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3/16/2015

Ann Cole, Clerk
Florida Public Service Commission
Office of Commission Clerk
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Dear Ms. Cole:

Enclosed please find an electronic copy of the 2015 Orlando Utilities Commission (OUC) Demand Side Management Plan (DSM Plan). The 2015 OUC DSM Plan was prepared by Black & Veatch and is being submitted by Black & Veatch on behalf of OUC.

If you have any questions regarding the 2015 OUC DSM Plan, please do not hesitate to contact me at (913) 458-7134.

Very truly yours,
BLACK & VEATCH CORPORATION

/s/ 

Bradley Kushner
Principal Consultant



The Reliable One®

**Orlando Utilities Commission
2015 Demand-Side Management Plan**

March 16, 2015

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1.0 Introduction

1.1 Background

Sections 366.80 through 366.85, and 403.519, Florida Statutes (F.S.), are known collectively as the Florida Energy Efficiency and Conservation Act (FEECA). Section 366.82(2), F.S., requires the Florida Public Service Commission (PSC) to adopt appropriate goals designed to increase the conservation of expensive resources, such as petroleum fuels, to reduce and control the growth rates of electric consumption and weather-sensitive peak demand. Pursuant to Section 366.82(6), F.S., the PSC must review the conservation goals of each utility subject to FEECA at least every five years. The seven utilities subject to FEECA are Florida Power & Light Company (FPL), Progress Energy Florida, Inc. (PEF), Tampa Electric Company (TECO), Gulf Power Company (Gulf), Florida Public Utilities Company (FPUC), Orlando Utilities Commission (OUC), and JEA (referred to collectively as the FEECA utilities). Goals were last established for the FEECA utilities in December 2009 (Order No. PSC-09-0855-FOF-EG). Therefore, new goals were required to be established by December 2014.

The remainder of this report summarizes OUC's DSM Plan and compares projected annual DSM peak demand and energy reductions (consistent with the programs outlined in the DSM Plan) to the annual DSM goals established by the PSC for the 2015 through 2024 period.

1.2 Commission Approved Numeric Conservation Goals

OUC's residential and commercial/industrial numeric conservation goals for the 2015 through 2024 period were established by the PSC pursuant to Order No. PSC-13-0645-PAA-EU. These PSC-established annual goals, along with OUC's projected annual DSM peak demand and energy reductions (corresponding to the programs discussed in subsequent sections of this document) are presented in Tables 1-1, 1-2 and 1-3.

Analysis of Tables 1-1 through 1-3 indicates that OUC is projected to exceed its residential numeric conservation goals for summer peak demand (kW), winter peak demand (kW), and annual energy requirements (MWh) for each year during the 2015 through 2024 period. OUC is also projected to exceed its commercial/industrial summer peak demand (kW) and annual energy requirements (MWh). Although OUC's projected commercial/industrial winter peak demand (kW) reductions fall short of its goals, OUC expects that winter peak demand (kW) reductions associated with its commercial/industrial Custom Incentive, Indoor Lighting Rebate, and Indoor Lighting Billed Solution programs will increase the winter peak demand (kW) reductions beyond those reflected in Tables 1-2 and 1-3; however, demand and energy reductions associated with these programs have not been quantified and incorporated into Tables 1-2 and 1-3 due to uncertainty about the proportion of demand and energy reductions that may be associated with current lighting standards. Additionally, OUC intends to evaluate

enhancing its commercial/industrial conservation program offerings through programs such as Custom Incentive and potential new programs associated with retro-commissioning and building automation controls, and possibly offering demand response programs.

As shown in Table 1-3, based on the programs currently offered by OUC and quantified and discussed in more detail in Sections 2 and 3 of this DSM Plan, OUC is projected to exceed its summer peak demand (kW) and annual energy requirements (MWh) reduction goals for the 2015 through 2024 period, while OUC’s winter peak demand (kW) reductions are projected to fall short of its goals during the 2019 through 2024 period. When considering OUC’s projected peak demand and energy reductions, it is important to note that winter peak demand is influenced primarily by residential loads, and the combined winter peak demand reduction goals for OUC’s residential and commercial/industrial goals are projected to be exceeded through 2018, which will allow OUC approximately 4 years to expand its program offerings and increase winter peak demand (kW) reductions, if necessary. It is anticipated OUC’s Custom Incentive Program and its Indoor Lighting programs’ kW reductions will contribute sufficiently to meet the goals.

