	180	203	102	0	102	92	0	92		217	754	971		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	25	43	0	67	0	0	5	0	5	(62)	(62)
2002	0	9	2	0	11	0	0	11	0	11	0	(62)
2003	0	10	2	0	12	0	0	12	0	12	0	(62)
2004	0	9	3	0	12	9	5	13	0	27	15	(48)
2005	0	10	3	0	13	9	5	14	0	29	16	(35)
2006	0	11	3	0	14	10	5	15	0	30	17	(23)
2007	0	11	3	0	15	10	5	17	0	32	17	(10)
2008	0	12	4	0	16	10	5	18	0	34	18	2
2009	0	13	4	0	17	11	6	20	0	36	19	15
2010	0	15	4	0	19	11	6	21	0	38	20	27
2011	0	16	4	0	20	12	6	23	0	41	21	39
2012	0	17	5	0	22	12	6	25	0	43	21	51
2013	0	18	5	0	24	12	6	27	0	46	22	62
2014	0	20	6	0	25	13	6	29	0	49	23	74
2015	0	22	6	0	28	13	7	32	0	52	24	85
2016	0	23	7	0	30	14	7	34	0	55	25	97
2017	0	25	7	0	32	14	7	37	0	59	26	108
2018	0	27	8	0	35	15	7	40	0	63	28	119
2019	0	29	8	0	38	15	8	44	0	67	29	130
2020	0	32	9	0	41	16	8	47	0	71	30	141
NOMINAL	0	354	135	0	489	207	105	487	0	800	311	
NPV	0	203	92	0	296	114	58	265	0	437	141	

Discount Rate: 5.50%
Benefit:Cost Ratio [col (11) / col (6)]: 1.48

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Res. Weatherization

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)	
2001	20	0	94	0	113	43	0	0	43	71	71	
2002	42	0	5	0	47	2	0	0	2	44	113	
2003	45	0	5	0	50	2	0	0	2	48	156	
2004	49	0	0	0	49	3	0	0	3	46	195	
2005	53	0	0	0	53	3	0	0	3	50	236	
2006	57	0	0	0	57	3	0	0	3	54	277	
2007	62	0	0	0	62	3	0	0	3	59	320	
2008	67	0	0	0	67	4	0	0	4	63	363	
2009	72	0	0	0	72	4	0	0	4	69	408	
2010	78	0	0	0	78	4	0	0	4	74	454	
2011	85	0	0	0	85	4	0	0	4	80	501	
2012	92	0	0	0	92	5	0	0	5	87	549	
2013	99	0	0	0	99	5	0	0	5	94	599	
2014	107	0	0	0	107	6	0	0	6	102	649	
2015	116	0	0	0	116	6	0	0	6	110	701	
2016	125	0	0	0	125	7	0	0	7	119	754	
2017	136	0	0	0	136	7	0	0	7	128	809	
2018	147	0	0	0	147	8	0	0	8	139	865	
2019	159	0	0	0	159	8	0	0	8	150	922	
2020	172	0	0	0	172	9	0	0	9	163	981	
NOMINAL	1,782	0	103	0	1,885	135	0	0	135	1,750		
NPV	971	0	102	0	1,073	92	0	0	92	981		
In-service year of generation unit:				2004	Benefit/Cost Ratio:				11.62			
Discount rate:				5.50%								

PROGRAM: Low Income Energy Fix Up

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.18 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	212.8 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	200.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	666.10 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	22.38 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KVM/O
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Low Income Energy Fix Up

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	317	317	1.71	1.93	1.93	1.92	1	1
2002	333	333	1.76	2.00	2.00	1.98	1	1
2003	350	350	1.81	2.06	2.06	2.04	1	1
2004	367	367	1.87	2.12	2.12	2.10	1	1
2005	385	385	1.92	2.19	2.19	2.16	1	1
2006	405	405	1.98	2.26	2.26	2.22	1	1
2007	425	425	2.04	2.33	2.33	2.29	1	1
2008	446	446	2.10	2.41	2.41	2.36	1	1
2009	469	469	2.16	2.48	2.48	2.43	1	1
2010	492	492	2.23	2.56	2.56	2.50	1	1
2011	517	517	2.30	2.64	2.64	2.58	1	1
2012	543	543	2.36	2.73	2.73	2.66	1	1
2013	570	570	2.44	2.81	2.81	2.74	1	1
2014	598	598	2.51	2.90	2.90	2.82	1	1
2015	628	628	2.58	2.99	2.99	2.90	1	1
2016	660	660	2.66	3.09	3.09	2.99	1	1
2017	693	693	2.74	3.19	3.19	3.08	1	1
2018	727	727	2.82	3.29	3.29	3.17	1	1
2019	764	764	2.91	3.39	3.39	3.27	1	1
2020	802	802	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	CT	CC
		RATE (%)				
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Low Income Energy Fix Up

* UNIT SIZE OF AVOIDED GENERATION UNIT = 72 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$29

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	2	535	0	1	11	11	0	4
2005	0.0685	2	535	0	1	12	12	0	4
2006	0.0706	2	535	0	1	12	12	0	4
2007	0.0727	2	535	0	1	12	12	0	4
2008	0.0749	2	535	0	1	13	13	0	4
2009	0.0771	2	535	0	1	13	13	0	4
2010	0.0794	2	535	0	1	14	13	0	4
2011	0.0818	2	535	0	1	14	14	0	5
2012	0.0843	2	535	0	1	15	14	0	5
2013	0.0868	3	535	1	1	15	15	0	5
2014	0.0894	3	535	1	2	16	15	0	5
2015	0.0921	3	535	1	2	16	16	0	5
2016	0.0948	3	535	1	2	17	16	0	5
2017	0.0977	3	535	1	2	17	16	0	6
2018	0.1006	3	535	1	2	18	17	0	6
2019	0.1036	3	535	1	2	18	17	0	6
2020	0.1067	3	535	1	2	19	18	0	6
NOMINAL		42	9,089	9	25	251	244	0	82
NPV		23		5	14	138	135	0	45

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Low Income Energy Fix Up

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$6
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$4

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	1
2002	0	0	0	0	0	0	1
2003	0	0	0	0	0	0	1
2004	0	0	1	0	1	1	2
2005	0	0	1	0	1	1	2
2006	0	0	1	0	1	1	2
2007	0	0	1	0	1	1	2
2008	0	0	1	0	1	1	2
2009	0	0	1	0	1	1	2
2010	0	0	1	0	1	2	3
2011	1	0	1	0	1	2	3
2012	1	0	1	0	1	2	3
2013	1	0	1	0	1	2	3
2014	1	0	1	0	1	2	4
2015	1	0	1	0	1	2	4
2016	1	0	1	0	1	2	4
2017	1	0	1	0	1	2	5
2018	1	0	1	0	2	2	5
2019	1	0	1	0	2	2	5
2020	1	0	1	0	2	2	6
NOMINAL	9	5	14	6	22	28	60
NPV	5	3	8	3	12	15	33

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	34	1	0	0	1	1
2002	69	1	0	0	1	1
2003	73	1	0	0	1	1
2004	76	2	0	0	2	2
2005	80	2	0	0	2	2
2006	84	2	0	0	2	2
2007	88	2	0	0	2	2
2008	93	2	0	0	2	2
2009	97	2	0	0	2	2
2010	102	3	0	0	3	3
2011	107	3	0	0	3	3
2012	113	3	0	0	3	3
2013	118	3	0	0	3	3
2014	124	4	0	0	4	4
2015	130	4	0	0	4	4
2016	137	4	0	0	4	4
2017	144	5	0	0	5	5
2018	151	5	0	0	5	5
2019	159	5	0	0	5	5
2020	167	6	0	0	6	6
NOMINAL	2,147	60	0	0	60	60
NPV		33	0	0	33	33

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs: Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	211	4	215	0	0	0	0	0	0	32	1	2	2	0	0	0	0
2002	11	7	18	0	0	0	0	0	0	65	1	4	5	0	0	0	0
2003	12	8	20	0	0	0	0	0	0	68	1	4	6	0	0	0	0
2004	0	9	9	0	0	0	0	0	0	72	1	5	6	0	0	0	0
2005	0	9	9	0	0	0	0	0	0	75	1	5	6	0	0	0	0
2006	0	10	10	0	0	0	0	0	0	79	2	5	7	0	0	0	0
2007	0	11	11	0	0	0	0	0	0	83	2	6	8	0	0	0	0
2008	0	12	12	0	0	0	0	0	0	87	2	6	8	0	0	0	0
2009	0	13	13	0	0	0	0	0	0	92	2	7	9	0	0	0	0
2010	0	14	14	0	0	0	0	0	0	96	2	7	10	0	0	0	0
2011	0	15	15	0	0	0	0	0	0	101	2	8	10	0	0	0	0
2012	0	16	16	0	0	0	0	0	0	106	3	9	11	0	0	0	0
2013	0	18	18	0	0	0	0	0	0	111	3	9	12	0	0	0	0
2014	0	19	19	0	0	0	0	0	0	117	3	10	13	0	0	0	0
2015	0	21	21	0	0	0	0	0	0	123	3	11	14	0	0	0	0
2016	0	22	22	0	0	0	0	0	0	129	3	12	15	0	0	0	0
2017	0	24	24	0	0	0	0	0	0	135	4	13	17	0	0	0	0
2018	0	26	26	0	0	0	0	0	0	142	4	14	18	0	0	0	0
2019	0	28	28	0	0	0	0	0	0	149	4	15	19	0	0	0	0
2020	0	31	31	0	0	0	0	0	0	157	5	16	21	0	0	0	0
NOMINAL	234	319	553	0	0	0	0	0	0	2,018	49	170	219	0	0	0	0
NPV	232	174	406	0	0	0	0	0	0		27	93	119		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	215	0	0	215	0	0	1	0	1	(214)	(214)
2002	0	18	0	0	18	0	0	1	0	1	(17)	(230)
2003	0	20	0	0	20	0	0	1	0	1	(19)	(247)
2004	0	9	0	0	9	4	2	2	0	7	(2)	(248)
2005	0	9	0	0	9	4	2	2	0	7	(2)	(250)
2006	0	10	0	0	10	4	2	2	0	8	(2)	(252)
2007	0	11	0	0	11	4	2	2	0	8	(3)	(254)
2008	0	12	0	0	12	4	2	2	0	9	(3)	(256)
2009	0	13	0	0	13	4	2	2	0	9	(4)	(259)
2010	0	14	0	0	14	4	2	3	0	9	(5)	(262)
2011	0	15	0	0	15	5	2	3	0	10	(5)	(265)
2012	0	16	0	0	16	5	2	3	0	10	(6)	(269)
2013	0	18	0	0	18	5	2	3	0	11	(7)	(272)
2014	0	19	0	0	19	5	3	4	0	11	(8)	(276)
2015	0	21	0	0	21	5	3	4	0	12	(9)	(280)
2016	0	22	0	0	22	5	3	4	0	12	(10)	(285)
2017	0	24	0	0	24	6	3	5	0	13	(11)	(290)
2018	0	26	0	0	26	6	3	5	0	14	(13)	(295)
2019	0	28	0	0	28	6	3	5	0	14	(14)	(300)
2020	0	31	0	0	31	6	3	6	0	15	(16)	(306)
NOMINAL	0	553	0	0	553	82	41	60	0	183	(370)	
NPV	0	406	0	0	406	45	23	33	0	100	(306)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.25

Participants Test

PARTICIPANT COSTS AND BENEFITS
 PROGRAM: Low Income Energy Fix Up

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	2	0	0	0	2	0	0	0	0	2	2
2002	5	0	0	0	5	0	0	0	0	5	7
2003	6	0	0	0	6	0	0	0	0	6	12
2004	6	0	0	0	6	0	0	0	0	6	17
2005	6	0	0	0	6	0	0	0	0	6	23
2006	7	0	0	0	7	0	0	0	0	7	28
2007	8	0	0	0	8	0	0	0	0	8	34
2008	8	0	0	0	8	0	0	0	0	8	39
2009	9	0	0	0	9	0	0	0	0	9	45
2010	10	0	0	0	10	0	0	0	0	10	51
2011	10	0	0	0	10	0	0	0	0	10	57
2012	11	0	0	0	11	0	0	0	0	11	63
2013	12	0	0	0	12	0	0	0	0	12	70
2014	13	0	0	0	13	0	0	0	0	13	76
2015	14	0	0	0	14	0	0	0	0	14	83
2016	15	0	0	0	15	0	0	0	0	15	90
2017	17	0	0	0	17	0	0	0	0	17	97
2018	18	0	0	0	18	0	0	0	0	18	104
2019	19	0	0	0	19	0	0	0	0	19	112
2020	21	0	0	0	21	0	0	0	0	21	119
NOMINAL	219	0	0	0	219	0	0	0	0	219	
NPV	119	0	0	0	119	0	0	0	0	119	
	In-service year of generation unit:			2004		Benefit/Cost Ratio:		1.00			
	Discount rate:			5.50%							

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	215	0	2	0	217	1	0	0	0	1	(216)	(216)
2002	0	18	0	5	0	24	1	0	0	0	1	(22)	(238)
2003	0	20	0	6	0	26	1	0	0	0	1	(24)	(259)
2004	0	9	0	6	0	15	5	2	0	0	7	(8)	(266)
2005	0	9	0	6	0	16	5	2	0	0	7	(9)	(273)
2006	0	10	0	7	0	17	6	2	0	0	8	(9)	(280)
2007	0	11	0	8	0	19	6	2	0	0	8	(11)	(288)
2008	0	12	0	8	0	20	6	2	0	0	9	(12)	(296)
2009	0	13	0	9	0	22	7	2	0	0	9	(13)	(304)
2010	0	14	0	10	0	24	7	2	0	0	9	(14)	(313)
2011	0	15	0	10	0	26	7	2	0	0	10	(16)	(322)
2012	0	16	0	11	0	28	8	2	0	0	10	(17)	(332)
2013	0	18	0	12	0	30	8	2	0	0	11	(19)	(342)
2014	0	19	0	13	0	32	9	3	0	0	11	(21)	(352)
2015	0	21	0	14	0	35	9	3	0	0	12	(23)	(363)
2016	0	22	0	15	0	38	10	3	0	0	12	(25)	(375)
2017	0	24	0	17	0	41	10	3	0	0	13	(28)	(387)
2018	0	26	0	18	0	44	11	3	0	0	14	(31)	(399)
2019	0	28	0	19	0	48	11	3	0	0	14	(33)	(412)
2020	0	31	0	21	0	52	12	3	0	0	15	(37)	(425)
NOMINAL	0	553	0	219	0	772	142	41	0	0	183	(589)	
NPV	0	406	0	119	0	526	78	23	0	0	100	(425)	
				Discount rate:		5.50%							
				Benefit / Cost Ratio [col (12) / col (7)]:		0.19							

PROGRAM: Res. Efficiency Water Heating

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.50 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.54 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	702.1 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	660.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	0.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	800.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	53.05 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM Res. Efficiency Water Heating

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	343	343	1.71	1.93	1.93	1.92	1	1
2002	361	361	1.76	2.00	2.00	1.98	1	1
2003	379	379	1.81	2.06	2.06	2.04	1	1
2004	398	398	1.87	2.12	2.12	2.10	1	1
2005	418	418	1.92	2.19	2.19	2.16	1	1
2006	439	439	1.98	2.26	2.26	2.22	1	1
2007	460	460	2.04	2.33	2.33	2.29	1	1
2008	484	484	2.10	2.41	2.41	2.36	1	1
2009	508	508	2.16	2.48	2.48	2.43	1	1
2010	533	533	2.23	2.56	2.56	2.50	1	1
2011	560	560	2.30	2.64	2.64	2.58	1	1
2012	588	588	2.36	2.73	2.73	2.66	1	1
2013	617	617	2.44	2.81	2.81	2.74	1	1
2014	648	648	2.51	2.90	2.90	2.82	1	1
2015	681	681	2.58	2.99	2.99	2.90	1	1
2016	715	715	2.66	3.09	3.09	2.99	1	1
2017	750	750	2.74	3.19	3.19	3.08	1	1
2018	788	788	2.82	3.29	3.29	3.17	1	1
2019	828	828	2.91	3.39	3.39	3.27	1	1
2020	869	869	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Res. Efficiency Water Heating

* UNIT SIZE OF AVOIDED GENERATION UNIT = 216 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$87

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	6	1,611	1	3	34	34	0	11
2005	0.0685	6	1,611	1	4	35	35	0	11
2006	0.0706	6	1,611	1	4	36	36	0	12
2007	0.0727	6	1,611	1	4	38	37	0	12
2008	0.0749	7	1,611	1	4	39	38	0	12
2009	0.0771	7	1,611	1	4	40	39	0	13
2010	0.0794	7	1,611	1	4	41	40	0	13
2011	0.0818	7	1,611	1	4	43	42	0	14
2012	0.0843	7	1,611	1	4	44	43	0	14
2013	0.0868	8	1,611	2	4	45	44	0	15
2014	0.0894	8	1,611	2	5	47	45	0	15
2015	0.0921	8	1,611	2	5	48	47	0	16
2016	0.0948	8	1,611	2	5	50	48	0	16
2017	0.0977	9	1,611	2	5	51	50	0	17
2018	0.1006	9	1,611	2	5	53	51	0	18
2019	0.1036	9	1,611	2	5	55	53	0	18
2020	0.1067	9	1,611	2	5	56	54	0	19
NOMINAL		126	27,380	26	74	755	735	0	247
NPV		70		14	41	417	406	0	136

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Res. Efficiency Water Heating

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$19
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$12

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	2
2002	0	0	0	0	0	0	5
2003	0	0	0	0	0	0	5
2004	1	1	2	1	3	4	6
2005	1	1	2	1	3	4	6
2006	1	1	2	1	3	4	7
2007	1	1	2	1	3	4	7
2008	1	1	2	1	3	4	8
2009	1	1	2	1	4	4	9
2010	1	1	2	1	4	5	9
2011	2	1	2	1	4	5	10
2012	2	1	2	1	4	5	11
2013	2	1	3	1	4	5	12
2014	2	1	3	1	4	5	13
2015	2	1	3	1	4	5	14
2016	2	1	3	1	4	5	15
2017	2	1	3	1	4	6	16
2018	2	1	3	1	5	6	18
2019	2	1	3	1	5	6	19
2020	2	1	3	1	5	6	21
NOMINAL	27	15	42	17	66	83	214
NPV	15	8	23	9	36	46	116

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	120	2	0	0	2	2
2002	247	5	0	0	5	5
2003	260	5	0	0	5	5
2004	273	6	0	0	6	6
2005	286	6	0	0	6	6
2006	301	7	0	0	7	7
2007	316	7	0	0	7	7
2008	331	8	0	0	8	8
2009	348	9	0	0	9	9
2010	365	9	0	0	9	9
2011	384	10	0	0	10	10
2012	403	11	0	0	11	11
2013	423	12	0	0	12	12
2014	444	13	0	0	13	13
2015	467	14	0	0	14	14
2016	490	15	0	0	15	15
2017	514	16	0	0	16	16
2018	540	18	0	0	18	18
2019	567	19	0	0	19	19
2020	596	21	0	0	21	21
NOMINAL	7,676	214	0	0	214	214
NPV		116	0	0	116	116

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS GAIN
 PROGRAM Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	0	0	0	18	0	18	274	0	274	113	2	7	9	0	0	0	0
2002	0	0	0	1	0	1	15	0	15	232	4	14	18	0	0	0	0
2003	0	0	0	1	0	1	15	0	15	244	4	15	20	0	0	0	0
2004	0	0	0	0	0	0	17	0	17	256	5	17	21	0	0	0	0
2005	0	0	0	0	0	0	18	0	18	269	5	18	23	0	0	0	0
2006	0	0	0	0	0	0	19	0	19	283	6	20	25	0	0	0	0
2007	0	0	0	0	0	0	20	0	20	297	6	21	27	0	0	0	0
2008	0	0	0	0	0	0	24	0	24	312	7	23	29	0	0	0	0
2009	0	0	0	0	0	0	24	0	24	327	7	25	32	0	0	0	0
2010	0	0	0	0	0	0	26	0	26	344	8	27	34	0	0	0	0
2011	0	0	0	0	0	0	29	0	29	361	8	29	37	0	0	0	0
2012	0	0	0	0	0	0	31	0	31	379	9	31	40	0	0	0	0
2013	0	0	0	0	0	0	33	0	33	398	10	34	44	0	0	0	0
2014	0	0	0	0	0	0	36	0	36	417	11	37	47	0	0	0	0
2015	0	0	0	0	0	0	40	0	40	439	11	40	51	0	0	0	0
2016	0	0	0	0	0	0	42	0	42	461	12	43	55	0	0	0	0
2017	0	0	0	0	0	0	45	0	45	483	13	46	60	0	0	0	0
2018	0	0	0	0	0	0	50	0	50	508	14	50	64	0	0	0	0
2019	0	0	0	0	0	0	54	0	54	533	16	54	70	0	0	0	0
2020	0	0	0	0	0	0	58	0	58	560	17	59	75	0	0	0	0
NOMINAL	0	0	0	20	0	20	872	0	872	7,215	175	608	782	0	0	0	0
NPV	0	0	0	20	0	20	597	0	597		95	331	426		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	274	0	274	0	0	2	0	2	(272)	(272)
2002	0	0	15	0	15	0	0	5	0	5	(10)	(281)
2003	0	0	15	0	15	0	0	5	0	5	(10)	(290)
2004	0	0	17	0	17	11	6	6	0	22	6	(285)
2005	0	0	18	0	18	11	6	6	0	23	5	(281)
2006	0	0	19	0	19	12	6	7	0	25	5	(277)
2007	0	0	20	0	20	12	6	7	0	26	6	(273)
2008	0	0	24	0	24	12	6	8	0	27	3	(271)
2009	0	0	24	0	24	13	7	9	0	28	4	(268)
2010	0	0	26	0	26	13	7	9	0	30	3	(266)
2011	0	0	29	0	29	14	7	10	0	31	2	(265)
2012	0	0	31	0	31	14	7	11	0	33	2	(264)
2013	0	0	33	0	33	15	7	12	0	34	1	(264)
2014	0	0	36	0	36	15	8	13	0	36	(0)	(264)
2015	0	0	40	0	40	16	8	14	0	38	(2)	(265)
2016	0	0	42	0	42	16	8	15	0	40	(3)	(266)
2017	0	0	45	0	45	17	8	16	0	42	(3)	(267)
2018	0	0	50	0	50	18	9	18	0	44	(6)	(270)
2019	0	0	54	0	54	18	9	19	0	46	(8)	(273)
2020	0	0	58	0	58	19	9	21	0	49	(9)	(276)
NOMINAL	0	0	872	0	872	247	125	214	0	586	(286)	
NPV	0	0	597	0	597	136	69	116	0	321	(276)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.54

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	CUSTOMER EQUIPMENT COSTS \$(000)	CUSTOMER O & M COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	9	0	18	0	27	274	0	0	274	(248)	(248)
2002	18	0	1	0	19	15	0	0	15	4	(243)
2003	20	0	1	0	21	15	0	0	15	6	(238)
2004	21	0	0	0	21	17	0	0	17	5	(234)
2005	23	0	0	0	23	18	0	0	18	5	(230)
2006	25	0	0	0	25	19	0	0	19	6	(226)
2007	27	0	0	0	27	20	0	0	20	7	(220)
2008	29	0	0	0	29	24	0	0	24	6	(216)
2009	32	0	0	0	32	24	0	0	24	7	(212)
2010	34	0	0	0	34	26	0	0	26	8	(206)
2011	37	0	0	0	37	29	0	0	29	8	(202)
2012	40	0	0	0	40	31	0	0	31	9	(196)
2013	44	0	0	0	44	33	0	0	33	10	(191)
2014	47	0	0	0	47	36	0	0	36	11	(186)
2015	51	0	0	0	51	40	0	0	40	11	(181)
2016	55	0	0	0	55	42	0	0	42	13	(175)
2017	60	0	0	0	60	45	0	0	45	15	(169)
2018	64	0	0	0	64	50	0	0	50	14	(163)
2019	70	0	0	0	70	54	0	0	54	15	(157)
2020	75	0	0	0	75	58	0	0	58	18	(151)
NOMINAL	782	0	20	0	803	872	0	0	872	(69)	
NPV	426	0	20	0	446	597	0	0	597	(151)	
	In-service year of generation unit:			2004		Benefit/Cost Ratio:		0.75			
	Discount rate:			5.50%							

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	0	18	9	0	27	2	0	0	0	2	(25)	(25)
2002	0	0	1	18	0	19	5	0	0	0	5	(14)	(38)
2003	0	0	1	20	0	21	5	0	0	0	5	(15)	(52)
2004	0	0	0	21	0	21	17	6	0	0	22	1	(51)
2005	0	0	0	23	0	23	18	6	0	0	23	0	(51)
2006	0	0	0	25	0	25	18	6	0	0	25	(1)	(52)
2007	0	0	0	27	0	27	19	6	0	0	26	(2)	(53)
2008	0	0	0	29	0	29	20	6	0	0	27	(3)	(55)
2009	0	0	0	32	0	32	22	7	0	0	28	(4)	(57)
2010	0	0	0	34	0	34	23	7	0	0	30	(5)	(60)
2011	0	0	0	37	0	37	24	7	0	0	31	(6)	(63)
2012	0	0	0	40	0	40	25	7	0	0	33	(8)	(68)
2013	0	0	0	44	0	44	27	7	0	0	34	(9)	(73)
2014	0	0	0	47	0	47	28	8	0	0	36	(11)	(78)
2015	0	0	0	51	0	51	30	8	0	0	38	(13)	(84)
2016	0	0	0	55	0	55	32	8	0	0	40	(15)	(91)
2017	0	0	0	60	0	60	33	8	0	0	42	(18)	(99)
2018	0	0	0	64	0	64	35	9	0	0	44	(20)	(107)
2019	0	0	0	70	0	70	37	9	0	0	46	(23)	(116)
2020	0	0	0	75	0	75	40	9	0	0	49	(26)	(125)
NOMINAL	0	0	20	782	0	803	461	125	0	0	586	(217)	
NPV	0	0	20	426	0	446	252	69	0	0	321	(125)	
				Discount rate:	5.50%								
				Benefit / Cost Ratio [col (12) / col (7)]:	0.72								

APPENDIX B.2

COMMERCIAL/INDUSTRIAL MEASURES

PROGRAM: Updated DLC-1A

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	2.24	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	2.43	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	219.54	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	47.13	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	57.31	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243	\$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3	%
(8) GENERATOR FIXED O & M COST	5.007448	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3	%
(10) TRANSMISSION FIXED O & M COST	3.07661	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3	%
(15) GENERATOR CAPACITY FACTOR	85	%
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM Updated DLC-1A

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	1770	1770	1.71	1.93	1.93	1.92	1	1
2002	2360	2360	1.76	2.00	2.00	1.98	1	1
2003	3034	3034	1.81	2.06	2.06	2.04	1	1
2004	3792	3792	1.87	2.12	2.12	2.10	1	1
2005	4474	4474	1.92	2.19	2.19	2.16	1	1
2006	5081	5081	1.98	2.26	2.26	2.22	1	1
2007	5612	5612	2.04	2.33	2.33	2.29	1	1
2008	6067	6067	2.10	2.41	2.41	2.36	1	1
2009	6656	6656	2.16	2.48	2.48	2.43	1	1
2010	6749	6749	2.23	2.56	2.56	2.50	1	1
2011	6976	6976	2.30	2.64	2.64	2.58	1	1
2012	7128	7128	2.36	2.73	2.73	2.66	1	1
2013	7204	7204	2.44	2.81	2.81	2.74	1	1
2014	7204	7204	2.51	2.90	2.90	2.82	1	1
2015	7204	7204	2.58	2.99	2.99	2.90	1	1
2016	7204	7204	2.66	3.09	3.09	2.99	1	1
2017	7204	7204	2.74	3.19	3.19	3.08	1	1
2018	7204	7204	2.82	3.29	3.29	3.17	1	1
2019	7204	7204	2.91	3.39	3.39	3.27	1	1
2020	7204	7204	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

< .. COST DATA FOR CONSTRUCTION OF PLANT .. >

TEMP DATA/NOT USED

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Updated DLC-1A

* UNIT SIZE OF AVOIDED GENERATION UNIT = 9,233 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$3,730

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	248	68,747	51	146	1,460	1,442	0	463
2005	0.0685	256	68,747	52	150	1,506	1,485	0	479
2006	0.0706	263	68,747	54	155	1,554	1,529	0	496
2007	0.0727	271	68,747	55	159	1,603	1,575	0	514
2008	0.0749	279	68,747	57	164	1,654	1,623	0	532
2009	0.0771	288	68,747	59	169	1,707	1,671	0	551
2010	0.0794	296	68,747	60	174	1,761	1,721	0	570
2011	0.0818	305	68,747	62	179	1,816	1,773	0	590
2012	0.0843	314	68,747	64	185	1,874	1,826	0	611
2013	0.0868	324	68,747	66	190	1,933	1,881	0	632
2014	0.0894	333	68,747	68	196	1,995	1,937	0	655
2015	0.0921	343	68,747	70	202	2,058	1,995	0	678
2016	0.0948	354	68,747	72	208	2,123	2,055	0	702
2017	0.0977	364	68,747	74	214	2,191	2,117	0	726
2018	0.1006	375	68,747	76	221	2,260	2,181	0	752
2019	0.1036	386	68,747	79	227	2,332	2,246	0	778
2020	0.1067	398	68,747	81	234	2,405	2,313	0	805
NOMINAL		5,398	1,168,693	1,099	3,174	32,232	31,371	0	10,533
NPV		2,985		608	1,755	17,785	17,346	0	5,786

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Updated DLC-1A

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$795
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$418