Calendar Year	Summer (MW)		Winter (MW)		Annual (GWh)	
	PSC Goal	OUC Projected	PSC Goal	OUC Projected	PSC Goal	OUC Projected
2015	0.05	0.78	0.04	0.60	0.14	2.32
2016	0.08	0.78	0.08	0.60	0.30	2.32
2017	0.12	0.78	0.12	0.60	0.45	2.32
2018	0.16	0.78	0.16	0.60	0.60	2.32
2019	0.20	0.78	0.21	0.60	0.72	2.32
2020	0.21	0.78	0.21	0.60	0.77	2.32
2021	0.21	0.78	0.22	0.60	0.80	2.32
2022	0.19	0.78	0.20	0.60	0.72	2.32
2023	0.19	0.78	0.18	0.60	0.66	2.32
2024	0.16	0.78	0.16	0.60	0.57	2.32
Total	1.57	7.82	1.58	6.02	5.73	23.15

Table 1-2 – PSC-Established Goals and Projected OUC Reductions for Commercial/Industrial						
Calendar Year	Summer (MW)		Winter (MW)		Annual (GWh)	
	PSC Goal	OUC Projected	PSC Goal	OUC Projected	PSC Goal	OUC Projected
2015	0.20	0.43	0.49	0.23	0.34	1.76
2016	0.28	0.43	0.57	0.23	0.50	1.76
2017	0.30	0.43	0.70	0.23	0.66	1.76
2018	0.36	0.43	0.70	0.23	0.75	1.76
2019	0.37	0.43	0.66	0.23	0.82	1.76
2020	0.39	0.43	0.70	0.23	0.85	1.76
2021	0.40	0.43	0.78	0.23	0.86	1.76
2022	0.37	0.43	0.78	0.23	0.85	1.76
2023	0.39	0.43	0.74	0.23	0.82	1.76
2024	0.36	0.43	0.70	0.23	0.80	1.76
Total	3.42	4.31	6.82	2.29	7.25	17.64

Note: OUC is working with the City of Orlando to retrofit existing streetlights with more efficient LED lighting. The demand and energy reductions corresponding to the City of Orlando’s streetlight retrofit program are included in the Commercial/Industrial projections reflected in this table.

Table 1-3 – PSC-Established Goals and Projected OUC Reductions for Total Residential and Commercial/Industrial						
Calendar Year	Summer (MW)		Winter (MW)		Annual (GWh)	
	PSC Goal	OUC Projected	PSC Goal	OUC Projected	PSC Goal	OUC Projected
2015	0.25	1.21	0.54	0.83	0.48	4.08
2016	0.36	1.21	0.65	0.83	0.80	4.08
2017	0.42	1.21	0.82	0.83	1.11	4.08
2018	0.52	1.21	0.82	0.83	1.35	4.08
2019	0.57	1.21	0.86	0.83	1.54	4.08
2020	0.60	1.21	0.91	0.83	1.62	4.08
2021	0.61	1.21	1.00	0.83	1.66	4.08
2022	0.56	1.21	0.98	0.83	1.56	4.08
2023	0.57	1.21	0.92	0.83	1.48	4.08
2024	0.52	1.21	0.86	0.83	1.37	4.08
Total	4.98	12.13	8.36	8.31	12.97	40.79

Note: OUC is working with the City of Orlando to retrofit existing streetlights with more efficient LED lighting. The demand and energy reductions corresponding to the City of Orlando’s streetlight retrofit program are included in the Commercial/Industrial projections reflected in this table.

1.3 Discussion of Rate Impacts from Conservation Programs

As illustrated in Appendix A of this DSM Plan, none of the DSM program evaluated for OUC passed the Rate Impact Test, meaning such programs will result in upward pressure on customers’ rates. The extent to which rates increase is difficult to evaluate, but a simple

reference point can get within a reasonable range. For example, OUC rates are affected roughly 1 percent for every \$5 million in additional revenue requirement. The evaluation of DSM programs indicated that DSM programs failed the Rate Impact Test (referred to as RIM) but some passed the Total Resources Cost Test (referred to as TRC). By definition, if a DSM program fails RIM, it will put upward pressure on rates. If a DSM program passes TRC, it may provide benefits to the participating customer in the form of lower overall bills. Consequently, a DSM program that fails RIM but passes TRC may lower the bills of participating customers, but would lead to an overall increase in utility rates such that those customers that don't participate in OUC DSM programs will experience an increase in their utility bills.

1.4 OUC's Marketing Efforts to Promote DSM Participation

OUC's conservation efforts will continue to be enhanced by an integrated approach of marketing, communications and community outreach that will lead to higher levels of program participation and behavioral changes. Customer education will be provided through a variety of media outlets, online and in person at home, business' and community meetings and other events.

1.4.1 Online Education Initiatives

OUC's Environment and Community website (<http://www.ouc.com/environment-community>) provides information related to OUC's solar and green initiatives, community involvement and educational programs, and educational resources, along with other information.

1.4.2 Marketing Media Overview

The marketing campaign features a mix of print advertising, online advertising, social media, broadcast television, radio, digital outdoor advertising, direct mail and other promotions that help to educate customers on ways to save energy, water and money. A goal of the campaign also will be to promote the right rebate to the right customer. The campaign includes:

- Traditional print media, business journals and residential publications that were selected for their target audience, market share and advertising rates.
- A broad range of sites and geo-targeted messaging based on zip codes to allow OUC to customize its message to various segments of OUC's customer base.
- Television commercial spots, delivered in English and Spanish, to reinforce the idea that "becoming green is easy and saves you money." The spots associate being green to lowering your utility bill or making small changes to improve energy efficiency and conserve water.
- A conservation video that shows how to conduct a home audit, money saving tips and rebate information. Customers can watch the conservation video on Channel 24's

Saturday Morning line-up and the video is also available online (<http://www.ouc.com/residential/save-energy-water-money/conservation-videos>)

- OUC radio campaigns that will promote online initiatives, rebate programs and the new conservation video while breaking green myths.
- Direct mail that invites customers to community meetings and can be used in targeted areas to promote specific rebates.

1.4.3 Community Outreach Overview

Specific examples of community activities in which OUC was involved during 2014 are outlined below.

1.4.3.1 Believe in Conservation. OUC partnered up with Nemours Children hospital to celebrate the hospitals grand opening by giving the elementary school children the change to participate in the special light ceremony. The winning schools received \$1,000 to be used to teach children the importance of conservation and efficiency; knowledge which will help their families reduce their utility bills by making good decisions. Nemours also is going green. In fact, 90 percent of the hospital's construction waste has been recycled, and reclaimed water is being used for more than 60,000 square feet of garden space.

1.4.3.2 Water Color Project. For the eighth year in a row, OUC hosted the Water Color Project, a conservation-themed art program that encourages students to showcase the importance of saving water through their artwork. More than 2,700 students from 29 schools competed to have their artwork featured in an annual calendar, while middle and high school students decorate rain barrels that become a traveling exhibit that is displayed throughout the community.

1.4.3.3 Project AWESOME. OUC and the Orlando Science Center delivered energy and water conservation workshops to fifth grade classrooms throughout OUC's service territory via Project AWESOME (Alternative Water & Energy Supply; Observation, Methods & Education). It was the fifth year of the educational program that promotes both water and energy conservation through a hands-on curriculum using content approved by OUC and meeting Sunshine State Standards. Projects included allowing students to make an aquifer, build a solar-powered car, and test low flow showerheads and compact fluorescent light bulbs (CFLs) against traditional fixtures as part of an electric and water conservation and alternative sources educational program. Project A.W.E.S.O.M.E., which launched in 2009, delivers two 90-minute classroom workshops as well as hands-on labs and pre and post classroom activities—energy in the fall and water in the spring—to students in support of their Science FCAT preparation. A total of 5,500 students went through the curriculum.

1.4.4 Educational Outreach

From providing better online access to their consumption history to designing convenient and effective conservation programs, OUC is arming customers with the information and tools they need to optimize the efficiency of their homes and businesses. While the tools and technologies we use might have changed, OUC's commitment to conservation has not.

1.4.4.1 Mobile Site. OUC continued to offer a mobile version of its website for handheld devices. The mobile site lets customers interact with OUC on the go. They can pay their bill, check their account, find a rebate or get conservation tips right from their cell phone. Customers have the same online access to [OUC.com](http://www.ouc.com) but in an easy-to-use mobile format.

1.4.4.2 Home Energy Reports Program. The Home Energy Reports Program, OUC's largest conservation effort to date serving 86,000 customers, encourages customers to conserve by comparing their consumption to their efficient neighbors. Participants receive regular emails or printed reports showing how they rank along with tips and suggestions on how they can improve. To administer the Home Energy Reports, OUC is working with Opower, a software company that helps utilities meet their efficiency goals through effective customer engagement.

1.4.4.3 Energy & Water Conservation DVD. OUC continued to offer a conservation video in an interactive DVD format in English or Spanish that walks customers through a "do-it-yourself" energy and water audit for their home that can help lower their utility bill. It is also available online at <http://www.ouc.com/waystosave>.

1.4.4.4 Media Overview. To reach the desired audience, OUC implemented a comprehensive media campaign that utilized print, online, television, radio, outdoor media and community partnerships. By diversifying their media, OUC is able to reach a broader range of customers and reinforce their commitment to showing customers how to reduce their energy and water use and ultimately their utility bills.