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	53	25	78	28	109	137	0
2005	54	26	80	29	112	141	0
2006	56	26	82	29	115	145	0
2007	58	27	85	30	119	149	0
2008	60	28	87	31	122	154	0
2009	61	29	90	32	126	158	0
2010	63	30	93	33	130	163	0
2011	65	31	96	34	134	168	0
2012	67	31	98	35	138	173	0
2013	69	32	101	36	142	178	0
2014	71	33	104	37	146	183	0
2015	73	34	108	38	151	189	0
2016	75	35	111	40	155	195	0
2017	78	36	114	41	160	200	0
2018	80	38	118	42	164	207	0
2019	82	39	121	43	169	213	0
2020	85	40	125	45	174	219	0
NOMINAL	1,150	540	1,691	605	2,366	2,971	0
NPV	636	299	935	335	1,308	1,643	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
 PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS-GAIN
PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC CUST COSTS \$(000)	REDUCT. IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT IN BILL \$(000)	INC. IN CUST KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	389	42	430	0	51	51	0	0	0	0	0	0	0	0	0	0	0
2002	133	100	234	0	118	118	0	0	0	0	0	0	0	0	0	0	0
2003	157	135	292	0	155	155	0	0	0	0	0	0	0	0	0	0	0
2004	0	176	176	0	196	196	0	0	0	0	0	0	0	0	0	0	0
2005	0	219	219	0	237	237	0	0	0	0	0	0	0	0	0	0	0
2006	0	261	261	0	274	274	0	0	0	0	0	0	0	0	0	0	0
2007	0	301	301	0	306	306	0	0	0	0	0	0	0	0	0	0	0
2008	0	338	338	0	335	335	0	0	0	0	0	0	0	0	0	0	0
2009	0	380	380	0	365	365	0	0	0	0	0	0	0	0	0	0	0
2010	0	412	412	0	384	384	0	0	0	0	0	0	0	0	0	0	0
2011	0	435	435	0	393	393	0	0	0	0	0	0	0	0	0	0	0
2012	0	460	460	0	404	404	0	0	0	0	0	0	0	0	0	0	0
2013	0	482	482	0	411	411	0	0	0	0	0	0	0	0	0	0	0
2014	0	499	499	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2015	0	514	514	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2016	0	529	529	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2017	0	545	545	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2018	0	561	561	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2019	0	578	578	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2020	0	595	595	0	413	413	0	0	0	0	0	0	0	0	0	0	0
NOMINAL	679	7,561	8,240	0	6,518	6,518	0	0	0	0	0	0	0	0	0	0	0
NPV	656	4,122	4,778	0	3,701	3,701	0	0	0	0	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	430	0	0	430	0	0	0	0	0	(430)	(430)
2002	0	234	0	0	234	0	0	0	0	0	(234)	(652)
2003	0	292	0	0	292	0	0	0	0	0	(292)	(914)
2004	0	176	0	0	176	463	214	0	0	677	501	(487)
2005	0	219	0	0	219	479	221	0	0	700	481	(99)
2006	0	261	0	0	261	496	227	0	0	723	462	255
2007	0	301	0	0	301	514	234	0	0	748	447	579
2008	0	338	0	0	338	532	241	0	0	773	434	877
2009	0	380	0	0	380	551	248	0	0	799	419	1,150
2010	0	412	0	0	412	570	256	0	0	826	414	1,406
2011	0	435	0	0	435	590	263	0	0	854	419	1,651
2012	0	460	0	0	460	611	271	0	0	882	422	1,885
2013	0	482	0	0	482	632	280	0	0	912	430	2,112
2014	0	499	0	0	499	655	288	0	0	943	444	2,333
2015	0	514	0	0	514	678	297	0	0	974	461	2,551
2016	0	529	0	0	529	702	305	0	0	1,007	478	2,765
2017	0	545	0	0	545	726	315	0	0	1,041	496	2,975
2018	0	561	0	0	561	752	324	0	0	1,076	515	3,183
2019	0	578	0	0	578	778	334	0	0	1,112	534	3,386
2020	0	595	0	0	595	805	344	0	0	1,149	554	3,586
NOMINAL	0	8,240	0	0	8,240	10,533	4,662	0	0	15,195	6,954	
NPV	0	4,778	0	0	4,778	5,786	2,578	0	0	8,364	3,586	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 1.75

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	CUSTOMER EQUIPMENT COSTS \$(000)	CUSTOMER O & M COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	51	0	51	0	0	0	0	51	51
2002	0	0	118	0	118	0	0	0	0	118	163
2003	0	0	155	0	155	0	0	0	0	155	302
2004	0	0	196	0	196	0	0	0	0	196	468
2005	0	0	237	0	237	0	0	0	0	237	660
2006	0	0	274	0	274	0	0	0	0	274	869
2007	0	0	306	0	306	0	0	0	0	306	1,091
2008	0	0	335	0	335	0	0	0	0	335	1,321
2009	0	0	365	0	365	0	0	0	0	365	1,559
2010	0	0	384	0	384	0	0	0	0	384	1,796
2011	0	0	393	0	393	0	0	0	0	393	2,026
2012	0	0	404	0	404	0	0	0	0	404	2,251
2013	0	0	411	0	411	0	0	0	0	411	2,467
2014	0	0	413	0	413	0	0	0	0	413	2,672
2015	0	0	413	0	413	0	0	0	0	413	2,868
2016	0	0	413	0	413	0	0	0	0	413	3,053
2017	0	0	413	0	413	0	0	0	0	413	3,228
2018	0	0	413	0	413	0	0	0	0	413	3,394
2019	0	0	413	0	413	0	0	0	0	413	3,551
2020	0	0	413	0	413	0	0	0	0	413	3,701
NOMINAL	0	0	6,518	0	6,518	0	0	0	0	6,518	
NPV	0	0	3,701	0	3,701	0	0	0	0	3,701	
	In-service year of generation unit:			2004		Benefit/Cost Ratio:		1.00			
	Discount rate:			5.50%							

PROGRAM: Updated DLC-2

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.75 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.82 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	219.54 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	31.39 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	21.49 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Updated DLC-2

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	498	498	1.71	1.93	1.93	1.92	1	1
2002	697	697	1.76	2.00	2.00	1.98	1	1
2003	930	930	1.81	2.06	2.06	2.04	1	1
2004	1196	1196	1.87	2.12	2.12	2.10	1	1
2005	1495	1495	1.92	2.19	2.19	2.16	1	1
2006	1761	1761	1.98	2.26	2.26	2.22	1	1
2007	1994	1994	2.04	2.33	2.33	2.29	1	1
2008	2193	2193	2.10	2.41	2.41	2.36	1	1
2009	2359	2359	2.16	2.48	2.48	2.43	1	1
2010	2592	2592	2.23	2.56	2.56	2.50	1	1
2011	2658	2658	2.30	2.64	2.64	2.58	1	1
2012	2691	2691	2.36	2.73	2.73	2.66	1	1
2013	2691	2691	2.44	2.81	2.81	2.74	1	1
2014	2691	2691	2.51	2.90	2.90	2.82	1	1
2015	2691	2691	2.58	2.99	2.99	2.90	1	1
2016	2691	2691	2.66	3.09	3.09	2.99	1	1
2017	2691	2691	2.74	3.19	3.19	3.08	1	1
2018	2691	2691	2.82	3.29	3.29	3.17	1	1
2019	2691	2691	2.91	3.39	3.39	3.27	1	1
2020	2691	2691	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

< -- COST DATA FOR CONSTRUCTION OF PLANT -- >

TEMP DATA/NOT USED

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Updated DLC-2

* UNIT SIZE OF AVOIDED GENERATION UNIT = 975 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$394

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	26	7,260	5	15	154	152	0	49
2005	0.0685	27	7,260	5	16	159	157	0	51
2006	0.0706	28	7,260	6	16	164	162	0	52
2007	0.0727	29	7,260	6	17	169	166	0	54
2008	0.0749	29	7,260	6	17	175	171	0	56
2009	0.0771	30	7,260	6	18	180	176	0	58
2010	0.0794	31	7,260	6	18	186	182	0	60
2011	0.0818	32	7,260	7	19	192	187	0	62
2012	0.0843	33	7,260	7	20	198	193	0	65
2013	0.0868	34	7,260	7	20	204	199	0	67
2014	0.0894	35	7,260	7	21	211	205	0	69
2015	0.0921	36	7,260	7	21	217	211	0	72
2016	0.0948	37	7,260	8	22	224	217	0	74
2017	0.0977	38	7,260	8	23	231	224	0	77
2018	0.1006	40	7,260	8	23	239	230	0	79
2019	0.1036	41	7,260	8	24	246	237	0	82
2020	0.1067	42	7,260	9	25	254	244	0	85
NOMINAL		570	123,417	116	335	3,404	3,313	0	1,112
NPV		315		64	185	1,878	1,832	0	611

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Updated DLC-2

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$84
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$43

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	6	3	8	3	11	14	0
2005	6	3	8	3	11	14	0
2006	6	3	9	3	12	15	0
2007	6	3	9	3	12	15	0
2008	6	3	9	3	13	16	0
2009	6	3	9	3	13	16	0
2010	7	3	10	3	13	17	0
2011	7	3	10	4	14	17	0
2012	7	3	10	4	14	18	0
2013	7	3	11	4	15	18	0
2014	8	3	11	4	15	19	0
2015	8	4	11	4	15	19	0
2016	8	4	12	4	16	20	0
2017	8	4	12	4	16	21	0
2018	8	4	12	4	17	21	0
2019	9	4	13	4	17	22	0
2020	9	4	13	5	18	22	0
NOMINAL	121	55	177	62	243	305	0
NPV	67	31	98	34	134	169	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES -----							----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT REV. REDUCT IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	109	8	117	0	5	5	0	0	0	0	0	0	0	0	0	0	0
2002	45	19	64	0	13	13	0	0	0	0	0	0	0	0	0	0	0
2003	54	27	81	0	17	17	0	0	0	0	0	0	0	0	0	0	0
2004	0	36	36	0	23	23	0	0	0	0	0	0	0	0	0	0	0
2005	0	48	48	0	29	29	0	0	0	0	0	0	0	0	0	0	0
2006	0	59	59	0	35	35	0	0	0	0	0	0	0	0	0	0	0
2007	0	70	70	0	40	40	0	0	0	0	0	0	0	0	0	0	0
2008	0	81	81	0	45	45	0	0	0	0	0	0	0	0	0	0	0
2009	0	90	90	0	49	49	0	0	0	0	0	0	0	0	0	0	0
2010	0	101	101	0	53	53	0	0	0	0	0	0	0	0	0	0	0
2011	0	111	111	0	56	56	0	0	0	0	0	0	0	0	0	0	0
2012	0	116	116	0	57	57	0	0	0	0	0	0	0	0	0	0	0
2013	0	120	120	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2014	0	124	124	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2015	0	128	128	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2016	0	132	132	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2017	0	136	136	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2018	0	140	140	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2019	0	144	144	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2020	0	148	148	0	58	58	0	0	0	0	0	0	0	0	0	0	0
NOMINAL	209	1,838	2,047	0	887	887	0	0	0	0	0	0	0	0	0	0	0
NPV	201	989	1,190	0	496	496	0	0	0	0	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	117	0	0	117	0	0	0	0	0	(117)	(117)
2002	0	64	0	0	64	0	0	0	0	0	(64)	(178)
2003	0	81	0	0	81	0	0	0	0	0	(81)	(251)
2004	0	36	0	0	36	49	22	0	0	71	35	(222)
2005	0	48	0	0	48	51	23	0	0	73	26	(201)
2006	0	59	0	0	59	52	23	0	0	76	17	(188)
2007	0	70	0	0	70	54	24	0	0	78	8	(182)
2008	0	81	0	0	81	56	25	0	0	81	0	(182)
2009	0	90	0	0	90	58	26	0	0	84	(7)	(186)
2010	0	101	0	0	101	60	26	0	0	87	(15)	(196)
2011	0	111	0	0	111	62	27	0	0	90	(21)	(208)
2012	0	116	0	0	116	65	28	0	0	93	(24)	(221)
2013	0	120	0	0	120	67	29	0	0	96	(25)	(234)
2014	0	124	0	0	124	69	30	0	0	99	(25)	(247)
2015	0	128	0	0	128	72	31	0	0	102	(26)	(259)
2016	0	132	0	0	132	74	32	0	0	106	(26)	(270)
2017	0	136	0	0	136	77	33	0	0	109	(26)	(281)
2018	0	140	0	0	140	79	33	0	0	113	(27)	(292)
2019	0	144	0	0	144	82	34	0	0	117	(27)	(303)
2020	0	148	0	0	148	85	36	0	0	121	(28)	(313)
NOMINAL	0	2,047	0	0	2,047	1,112	482	0	0	1,594	(453)	
NPV	0	1,190	0	0	1,190	611	266	0	0	877	(313)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.74

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Updated DLC-2

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	5	0	5	0	0	0	0	5	5
2002	0	0	13	0	13	0	0	0	0	13	18
2003	0	0	17	0	17	0	0	0	0	17	33
2004	0	0	23	0	23	0	0	0	0	23	53
2005	0	0	29	0	29	0	0	0	0	29	76
2006	0	0	35	0	35	0	0	0	0	35	103
2007	0	0	40	0	40	0	0	0	0	40	132
2008	0	0	45	0	45	0	0	0	0	45	163
2009	0	0	49	0	49	0	0	0	0	49	195
2010	0	0	53	0	53	0	0	0	0	53	228
2011	0	0	56	0	56	0	0	0	0	56	261
2012	0	0	57	0	57	0	0	0	0	57	293
2013	0	0	58	0	58	0	0	0	0	58	323
2014	0	0	58	0	58	0	0	0	0	58	352
2015	0	0	58	0	58	0	0	0	0	58	379
2016	0	0	58	0	58	0	0	0	0	58	405
2017	0	0	58	0	58	0	0	0	0	58	430
2018	0	0	58	0	58	0	0	0	0	58	453
2019	0	0	58	0	58	0	0	0	0	58	475
2020	0	0	58	0	58	0	0	0	0	58	496

NOMINAL	0	0	887	0	887	0	0	0	0	887
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NPV	0	0	496	0	496	0	0	0	0	496
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In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.00

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	117	5	0	0	122	0	0	0	0	0	(122)	(122)
2002	0	64	13	0	0	77	0	0	0	0	0	(77)	(196)
2003	0	81	17	0	0	99	0	0	0	0	0	(99)	(284)
2004	0	36	23	0	0	59	49	22	0	0	71	12	(274)
2005	0	48	29	0	0	76	51	23	0	0	73	(3)	(277)
2006	0	59	35	0	0	94	52	23	0	0	76	(18)	(291)
2007	0	70	40	0	0	111	54	24	0	0	78	(32)	(314)
2008	0	81	45	0	0	126	56	25	0	0	81	(45)	(345)
2009	0	90	49	0	0	139	58	26	0	0	84	(56)	(381)
2010	0	101	53	0	0	155	60	26	0	0	87	(68)	(423)
2011	0	111	56	0	0	167	62	27	0	0	90	(78)	(469)
2012	0	116	57	0	0	174	65	28	0	0	93	(81)	(514)
2013	0	120	58	0	0	178	67	29	0	0	96	(83)	(557)
2014	0	124	58	0	0	182	69	30	0	0	99	(83)	(599)
2015	0	128	58	0	0	186	72	31	0	0	102	(83)	(638)
2016	0	132	58	0	0	189	74	32	0	0	106	(84)	(675)
2017	0	136	58	0	0	193	77	33	0	0	109	(84)	(711)
2018	0	140	58	0	0	197	79	33	0	0	113	(85)	(745)
2019	0	144	58	0	0	202	82	34	0	0	117	(85)	(778)
2020	0	148	58	0	0	206	85	36	0	0	121	(85)	(809)
NOMINAL	0	2,047	887	0	0	2,933	1,112	482	0	0	1,594	(1,339)	
NPV	0	1,190	496	0	0	1,686	611	266	0	0	877	(809)	

Discount rate: 5.50%
Benefit / Cost Ratio [col (12) / col (7)]: 0.52

PROGRAM Comm. Energy Survey

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	5.50 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	5.98 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	3,563.8 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	3,350.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	5.46 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	25.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	3,000.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.450 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	6.90 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Comm. Energy Survey

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	367	367	1.71	1.93	1.93	1.92	1	1
2002	440	440	1.76	2.00	2.00	1.98	1	1
2003	513	513	1.81	2.06	2.06	2.04	1	1
2004	587	587	1.87	2.12	2.12	2.10	1	1
2005	660	660	1.92	2.19	2.19	2.16	1	1
2006	733	733	1.98	2.26	2.26	2.22	1	1
2007	807	807	2.04	2.33	2.33	2.29	1	1
2008	880	880	2.10	2.41	2.41	2.36	1	1
2009	953	953	2.16	2.48	2.48	2.43	1	1
2010	1026	1026	2.23	2.56	2.56	2.50	1	1
2011	1100	1100	2.30	2.64	2.64	2.58	1	1
2012	1173	1173	2.36	2.73	2.73	2.66	1	1
2013	1246	1246	2.44	2.81	2.81	2.74	1	1
2014	1320	1320	2.51	2.90	2.90	2.82	1	1
2015	1320	1320	2.58	2.99	2.99	2.90	1	1
2016	1320	1320	2.66	3.09	3.09	2.99	1	1
2017	1320	1320	2.74	3.19	3.19	3.08	1	1
2018	1320	1320	2.82	3.29	3.29	3.17	1	1
2019	1320	1320	2.91	3.39	3.39	3.27	1	1
2020	1320	1320	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Comm. Energy Survey

* UNIT SIZE OF AVOIDED GENERATION UNIT = 3,509 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$1,418

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	94	26,130	19	55	555	548	0	176
2005	0.0685	97	26,130	20	57	573	564	0	182
2006	0.0706	100	26,130	20	59	591	581	0	189
2007	0.0727	103	26,130	21	61	609	599	0	195
2008	0.0749	106	26,130	22	62	629	617	0	202
2009	0.0771	109	26,130	22	64	649	635	0	209
2010	0.0794	113	26,130	23	66	669	654	0	217
2011	0.0818	116	26,130	24	68	690	674	0	224
2012	0.0843	119	26,130	24	70	712	694	0	232
2013	0.0868	123	26,130	25	72	735	715	0	240
2014	0.0894	127	26,130	26	74	758	736	0	249
2015	0.0921	131	26,130	27	77	782	758	0	258
2016	0.0948	134	26,130	27	79	807	781	0	267
2017	0.0977	138	26,130	28	81	833	805	0	276
2018	0.1006	143	26,130	29	84	859	829	0	286
2019	0.1036	147	26,130	30	86	886	854	0	296
2020	0.1067	151	26,130	31	89	914	879	0	306
NOMINAL		2,052	444,207	418	1,206	12,251	11,924	0	4,003
NPV		1,135		231	667	6,760	6,593	0	2,199

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Comm. Cooling

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$55
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$32

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	14
2002	0	0	0	0	0	0	33
2003	0	0	0	0	0	0	40
2004	4	2	6	2	8	10	48
2005	4	2	6	2	8	11	56
2006	4	2	6	2	9	11	64
2007	4	2	6	2	9	11	73
2008	4	2	6	2	9	12	83
2009	4	2	6	2	10	12	93
2010	4	2	7	3	10	12	103
2011	4	2	7	3	10	13	114
2012	5	2	7	3	10	13	126
2013	5	2	7	3	11	13	139
2014	5	3	7	3	11	14	152
2015	5	3	8	3	11	14	161
2016	5	3	8	3	12	15	166
2017	5	3	8	3	12	15	171
2018	6	3	8	3	12	16	177
2019	6	3	9	3	13	16	183
2020	6	3	9	3	13	17	188
NOMINAL	80	41	120	46	179	224	2,184
NPV	44	23	67	25	99	124	1,168

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Comm. Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	748	14	0	0	14	14
2002	1,645	33	0	0	33	33
2003	1,942	40	0	0	40	40
2004	2,242	48	0	0	48	48
2005	2,542	56	0	0	56	56
2006	2,839	64	0	0	64	64
2007	3,139	73	0	0	73	73
2008	3,439	83	0	0	83	83
2009	3,736	93	0	0	93	93
2010	4,034	103	0	0	103	103
2011	4,333	114	0	0	114	114
2012	4,633	126	0	0	126	126
2013	4,931	139	0	0	139	139
2014	5,230	152	0	0	152	152
2015	5,381	161	0	0	161	161
2016	5,381	166	0	0	166	166
2017	5,381	171	0	0	171	171
2018	5,381	177	0	0	177	177
2019	5,381	183	0	0	183	183
2020	5,381	188	0	0	188	188
NOMINAL	77,720	2,184	0	0	2,184	2,184
NPV		1,168	0	0	1,168	1,168

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Comm. Cooling

(1)	(2) (3) (4) (5) (6) (7)						(8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18)										
	UTILITY PROGRAM COSTS & REBATES						PARTICIPATING CUSTOMER COSTS & BENEFITS										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	2	12	14	37	0	37	0	0	0	703	12	54	66	0	0	0	0
2002	0	27	27	7	0	7	0	0	0	1,546	27	120	147	0	0	0	0
2003	0	33	33	7	0	7	0	0	0	1,826	33	145	178	0	0	0	0
2004	0	39	39	0	0	0	0	0	0	2,108	39	171	210	0	0	0	0
2005	0	45	45	0	0	0	0	0	0	2,389	46	198	244	0	0	0	0
2006	0	52	52	0	0	0	0	0	0	2,669	53	226	279	0	0	0	0
2007	0	59	59	0	0	0	0	0	0	2,951	60	256	316	0	0	0	0
2008	0	67	67	0	0	0	0	0	0	3,232	68	286	355	0	0	0	0
2009	0	75	75	0	0	0	0	0	0	3,512	76	318	395	0	0	0	0
2010	0	83	83	0	0	0	0	0	0	3,792	85	351	436	0	0	0	0
2011	0	92	92	0	0	0	0	0	0	4,073	94	386	480	0	0	0	0
2012	0	102	102	0	0	0	0	0	0	4,355	103	423	526	0	0	0	0
2013	0	112	112	0	0	0	0	0	0	4,635	113	460	573	0	0	0	0
2014	0	122	122	0	0	0	0	0	0	4,916	124	500	623	0	0	0	0
2015	0	129	129	0	0	0	0	0	0	5,058	131	526	657	0	0	0	0
2016	0	133	133	0	0	0	0	0	0	5,058	135	539	674	0	0	0	0
2017	0	137	137	0	0	0	0	0	0	5,058	139	552	691	0	0	0	0
2018	0	141	141	0	0	0	0	0	0	5,058	143	565	708	0	0	0	0
2019	0	145	145	0	0	0	0	0	0	5,058	148	579	726	0	0	0	0
2020	0	150	150	0	0	0	0	0	0	5,058	152	593	745	0	0	0	0
NOMINAL	3	1,756	1,758	51	0	51	0	0	0	73,057	1,783	7,247	9,030	0	0	0	0
NPV	3	941	944	50	0	50	0	0	0		956	3,921	4,877		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS

PROGRAM: Comm. Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	14	0	0	14	0	0	14	0	14	1	1
2002	0	27	0	0	27	0	0	33	0	33	6	6
2003	0	33	0	0	33	0	0	40	0	40	7	12
2004	0	39	0	0	39	32	16	48	0	95	57	60
2005	0	45	0	0	45	33	16	56	0	105	60	108
2006	0	52	0	0	52	34	17	64	0	115	63	157
2007	0	59	0	0	59	35	17	73	0	126	67	205
2008	0	67	0	0	67	37	18	83	0	137	70	253
2009	0	75	0	0	75	38	18	93	0	149	74	301
2010	0	83	0	0	83	39	19	103	0	162	78	350
2011	0	92	0	0	92	41	19	114	0	175	82	398
2012	0	102	0	0	102	42	20	126	0	189	87	446
2013	0	112	0	0	112	44	21	139	0	203	92	494
2014	0	122	0	0	122	45	21	152	0	218	96	542
2015	0	129	0	0	129	47	22	161	0	230	101	590
2016	0	133	0	0	133	48	23	166	0	237	104	637
2017	0	137	0	0	137	50	23	171	0	245	108	682
2018	0	141	0	0	141	52	24	177	0	253	112	727
2019	0	145	0	0	145	54	25	183	0	261	116	772
2020	0	150	0	0	150	56	25	188	0	269	120	815
NOMINAL	0	1,758	0	0	1,758	728	345	2,184	0	3,257	1,498	
NPV	0	944	0	0	944	400	191	1,168	0	1,759	815	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 1.86

Participants Test

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Comm. Cooling

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	66	0	37	0	102	0	0	0	0	102	102
2002	147	0	7	0	155	0	0	0	0	155	249
2003	178	0	7	0	185	0	0	0	0	185	416
2004	210	0	0	0	210	0	0	0	0	210	595
2005	244	0	0	0	244	0	0	0	0	244	792
2006	279	0	0	0	279	0	0	0	0	279	1,006
2007	316	0	0	0	316	0	0	0	0	316	1,235
2008	355	0	0	0	355	0	0	0	0	355	1,479
2009	395	0	0	0	395	0	0	0	0	395	1,736
2010	436	0	0	0	436	0	0	0	0	436	2,005
2011	480	0	0	0	480	0	0	0	0	480	2,286
2012	526	0	0	0	526	0	0	0	0	526	2,578
2013	573	0	0	0	573	0	0	0	0	573	2,880
2014	623	0	0	0	623	0	0	0	0	623	3,191
2015	657	0	0	0	657	0	0	0	0	657	3,501
2016	674	0	0	0	674	0	0	0	0	674	3,803
2017	691	0	0	0	691	0	0	0	0	691	4,096
2018	708	0	0	0	708	0	0	0	0	708	4,381
2019	726	0	0	0	726	0	0	0	0	726	4,658
2020	745	0	0	0	745	0	0	0	0	745	4,927
NOMINAL	9,030	0	51	0	9,081	0	0	0	0	9,081	
NPV	4,877	0	50	0	4,927	0	0	0	0	4,927	

In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.00

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Comm. Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	14	37	66	0	116	14	0	0	0	14	(102)	(102)
2002	0	27	7	147	0	182	33	0	0	0	33	(149)	(243)
2003	0	33	7	178	0	219	40	0	0	0	40	(179)	(404)
2004	0	39	0	210	0	249	80	16	0	0	95	(154)	(535)
2005	0	45	0	244	0	290	89	16	0	0	105	(184)	(684)
2006	0	52	0	279	0	331	98	17	0	0	115	(216)	(849)
2007	0	59	0	316	0	376	109	17	0	0	126	(250)	(1,030)
2008	0	67	0	355	0	422	119	18	0	0	137	(284)	(1,225)
2009	0	75	0	395	0	470	131	18	0	0	149	(320)	(1,434)
2010	0	83	0	436	0	520	143	19	0	0	162	(358)	(1,656)
2011	0	92	0	480	0	572	155	19	0	0	175	(398)	(1,888)
2012	0	102	0	526	0	628	169	20	0	0	189	(439)	(2,132)
2013	0	112	0	573	0	685	182	21	0	0	203	(482)	(2,385)
2014	0	122	0	623	0	745	197	21	0	0	218	(527)	(2,648)
2015	0	129	0	657	0	786	208	22	0	0	230	(557)	(2,911)
2016	0	133	0	674	0	807	215	23	0	0	237	(569)	(3,166)
2017	0	137	0	691	0	828	222	23	0	0	245	(583)	(3,414)
2018	0	141	0	708	0	849	229	24	0	0	253	(596)	(3,654)
2019	0	145	0	726	0	871	236	25	0	0	261	(610)	(3,887)
2020	0	150	0	745	0	894	244	25	0	0	269	(625)	(4,113)
NOMINAL	0	1,758	51	9,030	0	10,840	2,912	345	0	0	3,257	(7,583)	
NPV	0	944	50	4,877	0	5,871	1,568	191	0	0	1,759	(4,113)	
Discount rate:				5.50%									
Benefit / Cost Ratio [col (12) / col (7)]:				0.30									

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Comm. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	654	13	0	0	13	13
2002	1,438	29	0	0	29	29
2003	1,698	35	0	0	35	35
2004	1,960	42	0	0	42	42
2005	2,222	49	0	0	49	49
2006	2,482	56	0	0	56	56
2007	2,744	64	0	0	64	64
2008	3,006	72	0	0	72	72
2009	3,266	81	0	0	81	81
2010	3,526	90	0	0	90	90
2011	3,788	100	0	0	100	100
2012	4,050	110	0	0	110	110
2013	4,310	121	0	0	121	121
2014	4,572	133	0	0	133	133
2015	4,704	141	0	0	141	141
2016	4,704	145	0	0	145	145
2017	4,704	150	0	0	150	150
2018	4,704	155	0	0	155	155
2019	4,704	160	0	0	160	160
2020	4,704	165	0	0	165	165
NOMINAL	67,944	1,910	0	0	1,910	1,910
NPV		1,021	0	0	1,021	1,021

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM Comm. Energy Survey

(1)	(2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12) (13) (14) (15) (16) (17) (18)																	
	UTILITY PROGRAM COSTS & REBATES						PARTICIPATING CUSTOMER COSTS & BENEFITS											
	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)	
YEAR																		
2001	2	5	7	1,101	0	1,101	0	0	0	615	11	117	128	0	0	0	0	
2002	0	10	11	219	0	219	0	0	0	1,352	24	260	283	0	0	0	0	
2003	0	13	13	219	0	219	0	0	0	1,596	29	309	338	0	0	0	0	
2004	0	15	15	0	0	0	0	0	0	1,843	35	360	395	0	0	0	0	
2005	0	18	18	0	0	0	0	0	0	2,089	40	412	452	0	0	0	0	
2006	0	20	20	0	0	0	0	0	0	2,333	46	464	511	0	0	0	0	
2007	0	23	23	0	0	0	0	0	0	2,580	53	518	571	0	0	0	0	
2008	0	26	26	0	0	0	0	0	0	2,826	60	573	633	0	0	0	0	
2009	0	29	29	0	0	0	0	0	0	3,070	67	629	696	0	0	0	0	
2010	0	32	32	0	0	0	0	0	0	3,315	74	686	760	0	0	0	0	
2011	0	36	36	0	0	0	0	0	0	3,561	82	745	827	0	0	0	0	
2012	0	39	39	0	0	0	0	0	0	3,807	90	804	895	0	0	0	0	
2013	0	43	43	0	0	0	0	0	0	4,052	99	865	964	0	0	0	0	
2014	0	47	47	0	0	0	0	0	0	4,298	108	928	1,036	0	0	0	0	
2015	0	50	50	0	0	0	0	0	0	4,422	115	965	1,080	0	0	0	0	
2016	0	51	51	0	0	0	0	0	0	4,422	118	976	1,094	0	0	0	0	
2017	0	53	53	0	0	0	0	0	0	4,422	122	987	1,109	0	0	0	0	
2018	0	55	55	0	0	0	0	0	0	4,422	125	999	1,124	0	0	0	0	
2019	0	56	56	0	0	0	0	0	0	4,422	129	1,011	1,140	0	0	0	0	
2020	0	58	58	0	0	0	0	0	0	4,422	133	1,023	1,156	0	0	0	0	
NOMINAL	3	679	682	1,539	0	1,539	0	0	0	63,868	1,559	13,633	15,192	0	0	0	0	
NPV	3	364	367	1,505	0	1,505	0	0	0		836	7,509	8,345		0	0	0	