1.4.4.5 Orlando Magic Partnership. After assisting with the energy and water efficiency features in the design phase of the Orlando Magic's new LEED certified home, OUC has continued its green partnership with the Orlando Magic since the Amway Center opened in October 2010:

- The promotion of the facility's LEED certification and its energy and water efficiency features
- Sponsorship of the NBA Green Week (April 2013)
- An interactive educational booth at home game Fan Fest events. For example "Fix a Leak Week"
- A public information campaign on www.orlandomagic.com.

With this partnership, OUC reaches many of its customers who attend Magic games or follow them on TV. In addition to the approximately 7,000 season ticket holders who reside in the OUC service territory, 87 corporations hold suites, loge boxes or legends suites at the arena.

These include many large and mid-size commercial businesses that can benefit from OUC's commercial products and services.

1.4.4.6 Connections. Connections is a monthly newsletter sent to all OUC customers whether they receive a paper statement or e-bill. The Connections newsletters also are posted on <http://www.OUC.com> and feature information on OUC's programs, events and energy and water saving tips.

1.4.4.7 Social Media. Facebook and Twitter allow OUC to spotlight special events and programs in the community and provide a conservation tip of the day, consisting of 365 daily tips on how to save energy, water and money. OUC also utilizes OUC TV via YouTube to promote conservation and renewable initiatives.

1.4.5 Power Pass Program

OUC Power Pass is a program that allows customers to pay-as-you-go or pay in advance for utility services allowing the option of avoiding deposits, late fees and a monthly bill. Statistics have shown that pay-before-consumption programs result in less electricity usage and water because the customer is more aware of how much they are using. Customers can check on their electric bill or water usage every day using the OUC Power Pass portal or receive alerts via text, email and/or phone.

1.4.6 Digital Meters

OUC's entire service area is in the process of being upgraded to digital electric and water meters. The electric meters were completed March 2014 and the water meters are expected to be completed within the end of the 2015. The digital meters are easier to read and provide detailed information about the customer's daily energy and water use. Meters will also be able to be monitored remotely which will reduce costs and time while ensuring an accurate and timely reading for the customer. Remote monitoring also allows for OUC to better predict and prevent outages and restore power faster.

1.5 OUC Program Monitoring and Verification

Program monitoring and evaluation are important components of DSM implementation. They serve the purpose of ensuring that all DSM resources are acquired in an efficient manner. Specifically, program monitoring includes tracking program data and ensuring quality control. Program impact evaluation results document the energy and demand impacts. Process evaluation and market assessment measures the delivery efficiency of the program, as well as suggest ways that the program can be improved by increasing savings, reducing costs, or increasing participation.

While there is a need to regularly evaluate programs to ensure their effectiveness, there is an equal need to utilize the evaluation method that is most appropriate. Imprudent expenditures on evaluation can significantly affect the program to its detriment. The level of evaluation effort must be balanced with the need. For example, the programs that provide the largest portion of the total DSM impact should be given the greatest evaluation emphasis. Programs (or measures) that provide small per unit impacts or which have had relatively low levels of participation should be evaluated using approaches that can be justified given their relative contribution to the benefits. Therefore, while there are many methods available to evaluate the impacts of these programs, OUC will determine, on a program-by-program basis, the most efficient evaluation method based on factors such as participation levels, program performance, dollars invested, the level of uncertainty of measure performance, and other appropriate metrics.

OUC will validate energy and demand savings through the most appropriate methodology for the given program, including but not limited to: engineering calculations, pre and post billing data analysis, simulation modeling, onsite inspection/data collection, and/or metering/load research. Process evaluations will also examine how to improve the delivery of DSM programs through interviews with the design and delivery staff, customer and contractor interviews or surveys, and customer/contractor focus groups.

1.6 Overview of DSM Programs

The DSM programs that OUC has included in this DSM Plan are divided into residential and commercial/industrial programs. The residential programs are offered to OUC's customers to encourage them to improve the energy efficiency of their homes, thereby decreasing heating and cooling costs. OUC offers DSM programs to its residential customers whether they live in single family or multiple family homes, and has a specific program, Residential Efficiency Delivered, to provide assistance to encourage low income customers to improve the energy efficiency of their homes. OUC also offers programs to encourage its commercial and industrial customers to improve the energy efficiency of their buildings. OUC's residential and commercial/industrial DSM programs are summarized below, and discussed in more detail in subsequent sections of this document.

1.6.1 Residential Programs

- Home Energy Survey Program – Walk-Through, DVD, and On-Line
- Duct Repair/Replacement Rebate Program
- Ceiling Insulation Upgrade Rebate Program
- Window Film/Solar Screen Rebate Program
- High Performance Windows Rebate Program
- Efficient Electric Heat Pump Rebate Program

- New Home Rebate Program
- Residential Efficiency Delivered Program

1.6.2 Commercial Programs

- Energy Audits Program
- Efficient Electric Heat Pump Rebate Program
- Duct Repair/Replacement Rebate Program
- Window Film/Solar Screen Rebate Program
- Ceiling Insulation Rebate Program
- Cool/Reflective Roof Rebate Program

1.7 Structure of the DSM Plan Document

The following sections present descriptions of the residential (Section 2.0) and commercial/industrial (Section 3.0) DSM programs that comprise OUC's DSM Plan. The sections have been structured to be consistent with the requirements of Chapter 25-17.0021, Section (4), F.A.C.

2.0 Residential Programs

2.1 Residential Program Overview

OUC offers residential DSM programs to encourage customers to improve the energy efficiency of their homes, thereby decreasing heating and cooling costs. OUC's offers DSM programs to its residential customers whether they live in single family or multiple family homes, and has a specific program to provide assistance to encourage low income customers to improve the energy efficiency of their homes.

- Home Energy Survey Program – Walk-Through, DVD, and On-Line
- Duct Repair/Replacement Rebate Program
- Ceiling Insulation Upgrade Rebate Program
- Window Film/Solar Screen Rebate Program
- High Performance Windows Rebate Program
- Efficient Electric Heat Pump Rebate Program
- New Home Rebate Program
- Residential Efficiency Delivered Program

2.2 Residential Program Descriptions

The remainder of this section presents information related to OUC's residential DSM programs in a format consistent with the requirements of Chapter 25-17.0021, Section (4), F.A.C. Please refer to Section 1.4 for a discussion of the measurement and verification process.

2.2.1 Home Energy Surveys

2.2.1.1 Program Description

OUC has been offering home energy surveys dating back to the late 1970's. The home energy walk-through surveys were designed to provide residential customers with recommended energy efficiency measures and practices customers can implement. The Residential Energy Survey Program consists of three measures: the Residential Energy Walk-Through Survey, the Residential Energy Survey DVD, and an interactive Online Energy Survey. These measures are available to both single family and multi-family residential customers.

The Residential Energy Walk-Through Survey includes a complete examination of the attic; heating, ventilation, and air conditioning (HVAC) system; air duct and air returns; window caulking; weather stripping around doors; faucets and toilets; and lawn sprinkler systems. OUC provides participating customers specific tips on conserving electricity and water as well as details on customer rebate programs. OUC Conservation Specialists are using this walk-through type audit as a means of motivating OUC customers to participate in other conservation programs and qualify for appropriate rebates.

A Residential Energy Survey Video was first offered in 2000 by OUC and is now available to OUC customers in an interactive DVD format. The DVD is free and is distributed in English and Spanish to OUC customers by request. The DVD was developed to further assist OUC customers in surveying their homes for potential energy saving opportunities. The DVD walks the customer through a complete visual assessment of energy and water efficiency in his or her home. A checklist brochure to guide the customer through the audit accompanies the DVD. The DVD has several benefits over the walk-through survey, including the convenience of viewing the DVD at any time without a scheduled appointment and the ability to watch the DVD numerous times. In addition to the Energy Walk-Through and the DVD Surveys, OUC offers customers an interactive Online Home Energy Audit. The interactive Online Home Energy Audit is available on OUC's web sites at <http://www.OUC.com>.

One of the primary benefits of the Residential Energy Survey Program is the education it provides to customers on energy conservation measures and ways their lifestyle can directly affect their energy use. Customers participating in the Energy Survey Program are informed about conservation measures that they can implement. Customers will benefit from the increased efficiency in their homes, and decreased electric and water bills.

Participation in the Walk-Through Energy Survey has been consistently strong over the past several years and interest in the Energy Survey DVD, as well as the interactive Online Home Energy Audit, has been high since the measures were first introduced. Feedback from customers who have taken advantage of the surveys has been very positive.

2.2.1.2 Description of Program Operation and Administration

OUC customers can participate in this program by requesting an appointment for a Walk-Through Energy Survey by calling the OUC Customer Service Call Center or requesting an Energy Survey DVD. OUC customers can also use the new Online Home Energy Audit at their convenience by visiting OUC's websites. The Home Energy Audit rates how efficient a customer's home energy use is and where one can make improvements to lower utility bills. Participation is tracked through service orders that are produced when appointments are scheduled and completed or the DVD is mailed. Online Surveys are tracked through the service provider (Apogee), who produces monthly activity reports.