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Comm. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	7	0	0	7	0	0	13	0	13	6	6
2002	0	11	0	0	11	0	0	29	0	29	18	23
2003	0	13	0	0	13	0	0	35	0	35	22	43
2004	0	15	0	0	15	176	87	42	0	305	290	289
2005	0	18	0	0	18	182	90	49	0	321	303	534
2006	0	20	0	0	20	189	92	56	0	337	317	776
2007	0	23	0	0	23	195	95	64	0	354	331	1,017
2008	0	26	0	0	26	202	98	72	0	372	347	1,255
2009	0	29	0	0	29	209	101	81	0	391	362	1,491
2010	0	32	0	0	32	217	104	90	0	411	379	1,725
2011	0	36	0	0	36	224	107	100	0	431	396	1,957
2012	0	39	0	0	39	232	110	110	0	453	414	2,186
2013	0	43	0	0	43	240	114	121	0	475	432	2,413
2014	0	47	0	0	47	249	117	133	0	499	451	2,638
2015	0	50	0	0	50	258	121	141	0	519	469	2,860
2016	0	51	0	0	51	267	124	145	0	536	485	3,077
2017	0	53	0	0	53	276	128	150	0	554	501	3,290
2018	0	55	0	0	55	286	132	155	0	572	518	3,498
2019	0	56	0	0	56	296	136	160	0	591	535	3,702
2020	0	58	0	0	58	306	140	165	0	610	553	3,902
NOMINAL	0	682	0	0	682	4,003	1,895	1,910	0	7,808	7,127	
NPV	0	367	0	0	367	2,199	1,048	1,021	0	4,269	3,902	

Discount Rate: 5.50%
Benefit:Cost Ratio [col (11) / col (6)]: 11.64

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Comm. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	CUSTOMER EQUIPMENT COSTS \$(000)	CUSTOMER O & M COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	128	0	1,101	0	1,229	0	0	0	0	1,229	1,229
2002	283	0	219	0	502	0	0	0	0	502	1,705
2003	338	0	219	0	557	0	0	0	0	557	2,205
2004	395	0	0	0	395	0	0	0	0	395	2,541
2005	452	0	0	0	452	0	0	0	0	452	2,906
2006	511	0	0	0	511	0	0	0	0	511	3,297
2007	571	0	0	0	571	0	0	0	0	571	3,711
2008	633	0	0	0	633	0	0	0	0	633	4,146
2009	696	0	0	0	696	0	0	0	0	696	4,600
2010	760	0	0	0	760	0	0	0	0	760	5,069
2011	827	0	0	0	827	0	0	0	0	827	5,553
2012	895	0	0	0	895	0	0	0	0	895	6,050
2013	964	0	0	0	964	0	0	0	0	964	6,557
2014	1,036	0	0	0	1,036	0	0	0	0	1,036	7,073
2015	1,080	0	0	0	1,080	0	0	0	0	1,080	7,584
2016	1,094	0	0	0	1,094	0	0	0	0	1,094	8,074
2017	1,109	0	0	0	1,109	0	0	0	0	1,109	8,545
2018	1,124	0	0	0	1,124	0	0	0	0	1,124	8,997
2019	1,140	0	0	0	1,140	0	0	0	0	1,140	9,432
2020	1,156	0	0	0	1,156	0	0	0	0	1,156	9,850
NOMINAL	15,192	0	1,539	0	16,731	0	0	0	0	16,731	
NPV	8,345	0	1,505	0	9,850	0	0	0	0	9,850	
	In-service year of generation unit:			2004			Benefit/Cost Ratio:		1.00		
	Discount rate:			5.50%							

PROGRAM: Comm. Lighting

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.90	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.98	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,063.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,000.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	26.31	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	33.95	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	1,592.06	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	90.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243	\$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3	%
(8) GENERATOR FIXED O & M COST	5.007448	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3	%
(10) TRANSMISSION FIXED O & M COST	3.07661	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3	%
(15) GENERATOR CAPACITY FACTOR	85	%
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.450	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	6.90	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Comm. Lighting

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	367	367	1.71	1.93	1.93	1.92	1	1
2002	440	440	1.76	2.00	2.00	1.98	1	1
2003	513	513	1.81	2.06	2.06	2.04	1	1
2004	587	587	1.87	2.12	2.12	2.10	1	1
2005	660	660	1.92	2.19	2.19	2.16	1	1
2006	733	733	1.98	2.26	2.26	2.22	1	1
2007	807	807	2.04	2.33	2.33	2.29	1	1
2008	880	880	2.10	2.41	2.41	2.36	1	1
2009	953	953	2.16	2.48	2.48	2.43	1	1
2010	1026	1026	2.23	2.56	2.56	2.50	1	1
2011	1100	1100	2.30	2.64	2.64	2.58	1	1
2012	1173	1173	2.36	2.73	2.73	2.66	1	1
2013	1246	1246	2.44	2.81	2.81	2.74	1	1
2014	1320	1320	2.51	2.90	2.90	2.82	1	1
2015	1320	1320	2.58	2.99	2.99	2.90	1	1
2016	1320	1320	2.66	3.09	3.09	2.99	1	1
2017	1320	1320	2.74	3.19	3.19	3.08	1	1
2018	1320	1320	2.82	3.29	3.29	3.17	1	1
2019	1320	1320	2.91	3.39	3.39	3.27	1	1
2020	1320	1320	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

<.. COST DATA FOR CONSTRUCTION OF PLANT ..>

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Comm. Lighting

* UNIT SIZE OF AVOIDED GENERATION UNIT = 574 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$232

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	15	4,276	3	9	91	90	0	29
2005	0.0685	16	4,276	3	9	94	92	0	30
2006	0.0706	16	4,276	3	10	97	95	0	31
2007	0.0727	17	4,276	3	10	100	98	0	32
2008	0.0749	17	4,276	4	10	103	101	0	33
2009	0.0771	18	4,276	4	11	106	104	0	34
2010	0.0794	18	4,276	4	11	110	107	0	35
2011	0.0818	19	4,276	4	11	113	110	0	37
2012	0.0843	20	4,276	4	11	117	114	0	38
2013	0.0868	20	4,276	4	12	120	117	0	39
2014	0.0894	21	4,276	4	12	124	120	0	41
2015	0.0921	21	4,276	4	13	128	124	0	42
2016	0.0948	22	4,276	4	13	132	128	0	44
2017	0.0977	23	4,276	5	13	136	132	0	45
2018	0.1006	23	4,276	5	14	141	136	0	47
2019	0.1036	24	4,276	5	14	145	140	0	48
2020	0.1067	25	4,276	5	15	150	144	0	50
NOMINAL		336	72,688	68	197	2,005	1,951	0	655
NPV		186		38	109	1,106	1,079	0	360

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Comm. Lighting

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$49
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$28

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	4
2002	0	0	0	0	0	0	9
2003	0	0	0	0	0	0	10
2004	3	2	5	2	7	9	12
2005	3	2	5	2	8	10	15
2006	3	2	5	2	8	10	17
2007	4	2	5	2	8	10	19
2008	4	2	6	2	8	10	22
2009	4	2	6	2	9	11	24
2010	4	2	6	2	9	11	27
2011	4	2	6	2	9	11	30
2012	4	2	6	2	9	12	33
2013	4	2	6	2	10	12	36
2014	4	2	7	3	10	12	40
2015	5	2	7	3	10	13	42
2016	5	2	7	3	11	13	43
2017	5	2	7	3	11	14	45
2018	5	3	8	3	11	14	46
2019	5	3	8	3	12	14	48
2020	5	3	8	3	12	15	49
NOMINAL	72	37	108	41	161	202	570
NPV	40	20	60	23	89	112	305

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Comm. Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	195	4	0	0	4	4
2002	429	9	0	0	9	9
2003	507	10	0	0	10	10
2004	585	12	0	0	12	12
2005	663	15	0	0	15	15
2006	741	17	0	0	17	17
2007	819	19	0	0	19	19
2008	897	22	0	0	22	22
2009	975	24	0	0	24	24
2010	1,053	27	0	0	27	27
2011	1,131	30	0	0	30	30
2012	1,209	33	0	0	33	33
2013	1,287	36	0	0	36	36
2014	1,365	40	0	0	40	40
2015	1,404	42	0	0	42	42
2016	1,404	43	0	0	43	43
2017	1,404	45	0	0	45	45
2018	1,404	46	0	0	46	46
2019	1,404	48	0	0	48	48
2020	1,404	49	0	0	49	49
NOMINAL	20,282	570	0	0	570	570
NPV		305	0	0	305	305

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs: Revenues

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Comm. Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->						<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->											
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	10	6	16	33	0	33	584	0	584	184	3	24	27	0	0	0	0
2002	2	14	16	7	0	7	120	0	120	404	7	53	60	0	0	0	0
2003	2	17	19	7	0	7	123	0	123	477	9	63	72	0	0	0	0
2004	0	20	20	0	0	0	129	0	129	550	10	74	84	0	0	0	0
2005	0	24	24	0	0	0	131	0	131	624	12	85	97	0	0	0	0
2006	0	27	27	0	0	0	135	0	135	697	14	96	110	0	0	0	0
2007	0	31	31	0	0	0	141	0	141	770	16	107	123	0	0	0	0
2008	0	35	35	0	0	0	143	0	143	844	18	119	137	0	0	0	0
2009	0	39	39	0	0	0	147	0	147	917	20	132	151	0	0	0	0
2010	0	44	44	0	0	0	152	0	152	990	22	144	166	0	0	0	0
2011	0	48	48	0	0	0	158	0	158	1,063	24	157	182	0	0	0	0
2012	0	53	53	0	0	0	161	0	161	1,137	27	170	197	0	0	0	0
2013	0	59	59	0	0	0	166	0	166	1,210	30	184	214	0	0	0	0
2014	0	64	64	0	0	0	173	0	173	1,283	32	198	231	0	0	0	0
2015	0	68	68	0	0	0	0	0	0	1,320	34	207	241	0	0	0	0
2016	0	70	70	0	0	0	0	0	0	1,320	35	210	246	0	0	0	0
2017	0	72	72	0	0	0	0	0	0	1,320	36	214	250	0	0	0	0
2018	0	74	74	0	0	0	0	0	0	1,320	37	217	255	0	0	0	0
2019	0	76	76	0	0	0	0	0	0	1,320	39	221	259	0	0	0	0
2020	0	79	79	0	0	0	0	0	0	1,320	40	224	264	0	0	0	0
NOMINAL	14	922	935	46	0	46	2,462	0	2,462	19,065	465	2,899	3,365	0	0	0	0
NPV	13	494	507	45	0	45	1,872	0	1,872		249	1,587	1,837		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Comm. Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	16	584	0	600	0	0	4	0	4	(596)	(596)
2002	0	16	120	0	136	0	0	9	0	9	(127)	(717)
2003	0	19	123	0	142	0	0	10	0	10	(132)	(836)
2004	0	20	129	0	149	29	14	12	0	55	(94)	(915)
2005	0	24	131	0	155	30	15	15	0	59	(96)	(993)
2006	0	27	135	0	162	31	15	17	0	63	(99)	(1,069)
2007	0	31	141	0	172	32	16	19	0	67	(105)	(1,145)
2008	0	35	143	0	178	33	16	22	0	71	(107)	(1,219)
2009	0	39	147	0	187	34	17	24	0	75	(112)	(1,292)
2010	0	44	152	0	195	35	17	27	0	79	(116)	(1,363)
2011	0	48	158	0	207	37	18	30	0	84	(123)	(1,435)
2012	0	53	161	0	214	38	18	33	0	89	(125)	(1,505)
2013	0	59	166	0	224	39	19	36	0	94	(130)	(1,573)
2014	0	64	173	0	237	41	19	40	0	99	(138)	(1,642)
2015	0	68	0	0	68	42	20	42	0	104	36	(1,625)
2016	0	70	0	0	70	44	20	43	0	107	38	(1,608)
2017	0	72	0	0	72	45	21	45	0	111	39	(1,591)
2018	0	74	0	0	74	47	22	46	0	114	40	(1,575)
2019	0	76	0	0	76	48	22	48	0	118	42	(1,559)
2020	0	79	0	0	79	50	23	49	0	122	44	(1,543)
NOMINAL	0	935	2,462	0	3,397	655	310	570	0	1,535	(1,862)	
NPV	0	507	1,872	0	2,380	360	171	305	0	836	(1,543)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.35

Participants Test

PARTICIPANT COSTS AND BENEFITS

PROGRAM: Comm. Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	CUSTOMER EQUIPMENT COSTS \$(000)	CUSTOMER O & M COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	27	0	33	0	60	584	0	0	584	(524)	(524)
2002	60	0	7	0	66	120	0	0	120	(53)	(575)
2003	72	0	7	0	78	123	0	0	123	(45)	(615)
2004	84	0	0	0	84	129	0	0	129	(45)	(654)
2005	97	0	0	0	97	131	0	0	131	(34)	(681)
2006	110	0	0	0	110	135	0	0	135	(25)	(700)
2007	123	0	0	0	123	141	0	0	141	(17)	(713)
2008	137	0	0	0	137	143	0	0	143	(6)	(717)
2009	151	0	0	0	151	147	0	0	147	4	(714)
2010	166	0	0	0	166	152	0	0	152	15	(705)
2011	182	0	0	0	182	158	0	0	158	23	(692)
2012	197	0	0	0	197	161	0	0	161	36	(671)
2013	214	0	0	0	214	166	0	0	166	48	(646)
2014	231	0	0	0	231	173	0	0	173	58	(617)
2015	241	0	0	0	241	0	0	0	0	241	(503)
2016	246	0	0	0	246	0	0	0	0	246	(393)
2017	250	0	0	0	250	0	0	0	0	250	(287)
2018	255	0	0	0	255	0	0	0	0	255	(185)
2019	259	0	0	0	259	0	0	0	0	259	(86)
2020	264	0	0	0	264	0	0	0	0	264	10
NOMINAL	3,365	0	46	0	3,411	2,462	0	0	2,462	949	
NPV	1,837	0	45	0	1,882	1,872	0	0	1,872	10	

In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.01

PROGRAM Comm_Cooling

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.00	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.09	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	4,076.6	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	3,832.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	5.46	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	64.66	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.450	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	6.90	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Comm. Cooling

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	367	367	1.71	1.93	1.93	1.92	1	1
2002	440	440	1.76	2.00	2.00	1.98	1	1
2003	513	513	1.81	2.06	2.06	2.04	1	1
2004	587	587	1.87	2.12	2.12	2.10	1	1
2005	660	660	1.92	2.19	2.19	2.16	1	1
2006	733	733	1.98	2.26	2.26	2.22	1	1
2007	807	807	2.04	2.33	2.33	2.29	1	1
2008	880	880	2.10	2.41	2.41	2.36	1	1
2009	953	953	2.16	2.48	2.48	2.43	1	1
2010	1026	1026	2.23	2.56	2.56	2.50	1	1
2011	1100	1100	2.30	2.64	2.64	2.58	1	1
2012	1173	1173	2.36	2.73	2.73	2.66	1	1
2013	1246	1246	2.44	2.81	2.81	2.74	1	1
2014	1320	1320	2.51	2.90	2.90	2.82	1	1
2015	1320	1320	2.58	2.99	2.99	2.90	1	1
2016	1320	1320	2.66	3.09	3.09	2.99	1	1
2017	1320	1320	2.74	3.19	3.19	3.08	1	1
2018	1320	1320	2.82	3.29	3.29	3.17	1	1
2019	1320	1320	2.91	3.39	3.39	3.27	1	1
2020	1320	1320	3.00	3.50	3.50	3.36	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	
IN-SERVICE YEAR =			2004							
PLANT COSTS (2001 \$)			\$372.77							
AFUDC RATE:			5.50%							

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Comm. Cooling

* UNIT SIZE OF AVOIDED GENERATION UNIT = 638 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$258

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	17	4,751	3	10	101	100	0	32
2005	0.0685	18	4,751	4	10	104	103	0	33
2006	0.0706	18	4,751	4	11	107	106	0	34
2007	0.0727	19	4,751	4	11	111	109	0	35
2008	0.0749	19	4,751	4	11	114	112	0	37
2009	0.0771	20	4,751	4	12	118	115	0	38
2010	0.0794	20	4,751	4	12	122	119	0	39
2011	0.0818	21	4,751	4	12	126	123	0	41
2012	0.0843	22	4,751	4	13	130	126	0	42
2013	0.0868	22	4,751	5	13	134	130	0	44
2014	0.0894	23	4,751	5	14	138	134	0	45
2015	0.0921	24	4,751	5	14	142	138	0	47
2016	0.0948	24	4,751	5	14	147	142	0	48
2017	0.0977	25	4,751	5	15	151	146	0	50
2018	0.1006	26	4,751	5	15	156	151	0	52
2019	0.1036	27	4,751	5	16	161	155	0	54
2020	0.1067	28	4,751	6	16	166	160	0	56
NOMINAL		373	80,765	76	219	2,227	2,168	0	728
NPV		206		42	121	1,229	1,199	0	400

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

APPENDIX B.3

FLORIDA POWER & LIGHT MEASURE

PROGRAM: OPBCI. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.09	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	66.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	258.86	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	0.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243	\$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3	%
(8) GENERATOR FIXED O & M COST	5.007448	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3	%
(10) TRANSMISSION FIXED O & M COST	3.07661	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3	%
(15) GENERATOR CAPACITY FACTOR	85	%
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.446	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	6.90	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: OPBC

• Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	2	2	1.71	1.93	1.93	1.92	1	1
2002	2	2	1.76	2.00	2.00	1.98	1	1
2003	2	2	1.81	2.06	2.06	2.04	1	1
2004	3	3	1.87	2.12	2.12	2.10	1	1
2005	3	3	1.92	2.19	2.19	2.16	1	1
2006	3	3	1.98	2.26	2.26	2.22	1	1
2007	4	4	2.04	2.33	2.33	2.29	1	1
2008	4	4	2.10	2.41	2.41	2.36	1	1
2009	5	5	2.16	2.48	2.48	2.43	1	1
2010	6	6	2.23	2.56	2.56	2.50	1	1
2011	7	7	2.30	2.64	2.64	2.58	1	1
2012	8	8	2.36	2.73	2.73	2.66	1	1
2013	9	9	2.44	2.81	2.81	2.74	1	1
2014	10	10	2.51	2.90	2.90	2.82	1	1
2015	11	11	2.58	2.99	2.99	2.90	1	1
2016	13	13	2.66	3.09	3.09	2.99	1	1
2017	15	15	2.74	3.19	3.19	3.08	1	1
2018	17	17	2.82	3.29	3.29	3.17	1	1
2019	20	20	2.91	3.39	3.39	3.27	1	1
2020	22	22	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED
BY PROGRAM

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		RATE (%)			CT	CC
					0.0%	0.0%
					0.0%	0.0%
					0.0%	20.3%
1995	-9	0.0%		0.0%	55.3%	50.2%
1996	-8	0.0%		0.0%	44.7%	29.5%
1997	-7	0.0%		0.0%	0.0%	0.0%
1998	-6	0.0%		0.0%		
1999	-5	0.0%		0.0%	1	1
2000	-4	0.0%		0.0%		
2001	-3	0.0%		0.0%		
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: OPBC

* UNIT SIZE OF AVOIDED GENERATION UNIT = 3 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$1

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	0	24	0	0	1	1	0	0
2005	0.0685	0	24	0	0	1	1	0	0
2006	0.0706	0	24	0	0	1	1	0	0
2007	0.0727	0	24	0	0	1	1	0	0
2008	0.0749	0	24	0	0	1	1	0	0
2009	0.0771	0	24	0	0	1	1	0	0
2010	0.0794	0	24	0	0	1	1	0	0
2011	0.0818	0	24	0	0	1	1	0	0
2012	0.0843	0	24	0	0	1	1	0	0
2013	0.0868	0	24	0	0	1	1	0	0
2014	0.0894	0	24	0	0	1	1	0	0
2015	0.0921	0	24	0	0	1	1	0	0
2016	0.0948	0	24	0	0	1	1	0	0
2017	0.0977	0	24	0	0	1	1	0	0
2018	0.1006	0	24	0	0	1	1	0	0
2019	0.1036	0	24	0	0	1	1	0	0
2020	0.1067	0	24	0	0	1	1	0	0
NOMINAL		2	413	0	1	11	11	0	4
NPV		1		0	1	6	6	0	2

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: OPBC

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$0

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0
NOMINAL	0	0	1	0	1	1	0
NPV	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET - UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
UTILITY PROGRAM COSTS & REBATES		PARTICIPATING CUSTOMER COSTS & BENEFITS															
UTIL NONREC. COSTS \$(000)	UTIL RECUR. COSTS \$(000)	UTIL NONREC. REBATES \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL RECUR. REBATES \$(000)	UTIL NONREC. REBATES \$(000)	TOTAL REBATE/ INGENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	TOTAL REDUCT. IN CUST. KWH (000)	RED. REV. -FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. -FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2016	0	0	0	0	0	0	1	0	1	0	1	1	1	0	0	0	0
2017	0	0	0	0	0	0	1	0	1	0	1	1	1	0	0	0	0
2018	0	0	0	0	0	0	1	0	1	0	1	1	1	0	0	0	0
2019	0	0	0	0	0	0	1	0	1	0	2	2	2	0	0	0	0
2020	0	0	0	0	0	0	1	0	1	0	2	2	2	0	0	0	0
NOMINAL	0	0	0	0	0	0	8	0	8	0	0	13	13	0	0	0	0
NPV	0	0	0	0	0	0	4	0	4	0	0	6	6	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	1	0	1	0	0	0	0	0	(1)	(1)
2002	0	0	0	0	0	0	0	0	0	0	0	(1)
2003	0	0	0	0	0	0	0	0	0	0	0	(1)
2004	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2005	0	0	0	0	0	0	0	0	0	0	0	(1)
2006	0	0	0	0	0	0	0	0	0	0	0	(0)
2007	0	0	0	0	0	0	0	0	0	0	0	(0)
2008	0	0	0	0	0	0	0	0	0	0	0	(0)
2009	0	0	0	0	0	0	0	0	0	0	0	(0)
2010	0	0	0	0	0	0	0	0	0	0	0	(0)
2011	0	0	0	0	0	0	0	0	0	0	0	(0)
2012	0	0	0	0	0	0	0	0	0	0	0	(0)
2013	0	0	0	0	0	0	0	0	0	0	0	(0)
2014	0	0	0	0	0	0	0	0	0	0	0	(0)
2015	0	0	0	0	0	0	0	0	0	0	0	(0)
2016	0	0	1	0	1	0	0	0	0	0	0	(0)
2017	0	0	1	0	1	0	0	0	0	0	0	(0)
2018	0	0	1	0	1	0	0	0	0	0	0	(0)
2019	0	0	1	0	1	0	0	0	0	0	0	(1)
2020	0	0	1	0	1	0	0	0	0	0	0	(1)
NOMINAL	0	0	8	0	8	4	1	0	0	5	(3)	
NPV	0	0	4	0	4	2	1	0	0	3	(2)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.65

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: OPBC

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	0	0	0	1	0	0	1	(0)	(0)
2002	0	0	0	0	0	0	0	0	0	0	(0)
2003	0	0	0	0	0	0	0	0	0	0	(0)
2004	0	0	0	0	0	0	0	0	0	(0)	(0)
2005	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	(0)	0
2008	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	1
2011	1	0	0	0	1	0	0	0	0	0	1
2012	1	0	0	0	1	0	0	0	0	0	1
2013	1	0	0	0	1	0	0	0	0	0	1
2014	1	0	0	0	1	0	0	0	0	0	1
2015	1	0	0	0	1	0	0	0	0	0	1
2016	1	0	0	0	1	1	0	0	1	0	1
2017	1	0	0	0	1	1	0	0	1	0	2
2018	1	0	0	0	1	1	0	0	1	0	2
2019	2	0	0	0	2	1	0	0	1	0	2
2020	2	0	0	0	2	1	0	0	1	1	2

NOMINAL	13	0	0	0	13	8	0	0	8	4	
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NPV	6	0	0	0	6	4	0	0	4	2	
-----	---	---	---	---	---	---	---	---	---	---	--

In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.51

6.0 Proposed Numeric Conservation Goals

The proposed numeric conservation goals for OUC are based on the FIRE Model results for the Rate Impact Test. No residential or commercial or industrial measures were found cost-effective for OUC customers. OUC's numeric proposed conservation goals are shown in Table 6-1.

Table 6-1 Proposed Numeric Conservation Goals						
Year	Residential Reduction			Commercial/Industrial Reduction		
	Summer kW	Winter kW	MWh	Summer kW	Winter kW	MWh
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0

Although none of measures passed the Rate Impact Test to qualify as cost-effective, OUC proposes the continuation of OUC's existing programs. The programs are described in Section 7.0.

FLORIDA PUBLIC SERVICE COMMISSION
 DOCKET
 NO. 990722-EG EXHIBIT NO. 2
 COMPANY/
 WITNESS: Asheum
 DATE: 2-21-00

Proposed Numeric Conservation Goals						
Year	Residential Reduction			Commercial/Industrial Reduction		
	Summer kW	Winter kW	MWh	Summer kW	Winter kW	MWh
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0

FLORIDA PUBLIC SERVICE COMMISSION
DOCKET
NO. 990722-EG EXHIBIT NO. 3
COMPANY/
WITNESS: Aasheim
DATE: 2-21-00

FLORIDA PUBLIC SERVICE COMMISSION

DOCKET

NO. 990722-5 EXHIBIT NO. 4

COMPANY/ Rollins

WITNESS: _____

DATE: 9-21-00

1.0 Introduction

In accordance with Rules 25-17.0021- .005, Florida Administrative Code, the Florida Public Service Commission (PSC) must establish numeric conservation goals for Orlando Utilities Commission (OUC). Each utility subject to the rule is required to propose numerical goal projections for the ten-year period 2001-2010. The PSC has initiated Docket 990722 – EG to implement the requirements of Rule 25-17.0021 - .005 for OUC. In response to this docket, OUC is submitting proposed numeric conservation goals and the associated demand side management (DSM) plan to the PSC for approval in this report.

In order to reduce cost, OUC did not model each possible DSM measure. OUC's study focused on alternatives that are expected to have the highest potential for being cost-effective. The DSM measures analyzed were compiled from programs deemed cost-effective in OUC's 1995 Demand Side Management Plan, existing OUC measures, and the most cost-effective measure evaluated by Florida's largest investor owned utility, Florida Power & Light.

By testing the most cost-effective measure from FPL, the assumption was made that if the most cost-effective measure for FPL did not prove cost-effective, then FPL's lesser cost-effective measures would also fail the analysis. Using this methodology, OUC has effectively screened all of FPL's measures.

Each potential measure was evaluated using the PSC approved Florida Integrated Resource Evaluator (FIRE) model providing the Rate Impact Test, the Total Resources Test, and the Participant Test. The model evaluates the economic impact of existing and proposed conservation measures by determining the relative cost effectiveness of the measures versus the avoided unit. Based on the cost effectiveness analysis, OUC proposed conservation goals and a corresponding demand side management plan.

This report contains seven sections. The next section presents the overall methodology used to develop the proposed numeric goals and supporting demand side management plan. The third section describes all inputs and assumptions associated with the potential DSM measures, avoided supply side generation and economic parameters. The fourth section describes the methodology and explanation of the results for the cost-effectiveness testing and analysis. The fifth section discusses the numerical results of the analysis. The sixth section describes the development of the proposed numerical

conservation goals. The seventh section describes OUC's proposed demand side management plan.

2.0 Methodology

Several steps were involved in the development of numeric conservation goals and the associated demand side management plan.

First, potential DSM measures for cost-effective analysis were selected. In order to reduce cost, the measures were chosen carefully. OUC did not model each possible DSM measure. Instead, OUC's study focused on alternatives that were expected to have the highest potential for being cost-effective. The DSM measures analyzed were compiled from programs deemed cost-effective in OUC's 1995 Demand Side Management Plan, existing OUC programs, and the most cost-effective measure that was found to be cost-effective by Florida's largest investor owned utility, Florida Power & Light. The potential DSM measures evaluated are listed in Table 3-1.

Second, each potential measure was evaluated for its cost-effectiveness. Measures were evaluated using the PSC approved Florida Integrated Resource Evaluator (FIRE) model which provides output in the form of the Rate Impact Test, the Total Resources Test, and the Participant Test. The model evaluates the economic impact of existing and proposed conservation measures by determining the relative cost effectiveness of the measures versus an avoided supply side resource. The avoided unit is the next unit planned for installation for the utility. FIRE Model methodology is discussed in Section 4.0. Avoided unit assumptions are discussed in Section 3.3.

Third, based on the cost effectiveness analysis, numeric conservation goals were developed. The numeric goals were calculated based on the demand and energy saved by the cost-effective measures. The results of the cost-effective analysis are listed in Table 5-1. The proposed numeric goals are listed in Table 6-1.

Fourth, a conservation plan was developed. Although OUC proposes zero goals, OUC proposes to continue existing conservation programs. The proposed DSM plan is described in Section 7.0.

3.0 Assumptions and Inputs for Cost-Effective Analysis

3.1 Demand-Side Management Measures

The DSM measures tested were taken from three sources: OUC existing DSM measures, measures proposed in OUC's 1995 DSM Plan, and the most cost-effective measure from Florida Power & Light's (FPL) 1999 goals. Each measure and its original source are listed in Table 3-1.

Basic assumptions were made in the development of input data for the measures. The sources for assumptions applying to all measures are shown in Table 3-2.

- Study Period for economic evaluation set to 20 years.
- Fuel Forecast and economic parameters were taken from OUC's 1999 Ten Year Site Plan.
- OUC 1999 Utility average system fuel cost of 1.93 cents/kWh was taken from Resource Data International Inc. and escalated at 3.17 percent to 2001\$.
- Non-fuel cost in residential customer bill for 1999 is 5.62 cents/kWh (5.95 cents/kWh (2001\$)) based on monthly Typical Electric Bill Tabulation for 1,000 kWh users (Florida Municipal Electric Association Inc.).
- Non-fuel cost in commercial customer bill for 1999 is 5.14 cents/kWh (5.45 cents/kWh (2001\$)) based on monthly Typical Electric Bill Tabulation for 30 kW - 6,000 kWh users (Florida Municipal Electric Association Inc.).
- Customer Demand Charge for 1999 of \$6.5 /kW/month (\$6.9/kW/month (2001\$)) per OUC.
- Transmission Capital Costs of \$78.78/kW (2001\$) were taken from FPL's 1999 goals
- Transmission Fixed O&M costs of \$3.08/ kW/ Year (2001\$) were taken from FPL's 1999 goals.
- Distribution Capital Costs of \$56.28/kW (2001\$) were taken from FPL's 1999 goals.
- Distribution Fixed O&M Costs of \$14.64/kW/Year (2001\$) were taken from FPL's 1999 goals.