2.2.1.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the home energy surveys are shown in the following tables. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	87,346	87,346	1,487	1,487	2%
2016	89,686	89,686	1,487	2,974	3%
2017	92,192	92,192	1,487	4,461	5%
2018	94,650	94,650	1,487	5,948	6%
2019	96,965	96,965	1,487	7,435	8%
2020	99,305	99,305	1,487	8,922	9%
2021	101,617	101,617	1,487	10,409	10%
2022	103,945	103,945	1,487	11,896	11%
2023	106,349	106,349	1,487	13,383	13%
2024	108,771	108,771	1,487	14,870	14%

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	263	0.00	0.00	390,986	0	0
2016	263	0.00	0.00	390,986	0	0
2017	263	0.00	0.00	390,986	0	0
2018	263	0.00	0.00	390,986	0	0
2019	263	0.00	0.00	390,986	0	0
2020	263	0.00	0.00	390,986	0	0
2021	263	0.00	0.00	390,986	0	0
2022	263	0.00	0.00	390,986	0	0
2023	263	0.00	0.00	390,986	0	0
2024	263	0.00	0.00	390,986	0	0

Table 2-3 – Single Family Home Energy Walk-Through Survey kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	273	0.00	0.00	406,235	0	0
2016	273	0.00	0.00	406,235	0	0
2017	273	0.00	0.00	406,235	0	0
2018	273	0.00	0.00	406,235	0	0
2019	273	0.00	0.00	406,235	0	0
2020	273	0.00	0.00	406,235	0	0
2021	273	0.00	0.00	406,235	0	0
2022	273	0.00	0.00	406,235	0	0
2023	273	0.00	0.00	406,235	0	0
2024	273	0.00	0.00	406,235	0	0

Table 2-4 – Multi Family Home Energy Walk-Through Survey Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	106,757	106,757	607	607	1%
2016	109,616	109,616	607	1,214	1%
2017	112,680	112,680	607	1,821	2%
2018	115,683	115,683	607	2,428	2%
2019	118,513	118,513	607	3,035	3%
2020	121,372	121,372	607	3,642	3%
2021	124,198	124,198	607	4,249	3%
2022	127,043	127,043	607	4,856	4%
2023	129,983	129,983	607	5,463	4%
2024	132,942	132,942	607	6,070	5%

Table 2-5 – Multi Family Home Energy Walk-Through Survey kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	200	0.00	0.00	121,352	0	0
2016	200	0.00	0.00	121,352	0	0
2017	200	0.00	0.00	121,352	0	0
2018	200	0.00	0.00	121,352	0	0
2019	200	0.00	0.00	121,352	0	0
2020	200	0.00	0.00	121,352	0	0
2021	200	0.00	0.00	121,352	0	0
2022	200	0.00	0.00	121,352	0	0
2023	200	0.00	0.00	121,352	0	0
2024	200	0.00	0.00	121,352	0	0

Table 2-6 – Multi Family Home Energy Walk-Through Survey kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	208	0.00	0.00	126,085	0	0
2016	208	0.00	0.00	126,085	0	0
2017	208	0.00	0.00	126,085	0	0
2018	208	0.00	0.00	126,085	0	0
2019	208	0.00	0.00	126,085	0	0
2020	208	0.00	0.00	126,085	0	0
2021	208	0.00	0.00	126,085	0	0
2022	208	0.00	0.00	126,085	0	0
2023	208	0.00	0.00	126,085	0	0
2024	208	0.00	0.00	126,085	0	0

Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	87,346	87,346	605	605	1%
2016	89,686	89,686	605	1,210	1%
2017	92,192	92,192	605	1,815	2%
2018	94,650	94,650	605	2,420	3%
2019	96,965	96,965	605	3,025	3%
2020	99,305	99,305	605	3,630	4%
2021	101,617	101,617	605	4,235	4%
2022	103,945	103,945	605	4,840	5%
2023	106,349	106,349	605	5,445	5%
2024	108,771	108,771	605	6,050	6%

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	131	0.00	0.00	79,297	0	0
2016	131	0.00	0.00	79,297	0	0
2017	131	0.00	0.00	79,297	0	0
2018	131	0.00	0.00	79,297	0	0
2019	131	0.00	0.00	79,297	0	0
2020	131	0.00	0.00	79,297	0	0
2021	131	0.00	0.00	79,297	0	0
2022	131	0.00	0.00	79,297	0	0
2023	131	0.00	0.00	79,297	0	0
2024	131	0.00	0.00	79,297	0	0

Table 2-9 – Single Family DVD Survey kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	136	0.00	0.00	82,389	0	0
2016	136	0.00	0.00	82,389	0	0
2017	136	0.00	0.00	82,389	0	0
2018	136	0.00	0.00	82,389	0	0
2019	136	0.00	0.00	82,389	0	0
2020	136	0.00	0.00	82,389	0	0
2021	136	0.00	0.00	82,389	0	0
2022	136	0.00	0.00	82,389	0	0
2023	136	0.00	0.00	82,389	0	0
2024	136	0.00	0.00	82,389	0	0

Table 2-10 – Multi Family DVD Survey Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	106,757	106,757	300	300	0%
2016	109,616	109,616	300	600	1%
2017	112,680	112,680	300	900	1%
2018	115,683	115,683	300	1,200	1%
2019	118,513	118,513	300	1,500	1%
2020	121,372	121,372	300	1,800	1%
2021	124,198	124,198	300	2,100	2%
2022	127,043	127,043	300	2,400	2%
2023	129,983	129,983	300	2,700	2%
2024	132,942	132,942	300	3,000	2%

Table 2-11 – Multi Family DVD Survey kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	100	0.00	0.00	30,028	0	0
2016	100	0.00	0.00	30,028	0	0
2017	100	0.00	0.00	30,028	0	0
2018	100	0.00	0.00	30,028	0	0
2019	100	0.00	0.00	30,028	0	0
2020	100	0.00	0.00	30,028	0	0
2021	100	0.00	0.00	30,028	0	0
2022	100	0.00	0.00	30,028	0	0
2023	100	0.00	0.00	30,028	0	0
2024	100	0.00	0.00	30,028	0	0

Table 2-12 – Multi Family DVD Survey kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	104	0.00	0.00	31,199	0	0
2016	104	0.00	0.00	31,199	0	0
2017	104	0.00	0.00	31,199	0	0
2018	104	0.00	0.00	31,199	0	0
2019	104	0.00	0.00	31,199	0	0
2020	104	0.00	0.00	31,199	0	0
2021	104	0.00	0.00	31,199	0	0
2022	104	0.00	0.00	31,199	0	0
2023	104	0.00	0.00	31,199	0	0
2024	104	0.00	0.00	31,199	0	0

Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	87,346	87,346	806	806	1%
2016	89,686	89,686	806	1,612	2%
2017	92,192	92,192	806	2,418	3%
2018	94,650	94,650	806	3,224	3%
2019	96,965	96,965	806	4,030	4%
2020	99,305	99,305	806	4,836	5%
2021	101,617	101,617	806	5,642	6%
2022	103,945	103,945	806	6,448	6%
2023	106,349	106,349	806	7,254	7%
2024	108,771	108,771	806	8,060	7%

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	131	0.00	0.00	105,602	0	0
2016	131	0.00	0.00	105,602	0	0
2017	131	0.00	0.00	105,602	0	0
2018	131	0.00	0.00	105,602	0	0
2019	131	0.00	0.00	105,602	0	0
2020	131	0.00	0.00	105,602	0	0
2021	131	0.00	0.00	105,602	0	0
2022	131	0.00	0.00	105,602	0	0
2023	131	0.00	0.00	105,602	0	0
2024	131	0.00	0.00	105,602	0	0

Table 2-15 – Single Family Online Survey kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	136	0.00	0.00	109,720	0	0
2016	136	0.00	0.00	109,720	0	0
2017	136	0.00	0.00	109,720	0	0
2018	136	0.00	0.00	109,720	0	0
2019	136	0.00	0.00	109,720	0	0
2020	136	0.00	0.00	109,720	0	0
2021	136	0.00	0.00	109,720	0	0
2022	136	0.00	0.00	109,720	0	0
2023	136	0.00	0.00	109,720	0	0
2024	136	0.00	0.00	109,720	0	0

Table 2-16 – Multi Family Online Survey Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	106,757	106,757	345	345	0%
2016	109,616	109,616	345	690	1%
2017	112,680	112,680	345	1,035	1%
2018	115,683	115,683	345	1,380	1%
2019	118,513	118,513	345	1,725	1%
2020	121,372	121,372	345	2,070	2%
2021	124,198	124,198	345	2,415	2%
2022	127,043	127,043	345	2,760	2%
2023	129,983	129,983	345	3,105	2%
2024	132,942	132,942	345	3,450	3%

Table 2-17 – Multi Family Online Survey kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	100	0.00	0.00	34,548	0	0
2016	100	0.00	0.00	34,548	0	0
2017	100	0.00	0.00	34,548	0	0
2018	100	0.00	0.00	34,548	0	0
2019	100	0.00	0.00	34,548	0	0
2020	100	0.00	0.00	34,548	0	0
2021	100	0.00	0.00	34,548	0	0
2022	100	0.00	0.00	34,548	0	0
2023	100	0.00	0.00	34,548	0	0
2024	100	0.00	0.00	34,548	0	0