Input data for these measures was compiled from Annual FEECA Reports, OUC's 1995 DSM Plan, OUC's 1999 Ten Year Site Plan, FPL's testimony (Docket 971004-EG) and FPL's supplemental responses for FPL's 1999 Ten Year Site Plan as well as other data provided by OUC. The number of participants for the FPL measure was developed by the ratio between OUC's and FPL's number of customers. The input data used in the FIRE Model is shown in Appendix B

Table 3-1 DSM Measures		
DSM Measure Abbr.	DSM Measures	Program Source
	<u>Residential</u>	
REnSur	Energy Survey	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
HPump	Heat Pump	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
Weath	Weatherization	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
LIncome	Low Income Energy Fix-up	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
EWaterH	Efficient Water Heating	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
DLC - 1	Direct Load Control - Main	Annual FEECA Reports/ OUC 1995 DSM Plan
DLC - 2	Direct Load Control - Pool Pumps	Annual FEECA Reports/ OUC 1995 DSM Plan
	<u>Commercial/Industrial</u>	
CEnSuv	Commercial Energy Survey	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
CEL	Commercial Lighting	Annual FEECA Reports/ OUC 1995 DSM Plan
CCool	Commercial Cooling	Annual FEECA Reports/ OUC 1995 DSM Plan/ OUC
OPBC	Off Peak Battery Charging - FPL	FPL Docket No. 971004-EG & FPL Supplemental Data Request for FPL 1999 Ten-Year Site Plan

3.2 Economic Parameters

The economic parameters used in the evaluation were obtained from OUC's 1999 Ten Year Site Plan and are presented in the following subsections.

3.2.1 Inflation and Escalation Rates

The general inflation rate is 3.0 percent annually. The 3.0 percent is applicable to capital costs, operations and maintenance (O&M) expenses, and various other expenses. Escalation rate for fuel costs is 3.17%

3.2.2 Present Worth Discount Rate

The present worth discount rate applied in the study is equal to the bond interest rate of 5.5%.

3.2.3 OUC Municipal Bond Interest Rate

The long-term municipal bond interest rate is assumed to be 5.5 percent. This rate is based on the current bond rate for OUC.

3.2.4 Interest During Construction Interest Rate

The interest during construction interest rate for OUC is assumed to be equal to the bond rate of 5.5 percent.

3.2.5 Fixed Charge Rate

Based upon a 2.0 percent issuance fee, 1.0 percent annual insurance cost, a bond interest rate of 5.5 percent, and a bond term of 25 years, the annual fixed charge rate is 8.78 percent.

3.3 Avoided Unit

Per OUC's 1999 Ten Year Site Plan, OUC's expansion plan does not require unit additions for the time period of 1999 through 2008. There has been a major change since the submittal of the 1999 Ten Year Site Plan. OUC has sold its Indian River steam units to Reliant. Under this agreement, OUC will purchase power generated from Indian River for four years. At the expiration of the four-year contract, OUC maintains the option of signing a second four-year contract.

OUC will thus have an option of building new generation to be in service when the initial purchase power term expires. For purposes of determining an avoided unit for the DSM evaluations, a new combined cycle has been selected with an in service date that matches the expiration of the first term of the purchase power contract. This represents a conservative choice for an avoided unit. If the optional term of the purchase power

contract is lower in cost than the avoided unit, then DSM measures that are evaluated against the avoided unit will be less cost-effective. On the other hand, if the avoided unit represents the least cost alternative, then the DSM measures will be properly evaluated.

The estimated capital cost for the combined cycle and its projected performance is presented in Table 3-3.

Table 3-3 Generating Unit Characteristics For Avoided Unit	
Item	General Electric 7FA 2 x 1 Combined Cycle
Total Capital Cost, 2001 \$1,000 (1)	\$ 208,003
O&M Cost-Baseload Duty	
Fixed O&M Cost, 2001 \$/kW-y	5.00
Variable O&M Cost, 2001 \$/MWh	1.94
Economic Life	25
Net Plant Capacity (MW) @ ISO	529
Net Heat Rate @ ISO (HHV)	6,704
Equivalent Availability, percent	92.5
Equivalent Forced Outage Rate, percent	4.2
Planned Maintenance Outage, weeks/y	3
Construction Period, months	24
(1) Does not include interest during construction.	

4.0 Cost-Effective Analysis

Each potential measure was evaluated for its cost-effectiveness. Measures were evaluated using the PSC approved Florida Integrated Resource Evaluator (FIRE) model which provides output in the form of the Rate Impact Test, the Total Resources Test, and the Participant Test. The model evaluates the economic impact of existing and proposed conservation programs by determining the relative cost-effectiveness of the programs versus the avoided supply side resource. The avoided unit is the next unit planned for installation for the utility. Based on the cost effectiveness analysis, numeric conservation goals are developed.

4.1 FIRE Model Methodology

In order to evaluate the cost-effectiveness of all existing and potential DSM measures in the reporting format specified by the PSC, the Florida Integrated Resource Evaluator (FIRE) model was used. The FIRE model was designed by Florida Power Corporation and is used by several utilities in Florida. The model evaluates the economic impact of existing and proposed conservation measures by determining the cost effectiveness of the measures versus the avoided unit. Assumptions inherent in the FIRE Model are listed in Table 4-1.

The FIRE Model was designed to evaluate a wide variety of DSM measures. The model uses avoided unit costs, DSM measure costs, operations and maintenance costs, rebates/incentives, and other input variables to calculate the incremental benefits of a DSM measure. These incremental costs are used to perform three cost-effectiveness tests: the Rate Impact Test, the Total Resources Test, and the Participant Test.

4.2 FIRE Model Output

FIRE Model results are output in the form of three cost-effectiveness tests. All the DSM cost effectiveness tests are based on the comparison of discounted present worth benefits to costs for a specific DSM measure. Each test is designed to measure costs and benefits from a different perspective.

The Rate Impact Test is a measure of the expected impact on customer rates resulting from a DSM program. The test statistic is the ratio of the utility's benefits (avoided supply costs and increased revenues) compared to the utility's costs (program

costs, incentives paid, increased supply costs and revenue losses). A value of less than one indicates an upward pressure on rate levels as a result of the DSM program.

The Total Resources Cost Test measures the benefit / cost ratio by comparing the total program benefits (both the participant's and utility's) to the total program costs (equipment costs, supply costs, participant costs).

The Participants Test measures the impact of the DSM program on the participating customer. Benefits to the participant may include bill reductions, incentives paid, and tax credits. Participants' costs may include equipment costs, operation and maintenance expenses, equipment removal, etc. The Participants' Test is important because customers will not participate if the program is not beneficial to them.

All three cost effectiveness tests were calculated for each DSM measure analyzed and considered in our evaluation. OUC views the Rate Impact Test as the primary test for determining the cost effectiveness for DSM measures for its system.

Table 4-1
FIRE Model Assumptions

- System demand is growing. Demand reductions due to DSM will result in reduced need for system expansion.
- Individual demand reductions can be related to reduced need for system generation expansion.
- The generation reduction will be evaluated with respect to specified generation.
- Decreases or increases in revenue due to demand side programs will impact rate levels and will be passed on to all customers.
- Additional conservation taking place after the next deferred generating unit will affect subsequent units.

5.0 Cost-Effective Analysis Results

5.1 Numerical Results

The numerical results from the FIRE Model analysis are listed below in Table 5-1. Descriptions of the measures are listed in Table 3-1 of Section 3.

Table 5-1 FIRE Model Results				
Abbr.	DSM Measure	Cost-Effectiveness Test Rating		
		Rate Impact	Total Resource Cost	Participant Costs
	<u>Residential</u>			
REnSur	Energy Survey	0.22	1.05	1.00
HPump	Heat Pump	0.79	0.24	0.28
Weath	Weatherization	0.34	1.48	11.62
LIncome	Low Income Energy Fix-up	0.19	0.25	1.00
EWaterH	Efficient Water Heating	0.72	0.54	0.75
DLC - 1	Direct Load Control - Main	0.99	1.75	1.00
DLC - 2	Direct Load Control - Pool Pumps	0.52	0.74	1.00
	<u>Commercial/Industrial</u>			
CEnSur	Commercial/Energy Survey	0.42	11.64	1.00
CEL	Commercial Lighting	0.35	0.35	1.01
CCool	Commercial Cooling	0.30	1.86	1.00
OPBC	Off Peak Battery Charging - FPL	0.43	0.65	1.51

5.2 Analysis of Results

Although every DSM measure failed the Rate Impact Test, OUC proposes the continuation of select conservation measures. OUC views energy conservation as an important service to OUC customers and the community. By continuing conservation

programs, OUC maintains interaction with customers and is better able to determine the needs of OUC's customers and the community.

OUC proposes to continue the following residential and commercial/industrial conservation programs and measures:

Residential:

- Residential Energy Survey
- Residential Heat Pump
- Residential Weatherization
- Residential Low Income Home Energy Fix-up
- Residential Educational Outreach Program

Commercial/Industrial:

- Commercial Energy Survey Program

The Educational Outreach Program was not tested because it is an educational program for children. Each of the proposed programs is described in detail in Section 7.0.

6.0 Proposed Numeric Conservation Goals

The proposed numeric conservation goals for OUC are based on the FIRE Model results for the Rate Impact Test. No residential or commercial or industrial measures were found cost-effective for OUC customers. OUC's numeric proposed conservation goals are shown in Table 6-1.

Year	Residential Reduction			Commercial/Industrial Reduction		
	Summer kW	Winter kW	MWh	Summer kW	Winter kW	MWh
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0

Although none of measures passed the Rate Impact Test to qualify as cost-effective, OUC proposes the continuation of OUC's existing programs. The programs are described in Section 7.0.

APPENDIX A
FUEL FORECAST

OUC 1999 Ten Year Site Plan

Fuel Forecast

Delivered Fuel Price Forecast (\$/Mbtu) - Base Case								
Year	Coal		Natural	No. 6	Uranium	Landfill	Petroleum	RDF
	Stanton	McIntosh	Gas	Fuel Oil		Gas	Coke	
1999	1.81	1.85	2.71	2.68	0.56	0.85	1.15	-2.42
2000	1.77	1.92	2.84	2.70	0.57	0.85	1.24	-2.54
2001	1.80	1.99	2.92	2.81	0.58	0.85	1.29	-2.67
2002	1.85	2.06	3.01	2.92	0.60	0.85	1.35	-2.79
2003	1.90	2.13	3.10	3.04	0.61	0.85	1.40	-2.93
2004	1.96	2.21	3.19	3.16	0.63	0.85	1.46	-3.07
2005	2.01	2.29	3.29	3.29	0.64	0.85	1.52	-3.22
2006	2.09	2.37	3.39	3.42	0.66	0.85	1.59	-3.37
2007	2.18	2.46	3.49	3.56	0.68	0.85	1.65	-3.53
2008	2.30	2.56	3.59	3.70	0.68	0.85	1.73	-3.70
AAGR	2.70	3.68	3.17	3.65	2.50	0.00	4.64	-4.83

APPENDIX B

COST EFFECTIVENESS RESULTS FOR DSM MEASURES

APPENDIX B.1

RESIDENTIAL MEASURES

Input Data

PROGRAM Res Energy Survey

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.00	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.00	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	319.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	300.0	KWH/CUST/YR

II ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	81.60	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	4.47	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	5.94	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY UTILITY REBATES ARE INPUT IN III.(14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1 03

Input Data

PROGRAM: Res. Energy Survey

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	1983	1983	1.71	1.93	1.93	1.92	1	1
2002	3985	3985	1.76	2.00	2.00	1.98	1	1
2003	6007	6007	1.81	2.06	2.06	2.04	1	1
2004	8050	8050	1.87	2.12	2.12	2.10	1	1
2005	10113	10113	1.92	2.19	2.19	2.16	1	1
2006	12197	12197	1.98	2.26	2.26	2.22	1	1
2007	14302	14302	2.04	2.33	2.33	2.29	1	1
2008	16428	16428	2.10	2.41	2.41	2.36	1	1
2009	18575	18575	2.16	2.48	2.48	2.43	1	1
2010	20743	20743	2.23	2.56	2.56	2.50	1	1
2011	22933	22933	2.30	2.64	2.64	2.58	1	1
2012	25145	25145	2.36	2.73	2.73	2.66	1	1
2013	27379	27379	2.44	2.81	2.81	2.74	1	1
2014	29635	29635	2.51	2.90	2.90	2.82	1	1
2015	31914	31914	2.58	2.99	2.99	2.90	1	1
2016	34216	34216	2.66	3.09	3.09	2.99	1	1
2017	36541	36541	2.74	3.19	3.19	3.08	1	1
2018	38889	38889	2.82	3.29	3.29	3.17	1	1
2019	41261	41261	2.91	3.39	3.39	3.27	1	1
2020	43656	43656	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	
	IN-SERVICE YEAR =		2004							
	PLANT COSTS (2001 \$)		\$372.77							
	AFUDC RATE:		5.50%							

AFUDC Calculation

< - COST DATA FOR CONSTRUCTION OF PLANT - >

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Res. Energy Survey

* UNIT SIZE OF AVOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	0	0	0	0	0	0	0	0
2005	0.0685	0	0	0	0	0	0	0	0
2006	0.0706	0	0	0	0	0	0	0	0
2007	0.0727	0	0	0	0	0	0	0	0
2008	0.0749	0	0	0	0	0	0	0	0
2009	0.0771	0	0	0	0	0	0	0	0
2010	0.0794	0	0	0	0	0	0	0	0
2011	0.0818	0	0	0	0	0	0	0	0
2012	0.0843	0	0	0	0	0	0	0	0
2013	0.0868	0	0	0	0	0	0	0	0
2014	0.0894	0	0	0	0	0	0	0	0
2015	0.0921	0	0	0	0	0	0	0	0
2016	0.0948	0	0	0	0	0	0	0	0
2017	0.0977	0	0	0	0	0	0	0	0
2018	0.1006	0	0	0	0	0	0	0	0
2019	0.1036	0	0	0	0	0	0	0	0
2020	0.1067	0	0	0	0	0	0	0	0
NOMINAL		0	0	0	0	0	0	0	0
NPV		0		0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

6007

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Res. Energy Survey

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	6
2002	0	0	0	0	0	0	19
2003	0	0	0	0	0	0	33
2004	0	0	0	0	0	0	48
2005	0	0	0	0	0	0	64
2006	0	0	0	0	0	0	80
2007	0	0	0	0	0	0	99
2008	0	0	0	0	0	0	118
2009	0	0	0	0	0	0	139
2010	0	0	0	0	0	0	161
2011	0	0	0	0	0	0	184
2012	0	0	0	0	0	0	209
2013	0	0	0	0	0	0	236
2014	0	0	0	0	0	0	264
2015	0	0	0	0	0	0	294
2016	0	0	0	0	0	0	326
2017	0	0	0	0	0	0	360
2018	0	0	0	0	0	0	396
2019	0	0	0	0	0	0	434
2020	0	0	0	0	0	0	474
NOMINAL	0	0	0	0	0	0	3,942
NPV	0	0	0	0	0	0	1,963

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	316	6	0	0	6	6
2002	952	19	0	0	19	19
2003	1,594	33	0	0	33	33
2004	2,243	48	0	0	48	48
2005	2,898	64	0	0	64	64
2006	3,560	80	0	0	80	80
2007	4,229	99	0	0	99	99
2008	4,904	118	0	0	118	118
2009	5,586	139	0	0	139	139
2010	6,274	161	0	0	161	161
2011	6,970	184	0	0	184	184
2012	7,672	209	0	0	209	209
2013	8,381	236	0	0	236	236
2014	9,098	264	0	0	264	264
2015	9,822	294	0	0	294	294
2016	10,553	326	0	0	326	326
2017	11,291	360	0	0	360	360
2018	12,037	396	0	0	396	396
2019	12,790	434	0	0	434	434
2020	13,551	474	0	0	474	474
NOMINAL	134,720	3,942	0	0	3,942	3,942
NPV		1,963	0	0	1,963	1,963

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

• WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Res Energy Survey

(1)	(2)----- UTILITY PROGRAM COSTS & REBATES ----->					<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->												(18)
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)	
2001	162	4	166	12	0	12	0	0	0	297	5	18	23	0	0	0	0	
2002	168	14	182	12	0	12	0	0	0	895	16	55	71	0	0	0	0	
2003	175	24	199	12	0	12	0	0	0	1,499	27	95	122	0	0	0	0	
2004	0	34	34	0	0	0	0	0	0	2,109	39	137	177	0	0	0	0	
2005	0	46	46	0	0	0	0	0	0	2,724	53	183	235	0	0	0	0	
2006	0	58	58	0	0	0	0	0	0	3,347	66	231	298	0	0	0	0	
2007	0	71	71	0	0	0	0	0	0	3,975	81	283	364	0	0	0	0	
2008	0	84	84	0	0	0	0	0	0	4,610	97	338	435	0	0	0	0	
2009	0	99	99	0	0	0	0	0	0	5,250	114	396	510	0	0	0	0	
2010	0	115	115	0	0	0	0	0	0	5,898	132	459	590	0	0	0	0	
2011	0	131	131	0	0	0	0	0	0	6,551	151	525	676	0	0	0	0	
2012	0	149	149	0	0	0	0	0	0	7,212	171	595	766	0	0	0	0	
2013	0	167	167	0	0	0	0	0	0	7,879	193	669	862	0	0	0	0	
2014	0	187	187	0	0	0	0	0	0	8,552	215	748	964	0	0	0	0	
2015	0	208	208	0	0	0	0	0	0	9,232	239	832	1,072	0	0	0	0	
2016	0	230	230	0	0	0	0	0	0	9,920	265	921	1,186	0	0	0	0	
2017	0	254	254	0	0	0	0	0	0	10,614	292	1,015	1,307	0	0	0	0	
2018	0	278	278	0	0	0	0	0	0	11,315	321	1,114	1,435	0	0	0	0	
2019	0	305	305	0	0	0	0	0	0	12,023	351	1,220	1,570	0	0	0	0	
2020	0	333	333	0	0	0	0	0	0	12,738	383	1,331	1,714	0	0	0	0	
NOMINAL	505	2,789	3,294	36	0	36	0	0	0	126,637	3,211	11,165	14,376	0	0	0	0	
NPV	479	1,391	1,870	34	0	34	0	0	0		1,602	5,569	7,171		0	0	0	

• SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	166	0	0	166	0	0	6	0	6	(160)	(160)
2002	0	182	0	0	182	0	0	19	0	19	(163)	(315)
2003	0	199	0	0	199	0	0	33	0	33	(166)	(464)
2004	0	34	0	0	34	0	0	48	0	48	13	(452)
2005	0	46	0	0	46	0	0	64	0	64	18	(438)
2006	0	58	0	0	58	0	0	80	0	80	23	(421)
2007	0	71	0	0	71	0	0	99	0	99	28	(400)
2008	0	84	0	0	84	0	0	118	0	118	34	(377)
2009	0	99	0	0	99	0	0	139	0	139	40	(351)
2010	0	115	0	0	115	0	0	161	0	161	46	(323)
2011	0	131	0	0	131	0	0	184	0	184	53	(292)
2012	0	149	0	0	149	0	0	209	0	209	61	(258)
2013	0	167	0	0	167	0	0	236	0	236	68	(222)
2014	0	187	0	0	187	0	0	264	0	264	77	(184)
2015	0	208	0	0	208	0	0	294	0	294	86	(143)
2016	0	230	0	0	230	0	0	326	0	326	96	(100)
2017	0	254	0	0	254	0	0	360	0	360	106	(55)
2018	0	278	0	0	278	0	0	396	0	396	117	(8)
2019	0	305	0	0	305	0	0	434	0	434	129	41
2020	0	333	0	0	333	0	0	474	0	474	142	93
NOMINAL	0	3,294	0	0	3,294	0	0	3,942	0	3,942	647	
NPV	0	1,870	0	0	1,870	0	0	1,963	0	1,963	93	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 1.05

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Res. Energy Survey

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	23	0	12	0	35	0	0	0	0	35	35
2002	71	0	12	0	83	0	0	0	0	83	113
2003	122	0	12	0	134	0	0	0	0	134	233
2004	177	0	0	0	177	0	0	0	0	177	384
2005	235	0	0	0	235	0	0	0	0	235	574
2006	298	0	0	0	298	0	0	0	0	298	802
2007	364	0	0	0	364	0	0	0	0	364	1,066
2008	435	0	0	0	435	0	0	0	0	435	1,365
2009	510	0	0	0	510	0	0	0	0	510	1,697
2010	590	0	0	0	590	0	0	0	0	590	2,062
2011	676	0	0	0	676	0	0	0	0	676	2,457
2012	766	0	0	0	766	0	0	0	0	766	2,882
2013	862	0	0	0	862	0	0	0	0	862	3,336
2014	964	0	0	0	964	0	0	0	0	964	3,816
2015	1,072	0	0	0	1,072	0	0	0	0	1,072	4,323
2016	1,186	0	0	0	1,186	0	0	0	0	1,186	4,854
2017	1,307	0	0	0	1,307	0	0	0	0	1,307	5,409
2018	1,435	0	0	0	1,435	0	0	0	0	1,435	5,986
2019	1,570	0	0	0	1,570	0	0	0	0	1,570	6,585
2020	1,714	0	0	0	1,714	0	0	0	0	1,714	7,205
NOMINAL	14,376	0	36	0	14,411	0	0	0	0	14,411	
NPV	7,171	0	34	0	7,205	0	0	0	0	7,205	

In-service year of generation unit: 2004
Discount rate: 5.50%

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Res. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	166	12	23	0	201	6	0	0	0	6	(195)	(195)
2002	0	182	12	71	0	265	19	0	0	0	19	(246)	(428)
2003	0	199	12	122	0	333	33	0	0	0	33	(300)	(697)
2004	0	34	0	177	0	211	48	0	0	0	48	(163)	(836)
2005	0	46	0	235	0	281	64	0	0	0	64	(217)	(1,012)
2006	0	58	0	298	0	355	80	0	0	0	80	(275)	(1,222)
2007	0	71	0	364	0	435	99	0	0	0	99	(336)	(1,466)
2008	0	84	0	435	0	519	118	0	0	0	118	(401)	(1,742)
2009	0	99	0	510	0	609	139	0	0	0	139	(471)	(2,049)
2010	0	115	0	590	0	705	161	0	0	0	161	(544)	(2,385)
2011	0	131	0	676	0	807	184	0	0	0	184	(622)	(2,749)
2012	0	149	0	766	0	915	209	0	0	0	209	(705)	(3,141)
2013	0	167	0	862	0	1,029	236	0	0	0	236	(793)	(3,558)
2014	0	187	0	964	0	1,151	264	0	0	0	264	(887)	(4,000)
2015	0	208	0	1,072	0	1,279	294	0	0	0	294	(985)	(4,466)
2016	0	230	0	1,186	0	1,416	326	0	0	0	326	(1,090)	(4,954)
2017	0	254	0	1,307	0	1,560	360	0	0	0	360	(1,201)	(5,464)
2018	0	278	0	1,435	0	1,713	396	0	0	0	396	(1,318)	(5,994)
2019	0	305	0	1,570	0	1,875	434	0	0	0	434	(1,441)	(6,544)
2020	0	333	0	1,714	0	2,046	474	0	0	0	474	(1,572)	(7,112)
NOMINAL	0	3,294	36	14,376	0	17,706	3,942	0	0	0	3,942	(13,764)	
NPV	0	1,870	34	7,171	0	9,075	1,963	0	0	0	1,963	(7,112)	

Discount rate: 5.50%
Benefit / Cost Ratio [col (12) / col (7)]: 0.22

PROGRAM: Res. Heat Pump

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.20 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.30 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,240.4 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,166.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	26.31 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	9.17 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	3,819.24 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	106.09 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Res. Heat Pump

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KIV EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	343	343	1.71	1.93	1.93	1.92	1	1
2002	361	361	1.76	2.00	2.00	1.98	1	1
2003	379	379	1.81	2.06	2.06	2.04	1	1
2004	398	398	1.87	2.12	2.12	2.10	1	1
2005	418	418	1.92	2.19	2.19	2.16	1	1
2006	439	439	1.98	2.26	2.26	2.22	1	1
2007	460	460	2.04	2.33	2.33	2.29	1	1
2008	484	484	2.10	2.41	2.41	2.36	1	1
2009	508	508	2.16	2.48	2.48	2.43	1	1
2010	533	533	2.23	2.56	2.56	2.50	1	1
2011	560	560	2.30	2.64	2.64	2.58	1	1
2012	588	588	2.36	2.73	2.73	2.66	1	1
2013	617	617	2.44	2.81	2.81	2.74	1	1
2014	648	648	2.51	2.90	2.90	2.82	1	1
2015	681	681	2.58	2.99	2.99	2.90	1	1
2016	715	715	2.66	3.09	3.09	2.99	1	1
2017	750	750	2.74	3.19	3.19	3.08	1	1
2018	788	788	2.82	3.29	3.29	3.17	1	1
2019	828	828	2.91	3.39	3.39	3.27	1	1
2020	869	869	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.82	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)
		RATE (%)		
1995	-9	0.0%		0.0%
1996	-8	0.0%		0.0%
1997	-7	0.0%		0.0%
1998	-6	0.0%		0.0%
1999	-5	0.0%		0.0%
2000	-4	0.0%		0.0%
2001	-3	0.0%		0.0%
2002	-2	2.3%		25.0%
2003	-1	2.3%		75.0%
2004	0	2.3%		0.0%

TEMP DATA/NOT USED
BY PROGRAM

CT	CC
0.0%	0.0%
0.0%	0.0%
0.0%	20.3%
55.3%	50.2%
44.7%	29.5%
0.0%	0.0%
1	1

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Res. Heat Pump

* UNIT SIZE OF AVOIDED GENERATION UNIT = 519 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$210

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	14	3,865	3	8	82	81	0	26
2005	0.0685	14	3,865	3	8	85	83	0	27
2006	0.0706	15	3,865	3	9	87	86	0	28
2007	0.0727	15	3,865	3	9	90	89	0	29
2008	0.0749	16	3,865	3	9	93	91	0	30
2009	0.0771	16	3,865	3	10	96	94	0	31
2010	0.0794	17	3,865	3	10	99	97	0	32
2011	0.0818	17	3,865	3	10	102	100	0	33
2012	0.0843	18	3,865	4	10	105	103	0	34
2013	0.0868	18	3,865	4	11	109	106	0	36
2014	0.0894	19	3,865	4	11	112	109	0	37
2015	0.0921	19	3,865	4	11	116	112	0	38
2016	0.0948	20	3,865	4	12	119	116	0	39
2017	0.0977	20	3,865	4	12	123	119	0	41
2018	0.1006	21	3,865	4	12	127	123	0	42
2019	0.1036	22	3,865	4	13	131	126	0	44
2020	0.1067	22	3,865	5	13	135	130	0	45
NOMINAL		304	65,713	62	178	1,812	1,764	0	592
NPV		168		34	99	1,000	975	0	325

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Res. Heat Pump

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$45

* INSERVICE COSTS OF AVOIDED DIST. (000) = \$28

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	4
2002	0	0	0	0	0	0	9
2003	0	0	0	0	0	0	9
2004	3	2	5	2	7	9	10
2005	3	2	5	2	7	9	11
2006	3	2	5	2	8	10	12
2007	3	2	5	2	8	10	13
2008	3	2	5	2	8	10	14
2009	3	2	5	2	8	11	15
2010	4	2	6	2	9	11	17
2011	4	2	6	2	9	11	18
2012	4	2	6	2	9	12	19
2013	4	2	6	2	9	12	21
2014	4	2	6	3	10	12	23
2015	4	2	6	3	10	13	25
2016	4	2	7	3	10	13	27
2017	4	2	7	3	11	13	29
2018	4	3	7	3	11	14	31
2019	5	3	7	3	11	14	34
2020	5	3	7	3	12	15	37
NOMINAL	65	36	101	40	158	199	378
NPV	36	20	56	22	88	110	205

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Res. Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	213	4	0	0	4	4
2002	437	9	0	0	9	9
2003	459	9	0	0	9	9
2004	482	10	0	0	10	10
2005	506	11	0	0	11	11
2006	532	12	0	0	12	12
2007	558	13	0	0	13	13
2008	585	14	0	0	14	14
2009	615	15	0	0	15	15
2010	646	17	0	0	17	17
2011	678	18	0	0	18	18
2012	712	19	0	0	19	19
2013	747	21	0	0	21	21
2014	785	23	0	0	23	23
2015	824	25	0	0	25	25
2016	866	27	0	0	27	27
2017	909	29	0	0	29	29
2018	954	31	0	0	31	31
2019	1,002	34	0	0	34	34
2020	1,053	37	0	0	37	37
NOMINAL	13,561	378	0	0	378	378
NPV		205	0	0	205	205

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM Res Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
UTILITY PROGRAM COSTS & REBATES							PARTICIPATING CUSTOMER COSTS & BENEFITS										
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC CUST EQUIP COSTS \$(000)	PARTIC CUST O & M COSTS \$(000)	TOTAL PARTIC CUST COSTS \$(000)	REDUCT. IN CUST KWH (000)	RED REV - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	9	2	11	36	0	36	1,310	0	1,310	200	3	12	15	0	0	0	0
2002	0	3	4	2	0	2	71	0	71	410	7	25	32	0	0	0	0
2003	1	4	4	2	0	2	73	0	73	431	8	27	35	0	0	0	0
2004	0	4	4	0	0	0	79	0	79	453	8	29	38	0	0	0	0
2005	0	4	4	0	0	0	86	0	86	476	9	32	41	0	0	0	0
2006	0	5	5	0	0	0	93	0	93	500	10	35	44	0	0	0	0
2007	0	5	5	0	0	0	96	0	96	524	11	37	48	0	0	0	0
2008	0	5	5	0	0	0	113	0	113	550	12	40	52	0	0	0	0
2009	0	6	6	0	0	0	116	0	116	578	13	44	56	0	0	0	0
2010	0	6	6	0	0	0	125	0	125	607	14	47	61	0	0	0	0
2011	0	7	7	0	0	0	139	0	139	637	15	51	66	0	0	0	0
2012	0	7	7	0	0	0	148	0	148	669	16	55	71	0	0	0	0
2013	0	8	8	0	0	0	158	0	158	703	17	60	77	0	0	0	0
2014	0	9	9	0	0	0	174	0	174	737	19	65	83	0	0	0	0
2015	0	9	9	0	0	0	191	0	191	775	20	70	90	0	0	0	0
2016	0	10	10	0	0	0	202	0	202	814	22	76	97	0	0	0	0
2017	0	11	11	0	0	0	215	0	215	854	23	82	105	0	0	0	0
2018	0	12	12	0	0	0	240	0	240	897	25	88	114	0	0	0	0
2019	0	13	13	0	0	0	260	0	260	942	27	96	123	0	0	0	0
2020	0	14	14	0	0	0	275	0	275	989	30	103	133	0	0	0	0
NOMINAL	10	142	152	40	0	40	4,162	0	4,162	12,747	309	1,074	1,382	0	0	0	0
NPV	10	77	87	40	0	40	2,850	0	2,850		168	585	753		0	0	0

• SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS

PROGRAM: Res. Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	11	1,310	0	1,321	0	0	4	0	4	(1,316)	(1,316)
2002	0	4	71	0	75	0	0	9	0	9	(66)	(1,379)
2003	0	4	73	0	77	0	0	9	0	9	(68)	(1,440)
2004	0	4	79	0	83	26	14	10	0	50	(33)	(1,468)
2005	0	4	86	0	90	27	14	11	0	52	(38)	(1,499)
2006	0	5	93	0	98	28	15	12	0	55	(43)	(1,531)
2007	0	5	96	0	101	29	15	13	0	57	(44)	(1,563)
2008	0	5	113	0	118	30	15	14	0	59	(59)	(1,603)
2009	0	6	116	0	122	31	16	15	0	62	(60)	(1,642)
2010	0	6	125	0	131	32	16	17	0	65	(66)	(1,683)
2011	0	7	139	0	145	33	17	18	0	68	(77)	(1,728)
2012	0	7	148	0	155	34	17	19	0	71	(84)	(1,775)
2013	0	8	158	0	166	36	18	21	0	75	(91)	(1,823)
2014	0	9	174	0	182	37	19	23	0	78	(104)	(1,875)
2015	0	9	191	0	200	38	19	25	0	82	(118)	(1,931)
2016	0	10	202	0	212	39	20	27	0	86	(126)	(1,987)
2017	0	11	215	0	225	41	20	29	0	90	(135)	(2,045)
2018	0	12	240	0	252	42	21	31	0	94	(157)	(2,108)
2019	0	13	260	0	273	44	21	34	0	99	(173)	(2,174)
2020	0	14	275	0	288	45	22	37	0	104	(184)	(2,241)
NOMINAL	0	152	4,162	0	4,313	592	300	378	0	1,270	(3,043)	
NPV	0	87	2,850	0	2,937	325	166	205	0	697	(2,241)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.24

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Res. Heat Pump

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	11	36	15	0	62	4	0	0	0	4	(58)	(58)
2002	0	4	2	32	0	38	9	0	0	0	9	(29)	(86)
2003	0	4	2	35	0	41	9	0	0	0	9	(32)	(115)
2004	0	4	0	38	0	42	36	14	0	0	50	8	(108)
2005	0	4	0	41	0	45	38	14	0	0	52	7	(102)
2006	0	5	0	44	0	49	40	15	0	0	55	6	(98)
2007	0	5	0	48	0	53	42	15	0	0	57	4	(95)
2008	0	5	0	52	0	57	44	15	0	0	59	2	(93)
2009	0	6	0	56	0	62	46	16	0	0	62	0	(93)
2010	0	6	0	61	0	67	49	16	0	0	65	(2)	(94)
2011	0	7	0	66	0	72	51	17	0	0	68	(4)	(97)
2012	0	7	0	71	0	78	54	17	0	0	71	(7)	(101)
2013	0	8	0	77	0	85	57	18	0	0	75	(10)	(106)
2014	0	9	0	83	0	92	60	19	0	0	78	(14)	(113)
2015	0	9	0	90	0	99	63	19	0	0	82	(17)	(121)
2016	0	10	0	97	0	107	66	20	0	0	86	(21)	(131)
2017	0	11	0	105	0	116	70	20	0	0	90	(26)	(142)
2018	0	12	0	114	0	125	74	21	0	0	94	(31)	(154)
2019	0	13	0	123	0	136	78	21	0	0	99	(36)	(168)
2020	0	14	0	133	0	147	82	22	0	0	104	(43)	(184)
NOMINAL	0	152	40	1,382	0	1,574	970	300	0	0	1,270	(304)	
NPV	0	87	40	753	0	880	531	166	0	0	697	(184)	
				Discount rate:		5.50%							
				Benefit / Cost Ratio [col (12) / col (7)]:		0.79							

PROGRAM Res. Weatherization

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.18 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	685.1 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	644.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	26.31 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	9.17 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	53.05 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	116.70 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM Res. Weatherization

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KIV EFFECTIVENESS FACTOR	PROGRAM KIVH EFFECTIVENESS FACTOR
2001	802	802	1.71	1.93	1.93	1.92	1	1
2002	842	842	1.76	2.00	2.00	1.98	1	1
2003	884	884	1.81	2.06	2.06	2.04	1	1
2004	929	929	1.87	2.12	2.12	2.10	1	1
2005	975	975	1.92	2.19	2.19	2.16	1	1
2006	1024	1024	1.98	2.26	2.26	2.22	1	1
2007	1075	1075	2.04	2.33	2.33	2.29	1	1
2008	1129	1129	2.10	2.41	2.41	2.36	1	1
2009	1185	1185	2.16	2.48	2.48	2.43	1	1
2010	1245	1245	2.23	2.56	2.56	2.50	1	1
2011	1307	1307	2.30	2.64	2.64	2.58	1	1
2012	1372	1372	2.36	2.73	2.73	2.66	1	1
2013	1441	1441	2.44	2.81	2.81	2.74	1	1
2014	1513	1513	2.51	2.90	2.90	2.82	1	1
2015	1589	1589	2.58	2.99	2.99	2.90	1	1
2016	1668	1668	2.66	3.09	3.09	2.99	1	1
2017	1752	1752	2.74	3.19	3.19	3.08	1	1
2018	1839	1839	2.82	3.29	3.29	3.17	1	1
2019	1932	1932	2.91	3.39	3.39	3.27	1	1
2020	2028	2028	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

TEMP DATA/NOT USED

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Res. Weatherization

* UNIT SIZE OF AVOIDED GENERATION UNIT = 182 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$73

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	5	1,353	1	3	29	28	0	9
2005	0.0685	5	1,353	1	3	30	29	0	9
2006	0.0706	5	1,353	1	3	31	30	0	10
2007	0.0727	5	1,353	1	3	32	31	0	10
2008	0.0749	5	1,353	1	3	33	32	0	10
2009	0.0771	6	1,353	1	3	34	33	0	11
2010	0.0794	6	1,353	1	3	35	34	0	11
2011	0.0818	6	1,353	1	4	36	35	0	12
2012	0.0843	6	1,353	1	4	37	36	0	12
2013	0.0868	6	1,353	1	4	38	37	0	12
2014	0.0894	7	1,353	1	4	39	38	0	13
2015	0.0921	7	1,353	1	4	41	39	0	13
2016	0.0948	7	1,353	1	4	42	40	0	14
2017	0.0977	7	1,353	1	4	43	42	0	14
2018	0.1006	7	1,353	2	4	44	43	0	15
2019	0.1036	8	1,353	2	4	46	44	0	15
2020	0.1067	8	1,353	2	5	47	46	0	16
NOMINAL		106	23,008	22	62	635	618	0	207
NPV		59		12	35	350	341	0	114

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Res. Weatherization

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$16

* INSERVICE COSTS OF AVOIDED DIST. (000) = \$10

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	5
2002	0	0	0	0	0	0	11
2003	0	0	0	0	0	0	12
2004	1	1	2	1	3	3	13
2005	1	1	2	1	3	3	14
2006	1	1	2	1	3	3	15
2007	1	1	2	1	3	3	17
2008	1	1	2	1	3	4	18
2009	1	1	2	1	3	4	20
2010	1	1	2	1	3	4	21
2011	1	1	2	1	3	4	23
2012	1	1	2	1	3	4	25
2013	1	1	2	1	3	4	27
2014	1	1	2	1	3	4	29
2015	1	1	2	1	4	4	32
2016	1	1	2	1	4	5	34
2017	2	1	2	1	4	5	37
2018	2	1	2	1	4	5	40
2019	2	1	3	1	4	5	44
2020	2	1	3	1	4	5	47
NOMINAL	23	13	35	14	55	70	487
NPV	13	7	20	8	31	38	265

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Res. Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	275	5	0	0	5	5
2002	563	11	0	0	11	11
2003	591	12	0	0	12	12
2004	621	13	0	0	13	13
2005	652	14	0	0	14	14
2006	685	15	0	0	15	15
2007	719	17	0	0	17	17
2008	755	18	0	0	18	18
2009	793	20	0	0	20	20
2010	832	21	0	0	21	21
2011	874	23	0	0	23	23
2012	918	25	0	0	25	25
2013	964	27	0	0	27	27
2014	1,012	29	0	0	29	29
2015	1,063	32	0	0	32	32
2016	1,116	34	0	0	34	34
2017	1,172	37	0	0	37	37
2018	1,230	40	0	0	40	40
2019	1,292	44	0	0	44	44
2020	1,357	47	0	0	47	47
NOMINAL	17,482	487	0	0	487	487
NPV		265	0	0	265	265

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM Res. Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES -----							----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----										
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT. IN CUST. KWH (000)	RED REV - FUEL PORTION \$(000)	RED REV. NONFUEL PORTION \$(000)	EFFECT REV. REDUCT. IN BILL \$(000)	INC. IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	21	4	25	94	0	94	43	0	43	258	4	15	20	0	0	0	0
2002	1	8	9	5	0	5	2	0	2	529	9	32	42	0	0	0	0
2003	1	8	10	5	0	5	2	0	2	556	10	35	45	0	0	0	0
2004	0	9	9	0	0	0	3	0	3	584	11	38	49	0	0	0	0
2005	0	10	10	0	0	0	3	0	3	613	12	41	53	0	0	0	0
2006	0	11	11	0	0	0	3	0	3	644	13	44	57	0	0	0	0
2007	0	11	11	0	0	0	3	0	3	676	14	48	62	0	0	0	0
2008	0	12	12	0	0	0	4	0	4	710	15	52	67	0	0	0	0
2009	0	13	13	0	0	0	4	0	4	745	16	56	72	0	0	0	0
2010	0	15	15	0	0	0	4	0	4	782	17	61	78	0	0	0	0
2011	0	16	16	0	0	0	4	0	4	822	19	66	85	0	0	0	0
2012	0	17	17	0	0	0	5	0	5	863	20	71	92	0	0	0	0
2013	0	18	18	0	0	0	5	0	5	906	22	77	99	0	0	0	0
2014	0	20	20	0	0	0	6	0	6	951	24	83	107	0	0	0	0
2015	0	22	22	0	0	0	6	0	6	999	26	90	116	0	0	0	0
2016	0	23	23	0	0	0	7	0	7	1,049	28	97	125	0	0	0	0
2017	0	25	25	0	0	0	7	0	7	1,101	30	105	136	0	0	0	0
2018	0	27	27	0	0	0	8	0	8	1,156	33	114	147	0	0	0	0
2019	0	29	29	0	0	0	8	0	8	1,214	35	123	159	0	0	0	0
2020	0	32	32	0	0	0	9	0	9	1,275	38	133	172	0	0	0	0
NOMINAL	23	331	354	103	0	103	135	0	135	16,433	398	1,384	1,782	0	0	0	0
NPV	23	180	203	102	0	102	92	0	92		217	754	971		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	25	43	0	67	0	0	5	0	5	(62)	(62)
2002	0	9	2	0	11	0	0	11	0	11	0	(62)
2003	0	10	2	0	12	0	0	12	0	12	0	(62)
2004	0	9	3	0	12	9	5	13	0	27	15	(48)
2005	0	10	3	0	13	9	5	14	0	29	16	(35)
2006	0	11	3	0	14	10	5	15	0	30	17	(23)
2007	0	11	3	0	15	10	5	17	0	32	17	(10)
2008	0	12	4	0	16	10	5	18	0	34	18	2
2009	0	13	4	0	17	11	6	20	0	36	19	15
2010	0	15	4	0	19	11	6	21	0	38	20	27
2011	0	16	4	0	20	12	6	23	0	41	21	39
2012	0	17	5	0	22	12	6	25	0	43	21	51
2013	0	18	5	0	24	12	6	27	0	46	22	62
2014	0	20	6	0	25	13	6	29	0	49	23	74
2015	0	22	6	0	28	13	7	32	0	52	24	85
2016	0	23	7	0	30	14	7	34	0	55	25	97
2017	0	25	7	0	32	14	7	37	0	59	26	108
2018	0	27	8	0	35	15	7	40	0	63	28	119
2019	0	29	8	0	38	15	8	44	0	67	29	130
2020	0	32	9	0	41	16	8	47	0	71	30	141
NOMINAL	0	354	135	0	489	207	105	487	0	800	311	
NPV	0	203	92	0	296	114	58	265	0	437	141	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 1.48

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Res. Weatherization

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)	
2001	20	0	94	0	113	43	0	0	43	71	71	
2002	42	0	5	0	47	2	0	0	2	44	113	
2003	45	0	5	0	50	2	0	0	2	48	156	
2004	49	0	0	0	49	3	0	0	3	46	195	
2005	53	0	0	0	53	3	0	0	3	50	236	
2006	57	0	0	0	57	3	0	0	3	54	277	
2007	62	0	0	0	62	3	0	0	3	59	320	
2008	67	0	0	0	67	4	0	0	4	63	363	
2009	72	0	0	0	72	4	0	0	4	69	408	
2010	78	0	0	0	78	4	0	0	4	74	454	
2011	85	0	0	0	85	4	0	0	4	80	501	
2012	92	0	0	0	92	5	0	0	5	87	549	
2013	99	0	0	0	99	5	0	0	5	94	599	
2014	107	0	0	0	107	6	0	0	6	102	649	
2015	116	0	0	0	116	6	0	0	6	110	701	
2016	125	0	0	0	125	7	0	0	7	119	754	
2017	136	0	0	0	136	7	0	0	7	128	809	
2018	147	0	0	0	147	8	0	0	8	139	865	
2019	159	0	0	0	159	8	0	0	8	150	922	
2020	172	0	0	0	172	9	0	0	9	163	981	
NOMINAL	1,782	0	103	0	1,885	135	0	0	135	1,750		
NPV	971	0	102	0	1,073	92	0	0	92	981		
In-service year of generation unit:				2004	Benefit/Cost Ratio:				11.62			
Discount rate:				5.50%								

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Res. Weatherization

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	25	94	20	0	138	5	0	0	0	5	(133)	(133)
2002	0	9	5	42	0	55	11	0	0	0	11	(44)	(175)
2003	0	10	5	45	0	60	12	0	0	0	12	(48)	(217)
2004	0	9	0	49	0	58	22	5	0	0	27	(31)	(244)
2005	0	10	0	53	0	63	24	5	0	0	29	(34)	(271)
2006	0	11	0	57	0	68	25	5	0	0	30	(38)	(300)
2007	0	11	0	62	0	73	27	5	0	0	32	(41)	(330)
2008	0	12	0	67	0	79	29	5	0	0	34	(45)	(361)
2009	0	13	0	72	0	86	31	6	0	0	36	(50)	(393)
2010	0	15	0	78	0	93	33	6	0	0	38	(55)	(427)
2011	0	16	0	85	0	100	35	6	0	0	41	(60)	(462)
2012	0	17	0	92	0	109	37	6	0	0	43	(65)	(498)
2013	0	18	0	99	0	117	40	6	0	0	46	(72)	(536)
2014	0	20	0	107	0	127	42	6	0	0	49	(78)	(575)
2015	0	22	0	116	0	137	45	7	0	0	52	(86)	(616)
2016	0	23	0	125	0	149	48	7	0	0	55	(93)	(658)
2017	0	25	0	136	0	161	52	7	0	0	59	(102)	(701)
2018	0	27	0	147	0	174	55	7	0	0	63	(111)	(746)
2019	0	29	0	159	0	188	59	8	0	0	67	(121)	(792)
2020	0	32	0	172	0	203	63	8	0	0	71	(132)	(840)
NOMINAL	0	354	103	1,782	0	2,239	695	105	0	0	800	(1,439)	
NPV	0	203	102	971	0	1,277	379	58	0	0	437	(840)	
Discount rate:				5.50%									
Benefit / Cost Ratio [col (12) / col (7)]:				0.34									

PROGRAM, Low Income Energy Fix Up

I PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.18 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20 KW GEN:CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	212.8 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	200.0 KWH/CUST/YR

II ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	666.10 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	22.38 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III.(14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Low Income Energy Fix Up

• Avoided Generation Unit CC-OUC
 • Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	317	317	1.71	1.93	1.93	1.92	1	1
2002	333	333	1.76	2.00	2.00	1.98	1	1
2003	350	350	1.81	2.06	2.06	2.04	1	1
2004	367	367	1.87	2.12	2.12	2.10	1	1
2005	385	385	1.92	2.19	2.19	2.16	1	1
2006	405	405	1.98	2.26	2.26	2.22	1	1
2007	425	425	2.04	2.33	2.33	2.29	1	1
2008	446	446	2.10	2.41	2.41	2.36	1	1
2009	469	469	2.16	2.48	2.48	2.43	1	1
2010	492	492	2.23	2.56	2.56	2.50	1	1
2011	517	517	2.30	2.64	2.64	2.58	1	1
2012	543	543	2.36	2.73	2.73	2.66	1	1
2013	570	570	2.44	2.81	2.81	2.74	1	1
2014	598	598	2.51	2.90	2.90	2.82	1	1
2015	628	628	2.58	2.99	2.99	2.90	1	1
2016	660	660	2.66	3.09	3.09	2.99	1	1
2017	693	693	2.74	3.19	3.19	3.08	1	1
2018	727	727	2.82	3.29	3.29	3.17	1	1
2019	764	764	2.91	3.39	3.39	3.27	1	1
2020	802	802	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

AFUDC Calculation

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL COST		YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
		PLANT ESCALATION RATE (%)	PLANT COST		CT	CC
1995	-9	0.0%		0.0%	0.0%	0.0%
1996	-8	0.0%		0.0%	0.0%	0.0%
1997	-7	0.0%		0.0%	0.0%	20.3%
1998	-6	0.0%		0.0%	55.3%	50.2%
1999	-5	0.0%		0.0%	44.7%	29.5%
2000	-4	0.0%		0.0%	0.0%	0.0%
2001	-3	0.0%		0.0%	0.0%	0.0%
2002	-2	2.3%		25.0%		
2003	-1	2.3%		75.0%		
2004	0	2.3%		0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Low Income Energy Fix Up

* UNIT SIZE OF AVOIDED GENERATION UNIT = 72 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$29

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	2	535	0	1	11	11	0	4
2005	0.0685	2	535	0	1	12	12	0	4
2006	0.0706	2	535	0	1	12	12	0	4
2007	0.0727	2	535	0	1	12	12	0	4
2008	0.0749	2	535	0	1	13	13	0	4
2009	0.0771	2	535	0	1	13	13	0	4
2010	0.0794	2	535	0	1	14	13	0	4
2011	0.0818	2	535	0	1	14	14	0	5
2012	0.0843	2	535	0	1	15	14	0	5
2013	0.0868	3	535	1	1	15	15	0	5
2014	0.0894	3	535	1	2	16	15	0	5
2015	0.0921	3	535	1	2	16	16	0	5
2016	0.0948	3	535	1	2	17	16	0	5
2017	0.0977	3	535	1	2	17	16	0	6
2018	0.1006	3	535	1	2	18	17	0	6
2019	0.1036	3	535	1	2	18	17	0	6
2020	0.1067	3	535	1	2	19	18	0	6
NOMINAL		42	9,089	9	25	251	244	0	82
NPV		23		5	14	138	135	0	45

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Low Income Energy Fix Up

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$6
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$4

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	1
2002	0	0	0	0	0	0	1
2003	0	0	0	0	0	0	1
2004	0	0	1	0	1	1	2
2005	0	0	1	0	1	1	2
2006	0	0	1	0	1	1	2
2007	0	0	1	0	1	1	2
2008	0	0	1	0	1	1	2
2009	0	0	1	0	1	1	2
2010	0	0	1	0	1	2	3
2011	1	0	1	0	1	2	3
2012	1	0	1	0	1	2	3
2013	1	0	1	0	1	2	3
2014	1	0	1	0	1	2	4
2015	1	0	1	0	1	2	4
2016	1	0	1	0	1	2	4
2017	1	0	1	0	1	2	5
2018	1	0	1	0	2	2	5
2019	1	0	1	0	2	2	5
2020	1	0	1	0	2	2	6
NOMINAL	9	5	14	6	22	28	60
NPV	5	3	8	3	12	15	33

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	34	1	0	0	1	1
2002	69	1	0	0	1	1
2003	73	1	0	0	1	1
2004	76	2	0	0	2	2
2005	80	2	0	0	2	2
2006	84	2	0	0	2	2
2007	88	2	0	0	2	2
2008	93	2	0	0	2	2
2009	97	2	0	0	2	2
2010	102	3	0	0	3	3
2011	107	3	0	0	3	3
2012	113	3	0	0	3	3
2013	118	3	0	0	3	3
2014	124	4	0	0	4	4
2015	130	4	0	0	4	4
2016	137	4	0	0	4	4
2017	144	5	0	0	5	5
2018	151	5	0	0	5	5
2019	159	5	0	0	5	5
2020	167	6	0	0	6	6
NOMINAL	2,147	60	0	0	60	60
NPV		33	0	0	33	33

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs: Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV. LOSS/GAIN PROGRAM, Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
PARTICIPATING CUSTOMER COSTS & BENEFITS																	
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE INCENT COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT CUST KWH (000)	RED. REV. -FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT REV. REDUCT. IN BILL \$(000)	INC. CUST. KWH (000)	INC. REV. -FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT REVENUE INC. IN BILL \$(000)
2001	211	4	215	0	0	0	0	0	0	32	1	2	2	0	0	0	0
2002	11	7	18	0	0	0	0	0	0	65	1	4	5	0	0	0	0
2003	12	8	20	0	0	0	0	0	0	68	1	4	6	0	0	0	0
2004	0	9	9	0	0	0	0	0	0	72	1	5	6	0	0	0	0
2005	0	9	9	0	0	0	0	0	0	75	1	5	6	0	0	0	0
2006	0	10	10	0	0	0	0	0	0	79	2	5	7	0	0	0	0
2007	0	11	11	0	0	0	0	0	0	83	2	6	8	0	0	0	0
2008	0	12	12	0	0	0	0	0	0	87	2	6	8	0	0	0	0
2009	0	13	13	0	0	0	0	0	0	92	2	7	9	0	0	0	0
2010	0	14	14	0	0	0	0	0	0	96	2	7	10	0	0	0	0
2011	0	15	15	0	0	0	0	0	0	101	2	8	10	0	0	0	0
2012	0	16	16	0	0	0	0	0	0	106	3	9	11	0	0	0	0
2013	0	18	18	0	0	0	0	0	0	111	3	9	12	0	0	0	0
2014	0	19	19	0	0	0	0	0	0	117	3	10	13	0	0	0	0
2015	0	21	21	0	0	0	0	0	0	123	3	11	14	0	0	0	0
2016	0	22	22	0	0	0	0	0	0	129	3	12	15	0	0	0	0
2017	0	24	24	0	0	0	0	0	0	135	4	13	17	0	0	0	0
2018	0	26	26	0	0	0	0	0	0	142	4	14	18	0	0	0	0
2019	0	28	28	0	0	0	0	0	0	149	4	15	19	0	0	0	0
2020	0	31	31	0	0	0	0	0	0	157	5	16	21	0	0	0	0
NOMINAL	234	319	553	0	0	0	0	0	0	2,018	49	170	219	0	0	0	0
NPV	232	174	406	0	0	0	0	0	0		27	93	119	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	215	0	0	215	0	0	1	0	1	(214)	(214)
2002	0	18	0	0	18	0	0	1	0	1	(17)	(230)
2003	0	20	0	0	20	0	0	1	0	1	(19)	(247)
2004	0	9	0	0	9	4	2	2	0	7	(2)	(248)
2005	0	9	0	0	9	4	2	2	0	7	(2)	(250)
2006	0	10	0	0	10	4	2	2	0	8	(2)	(252)
2007	0	11	0	0	11	4	2	2	0	8	(3)	(254)
2008	0	12	0	0	12	4	2	2	0	9	(3)	(256)
2009	0	13	0	0	13	4	2	2	0	9	(4)	(259)
2010	0	14	0	0	14	4	2	3	0	9	(5)	(262)
2011	0	15	0	0	15	5	2	3	0	10	(5)	(265)
2012	0	16	0	0	16	5	2	3	0	10	(6)	(269)
2013	0	18	0	0	18	5	2	3	0	11	(7)	(272)
2014	0	19	0	0	19	5	3	4	0	11	(8)	(276)
2015	0	21	0	0	21	5	3	4	0	12	(9)	(280)
2016	0	22	0	0	22	5	3	4	0	12	(10)	(285)
2017	0	24	0	0	24	6	3	5	0	13	(11)	(290)
2018	0	26	0	0	26	6	3	5	0	14	(13)	(295)
2019	0	28	0	0	28	6	3	5	0	14	(14)	(300)
2020	0	31	0	0	31	6	3	6	0	15	(16)	(306)
NOMINAL	0	553	0	0	553	82	41	60	0	183	(370)	
NPV	0	406	0	0	406	45	23	33	0	100	(306)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.25

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Low Income Energy Fix Up

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	2	0	0	0	2	0	0	0	0	2	2
2002	5	0	0	0	5	0	0	0	0	5	7
2003	6	0	0	0	6	0	0	0	0	6	12
2004	6	0	0	0	6	0	0	0	0	6	17
2005	6	0	0	0	6	0	0	0	0	6	23
2006	7	0	0	0	7	0	0	0	0	7	28
2007	8	0	0	0	8	0	0	0	0	8	34
2008	8	0	0	0	8	0	0	0	0	8	39
2009	9	0	0	0	9	0	0	0	0	9	45
2010	10	0	0	0	10	0	0	0	0	10	51
2011	10	0	0	0	10	0	0	0	0	10	57
2012	11	0	0	0	11	0	0	0	0	11	63
2013	12	0	0	0	12	0	0	0	0	12	70
2014	13	0	0	0	13	0	0	0	0	13	76
2015	14	0	0	0	14	0	0	0	0	14	83
2016	15	0	0	0	15	0	0	0	0	15	90
2017	17	0	0	0	17	0	0	0	0	17	97
2018	18	0	0	0	18	0	0	0	0	18	104
2019	19	0	0	0	19	0	0	0	0	19	112
2020	21	0	0	0	21	0	0	0	0	21	119
NOMINAL	219	0	0	0	219	0	0	0	0	219	
NPV	119	0	0	0	119	0	0	0	0	119	
	In-service year of generation unit:			2004		Benefit/Cost Ratio:		1.00			
	Discount rate:			5.50%							

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Low Income Energy Fix Up

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	215	0	2	0	217	1	0	0	0	1	(216)	(216)
2002	0	18	0	5	0	24	1	0	0	0	1	(22)	(238)
2003	0	20	0	6	0	26	1	0	0	0	1	(24)	(259)
2004	0	9	0	6	0	15	5	2	0	0	7	(8)	(266)
2005	0	9	0	6	0	16	5	2	0	0	7	(9)	(273)
2006	0	10	0	7	0	17	6	2	0	0	8	(9)	(280)
2007	0	11	0	8	0	19	6	2	0	0	8	(11)	(288)
2008	0	12	0	8	0	20	6	2	0	0	9	(12)	(296)
2009	0	13	0	9	0	22	7	2	0	0	9	(13)	(304)
2010	0	14	0	10	0	24	7	2	0	0	9	(14)	(313)
2011	0	15	0	10	0	26	7	2	0	0	10	(16)	(322)
2012	0	16	0	11	0	28	8	2	0	0	10	(17)	(332)
2013	0	18	0	12	0	30	8	2	0	0	11	(19)	(342)
2014	0	19	0	13	0	32	9	3	0	0	11	(21)	(352)
2015	0	21	0	14	0	35	9	3	0	0	12	(23)	(363)
2016	0	22	0	15	0	38	10	3	0	0	12	(25)	(375)
2017	0	24	0	17	0	41	10	3	0	0	13	(28)	(387)
2018	0	26	0	18	0	44	11	3	0	0	14	(31)	(399)
2019	0	28	0	19	0	48	11	3	0	0	14	(33)	(412)
2020	0	31	0	21	0	52	12	3	0	0	15	(37)	(425)
NOMINAL	0	553	0	219	0	772	142	41	0	0	183	(589)	
NPV	0	406	0	119	0	526	78	23	0	0	100	(425)	

Discount rate: 5.50%
Benefit / Cost Ratio [col (12) / col (7)]: 0.19

Input Data

PROGRAM: Res Efficiency Water Heating

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KWH REDUCTION AT THE METER	0.50	KWH/CUST
(2) GENERATOR KWH REDUCTION PER CUSTOMER	0.54	KWH/CUST
(3) KWH LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	702.1	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	660.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	0.00	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	800.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	53.05	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243	\$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3	%
(8) GENERATOR FIXED O & M COST	5.007448	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3	%
(10) TRANSMISSION FIXED O & M COST	3.07661	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3	%
(15) GENERATOR CAPACITY FACTOR	85	%
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Res. Efficiency Water Heating

• Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	343	343	1.71	1.93	1.93	1.92	1	1
2002	361	361	1.76	2.00	2.00	1.98	1	1
2003	379	379	1.81	2.06	2.06	2.04	1	1
2004	398	398	1.87	2.12	2.12	2.10	1	1
2005	418	418	1.92	2.19	2.19	2.16	1	1
2006	439	439	1.98	2.26	2.26	2.22	1	1
2007	460	460	2.04	2.33	2.33	2.29	1	1
2008	484	484	2.10	2.41	2.41	2.36	1	1
2009	508	508	2.16	2.48	2.48	2.43	1	1
2010	533	533	2.23	2.56	2.56	2.50	1	1
2011	560	560	2.30	2.64	2.64	2.58	1	1
2012	588	588	2.36	2.73	2.73	2.66	1	1
2013	617	617	2.44	2.81	2.81	2.74	1	1
2014	648	648	2.51	2.90	2.90	2.82	1	1
2015	681	681	2.58	2.99	2.99	2.90	1	1
2016	715	715	2.66	3.09	3.09	2.99	1	1
2017	750	750	2.74	3.19	3.19	3.08	1	1
2018	788	788	2.82	3.29	3.29	3.17	1	1
2019	828	828	2.91	3.39	3.39	3.27	1	1
2020	869	869	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)
		RATE (%)		
1995	-9	0.0%		0.0%
1996	-8	0.0%		0.0%
1997	-7	0.0%		0.0%
1998	-6	0.0%		0.0%
1999	-5	0.0%		0.0%
2000	-4	0.0%		0.0%
2001	-3	0.0%		0.0%
2002	-2	2.3%		25.0%
2003	-1	2.3%		75.0%
2004	0	2.3%		0.0%

TEMP DATA/NOT USED

BY PROGRAM	
CT	CC
0.0%	0.0%
0.0%	0.0%
0.0%	20.3%
55.3%	50.2%
44.7%	29.5%
0.0%	0.0%
1	1

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Res. Efficiency Water Heating

* UNIT SIZE OF AVOIDED GENERATION UNIT = 216 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$87

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	6	1,611	1	3	34	34	0	11
2005	0.0685	6	1,611	1	4	35	35	0	11
2006	0.0706	6	1,611	1	4	36	36	0	12
2007	0.0727	6	1,611	1	4	38	37	0	12
2008	0.0749	7	1,611	1	4	39	38	0	12
2009	0.0771	7	1,611	1	4	40	39	0	13
2010	0.0794	7	1,611	1	4	41	40	0	13
2011	0.0818	7	1,611	1	4	43	42	0	14
2012	0.0843	7	1,611	1	4	44	43	0	14
2013	0.0868	8	1,611	2	4	45	44	0	15
2014	0.0894	8	1,611	2	5	47	45	0	15
2015	0.0921	8	1,611	2	5	48	47	0	16
2016	0.0948	8	1,611	2	5	50	48	0	16
2017	0.0977	9	1,611	2	5	51	50	0	17
2018	0.1006	9	1,611	2	5	53	51	0	18
2019	0.1036	9	1,611	2	5	55	53	0	18
2020	0.1067	9	1,611	2	5	56	54	0	19
NOMINAL		126	27,380	26	74	755	735	0	247
NPV		70		14	41	417	406	0	136

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Res. Efficiency Water Heating

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$19
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$12

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	2
2002	0	0	0	0	0	0	5
2003	0	0	0	0	0	0	5
2004	1	1	2	1	3	4	6
2005	1	1	2	1	3	4	6
2006	1	1	2	1	3	4	7
2007	1	1	2	1	3	4	7
2008	1	1	2	1	3	4	8
2009	1	1	2	1	4	4	9
2010	1	1	2	1	4	5	9
2011	2	1	2	1	4	5	10
2012	2	1	2	1	4	5	11
2013	2	1	3	1	4	5	12
2014	2	1	3	1	4	5	13
2015	2	1	3	1	4	5	14
2016	2	1	3	1	4	5	15
2017	2	1	3	1	4	6	16
2018	2	1	3	1	5	6	18
2019	2	1	3	1	5	6	19
2020	2	1	3	1	5	6	21
NOMINAL	27	15	42	17	66	83	214
NPV	15	8	23	9	36	46	116

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
 PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	120	2	0	0	2	2
2002	247	5	0	0	5	5
2003	260	5	0	0	5	5
2004	273	6	0	0	6	6
2005	286	6	0	0	6	6
2006	301	7	0	0	7	7
2007	316	7	0	0	7	7
2008	331	8	0	0	8	8
2009	348	9	0	0	9	9
2010	365	9	0	0	9	9
2011	384	10	0	0	10	10
2012	403	11	0	0	11	11
2013	423	12	0	0	12	12
2014	444	13	0	0	13	13
2015	467	14	0	0	14	14
2016	490	15	0	0	15	15
2017	514	16	0	0	16	16
2018	540	18	0	0	18	18
2019	567	19	0	0	19	19
2020	596	21	0	0	21	21
NOMINAL	7,676	214	0	0	214	214
NPV		116	0	0	116	116

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Res Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
UTILITY PROGRAM COSTS & REBATES							PARTICIPATING CUSTOMER COSTS & BENEFITS										
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC CUST O & M COSTS \$(000)	TOTAL PARTIC CUST COSTS \$(000)	REDUCT IN CUST KWH (000)	RED REV - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT REV REDUCT IN BILL \$(000)	INC IN CUST. KWH (000)	INC. REV - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	0	0	0	18	0	18	274	0	274	113	2	7	9	0	0	0	0
2002	0	0	0	1	0	1	15	0	15	232	4	14	18	0	0	0	0
2003	0	0	0	1	0	1	15	0	15	244	4	15	20	0	0	0	0
2004	0	0	0	0	0	0	17	0	17	256	5	17	21	0	0	0	0
2005	0	0	0	0	0	0	18	0	18	269	5	18	23	0	0	0	0
2006	0	0	0	0	0	0	19	0	19	283	6	20	25	0	0	0	0
2007	0	0	0	0	0	0	20	0	20	297	6	21	27	0	0	0	0
2008	0	0	0	0	0	0	24	0	24	312	7	23	29	0	0	0	0
2009	0	0	0	0	0	0	24	0	24	327	7	25	32	0	0	0	0
2010	0	0	0	0	0	0	26	0	26	344	8	27	34	0	0	0	0
2011	0	0	0	0	0	0	29	0	29	361	8	29	37	0	0	0	0
2012	0	0	0	0	0	0	31	0	31	379	9	31	40	0	0	0	0
2013	0	0	0	0	0	0	33	0	33	398	10	34	44	0	0	0	0
2014	0	0	0	0	0	0	36	0	36	417	11	37	47	0	0	0	0
2015	0	0	0	0	0	0	40	0	40	439	11	40	51	0	0	0	0
2016	0	0	0	0	0	0	42	0	42	461	12	43	55	0	0	0	0
2017	0	0	0	0	0	0	45	0	45	483	13	46	60	0	0	0	0
2018	0	0	0	0	0	0	50	0	50	508	14	50	64	0	0	0	0
2019	0	0	0	0	0	0	54	0	54	533	16	54	70	0	0	0	0
2020	0	0	0	0	0	0	58	0	58	560	17	59	75	0	0	0	0
NOMINAL	0	0	0	20	0	20	872	0	872	7,215	175	608	782	0	0	0	0
NPV	0	0	0	20	0	20	597	0	597		95	331	426		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	274	0	274	0	0	2	0	2	(272)	(272)
2002	0	0	15	0	15	0	0	5	0	5	(10)	(281)
2003	0	0	15	0	15	0	0	5	0	5	(10)	(290)
2004	0	0	17	0	17	11	6	6	0	22	6	(285)
2005	0	0	18	0	18	11	6	6	0	23	5	(281)
2006	0	0	19	0	19	12	6	7	0	25	5	(277)
2007	0	0	20	0	20	12	6	7	0	26	6	(273)
2008	0	0	24	0	24	12	6	8	0	27	3	(271)
2009	0	0	24	0	24	13	7	9	0	28	4	(268)
2010	0	0	26	0	26	13	7	9	0	30	3	(266)
2011	0	0	29	0	29	14	7	10	0	31	2	(265)
2012	0	0	31	0	31	14	7	11	0	33	2	(264)
2013	0	0	33	0	33	15	7	12	0	34	1	(264)
2014	0	0	36	0	36	15	8	13	0	36	(0)	(264)
2015	0	0	40	0	40	16	8	14	0	38	(2)	(265)
2016	0	0	42	0	42	16	8	15	0	40	(3)	(266)
2017	0	0	45	0	45	17	8	16	0	42	(3)	(267)
2018	0	0	50	0	50	18	9	18	0	44	(6)	(270)
2019	0	0	54	0	54	18	9	19	0	46	(8)	(273)
2020	0	0	58	0	58	19	9	21	0	49	(9)	(276)
NOMINAL	0	0	872	0	872	247	125	214	0	586	(286)	
NPV	0	0	597	0	597	136	69	116	0	321	(276)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.54

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Res. Efficiency Water Heating

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL. \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	9	0	18	0	27	274	0	0	274	(248)	(248)
2002	18	0	1	0	19	15	0	0	15	4	(243)
2003	20	0	1	0	21	15	0	0	15	6	(238)
2004	21	0	0	0	21	17	0	0	17	5	(234)
2005	23	0	0	0	23	18	0	0	18	5	(230)
2006	25	0	0	0	25	19	0	0	19	6	(226)
2007	27	0	0	0	27	20	0	0	20	7	(220)
2008	29	0	0	0	29	24	0	0	24	6	(216)
2009	32	0	0	0	32	24	0	0	24	7	(212)
2010	34	0	0	0	34	26	0	0	26	8	(206)
2011	37	0	0	0	37	29	0	0	29	8	(202)
2012	40	0	0	0	40	31	0	0	31	9	(196)
2013	44	0	0	0	44	33	0	0	33	10	(191)
2014	47	0	0	0	47	36	0	0	36	11	(186)
2015	51	0	0	0	51	40	0	0	40	11	(181)
2016	55	0	0	0	55	42	0	0	42	13	(175)
2017	60	0	0	0	60	45	0	0	45	15	(169)
2018	64	0	0	0	64	50	0	0	50	14	(163)
2019	70	0	0	0	70	54	0	0	54	15	(157)
2020	75	0	0	0	75	58	0	0	58	18	(151)
NOMINAL	782	0	20	0	803	872	0	0	872	(69)	
NPV	426	0	20	0	446	597	0	0	597	(151)	
	In-service year of generation unit:			2004		Benefit/Cost Ratio:		0.75			
	Discount rate:			5.50%							

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Res. Efficiency Water Heating

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	0	18	9	0	27	2	0	0	0	2	(25)	(25)
2002	0	0	1	18	0	19	5	0	0	0	5	(14)	(38)
2003	0	0	1	20	0	21	5	0	0	0	5	(15)	(52)
2004	0	0	0	21	0	21	17	6	0	0	22	1	(51)
2005	0	0	0	23	0	23	18	6	0	0	23	0	(51)
2006	0	0	0	25	0	25	18	6	0	0	25	(1)	(52)
2007	0	0	0	27	0	27	19	6	0	0	26	(2)	(53)
2008	0	0	0	29	0	29	20	6	0	0	27	(3)	(55)
2009	0	0	0	32	0	32	22	7	0	0	28	(4)	(57)
2010	0	0	0	34	0	34	23	7	0	0	30	(5)	(60)
2011	0	0	0	37	0	37	24	7	0	0	31	(6)	(63)
2012	0	0	0	40	0	40	25	7	0	0	33	(8)	(68)
2013	0	0	0	44	0	44	27	7	0	0	34	(9)	(73)
2014	0	0	0	47	0	47	28	8	0	0	36	(11)	(78)
2015	0	0	0	51	0	51	30	8	0	0	38	(13)	(84)
2016	0	0	0	55	0	55	32	8	0	0	40	(15)	(91)
2017	0	0	0	60	0	60	33	8	0	0	42	(18)	(99)
2018	0	0	0	64	0	64	35	9	0	0	44	(20)	(107)
2019	0	0	0	70	0	70	37	9	0	0	46	(23)	(116)
2020	0	0	0	75	0	75	40	9	0	0	49	(26)	(125)
NOMINAL	0	0	20	782	0	803	461	125	0	0	586	(217)	
NPV	0	0	20	426	0	446	252	69	0	0	321	(125)	
Discount rate:				5.50%									
Benefit / Cost Ratio [col (12) / col (7)]:				0.72									

APPENDIX B.2

COMMERCIAL/INDUSTRIAL MEASURES

Input Data

PROGRAM: Updated DLC-1A

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	2.24 KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	2.43 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	219.54 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	47.13 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	57.31 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY UTILITY REBATES ARE INPUT IN III (14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM Updated DLC-1A

* Avoided Generation Unit CC-OUC
 • Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	1770	1770	1.71	1.93	1.93	1.92	1	1
2002	2360	2360	1.76	2.00	2.00	1.98	1	1
2003	3034	3034	1.81	2.06	2.06	2.04	1	1
2004	3792	3792	1.87	2.12	2.12	2.10	1	1
2005	4474	4474	1.92	2.19	2.19	2.16	1	1
2006	5081	5081	1.98	2.26	2.26	2.22	1	1
2007	5612	5612	2.04	2.33	2.33	2.29	1	1
2008	6067	6067	2.10	2.41	2.41	2.36	1	1
2009	6656	6656	2.16	2.48	2.48	2.43	1	1
2010	6749	6749	2.23	2.56	2.56	2.50	1	1
2011	6976	6976	2.30	2.64	2.64	2.58	1	1
2012	7128	7128	2.36	2.73	2.73	2.66	1	1
2013	7204	7204	2.44	2.81	2.81	2.74	1	1
2014	7204	7204	2.51	2.90	2.90	2.82	1	1
2015	7204	7204	2.58	2.99	2.99	2.90	1	1
2016	7204	7204	2.66	3.09	3.09	2.99	1	1
2017	7204	7204	2.74	3.19	3.19	3.08	1	1
2018	7204	7204	2.82	3.29	3.29	3.17	1	1
2019	7204	7204	2.91	3.39	3.39	3.27	1	1
2020	7204	7204	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004
 PLANT COSTS (2001 \$) \$372.77
 AFUDC RATE: 5.50%

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)	TEMP DATA/NOT USED BY PROGRAM	
				CT	CC
				0.0%	0.0%
				0.0%	0.0%
				0.0%	20.3%
1995	-9	0.0%	0.0%	55.3%	50.2%
1996	-8	0.0%	0.0%	44.7%	29.5%
1997	-7	0.0%	0.0%	0.0%	0.0%
1998	-6	0.0%	0.0%		
1999	-5	0.0%	0.0%	1	1
2000	-4	0.0%	0.0%		
2001	-3	0.0%	0.0%		
2002	-2	2.3%	25.0%		
2003	-1	2.3%	75.0%		
2004	0	2.3%	0.0%		

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Updated DLC-1A

* UNIT SIZE OF AVOIDED GENERATION UNIT = 9,233 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$3,730

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	248	68,747	51	146	1,460	1,442	0	463
2005	0.0685	256	68,747	52	150	1,506	1,485	0	479
2006	0.0706	263	68,747	54	155	1,554	1,529	0	496
2007	0.0727	271	68,747	55	159	1,603	1,575	0	514
2008	0.0749	279	68,747	57	164	1,654	1,623	0	532
2009	0.0771	288	68,747	59	169	1,707	1,671	0	551
2010	0.0794	296	68,747	60	174	1,761	1,721	0	570
2011	0.0818	305	68,747	62	179	1,816	1,773	0	590
2012	0.0843	314	68,747	64	185	1,874	1,826	0	611
2013	0.0868	324	68,747	66	190	1,933	1,881	0	632
2014	0.0894	333	68,747	68	196	1,995	1,937	0	655
2015	0.0921	343	68,747	70	202	2,058	1,995	0	678
2016	0.0948	354	68,747	72	208	2,123	2,055	0	702
2017	0.0977	364	68,747	74	214	2,191	2,117	0	726
2018	0.1006	375	68,747	76	221	2,260	2,181	0	752
2019	0.1036	386	68,747	79	227	2,332	2,246	0	778
2020	0.1067	398	68,747	81	234	2,405	2,313	0	805
NOMINAL		5,398	1,168,693	1,099	3,174	32,232	31,371	0	10,533
NPV		2,985		608	1,755	17,785	17,346	0	5,786

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Updated DLC-1A

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$795
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$418

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	53	25	78	28	109	137	0
2005	54	26	80	29	112	141	0
2006	56	26	82	29	115	145	0
2007	58	27	85	30	119	149	0
2008	60	28	87	31	122	154	0
2009	61	29	90	32	126	158	0
2010	63	30	93	33	130	163	0
2011	65	31	96	34	134	168	0
2012	67	31	98	35	138	173	0
2013	69	32	101	36	142	178	0
2014	71	33	104	37	146	183	0
2015	73	34	108	38	151	189	0
2016	75	35	111	40	155	195	0
2017	78	36	114	41	160	200	0
2018	80	38	118	42	164	207	0
2019	82	39	121	43	169	213	0
2020	85	40	125	45	174	219	0
NOMINAL	1,150	540	1,691	605	2,366	2,971	0
NPV	636	299	935	335	1,308	1,643	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs: Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS-GAIN
PROGRAM Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES -----							----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----										
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC CUST COSTS \$(000)	REDUCT. IN CUST KWH (000)	RED. REV - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV IN BILL \$(000)	INC. IN CUST KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	389	42	430	0	51	51	0	0	0	0	0	0	0	0	0	0	0
2002	133	100	234	0	118	118	0	0	0	0	0	0	0	0	0	0	0
2003	157	135	292	0	155	155	0	0	0	0	0	0	0	0	0	0	0
2004	0	176	176	0	196	196	0	0	0	0	0	0	0	0	0	0	0
2005	0	219	219	0	237	237	0	0	0	0	0	0	0	0	0	0	0
2006	0	261	261	0	274	274	0	0	0	0	0	0	0	0	0	0	0
2007	0	301	301	0	306	306	0	0	0	0	0	0	0	0	0	0	0
2008	0	338	338	0	335	335	0	0	0	0	0	0	0	0	0	0	0
2009	0	380	380	0	365	365	0	0	0	0	0	0	0	0	0	0	0
2010	0	412	412	0	384	384	0	0	0	0	0	0	0	0	0	0	0
2011	0	435	435	0	393	393	0	0	0	0	0	0	0	0	0	0	0
2012	0	460	460	0	404	404	0	0	0	0	0	0	0	0	0	0	0
2013	0	482	482	0	411	411	0	0	0	0	0	0	0	0	0	0	0
2014	0	499	499	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2015	0	514	514	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2016	0	529	529	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2017	0	545	545	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2018	0	561	561	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2019	0	578	578	0	413	413	0	0	0	0	0	0	0	0	0	0	0
2020	0	595	595	0	413	413	0	0	0	0	0	0	0	0	0	0	0
NOMINAL	679	7,561	8,240	0	6,518	6,518	0	0	0	0	0	0	0	0	0	0	0
NPV	656	4,122	4,778	0	3,701	3,701	0	0	0	0	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	430	0	0	430	0	0	0	0	0	(430)	(430)
2002	0	234	0	0	234	0	0	0	0	0	(234)	(652)
2003	0	292	0	0	292	0	0	0	0	0	(292)	(914)
2004	0	176	0	0	176	463	214	0	0	677	501	(487)
2005	0	219	0	0	219	479	221	0	0	700	481	(99)
2006	0	261	0	0	261	496	227	0	0	723	462	255
2007	0	301	0	0	301	514	234	0	0	748	447	579
2008	0	338	0	0	338	532	241	0	0	773	434	877
2009	0	380	0	0	380	551	248	0	0	799	419	1,150
2010	0	412	0	0	412	570	256	0	0	826	414	1,406
2011	0	435	0	0	435	590	263	0	0	854	419	1,651
2012	0	460	0	0	460	611	271	0	0	882	422	1,885
2013	0	482	0	0	482	632	280	0	0	912	430	2,112
2014	0	499	0	0	499	655	288	0	0	943	444	2,333
2015	0	514	0	0	514	678	297	0	0	974	461	2,551
2016	0	529	0	0	529	702	305	0	0	1,007	478	2,765
2017	0	545	0	0	545	726	315	0	0	1,041	496	2,975
2018	0	561	0	0	561	752	324	0	0	1,076	515	3,183
2019	0	578	0	0	578	778	334	0	0	1,112	534	3,386
2020	0	595	0	0	595	805	344	0	0	1,149	554	3,586
NOMINAL	0	8,240	0	0	8,240	10,533	4,662	0	0	15,195	6,954	
NPV	0	4,778	0	0	4,778	5,786	2,578	0	0	8,364	3,586	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 1.75

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	CUSTOMER EQUIPMENT COSTS \$(000)	CUSTOMER O & M COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	51	0	51	0	0	0	0	51	51
2002	0	0	118	0	118	0	0	0	0	118	163
2003	0	0	155	0	155	0	0	0	0	155	302
2004	0	0	196	0	196	0	0	0	0	196	468
2005	0	0	237	0	237	0	0	0	0	237	660
2006	0	0	274	0	274	0	0	0	0	274	869
2007	0	0	306	0	306	0	0	0	0	306	1,091
2008	0	0	335	0	335	0	0	0	0	335	1,321
2009	0	0	365	0	365	0	0	0	0	365	1,559
2010	0	0	384	0	384	0	0	0	0	384	1,796
2011	0	0	393	0	393	0	0	0	0	393	2,026
2012	0	0	404	0	404	0	0	0	0	404	2,251
2013	0	0	411	0	411	0	0	0	0	411	2,467
2014	0	0	413	0	413	0	0	0	0	413	2,672
2015	0	0	413	0	413	0	0	0	0	413	2,868
2016	0	0	413	0	413	0	0	0	0	413	3,053
2017	0	0	413	0	413	0	0	0	0	413	3,228
2018	0	0	413	0	413	0	0	0	0	413	3,394
2019	0	0	413	0	413	0	0	0	0	413	3,551
2020	0	0	413	0	413	0	0	0	0	413	3,701
NOMINAL	0	0	6,518	0	6,518	0	0	0	0	6,518	
NPV	0	0	3,701	0	3,701	0	0	0	0	3,701	
	In-service year of generation unit:			2004		Benefit/Cost Ratio:		1.00			
	Discount rate:			5.50%							

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Updated DLC-1A

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	430	51	0	0	481	0	0	0	0	0	(481)	(481)
2002	0	234	118	0	0	352	0	0	0	0	0	(352)	(815)
2003	0	292	155	0	0	446	0	0	0	0	0	(446)	(1,216)
2004	0	176	196	0	0	371	463	214	0	0	677	306	(955)
2005	0	219	237	0	0	456	479	221	0	0	700	244	(759)
2006	0	261	274	0	0	535	496	227	0	0	723	189	(614)
2007	0	301	306	0	0	607	514	234	0	0	748	140	(512)
2008	0	338	335	0	0	673	532	241	0	0	773	100	(444)
2009	0	380	365	0	0	744	551	248	0	0	799	55	(408)
2010	0	412	384	0	0	796	570	256	0	0	826	29	(390)
2011	0	435	393	0	0	828	590	263	0	0	854	26	(375)
2012	0	460	404	0	0	864	611	271	0	0	882	18	(365)
2013	0	482	411	0	0	892	632	280	0	0	912	20	(355)
2014	0	499	413	0	0	911	655	288	0	0	943	31	(339)
2015	0	514	413	0	0	926	678	297	0	0	974	48	(317)
2016	0	529	413	0	0	942	702	305	0	0	1,007	65	(288)
2017	0	545	413	0	0	958	726	315	0	0	1,041	83	(252)
2018	0	561	413	0	0	974	752	324	0	0	1,076	102	(211)
2019	0	578	413	0	0	991	778	334	0	0	1,112	121	(165)
2020	0	595	413	0	0	1,008	805	344	0	0	1,149	141	(114)
NOMINAL	0	8,240	6,518	0	0	14,758	10,533	4,662	0	0	15,195	437	
NPV	0	4,778	3,701	0	0	8,478	5,786	2,578	0	0	8,364	(114)	
				Discount rate:	5.50%								
				Benefit / Cost Ratio [col (12) / col (7)]:	0.99								

PROGRAM: Updated DLC-2

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.75 KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.82 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	219.54 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	31.39 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	21.49 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15).

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE-O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.959 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number 1.03

Input Data

PROGRAM: Updated DLC-2

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	498	498	1.71	1.93	1.93	1.92	1	1
2002	697	697	1.76	2.00	2.00	1.98	1	1
2003	930	930	1.81	2.06	2.06	2.04	1	1
2004	1196	1196	1.87	2.12	2.12	2.10	1	1
2005	1495	1495	1.92	2.19	2.19	2.16	1	1
2006	1761	1761	1.98	2.26	2.26	2.22	1	1
2007	1994	1994	2.04	2.33	2.33	2.29	1	1
2008	2193	2193	2.10	2.41	2.41	2.36	1	1
2009	2359	2359	2.16	2.48	2.48	2.43	1	1
2010	2592	2592	2.23	2.56	2.56	2.50	1	1
2011	2658	2658	2.30	2.64	2.64	2.58	1	1
2012	2691	2691	2.36	2.73	2.73	2.66	1	1
2013	2691	2691	2.44	2.81	2.81	2.74	1	1
2014	2691	2691	2.51	2.90	2.90	2.82	1	1
2015	2691	2691	2.58	2.99	2.99	2.90	1	1
2016	2691	2691	2.66	3.09	3.09	2.99	1	1
2017	2691	2691	2.74	3.19	3.19	3.08	1	1
2018	2691	2691	2.82	3.29	3.29	3.17	1	1
2019	2691	2691	2.91	3.39	3.39	3.27	1	1
2020	2691	2691	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)
1995	-9	0.0%	0.0%
1996	-8	0.0%	0.0%
1997	-7	0.0%	0.0%
1998	-6	0.0%	0.0%
1999	-5	0.0%	0.0%
2000	-4	0.0%	0.0%
2001	-3	0.0%	0.0%
2002	-2	2.3%	25.0%
2003	-1	2.3%	75.0%
2004	0	2.3%	0.0%

TEMP DATA/NOT USED
BY PROGRAM

CT	CC
0.0%	0.0%
0.0%	0.0%
0.0%	20.3%
55.3%	50.2%
44.7%	29.5%
0.0%	0.0%
1	1

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Updated DLC-2

* UNIT SIZE OF AVOIDED GENERATION UNIT = 975 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$394

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	26	7,260	5	15	154	152	0	49
2005	0.0685	27	7,260	5	16	159	157	0	51
2006	0.0706	28	7,260	6	16	164	162	0	52
2007	0.0727	29	7,260	6	17	169	166	0	54
2008	0.0749	29	7,260	6	17	175	171	0	56
2009	0.0771	30	7,260	6	18	180	176	0	58
2010	0.0794	31	7,260	6	18	186	182	0	60
2011	0.0818	32	7,260	7	19	192	187	0	62
2012	0.0843	33	7,260	7	20	198	193	0	65
2013	0.0868	34	7,260	7	20	204	199	0	67
2014	0.0894	35	7,260	7	21	211	205	0	69
2015	0.0921	36	7,260	7	21	217	211	0	72
2016	0.0948	37	7,260	8	22	224	217	0	74
2017	0.0977	38	7,260	8	23	231	224	0	77
2018	0.1006	40	7,260	8	23	239	230	0	79
2019	0.1036	41	7,260	8	24	246	237	0	82
2020	0.1067	42	7,260	9	25	254	244	0	85
NOMINAL		570	123,417	116	335	3,404	3,313	0	1,112
NPV		315		64	185	1,878	1,832	0	611

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS
 PROGRAM: Updated DLC-2

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$84
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$43

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	6	3	8	3	11	14	0
2005	6	3	8	3	11	14	0
2006	6	3	9	3	12	15	0
2007	6	3	9	3	12	15	0
2008	6	3	9	3	13	16	0
2009	6	3	9	3	13	16	0
2010	7	3	10	3	13	17	0
2011	7	3	10	4	14	17	0
2012	7	3	10	4	14	18	0
2013	7	3	11	4	15	18	0
2014	8	3	11	4	15	19	0
2015	8	4	11	4	15	19	0
2016	8	4	12	4	16	20	0
2017	8	4	12	4	16	21	0
2018	8	4	12	4	17	21	0
2019	9	4	13	4	17	22	0
2020	9	4	13	5	18	22	0
NOMINAL	121	55	177	62	243	305	0
NPV	67	31	98	34	134	169	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs: Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC CUST O & M COSTS \$(000)	TOTAL PARTIC CUST COSTS \$(000)	REDUCT IN CUST KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT REV REDUCT IN BILL \$(000)	INC IN CUST KWH (000)	INC. REV - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	109	8	117	0	5	5	0	0	0	0	0	0	0	0	0	0	0
2002	45	19	64	0	13	13	0	0	0	0	0	0	0	0	0	0	0
2003	54	27	81	0	17	17	0	0	0	0	0	0	0	0	0	0	0
2004	0	36	36	0	23	23	0	0	0	0	0	0	0	0	0	0	0
2005	0	48	48	0	29	29	0	0	0	0	0	0	0	0	0	0	0
2006	0	59	59	0	35	35	0	0	0	0	0	0	0	0	0	0	0
2007	0	70	70	0	40	40	0	0	0	0	0	0	0	0	0	0	0
2008	0	81	81	0	45	45	0	0	0	0	0	0	0	0	0	0	0
2009	0	90	90	0	49	49	0	0	0	0	0	0	0	0	0	0	0
2010	0	101	101	0	53	53	0	0	0	0	0	0	0	0	0	0	0
2011	0	111	111	0	56	56	0	0	0	0	0	0	0	0	0	0	0
2012	0	116	116	0	57	57	0	0	0	0	0	0	0	0	0	0	0
2013	0	120	120	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2014	0	124	124	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2015	0	128	128	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2016	0	132	132	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2017	0	136	136	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2018	0	140	140	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2019	0	144	144	0	58	58	0	0	0	0	0	0	0	0	0	0	0
2020	0	148	148	0	58	58	0	0	0	0	0	0	0	0	0	0	0
NOMINAL	209	1,838	2,047	0	887	887	0	0	0	0	0	0	0	0	0	0	0
NPV	201	989	1,190	0	496	496	0	0	0	0	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Updated DLC-2

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	117	0	0	117	0	0	0	0	0	(117)	(117)
2002	0	64	0	0	64	0	0	0	0	0	(64)	(178)
2003	0	81	0	0	81	0	0	0	0	0	(81)	(251)
2004	0	36	0	0	36	49	22	0	0	71	35	(222)
2005	0	48	0	0	48	51	23	0	0	73	26	(201)
2006	0	59	0	0	59	52	23	0	0	76	17	(188)
2007	0	70	0	0	70	54	24	0	0	78	8	(182)
2008	0	81	0	0	81	56	25	0	0	81	0	(182)
2009	0	90	0	0	90	58	26	0	0	84	(7)	(186)
2010	0	101	0	0	101	60	26	0	0	87	(15)	(196)
2011	0	111	0	0	111	62	27	0	0	90	(21)	(208)
2012	0	116	0	0	116	65	28	0	0	93	(24)	(221)
2013	0	120	0	0	120	67	29	0	0	96	(25)	(234)
2014	0	124	0	0	124	69	30	0	0	99	(25)	(247)
2015	0	128	0	0	128	72	31	0	0	102	(26)	(259)
2016	0	132	0	0	132	74	32	0	0	106	(26)	(270)
2017	0	136	0	0	136	77	33	0	0	109	(26)	(281)
2018	0	140	0	0	140	79	33	0	0	113	(27)	(292)
2019	0	144	0	0	144	82	34	0	0	117	(27)	(303)
2020	0	148	0	0	148	85	36	0	0	121	(28)	(313)
NOMINAL	0	2,047	0	0	2,047	1,112	482	0	0	1,594	(453)	
NPV	0	1,190	0	0	1,190	611	266	0	0	877	(313)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.74

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Updated DLC-2

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	5	0	5	0	0	0	0	5	5
2002	0	0	13	0	13	0	0	0	0	13	18
2003	0	0	17	0	17	0	0	0	0	17	33
2004	0	0	23	0	23	0	0	0	0	23	53
2005	0	0	29	0	29	0	0	0	0	29	76
2006	0	0	35	0	35	0	0	0	0	35	103
2007	0	0	40	0	40	0	0	0	0	40	132
2008	0	0	45	0	45	0	0	0	0	45	163
2009	0	0	49	0	49	0	0	0	0	49	195
2010	0	0	53	0	53	0	0	0	0	53	228
2011	0	0	56	0	56	0	0	0	0	56	261
2012	0	0	57	0	57	0	0	0	0	57	293
2013	0	0	58	0	58	0	0	0	0	58	323
2014	0	0	58	0	58	0	0	0	0	58	352
2015	0	0	58	0	58	0	0	0	0	58	379
2016	0	0	58	0	58	0	0	0	0	58	405
2017	0	0	58	0	58	0	0	0	0	58	430
2018	0	0	58	0	58	0	0	0	0	58	453
2019	0	0	58	0	58	0	0	0	0	58	475
2020	0	0	58	0	58	0	0	0	0	58	496

NOMINAL	0	0	887	0	887	0	0	0	0	887
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NPV	0	0	496	0	496	0	0	0	0	496
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In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.00

PROGRAM: Comm Energy Survey

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	5.50 KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	5.98 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	3,563.8 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	3,350.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	5.46 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	25.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	3,000.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III.(1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15)

IV. AVOIDED GENERATOR, TRANS AND DIST COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.450 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	6.90 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Comm Energy Survey

* Avoided Generation Unit: CC-OUC
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	367	367	1.71	1.93	1.93	1.92	1	1
2002	440	440	1.76	2.00	2.00	1.98	1	1
2003	513	513	1.81	2.06	2.06	2.04	1	1
2004	587	587	1.87	2.12	2.12	2.10	1	1
2005	660	660	1.92	2.19	2.19	2.16	1	1
2006	733	733	1.98	2.26	2.26	2.22	1	1
2007	807	807	2.04	2.33	2.33	2.29	1	1
2008	880	880	2.10	2.41	2.41	2.36	1	1
2009	953	953	2.16	2.48	2.48	2.43	1	1
2010	1026	1026	2.23	2.56	2.56	2.50	1	1
2011	1100	1100	2.30	2.64	2.64	2.58	1	1
2012	1173	1173	2.36	2.73	2.73	2.66	1	1
2013	1246	1246	2.44	2.81	2.81	2.74	1	1
2014	1320	1320	2.51	2.90	2.90	2.82	1	1
2015	1320	1320	2.58	2.99	2.99	2.90	1	1
2016	1320	1320	2.66	3.09	3.09	2.99	1	1
2017	1320	1320	2.74	3.19	3.19	3.08	1	1
2018	1320	1320	2.82	3.29	3.29	3.17	1	1
2019	1320	1320	2.91	3.39	3.39	3.27	1	1
2020	1320	1320	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

FLORIDA POWER & LIGHT MEASURE

APPENDIX B.3

PROGRAM: OPBC

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.00	KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.09	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0	%
(6) GROUP LINE LOSS MULTIPLIER	1.0034	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20	YEARS
(2) GENERATOR ECONOMIC LIFE	25	YEARS
(3) T & D ECONOMIC LIFE	25	YEARS
(4) K FACTOR FOR GENERATION	1.27	
(5) K FACTOR FOR T & D	1.27	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	66.84	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0	%
(4) CUSTOMER EQUIPMENT COST	258.86	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	0.0	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	5.50	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00	\$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00	\$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL. RATE	0.0	%

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001	
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004	
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004	
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684	\$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243	\$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28076	\$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3	%
(8) GENERATOR FIXED O & M COST	5.007448	\$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3	%
(10) TRANSMISSION FIXED O & M COST	3.07661	\$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042	\$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3	%
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145	CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3	%
(15) GENERATOR CAPACITY FACTOR	85	%
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917	CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17	%
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0	\$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3	%

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.446	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	6.90	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: OPBC

• Avoided Generation Unit CC-OUC
 • Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	2	2	1.71	1.93	1.93	1.92	1	1
2002	2	2	1.76	2.00	2.00	1.98	1	1
2003	2	2	1.81	2.06	2.06	2.04	1	1
2004	3	3	1.87	2.12	2.12	2.10	1	1
2005	3	3	1.92	2.19	2.19	2.16	1	1
2006	3	3	1.98	2.26	2.26	2.22	1	1
2007	4	4	2.04	2.33	2.33	2.29	1	1
2008	4	4	2.10	2.41	2.41	2.36	1	1
2009	5	5	2.16	2.48	2.48	2.43	1	1
2010	6	6	2.23	2.56	2.56	2.50	1	1
2011	7	7	2.30	2.64	2.64	2.58	1	1
2012	8	8	2.36	2.73	2.73	2.66	1	1
2013	9	9	2.44	2.81	2.81	2.74	1	1
2014	10	10	2.51	2.90	2.90	2.82	1	1
2015	11	11	2.58	2.99	2.99	2.90	1	1
2016	13	13	2.66	3.09	3.09	2.99	1	1
2017	15	15	2.74	3.19	3.19	3.08	1	1
2018	17	17	2.82	3.29	3.29	3.17	1	1
2019	20	20	2.91	3.39	3.39	3.27	1	1
2020	22	22	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)
		RATE (%)		
1995	-9	0.0%		0.0%
1996	-8	0.0%		0.0%
1997	-7	0.0%		0.0%
1998	-6	0.0%		0.0%
1999	-5	0.0%		0.0%
2000	-4	0.0%		0.0%
2001	-3	0.0%		0.0%
2002	-2	2.3%		25.0%
2003	-1	2.3%		75.0%
2004	0	2.3%		0.0%

TEMP DATA/NOT USED
BY PROGRAM

CT	CC
0.0%	0.0%
0.0%	0.0%
0.0%	20.3%
55.3%	50.2%
44.7%	29.5%
0.0%	0.0%
1	1

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: OPBC

* UNIT SIZE OF AVOIDED GENERATION UNIT = 3 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$1

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	0	24	0	0	1	1	0	0
2005	0.0685	0	24	0	0	1	1	0	0
2006	0.0706	0	24	0	0	1	1	0	0
2007	0.0727	0	24	0	0	1	1	0	0
2008	0.0749	0	24	0	0	1	1	0	0
2009	0.0771	0	24	0	0	1	1	0	0
2010	0.0794	0	24	0	0	1	1	0	0
2011	0.0818	0	24	0	0	1	1	0	0
2012	0.0843	0	24	0	0	1	1	0	0
2013	0.0868	0	24	0	0	1	1	0	0
2014	0.0894	0	24	0	0	1	1	0	0
2015	0.0921	0	24	0	0	1	1	0	0
2016	0.0948	0	24	0	0	1	1	0	0
2017	0.0977	0	24	0	0	1	1	0	0
2018	0.1006	0	24	0	0	1	1	0	0
2019	0.1036	0	24	0	0	1	1	0	0
2020	0.1067	0	24	0	0	1	1	0	0
NOMINAL		2	413	0	1	11	11	0	4
NPV		1		0	1	6	6	0	2

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: OPBC

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0

* INSERVICE COSTS OF AVOIDED DIST. (000) = \$0

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0
NOMINAL	0	0	1	0	1	1	0
NPV	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs: Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES ----->							<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->										
YEAR	UTIL NONREC. COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT IN CUST KWH (000)	RED REV. - FUEL PORTION \$(000)	RED REV NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC IN CUST KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2016	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0
2017	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0
2018	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0
2019	0	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0
2020	0	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0
NOMINAL	0	0	0	0	0	0	8	0	8	0	0	13	13	0	0	0	0
NPV	0	0	0	0	0	0	4	0	4	0	0	6	6	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	1	0	1	0	0	0	0	0	(1)	(1)
2002	0	0	0	0	0	0	0	0	0	0	0	(1)
2003	0	0	0	0	0	0	0	0	0	0	0	(1)
2004	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2005	0	0	0	0	0	0	0	0	0	0	0	(1)
2006	0	0	0	0	0	0	0	0	0	0	0	(0)
2007	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2008	0	0	0	0	0	0	0	0	0	0	0	(0)
2009	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2010	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2011	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2012	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2013	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2014	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2015	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2016	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2017	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2018	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2019	0	0	1	0	1	0	0	0	0	0	(1)	(1)
2020	0	0	1	0	1	0	0	0	0	0	(1)	(2)
NOMINAL	0	0	8	0	8	4	1	0	0	5	(3)	
NPV	0	0	4	0	4	2	1	0	0	3	(2)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.65

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
YEAR	SAVINGS IN PARTICIPANTS BILL \$(000)	TAX CREDITS \$(000)	UTILITY REBATES \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	CUSTOMER EQUIPMENT COSTS \$(000)	CUSTOMER O & M COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	0	0	0	1	0	0	1	(0)	(0)
2002	0	0	0	0	0	0	0	0	0	0	(0)
2003	0	0	0	0	0	0	0	0	0	0	(0)
2004	0	0	0	0	0	0	0	0	0	(0)	(0)
2005	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	(0)	0
2008	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	1
2011	1	0	0	0	1	0	0	0	0	0	1
2012	1	0	0	0	1	0	0	0	0	0	1
2013	1	0	0	0	1	0	0	0	0	0	1
2014	1	0	0	0	1	0	0	0	0	0	1
2015	1	0	0	0	1	0	0	0	0	0	1
2016	1	0	0	0	1	1	0	0	1	0	1
2017	1	0	0	0	1	1	0	0	1	0	2
2018	1	0	0	0	1	1	0	0	1	0	2
2019	2	0	0	0	2	1	0	0	1	0	2
2020	2	0	0	0	2	1	0	0	1	1	2
NOMINAL	13	0	0	0	13	8	0	0	8	4	
NPV	6	0	0	0	6	4	0	0	4	2	

In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.51

Rate Impact Test

RATE IMPACT TEST
PROGRAM: OPBC

YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE NET BENEFIT \$(000)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2001	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2002	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2003	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2004	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2005	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2006	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2007	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2008	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2009	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2010	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2011	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2012	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2013	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2014	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2015	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2016	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2017	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2018	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2019	0	0	0	0	0	0	0	0	0	0	0	0	(0)
2020	0	0	0	0	0	0	0	0	0	0	0	0	(0)
NOMINAL	0	0	0	0	0	13	4	1	0	0	5	0	(8)
NPV	0	0	0	0	6	7	2	1	0	0	3	0	(4)

Discount rate: 5.50%
Benefit / Cost Ratio [col (12) / col (7)]: 0.43

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)
1995	-9	0.0%	0.0%
1996	-8	0.0%	0.0%
1997	-7	0.0%	0.0%
1998	-6	0.0%	0.0%
1999	-5	0.0%	0.0%
2000	-4	0.0%	0.0%
2001	-3	0.0%	0.0%
2002	-2	2.3%	25.0%
2003	-1	2.3%	75.0%
2004	0	2.3%	0.0%

TEMP DATA/NOT USED
BY PROGRAM

CT	CC
0.0%	0.0%
0.0%	0.0%
0.0%	20.3%
55.3%	50.2%
44.7%	29.5%
0.0%	0.0%
1	1

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Comm. Energy Survey

* UNIT SIZE OF AVOIDED GENERATION UNIT = 3,509 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$1,418

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	94	26,130	19	55	555	548	0	176
2005	0.0685	97	26,130	20	57	573	564	0	182
2006	0.0706	100	26,130	20	59	591	581	0	189
2007	0.0727	103	26,130	21	61	609	599	0	195
2008	0.0749	106	26,130	22	62	629	617	0	202
2009	0.0771	109	26,130	22	64	649	635	0	209
2010	0.0794	113	26,130	23	66	669	654	0	217
2011	0.0818	116	26,130	24	68	690	674	0	224
2012	0.0843	119	26,130	24	70	712	694	0	232
2013	0.0868	123	26,130	25	72	735	715	0	240
2014	0.0894	127	26,130	26	74	758	736	0	249
2015	0.0921	131	26,130	27	77	782	758	0	258
2016	0.0948	134	26,130	27	79	807	781	0	267
2017	0.0977	138	26,130	28	81	833	805	0	276
2018	0.1006	143	26,130	29	84	859	829	0	286
2019	0.1036	147	26,130	30	86	886	854	0	296
2020	0.1067	151	26,130	31	89	914	879	0	306
NOMINAL		2,052	444,207	418	1,206	12,251	11,924	0	4,003
NPV		1,135		231	667	6,760	6,593	0	2,199

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Comm. Cooling

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$55

* INSERVICE COSTS OF AVOIDED DIST. (000) = \$32

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	14
2002	0	0	0	0	0	0	33
2003	0	0	0	0	0	0	40
2004	4	2	6	2	8	10	48
2005	4	2	6	2	8	11	56
2006	4	2	6	2	9	11	64
2007	4	2	6	2	9	11	73
2008	4	2	6	2	9	12	83
2009	4	2	6	2	10	12	93
2010	4	2	7	3	10	12	103
2011	4	2	7	3	10	13	114
2012	5	2	7	3	10	13	126
2013	5	2	7	3	11	13	139
2014	5	3	7	3	11	14	152
2015	5	3	8	3	11	14	161
2016	5	3	8	3	12	15	166
2017	5	3	8	3	12	15	171
2018	6	3	8	3	12	16	177
2019	6	3	9	3	13	16	183
2020	6	3	9	3	13	17	188
NOMINAL	80	41	120	46	179	224	2,184
NPV	44	23	67	25	99	124	1,168

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
 PROGRAM: Comm. Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	748	14	0	0	14	14
2002	1,645	33	0	0	33	33
2003	1,942	40	0	0	40	40
2004	2,242	48	0	0	48	48
2005	2,542	56	0	0	56	56
2006	2,839	64	0	0	64	64
2007	3,139	73	0	0	73	73
2008	3,439	83	0	0	83	83
2009	3,736	93	0	0	93	93
2010	4,034	103	0	0	103	103
2011	4,333	114	0	0	114	114
2012	4,633	126	0	0	126	126
2013	4,931	139	0	0	139	139
2014	5,230	152	0	0	152	152
2015	5,381	161	0	0	161	161
2016	5,381	166	0	0	166	166
2017	5,381	171	0	0	171	171
2018	5,381	177	0	0	177	177
2019	5,381	183	0	0	183	183
2020	5,381	188	0	0	188	188
NOMINAL	77,720	2,184	0	0	2,184	2,184
NPV		1,168	0	0	1,168	1,168

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM Comm. Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
----- UTILITY PROGRAM COSTS & REBATES -----							----- PARTICIPATING CUSTOMER COSTS & BENEFITS -----										
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC CUST COSTS \$(000)	REDUCT IN CUST KWH (000)	RED REV - FUEL PORTION \$(000)	RED REV NONFUEL PORTION \$(000)	EFFECT. REV REDUCT IN BILL \$(000)	INC IN CUST KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC. IN BILL \$(000)
2001	2	12	14	37	0	37	0	0	0	703	12	54	66	0	0	0	0
2002	0	27	27	7	0	7	0	0	0	1,546	27	120	147	0	0	0	0
2003	0	33	33	7	0	7	0	0	0	1,826	33	145	178	0	0	0	0
2004	0	39	39	0	0	0	0	0	0	2,108	39	171	210	0	0	0	0
2005	0	45	45	0	0	0	0	0	0	2,389	46	198	244	0	0	0	0
2006	0	52	52	0	0	0	0	0	0	2,669	53	226	279	0	0	0	0
2007	0	59	59	0	0	0	0	0	0	2,951	60	256	316	0	0	0	0
2008	0	67	67	0	0	0	0	0	0	3,232	68	286	355	0	0	0	0
2009	0	75	75	0	0	0	0	0	0	3,512	76	318	395	0	0	0	0
2010	0	83	83	0	0	0	0	0	0	3,792	85	351	436	0	0	0	0
2011	0	92	92	0	0	0	0	0	0	4,073	94	386	480	0	0	0	0
2012	0	102	102	0	0	0	0	0	0	4,355	103	423	526	0	0	0	0
2013	0	112	112	0	0	0	0	0	0	4,635	113	460	573	0	0	0	0
2014	0	122	122	0	0	0	0	0	0	4,916	124	500	623	0	0	0	0
2015	0	129	129	0	0	0	0	0	0	5,058	131	526	657	0	0	0	0
2016	0	133	133	0	0	0	0	0	0	5,058	135	539	674	0	0	0	0
2017	0	137	137	0	0	0	0	0	0	5,058	139	552	691	0	0	0	0
2018	0	141	141	0	0	0	0	0	0	5,058	143	565	708	0	0	0	0
2019	0	145	145	0	0	0	0	0	0	5,058	148	579	726	0	0	0	0
2020	0	150	150	0	0	0	0	0	0	5,058	152	593	745	0	0	0	0
NOMINAL	3	1,756	1,758	51	0	51	0	0	0	73,057	1,783	7,247	9,030	0	0	0	0
NPV	3	941	944	50	0	50	0	0	0		956	3,921	4,877		0	0	0

• SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS

PROGRAM: Comm. Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	14	0	0	14	0	0	14	0	14	1	1
2002	0	27	0	0	27	0	0	33	0	33	6	6
2003	0	33	0	0	33	0	0	40	0	40	7	12
2004	0	39	0	0	39	32	16	48	0	95	57	60
2005	0	45	0	0	45	33	16	56	0	105	60	108
2006	0	52	0	0	52	34	17	64	0	115	63	157
2007	0	59	0	0	59	35	17	73	0	126	67	205
2008	0	67	0	0	67	37	18	83	0	137	70	253
2009	0	75	0	0	75	38	18	93	0	149	74	301
2010	0	83	0	0	83	39	19	103	0	162	78	350
2011	0	92	0	0	92	41	19	114	0	175	82	398
2012	0	102	0	0	102	42	20	126	0	189	87	446
2013	0	112	0	0	112	44	21	139	0	203	92	494
2014	0	122	0	0	122	45	21	152	0	218	96	542
2015	0	129	0	0	129	47	22	161	0	230	101	590
2016	0	133	0	0	133	48	23	166	0	237	104	637
2017	0	137	0	0	137	50	23	171	0	245	108	682
2018	0	141	0	0	141	52	24	177	0	253	112	727
2019	0	145	0	0	145	54	25	183	0	261	116	772
2020	0	150	0	0	150	56	25	188	0	269	120	815
NOMINAL	0	1,758	0	0	1,758	728	345	2,184	0	3,257	1,498	
NPV	0	944	0	0	944	400	191	1,168	0	1,759	815	

Discount Rate: 5.50%

Benefit/Cost Ratio [col (11) / col (6)]: 1.86

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Comm. Cooling

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	14	37	66	0	116	14	0	0	0	14	(102)	(102)
2002	0	27	7	147	0	182	33	0	0	0	33	(149)	(243)
2003	0	33	7	178	0	219	40	0	0	0	40	(179)	(404)
2004	0	39	0	210	0	249	80	16	0	0	95	(154)	(535)
2005	0	45	0	244	0	290	89	16	0	0	105	(184)	(684)
2006	0	52	0	279	0	331	98	17	0	0	115	(216)	(849)
2007	0	59	0	316	0	376	109	17	0	0	126	(250)	(1,030)
2008	0	67	0	355	0	422	119	18	0	0	137	(284)	(1,225)
2009	0	75	0	395	0	470	131	18	0	0	149	(320)	(1,434)
2010	0	83	0	436	0	520	143	19	0	0	162	(358)	(1,656)
2011	0	92	0	480	0	572	155	19	0	0	175	(398)	(1,888)
2012	0	102	0	526	0	628	169	20	0	0	189	(439)	(2,132)
2013	0	112	0	573	0	685	182	21	0	0	203	(482)	(2,385)
2014	0	122	0	623	0	745	197	21	0	0	218	(527)	(2,648)
2015	0	129	0	657	0	786	208	22	0	0	230	(557)	(2,911)
2016	0	133	0	674	0	807	215	23	0	0	237	(569)	(3,166)
2017	0	137	0	691	0	828	222	23	0	0	245	(583)	(3,414)
2018	0	141	0	708	0	849	229	24	0	0	253	(596)	(3,654)
2019	0	145	0	726	0	871	236	25	0	0	261	(610)	(3,887)
2020	0	150	0	745	0	894	244	25	0	0	269	(625)	(4,113)
NOMINAL	0	1,758	51	9,030	0	10,840	2,912	345	0	0	3,257	(7,583)	
NPV	0	944	50	4,877	0	5,871	1,568	191	0	0	1,759	(4,113)	

Discount rate: 5.50%
Benefit / Cost Ratio [col (12) / col (7)]: 0.30

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Comm. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	654	13	0	0	13	13
2002	1,438	29	0	0	29	29
2003	1,698	35	0	0	35	35
2004	1,960	42	0	0	42	42
2005	2,222	49	0	0	49	49
2006	2,482	56	0	0	56	56
2007	2,744	64	0	0	64	64
2008	3,006	72	0	0	72	72
2009	3,266	81	0	0	81	81
2010	3,526	90	0	0	90	90
2011	3,788	100	0	0	100	100
2012	4,050	110	0	0	110	110
2013	4,310	121	0	0	121	121
2014	4,572	133	0	0	133	133
2015	4,704	141	0	0	141	141
2016	4,704	145	0	0	145	145
2017	4,704	150	0	0	150	150
2018	4,704	155	0	0	155	155
2019	4,704	160	0	0	160	160
2020	4,704	165	0	0	165	165
NOMINAL	67,944	1,910	0	0	1,910	1,910
NPV		1,021	0	0	1,021	1,021

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

• WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM Comm. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
UTILITY PROGRAM COSTS & REBATES							PARTICIPATING CUSTOMER COSTS & BENEFITS										
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT. COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT IN CUST. KWH (000)	RED. REV. - FUEL PORTION \$(000)	RED. REV. NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT IN BILL \$(000)	INC. IN CUST. KWH (000)	INC REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT REVENUE INC. IN BILL \$(000)
2001	2	5	7	1,101	0	1,101	0	0	0	615	11	117	128	0	0	0	0
2002	0	10	11	219	0	219	0	0	0	1,352	24	260	283	0	0	0	0
2003	0	13	13	219	0	219	0	0	0	1,596	29	309	338	0	0	0	0
2004	0	15	15	0	0	0	0	0	0	1,843	35	360	395	0	0	0	0
2005	0	18	18	0	0	0	0	0	0	2,089	40	412	452	0	0	0	0
2006	0	20	20	0	0	0	0	0	0	2,333	46	464	511	0	0	0	0
2007	0	23	23	0	0	0	0	0	0	2,580	53	518	571	0	0	0	0
2008	0	26	26	0	0	0	0	0	0	2,826	60	573	633	0	0	0	0
2009	0	29	29	0	0	0	0	0	0	3,070	67	629	696	0	0	0	0
2010	0	32	32	0	0	0	0	0	0	3,315	74	686	760	0	0	0	0
2011	0	36	36	0	0	0	0	0	0	3,561	82	745	827	0	0	0	0
2012	0	39	39	0	0	0	0	0	0	3,807	90	804	895	0	0	0	0
2013	0	43	43	0	0	0	0	0	0	4,052	99	865	964	0	0	0	0
2014	0	47	47	0	0	0	0	0	0	4,298	108	928	1,036	0	0	0	0
2015	0	50	50	0	0	0	0	0	0	4,422	115	965	1,080	0	0	0	0
2016	0	51	51	0	0	0	0	0	0	4,422	118	976	1,094	0	0	0	0
2017	0	53	53	0	0	0	0	0	0	4,422	122	987	1,109	0	0	0	0
2018	0	55	55	0	0	0	0	0	0	4,422	125	999	1,124	0	0	0	0
2019	0	56	56	0	0	0	0	0	0	4,422	129	1,011	1,140	0	0	0	0
2020	0	58	58	0	0	0	0	0	0	4,422	133	1,023	1,156	0	0	0	0
NOMINAL	3	679	682	1,539	0	1,539	0	0	0	63,868	1,559	13,633	15,192	0	0	0	0
NPV	3	364	367	1,505	0	1,505	0	0	0		836	7,509	8,345		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: Comm. Energy Survey

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	7	0	0	7	0	0	13	0	13	6	6
2002	0	11	0	0	11	0	0	29	0	29	18	23
2003	0	13	0	0	13	0	0	35	0	35	22	43
2004	0	15	0	0	15	176	87	42	0	305	290	289
2005	0	18	0	0	18	182	90	49	0	321	303	534
2006	0	20	0	0	20	189	92	56	0	337	317	776
2007	0	23	0	0	23	195	95	64	0	354	331	1,017
2008	0	26	0	0	26	202	98	72	0	372	347	1,255
2009	0	29	0	0	29	209	101	81	0	391	362	1,491
2010	0	32	0	0	32	217	104	90	0	411	379	1,725
2011	0	36	0	0	36	224	107	100	0	431	396	1,957
2012	0	39	0	0	39	232	110	110	0	453	414	2,186
2013	0	43	0	0	43	240	114	121	0	475	432	2,413
2014	0	47	0	0	47	249	117	133	0	499	451	2,638
2015	0	50	0	0	50	258	121	141	0	519	469	2,860
2016	0	51	0	0	51	267	124	145	0	536	485	3,077
2017	0	53	0	0	53	276	128	150	0	554	501	3,290
2018	0	55	0	0	55	286	132	155	0	572	518	3,498
2019	0	56	0	0	56	296	136	160	0	591	535	3,702
2020	0	58	0	0	58	306	140	165	0	610	553	3,902
NOMINAL	0	682	0	0	682	4,003	1,895	1,910	0	7,808	7,127	
NPV	0	367	0	0	367	2,199	1,048	1,021	0	4,269	3,902	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 11.64

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Comm. Energy Survey

YEAR	SAVINGS IN PARTICIPANTS		TAX CREDITS		UTILITY REBATES		OTHER BENEFITS		TOTAL BENEFITS		CUMULATIVE DISCOUNTED NET BENEFITS	COSTS	OTHER COSTS	TOTAL COSTS	NET BENEFITS	NPV	NOMINAL
	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)							
2001	128	0	1,101	0	1,229	0	0	0	0	0	1,229	0	0	0	0	0	16,731
2002	283	0	219	0	502	0	0	0	0	0	502	0	0	0	0	0	16,731
2003	338	0	219	0	557	0	0	0	0	0	557	0	0	0	0	0	9,850
2004	395	0	0	0	395	0	0	0	0	0	395	0	0	0	0	0	9,850
2005	452	0	0	0	452	0	0	0	0	0	452	0	0	0	0	0	9,850
2006	511	0	0	0	511	0	0	0	0	0	511	0	0	0	0	0	9,850
2007	571	0	0	0	571	0	0	0	0	0	571	0	0	0	0	0	9,850
2008	633	0	0	0	633	0	0	0	0	0	633	0	0	0	0	0	9,850
2009	696	0	0	0	696	0	0	0	0	0	696	0	0	0	0	0	9,850
2010	760	0	0	0	760	0	0	0	0	0	760	0	0	0	0	0	9,850
2011	827	0	0	0	827	0	0	0	0	0	827	0	0	0	0	0	9,850
2012	895	0	0	0	895	0	0	0	0	0	895	0	0	0	0	0	9,850
2013	964	0	0	0	964	0	0	0	0	0	964	0	0	0	0	0	9,850
2014	1,036	0	0	0	1,036	0	0	0	0	0	1,036	0	0	0	0	0	9,850
2015	1,080	0	0	0	1,080	0	0	0	0	0	1,080	0	0	0	0	0	9,850
2016	1,094	0	0	0	1,094	0	0	0	0	0	1,094	0	0	0	0	0	9,850
2017	1,109	0	0	0	1,109	0	0	0	0	0	1,109	0	0	0	0	0	9,850
2018	1,124	0	0	0	1,124	0	0	0	0	0	1,124	0	0	0	0	0	9,850
2019	1,140	0	0	0	1,140	0	0	0	0	0	1,140	0	0	0	0	0	9,850
2020	1,156	0	0	0	1,156	0	0	0	0	0	1,156	0	0	0	0	0	9,850
TOTAL	15,192	0	1,539	0	16,731	0	0	0	0	0	16,731	0	0	0	0	0	9,850
																	1.00

In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.00

Input Data

PROGRAM: Comm Lighting

I PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.90 KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.98 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,063.8 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,000.0 KWH/CUST/YR

II ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	26.31 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	33.95 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	1,592.06 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	90.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL. RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15)

IV AVOIDED GENERATOR, TRANS AND DIST COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.450 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	6.90 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Comm Lighting

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	367	367	1.71	1.93	1.93	1.92	1	1
2002	440	440	1.76	2.00	2.00	1.98	1	1
2003	513	513	1.81	2.06	2.06	2.04	1	1
2004	587	587	1.87	2.12	2.12	2.10	1	1
2005	660	660	1.92	2.19	2.19	2.16	1	1
2006	733	733	1.98	2.26	2.26	2.22	1	1
2007	807	807	2.04	2.33	2.33	2.29	1	1
2008	880	880	2.10	2.41	2.41	2.36	1	1
2009	953	953	2.16	2.48	2.48	2.43	1	1
2010	1026	1026	2.23	2.56	2.56	2.50	1	1
2011	1100	1100	2.30	2.64	2.64	2.58	1	1
2012	1173	1173	2.36	2.73	2.73	2.66	1	1
2013	1246	1246	2.44	2.81	2.81	2.74	1	1
2014	1320	1320	2.51	2.90	2.90	2.82	1	1
2015	1320	1320	2.58	2.99	2.99	2.90	1	1
2016	1320	1320	2.66	3.09	3.09	2.99	1	1
2017	1320	1320	2.74	3.19	3.19	3.08	1	1
2018	1320	1320	2.82	3.29	3.29	3.17	1	1
2019	1320	1320	2.91	3.39	3.39	3.27	1	1
2020	1320	1320	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION		YEARLY EXPENDITURE (%)
		RATE (%)		
1995	-9	0.0%		0.0%
1996	-8	0.0%		0.0%
1997	-7	0.0%		0.0%
1998	-6	0.0%		0.0%
1999	-5	0.0%		0.0%
2000	-4	0.0%		0.0%
2001	-3	0.0%		0.0%
2002	-2	2.3%		25.0%
2003	-1	2.3%		75.0%
2004	0	2.3%		0.0%

TEMP DATA/NOT USED

BY PROGRAM

CT	CC
0.0%	0.0%
0.0%	0.0%
0.0%	20.3%
55.3%	50.2%
44.7%	29.5%
0.0%	0.0%
1	1

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Comm. Lighting

* UNIT SIZE OF AVOIDED GENERATION UNIT = 574 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$232

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL UNIT KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	15	4,276	3	9	91	90	0	29
2005	0.0685	16	4,276	3	9	94	92	0	30
2006	0.0706	16	4,276	3	10	97	95	0	31
2007	0.0727	17	4,276	3	10	100	98	0	32
2008	0.0749	17	4,276	4	10	103	101	0	33
2009	0.0771	18	4,276	4	11	106	104	0	34
2010	0.0794	18	4,276	4	11	110	107	0	35
2011	0.0818	19	4,276	4	11	113	110	0	37
2012	0.0843	20	4,276	4	11	117	114	0	38
2013	0.0868	20	4,276	4	12	120	117	0	39
2014	0.0894	21	4,276	4	12	124	120	0	41
2015	0.0921	21	4,276	4	13	128	124	0	42
2016	0.0948	22	4,276	4	13	132	128	0	44
2017	0.0977	23	4,276	5	13	136	132	0	45
2018	0.1006	23	4,276	5	14	141	136	0	47
2019	0.1036	24	4,276	5	14	145	140	0	48
2020	0.1067	25	4,276	5	15	150	144	0	50
NOMINAL		336	72,688	68	197	2,005	1,951	0	655
NPV		186		38	109	1,106	1,079	0	360

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Comm. Lighting

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$49
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$28

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	AVOIDED TRANSMISSION CAPACITY COST \$(000)	AVOIDED TRANSMISSION O&M COST (000)	TOTAL AVOIDED TRANSMISSION COST \$(000)	AVOIDED DISTRIBUTION CAPACITY COST \$(000)	AVOIDED DISTRIBUTION O&M COST \$(000)	TOTAL AVOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	4
2002	0	0	0	0	0	0	9
2003	0	0	0	0	0	0	10
2004	3	2	5	2	7	9	12
2005	3	2	5	2	8	10	15
2006	3	2	5	2	8	10	17
2007	4	2	5	2	8	10	19
2008	4	2	6	2	8	10	22
2009	4	2	6	2	9	11	24
2010	4	2	6	2	9	11	27
2011	4	2	6	2	9	11	30
2012	4	2	6	2	9	12	33
2013	4	2	6	2	10	12	36
2014	4	2	7	3	10	12	40
2015	5	2	7	3	10	13	42
2016	5	2	7	3	11	13	43
2017	5	2	7	3	11	14	45
2018	5	3	8	3	11	14	46
2019	5	3	8	3	12	14	48
2020	5	3	8	3	12	15	49
NOMINAL	72	37	108	41	161	202	570
NPV	40	20	60	23	89	112	305

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Comm. Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	195	4	0	0	4	4
2002	429	9	0	0	9	9
2003	507	10	0	0	10	10
2004	585	12	0	0	12	12
2005	663	15	0	0	15	15
2006	741	17	0	0	17	17
2007	819	19	0	0	19	19
2008	897	22	0	0	22	22
2009	975	24	0	0	24	24
2010	1,053	27	0	0	27	27
2011	1,131	30	0	0	30	30
2012	1,209	33	0	0	33	33
2013	1,287	36	0	0	36	36
2014	1,365	40	0	0	40	40
2015	1,404	42	0	0	42	42
2016	1,404	43	0	0	43	43
2017	1,404	45	0	0	45	45
2018	1,404	46	0	0	46	46
2019	1,404	48	0	0	48	48
2020	1,404	49	0	0	49	49
NOMINAL	20,282	570	0	0	570	570
NPV		305	0	0	305	305

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs: Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM Comm Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
UTILITY PROGRAM COSTS & REBATES							PARTICIPATING CUSTOMER COSTS & BENEFITS										
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC REBATES \$(000)	UTIL RECUR REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC. CUST EQUIP COSTS \$(000)	PARTIC CUST O & M COSTS \$(000)	TOTAL PARTIC CUST COSTS \$(000)	REDUCT. IN CUST KVVH (000)	RED REV - FUEL PORTION \$(000)	RED REV NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC. IN CUST KVVH (000)	INC REV. - FUEL PORTION \$(000)	INC. REV NONFUEL PORTION	EFFECT. REVENUE INC. IN BILL \$(000)
2001	10	6	16	33	0	33	584	0	584	184	3	24	27	0	0	0	0
2002	2	14	16	7	0	7	120	0	120	404	7	53	60	0	0	0	0
2003	2	17	19	7	0	7	123	0	123	477	9	63	72	0	0	0	0
2004	0	20	20	0	0	0	129	0	129	550	10	74	84	0	0	0	0
2005	0	24	24	0	0	0	131	0	131	624	12	85	97	0	0	0	0
2006	0	27	27	0	0	0	135	0	135	697	14	96	110	0	0	0	0
2007	0	31	31	0	0	0	141	0	141	770	16	107	123	0	0	0	0
2008	0	35	35	0	0	0	143	0	143	844	18	119	137	0	0	0	0
2009	0	39	39	0	0	0	147	0	147	917	20	132	151	0	0	0	0
2010	0	44	44	0	0	0	152	0	152	990	22	144	166	0	0	0	0
2011	0	48	48	0	0	0	158	0	158	1,063	24	157	182	0	0	0	0
2012	0	53	53	0	0	0	161	0	161	1,137	27	170	197	0	0	0	0
2013	0	59	59	0	0	0	166	0	166	1,210	30	184	214	0	0	0	0
2014	0	64	64	0	0	0	173	0	173	1,283	32	198	231	0	0	0	0
2015	0	68	68	0	0	0	0	0	0	1,320	34	207	241	0	0	0	0
2016	0	70	70	0	0	0	0	0	0	1,320	35	210	246	0	0	0	0
2017	0	72	72	0	0	0	0	0	0	1,320	36	214	250	0	0	0	0
2018	0	74	74	0	0	0	0	0	0	1,320	37	217	255	0	0	0	0
2019	0	76	76	0	0	0	0	0	0	1,320	39	221	259	0	0	0	0
2020	0	79	79	0	0	0	0	0	0	1,320	40	224	264	0	0	0	0
NOMINAL	14	922	935	46	0	46	2,462	0	2,462	19,065	465	2,899	3,365	0	0	0	0
NPV	13	494	507	45	0	45	1,872	0	1,872		249	1,587	1,837		0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS

PROGRAM: Comm. Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	16	584	0	600	0	0	4	0	4	(596)	(596)
2002	0	16	120	0	136	0	0	9	0	9	(127)	(717)
2003	0	19	123	0	142	0	0	10	0	10	(132)	(836)
2004	0	20	129	0	149	29	14	12	0	55	(94)	(915)
2005	0	24	131	0	155	30	15	15	0	59	(96)	(993)
2006	0	27	135	0	162	31	15	17	0	63	(99)	(1,069)
2007	0	31	141	0	172	32	16	19	0	67	(105)	(1,145)
2008	0	35	143	0	178	33	16	22	0	71	(107)	(1,219)
2009	0	39	147	0	187	34	17	24	0	75	(112)	(1,292)
2010	0	44	152	0	195	35	17	27	0	79	(116)	(1,363)
2011	0	48	158	0	207	37	18	30	0	84	(123)	(1,435)
2012	0	53	161	0	214	38	18	33	0	89	(125)	(1,505)
2013	0	59	166	0	224	39	19	36	0	94	(130)	(1,573)
2014	0	64	173	0	237	41	19	40	0	99	(138)	(1,642)
2015	0	68	0	0	68	42	20	42	0	104	36	(1,625)
2016	0	70	0	0	70	44	20	43	0	107	38	(1,608)
2017	0	72	0	0	72	45	21	45	0	111	39	(1,591)
2018	0	74	0	0	74	47	22	46	0	114	40	(1,575)
2019	0	76	0	0	76	48	22	48	0	118	42	(1,559)
2020	0	79	0	0	79	50	23	49	0	122	44	(1,543)
NOMINAL	0	935	2,462	0	3,397	655	310	570	0	1,535	(1,862)	
NPV	0	507	1,872	0	2,380	360	171	305	0	836	(1,543)	

Discount Rate: 5.50%

Benefit/Cost Ratio [col (11) / col (6)]: 0.35

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Comm. Lighting

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	27	0	33	0	60	584	0	0	584	(524)	(524)
2002	60	0	7	0	66	120	0	0	120	(53)	(575)
2003	72	0	7	0	78	123	0	0	123	(45)	(615)
2004	84	0	0	0	84	129	0	0	129	(45)	(654)
2005	97	0	0	0	97	131	0	0	131	(34)	(681)
2006	110	0	0	0	110	135	0	0	135	(25)	(700)
2007	123	0	0	0	123	141	0	0	141	(17)	(713)
2008	137	0	0	0	137	143	0	0	143	(6)	(717)
2009	151	0	0	0	151	147	0	0	147	4	(714)
2010	166	0	0	0	166	152	0	0	152	15	(705)
2011	182	0	0	0	182	158	0	0	158	23	(692)
2012	197	0	0	0	197	161	0	0	161	36	(671)
2013	214	0	0	0	214	166	0	0	166	48	(646)
2014	231	0	0	0	231	173	0	0	173	58	(617)
2015	241	0	0	0	241	0	0	0	0	241	(503)
2016	246	0	0	0	246	0	0	0	0	246	(393)
2017	250	0	0	0	250	0	0	0	0	250	(287)
2018	255	0	0	0	255	0	0	0	0	255	(185)
2019	259	0	0	0	259	0	0	0	0	259	(86)
2020	264	0	0	0	264	0	0	0	0	264	10
NOMINAL	3,365	0	46	0	3,411	2,462	0	0	2,462	949	
NPV	1,837	0	45	0	1,882	1,872	0	0	1,872	10	

In-service year of generation unit: 2004
 Discount rate: 5.50%

Benefit/Cost Ratio: 1.01

Rate Impact Test

RATE IMPACT TEST
PROGRAM: Comm. Lighting

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	16	33	27	0	76	4	0	0	0	4	(72)	(72)
2002	0	16	7	60	0	82	9	0	0	0	9	(74)	(142)
2003	0	19	7	72	0	97	10	0	0	0	10	(87)	(220)
2004	0	20	0	84	0	104	41	14	0	0	55	(49)	(262)
2005	0	24	0	97	0	121	44	15	0	0	59	(62)	(312)
2006	0	27	0	110	0	137	48	15	0	0	63	(74)	(368)
2007	0	31	0	123	0	154	51	16	0	0	67	(88)	(432)
2008	0	35	0	137	0	172	55	16	0	0	71	(102)	(502)
2009	0	39	0	151	0	191	58	17	0	0	75	(116)	(578)
2010	0	44	0	166	0	210	62	17	0	0	79	(131)	(658)
2011	0	48	0	182	0	230	67	18	0	0	84	(146)	(744)
2012	0	53	0	197	0	251	71	18	0	0	89	(162)	(833)
2013	0	59	0	214	0	272	76	19	0	0	94	(178)	(927)
2014	0	64	0	231	0	294	80	19	0	0	99	(195)	(1,024)
2015	0	68	0	241	0	309	84	20	0	0	104	(205)	(1,121)
2016	0	70	0	246	0	315	87	20	0	0	107	(208)	(1,214)
2017	0	72	0	250	0	322	90	21	0	0	111	(211)	(1,304)
2018	0	74	0	255	0	329	93	22	0	0	114	(214)	(1,390)
2019	0	76	0	259	0	336	96	22	0	0	118	(217)	(1,473)
2020	0	79	0	264	0	343	99	23	0	0	122	(221)	(1,553)
NOMINAL	0	935	46	3,365	0	4,346	1,225	310	0	0	1,535	(2,811)	
NPV	0	507	45	1,837	0	2,389	665	171	0	0	836	(1,553)	
				Discount rate:	5.50%								
				Benefit / Cost Ratio [col (12) / col (7)]:	0.35								

Input Data

PROGRAM Comm.Cooling

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.00 KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.09 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	4,076.6 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	3,832.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	5.46 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	64.66 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	3.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	3.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	100.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY UTILITY REBATES ARE INPUT IN III (14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7884 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07861 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.450 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	6.90 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: Comm Cooling

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	367	367	1.71	1.93	1.93	1.92	1	1
2002	440	440	1.76	2.00	2.00	1.98	1	1
2003	513	513	1.81	2.06	2.06	2.04	1	1
2004	587	587	1.87	2.12	2.12	2.10	1	1
2005	660	660	1.92	2.19	2.19	2.16	1	1
2006	733	733	1.98	2.26	2.26	2.22	1	1
2007	807	807	2.04	2.33	2.33	2.29	1	1
2008	880	880	2.10	2.41	2.41	2.36	1	1
2009	953	953	2.16	2.48	2.48	2.43	1	1
2010	1026	1026	2.23	2.56	2.56	2.50	1	1
2011	1100	1100	2.30	2.64	2.64	2.58	1	1
2012	1173	1173	2.36	2.73	2.73	2.66	1	1
2013	1246	1246	2.44	2.81	2.81	2.74	1	1
2014	1320	1320	2.51	2.90	2.90	2.82	1	1
2015	1320	1320	2.58	2.99	2.99	2.90	1	1
2016	1320	1320	2.66	3.09	3.09	2.99	1	1
2017	1320	1320	2.74	3.19	3.19	3.08	1	1
2018	1320	1320	2.82	3.29	3.29	3.17	1	1
2019	1320	1320	2.91	3.39	3.39	3.27	1	1
2020	1320	1320	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)
1995	-9	0.0%	0.0%
1996	-8	0.0%	0.0%
1997	-7	0.0%	0.0%
1998	-6	0.0%	0.0%
1999	-5	0.0%	0.0%
2000	-4	0.0%	0.0%
2001	-3	0.0%	0.0%
2002	-2	2.3%	25.0%
2003	-1	2.3%	75.0%
2004	0	2.3%	0.0%

TEMP DATA/NOT USED
BY PROGRAM

CT	CC
0.0%	0.0%
0.0%	0.0%
0.0%	20.3%
55.3%	50.2%
44.7%	29.5%
0.0%	0.0%
1	1

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Comm. Cooling

* UNIT SIZE OF AVOIDED GENERATION UNIT = 638 kW
 * INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$258

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	17	4,751	3	10	101	100	0	32
2005	0.0685	18	4,751	4	10	104	103	0	33
2006	0.0706	18	4,751	4	11	107	106	0	34
2007	0.0727	19	4,751	4	11	111	109	0	35
2008	0.0749	19	4,751	4	11	114	112	0	37
2009	0.0771	20	4,751	4	12	118	115	0	38
2010	0.0794	20	4,751	4	12	122	119	0	39
2011	0.0818	21	4,751	4	12	126	123	0	41
2012	0.0843	22	4,751	4	13	130	126	0	42
2013	0.0868	22	4,751	5	13	134	130	0	44
2014	0.0894	23	4,751	5	14	138	134	0	45
2015	0.0921	24	4,751	5	14	142	138	0	47
2016	0.0948	24	4,751	5	14	147	142	0	48
2017	0.0977	25	4,751	5	15	151	146	0	50
2018	0.1006	26	4,751	5	15	156	151	0	52
2019	0.1036	27	4,751	5	16	161	155	0	54
2020	0.1067	28	4,751	6	16	166	160	0	56
NOMINAL		373	80,765	76	219	2,227	2,168	0	728
NPV		206		42	121	1,229	1,199	0	400

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

APPENDIX B.3

FLORIDA POWER & LIGHT MEASURE

PROGRAM: OPBC

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	1.00 KW/CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	1.09 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	8.0 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	0.0 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	6.0 %
(6) GROUP LINE LOSS MULTIPLIER	1.0034
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	0.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	20 YEARS
(2) GENERATOR ECONOMIC LIFE	25 YEARS
(3) T & D ECONOMIC LIFE	25 YEARS
(4) K FACTOR FOR GENERATION	1.27
(5) K FACTOR FOR T & D	1.27
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	66.84 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	3.0 %
(4) CUSTOMER EQUIPMENT COST	258.86 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	3.0 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	3.0 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	0.0 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	5.50 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	0.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL. RATE	0.0 %

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

** NONRECURRING & RECURRING COSTS IN INPUTS III (1 & 2) DO NOT INCLUDE CUSTOMER REBATES PAID BY THE UTILITY. UTILITY REBATES ARE INPUT IN III (14 & 15)

IV. AVOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2001
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2004
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2004
(4) BASE YEAR AVOIDED GENERATING UNIT COST	372.7684 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	78.78243 \$/KW
(6) BASE YEAR DISTRIBUTION COST	56.28075 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	3 %
(8) GENERATOR FIXED O & M COST	5.007448 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	3 %
(10) TRANSMISSION FIXED O & M COST	3.07661 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	14.64042 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	3 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0.194145 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	3 %
(15) GENERATOR CAPACITY FACTOR	85 %
(16) AVOIDED GENERATING UNIT FUEL COST	1.933917 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	3.17 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	3 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	5.446 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	3.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	6.90 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	0.0 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

Input Data

PROGRAM: OPBC

* Avoided Generation Unit CC-OUC
 * Program Generation Equivalency Factor 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
YEAR	CUMULATIVE TOTAL PARTICIPATING CUSTOMERS	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	UTILITY AVERAGE SYSTEM FUEL COSTS (C/KWH)	AVOIDED MARGINAL FUEL COST (C/KWH)	INCREASED MARGINAL FUEL COST (C/KWH)	REPLACEMENT FUEL COST (C/KWH)	PROGRAM KW EFFECTIVENESS FACTOR	PROGRAM KWH EFFECTIVENESS FACTOR
2001	2	2	1.71	1.93	1.93	1.92	1	1
2002	2	2	1.76	2.00	2.00	1.98	1	1
2003	2	2	1.81	2.06	2.06	2.04	1	1
2004	3	3	1.87	2.12	2.12	2.10	1	1
2005	3	3	1.92	2.19	2.19	2.16	1	1
2006	3	3	1.98	2.26	2.26	2.22	1	1
2007	4	4	2.04	2.33	2.33	2.29	1	1
2008	4	4	2.10	2.41	2.41	2.36	1	1
2009	5	5	2.16	2.48	2.48	2.43	1	1
2010	6	6	2.23	2.56	2.56	2.50	1	1
2011	7	7	2.30	2.64	2.64	2.58	1	1
2012	8	8	2.36	2.73	2.73	2.66	1	1
2013	9	9	2.44	2.81	2.81	2.74	1	1
2014	10	10	2.51	2.90	2.90	2.82	1	1
2015	11	11	2.58	2.99	2.99	2.90	1	1
2016	13	13	2.66	3.09	3.09	2.99	1	1
2017	15	15	2.74	3.19	3.19	3.08	1	1
2018	17	17	2.82	3.29	3.29	3.17	1	1
2019	20	20	2.91	3.39	3.39	3.27	1	1
2020	22	22	3.00	3.50	3.50	3.36	1	1

AFUDC Calculation

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2004 AVOIDED UNIT

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
YEAR	NO. YEARS BEFORE INSERVICE	PLANT ESCALATION RATE (%)	CUMULATIVE ESCALATION FACTOR	YEARLY EXPENDITURE (%)	ANNUAL SPENDING (\$/KW)	CUMULATIVE AVERAGE SPENDING (\$/KW)	CUMULATIVE SPENDING WITH AFUDC (\$/KW)	YEARLY TOTAL AFUDC (\$/KW)	INCREMENTAL YEAR-END BOOK VALUE (\$/KW)	CUMULATIVE YEAR-END BOOK VALUE (\$/KW)
1995	-9	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1996	-8	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1997	-7	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1998	-6	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
1999	-5	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2000	-4	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2001	-3	0.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2002	-2	2.3%	1.0230	25.0%	95.34	47.67	47.67	2.62	97.96	97.96
2003	-1	2.3%	1.0465	75.0%	292.58	241.63	244.25	13.43	306.02	403.98
2004	0			0.0%	0.00			0.00	0.00	
				1.00	387.92			16.06	403.98	

IN-SERVICE YEAR = 2004

PLANT COSTS (2001 \$) \$372.77
AFUDC RATE: 5.50%

AFUDC Calculation

<-- COST DATA FOR CONSTRUCTION OF PLANT -->

YEAR	NUMBER OF YEARS BEFORE INSERVICE	ANNUAL PLANT COST ESCALATION RATE (%)	YEARLY EXPENDITURE (%)
1995	-9	0.0%	0.0%
1996	-8	0.0%	0.0%
1997	-7	0.0%	0.0%
1998	-6	0.0%	0.0%
1999	-5	0.0%	0.0%
2000	-4	0.0%	0.0%
2001	-3	0.0%	0.0%
2002	-2	2.3%	25.0%
2003	-1	2.3%	75.0%
2004	0	2.3%	0.0%

TEMP DATA/NOT USED
BY PROGRAM

CT	CC
0.0%	0.0%
0.0%	0.0%
0.0%	20.3%
55.3%	50.2%
44.7%	29.5%
0.0%	0.0%
1	1

Avoided Generation Benefits

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: OPBC

* UNIT SIZE OF AVOIDED GENERATION UNIT = 3 kW
* INSERVICE COSTS OF AVOIDED GEN. UNIT (000) = \$1

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	AVOIDED GEN UNIT CAPACITY COST \$(000)	AVOIDED ANNUAL KWH GEN (000)	AVOIDED UNIT FIXED O&M COST \$(000)	AVOIDED GEN UNIT VARIABLE O&M COST \$(000)	AVOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	AVOIDED PURCHASED CAPACITY COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)
2001	0.0000	0	0	0	0	0	0	0	0
2002	0.0000	0	0	0	0	0	0	0	0
2003	0.0000	0	0	0	0	0	0	0	0
2004	0.0665	0	24	0	0	1	1	0	0
2005	0.0685	0	24	0	0	1	1	0	0
2006	0.0706	0	24	0	0	1	1	0	0
2007	0.0727	0	24	0	0	1	1	0	0
2008	0.0749	0	24	0	0	1	1	0	0
2009	0.0771	0	24	0	0	1	1	0	0
2010	0.0794	0	24	0	0	1	1	0	0
2011	0.0818	0	24	0	0	1	1	0	0
2012	0.0843	0	24	0	0	1	1	0	0
2013	0.0868	0	24	0	0	1	1	0	0
2014	0.0894	0	24	0	0	1	1	0	0
2015	0.0921	0	24	0	0	1	1	0	0
2016	0.0948	0	24	0	0	1	1	0	0
2017	0.0977	0	24	0	0	1	1	0	0
2018	0.1006	0	24	0	0	1	1	0	0
2019	0.1036	0	24	0	0	1	1	0	0
2020	0.1067	0	24	0	0	1	1	0	0
NOMINAL		2	413	0	1	11	11	0	4
NPV		1		0	1	6	6	0	2

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Avoided T&D Benefits

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: OPBC

* INSERVICE COSTS OF AVOIDED TRANS. (000) = \$0
 * INSERVICE COSTS OF AVOIDED DIST. (000) = \$0

(1) Year	(2) AVOIDED TRANSMISSION CAPACITY COST \$(000)	(3) AVOIDED TRANSMISSION O&M COST (000)	(4) TOTAL AVOIDED TRANSMISSION COST \$(000)	(5) AVOIDED DISTRIBUTION CAPACITY COST \$(000)	(6) AVOIDED DISTRIBUTION O&M COST \$(000)	(7) TOTAL AVOIDED DISTRIBUTION COST \$(000)	(8) PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	0	0	0	0	0	0	0
2020	0	0	0	0	0	0	0
NOMINAL	0	0	1	0	1	1	0
NPV	0	0	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Program Fuel Savings

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	AVOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET AVOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2001	0	0	0	0	0	0
2002	0	0	0	0	0	0
2003	0	0	0	0	0	0
2004	0	0	0	0	0	0
2005	0	0	0	0	0	0
2006	0	0	0	0	0	0
2007	0	0	0	0	0	0
2008	0	0	0	0	0	0
2009	0	0	0	0	0	0
2010	0	0	0	0	0	0
2011	0	0	0	0	0	0
2012	0	0	0	0	0	0
2013	0	0	0	0	0	0
2014	0	0	0	0	0	0
2015	0	0	0	0	0	0
2016	0	0	0	0	0	0
2017	0	0	0	0	0	0
2018	0	0	0	0	0	0
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
NOMINAL	0	0	0	0	0	0
NPV		0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Util. & Part. costs; Revenues

* WORKSHEET UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS GAIN
PROGRAM OPBC

(1)	(2)----- UTILITY PROGRAM COSTS & REBATES ----->						<----- PARTICIPATING CUSTOMER COSTS & BENEFITS----->											(18)
YEAR	UTIL NONREC COSTS \$(000)	UTIL RECUR COSTS \$(000)	TOTAL UTIL PGM COSTS \$(000)	UTIL NONREC. REBATES \$(000)	UTIL RECUR. REBATES \$(000)	TOTAL REBATE/ INCENT COSTS \$(000)	PARTIC CUST EQUIP COSTS \$(000)	PARTIC. CUST O & M COSTS \$(000)	TOTAL PARTIC. CUST COSTS \$(000)	REDUCT IN CUST. KWH (000)	RED REV. - FUEL PORTION \$(000)	RED REV NONFUEL PORTION \$(000)	EFFECT. REV. REDUCT. IN BILL \$(000)	INC IN CUST. KWH (000)	INC. REV. - FUEL PORTION \$(000)	INC. REV. NONFUEL PORTION \$(000)	EFFECT. REVENUE INC IN BILL \$(000)	
2001	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0
2016	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0
2017	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0
2018	0	0	0	0	0	0	1	0	1	0	0	1	1	0	0	0	0	0
2019	0	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0	0
2020	0	0	0	0	0	0	1	0	1	0	0	2	2	0	0	0	0	0
NOMINAL	0	0	0	0	0	0	8	0	8	0	0	13	13	0	0	0	0	0
NPV	0	0	0	0	0	0	4	0	4	0	0	6	6	0	0	0	0	0

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Total Resources Test

TOTAL RESOURCE COST TESTS
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	PARTICIPANT PROGRAM COSTS \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	PROGRAM FUEL SAVINGS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	1	0	1	0	0	0	0	0	(1)	(1)
2002	0	0	0	0	0	0	0	0	0	0	0	(1)
2003	0	0	0	0	0	0	0	0	0	0	0	(1)
2004	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2005	0	0	0	0	0	0	0	0	0	0	0	(1)
2006	0	0	0	0	0	0	0	0	0	0	0	(0)
2007	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2008	0	0	0	0	0	0	0	0	0	0	0	(0)
2009	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2010	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2011	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2012	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2013	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2014	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2015	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2016	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2017	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2018	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2019	0	0	1	0	1	0	0	0	0	0	(1)	(1)
2020	0	0	1	0	1	0	0	0	0	0	(1)	(2)
NOMINAL	0	0	8	0	8	4	1	0	0	5	(3)	
NPV	0	0	4	0	4	2	1	0	0	3	(2)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.65

Participants Test

PARTICIPANT COSTS AND BENEFITS
PROGRAM: OPBC

(1) YEAR	(2) SAVINGS IN PARTICIPANTS BILL \$(000)	(3) TAX CREDITS \$(000)	(4) UTILITY REBATES \$(000)	(5) OTHER BENEFITS \$(000)	(6) TOTAL BENEFITS \$(000)	(7) CUSTOMER EQUIPMENT COSTS \$(000)	(8) CUSTOMER O & M COSTS \$(000)	(9) OTHER COSTS \$(000)	(10) TOTAL COSTS \$(000)	(11) NET BENEFITS \$(000)	(12) CUMULATIVE DISCOUNTED NET BENEFITS \$(000)
2001	0	0	0	0	0	1	0	0	1	(0)	(0)
2002	0	0	0	0	0	0	0	0	0	0	(0)
2003	0	0	0	0	0	0	0	0	0	0	(0)
2004	0	0	0	0	0	0	0	0	0	(0)	(0)
2005	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	(0)	0
2008	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	1
2011	1	0	0	0	1	0	0	0	0	0	1
2012	1	0	0	0	1	0	0	0	0	0	1
2013	1	0	0	0	1	0	0	0	0	0	1
2014	1	0	0	0	1	0	0	0	0	0	1
2015	1	0	0	0	1	0	0	0	0	0	1
2016	1	0	0	0	1	1	0	0	1	0	1
2017	1	0	0	0	1	1	0	0	1	0	2
2018	1	0	0	0	1	1	0	0	1	0	2
2019	2	0	0	0	2	1	0	0	1	0	2
2020	2	0	0	0	2	1	0	0	1	1	2

NOMINAL	13	0	0	0	13	8	0	0	8	4	
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NPV	6	0	0	0	6	4	0	0	4	2	
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In-service year of generation unit: 2004
Discount rate: 5.50%

Benefit/Cost Ratio: 1.51

Rate Impact Test

RATE IMPACT TEST
PROGRAM: OPBC

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
YEAR	INCREASED SUPPLY COSTS \$(000)	UTILITY PROGRAM COSTS \$(000)	INCENTIVES \$(000)	REVENUE LOSSES \$(000)	OTHER COSTS \$(000)	TOTAL COSTS \$(000)	AVOIDED GEN UNIT & FUEL BENEFITS \$(000)	AVOIDED T & D BENEFITS \$(000)	REVENUE GAINS \$(000)	OTHER BENEFITS \$(000)	TOTAL BENEFITS \$(000)	NET BENEFITS TO ALL CUSTOMERS \$(000)	CUMULATIVE DISCOUNTED NET BENEFIT \$(000)
2001	0	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2002	0	0	0	0	0	0	0	0	0	0	0	(0)	(0)
2003	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2004	0	0	0	0	0	0	0	0	0	0	0	0	(1)
2005	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2006	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2007	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2008	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2009	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2010	0	0	0	0	0	0	0	0	0	0	0	(0)	(1)
2011	0	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2012	0	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2013	0	0	0	1	0	1	0	0	0	0	0	(0)	(1)
2014	0	0	0	1	0	1	0	0	0	0	0	(0)	(2)
2015	0	0	0	1	0	1	0	0	0	0	0	(1)	(2)
2016	0	0	0	1	0	1	0	0	0	0	0	(1)	(2)
2017	0	0	0	1	0	1	0	0	0	0	0	(1)	(2)
2018	0	0	0	1	0	1	0	0	0	0	0	(1)	(3)
2019	0	0	0	2	0	2	0	0	0	0	0	(1)	(3)
2020	0	0	0	2	0	2	0	0	0	0	0	(1)	(4)
NOMINAL	0	0	0	13	0	13	4	1	0	0	5	(8)	
NPV	0	0	0	6	0	7	2	1	0	0	3	(4)	

Discount rate: 5.50%
Benefit / Cost Ratio [col (12) / col (7)]: 0.43