Table 2-18 – Multi Family Online Survey kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	104	0.00	0.00	35,895	0	0
2016	104	0.00	0.00	35,895	0	0
2017	104	0.00	0.00	35,895	0	0
2018	104	0.00	0.00	35,895	0	0
2019	104	0.00	0.00	35,895	0	0
2020	104	0.00	0.00	35,895	0	0
2021	104	0.00	0.00	35,895	0	0
2022	104	0.00	0.00	35,895	0	0
2023	104	0.00	0.00	35,895	0	0
2024	104	0.00	0.00	35,895	0	0

2.2.1.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.2 Duct Repair Rebates

2.2.2.1 Program Description

The Duct Repair Rebate Program originated in 2000 and is designed to encourage customers to repair leaking ducts on existing systems. Qualifying customers must have an existing central air conditioning system of 5.5 tons or less and ducts must be sealed with mastic and fabric tape or any other Underwriters Laboratory (UL) approved duct tape. Participating customers receive a rebate for 100 percent of the cost of duct repairs on their homes, up to \$160.

2.2.2.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

2.2.2.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the duct repair rebates are shown in Tables 2-19, 2-20 and 2-21. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions are based on estimates developed by OUC.

Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	194,103	97,052	269	269	0.28%
2016	199,302	99,651	269	538	0.54%
2017	204,872	102,436	269	807	0.79%
2018	210,333	105,167	269	1,076	1.02%
2019	215,478	107,739	269	1,345	1.25%
2020	220,677	110,339	269	1,614	1.46%
2021	225,815	112,908	269	1,883	1.67%
2022	230,988	115,494	269	2,152	1.86%
2023	236,332	118,166	269	2,421	2.05%
2024	241,713	120,857	269	2,690	2.23%

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	306	0.29	0.22	82,208	79	59
2016	306	0.29	0.22	82,208	79	59
2017	306	0.29	0.22	82,208	79	59
2018	306	0.29	0.22	82,208	79	59
2019	306	0.29	0.22	82,208	79	59
2020	306	0.29	0.22	82,208	79	59
2021	306	0.29	0.22	82,208	79	59
2022	306	0.29	0.22	82,208	79	59
2023	306	0.29	0.22	82,208	79	59
2024	306	0.29	0.22	82,208	79	59

Table 2-21 – Residential Duct Repair kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	318	0.30	0.23	85,414	82	62
2016	318	0.30	0.23	85,414	82	62
2017	318	0.30	0.23	85,414	82	62
2018	318	0.30	0.23	85,414	82	62
2019	318	0.30	0.23	85,414	82	62
2020	318	0.30	0.23	85,414	82	62
2021	318	0.30	0.23	85,414	82	62
2022	318	0.30	0.23	85,414	82	62
2023	318	0.30	0.23	85,414	82	62
2024	318	0.30	0.23	85,414	82	62

2.2.2.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.3 Ceiling Insulation Rebates

2.2.3.1 Program Description

The attic is the easiest place to add insulation and lower total energy costs throughout the seasons. The ceiling insulation rebate program has been offered for several years and is designed to encourage customers to upgrade their attic insulation. Participating customers receive \$0.05 per square foot for upgrading their attic insulation up to R-30. If the customer arranges an OUC pre-inspection and it is verified the existing insulation is R-11 or less, OUC will pay a rebate of \$0.14 per square foot.

2.2.3.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer’s bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

2.2.3.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the ceiling insulation rebates are shown in Tables 2-22, 2-23 and 2-24. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Table 2-22 – Residential Ceiling Insulation Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	194,103	43,903	253	253	1%
2016	199,302	43,591	253	506	1%
2017	204,872	43,338	253	759	2%
2018	210,333	43,085	253	1,012	2%
2019	215,478	42,832	253	1,265	3%
2020	220,677	42,579	253	1,518	4%
2021	225,815	42,326	253	1,771	4%
2022	230,988	42,073	253	2,024	5%
2023	236,332	41,820	253	2,277	5%
2024	241,713	41,567	253	2,530	6%

Table 2-23 – Residential Ceiling Insulation kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	459	0.32	0.17	116,060	81	44
2016	459	0.32	0.17	116,060	81	44
2017	459	0.32	0.17	116,060	81	44
2018	459	0.32	0.17	116,060	81	44
2019	459	0.32	0.17	116,060	81	44
2020	459	0.32	0.17	116,060	81	44
2021	459	0.32	0.17	116,060	81	44
2022	459	0.32	0.17	116,060	81	44
2023	459	0.32	0.17	116,060	81	44
2024	459	0.32	0.17	116,060	81	44

Table 2-24 – Residential Ceiling Insulation kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	477	0.33	0.18	120,587	84	46
2016	477	0.33	0.18	120,587	84	46
2017	477	0.33	0.18	120,587	84	46
2018	477	0.33	0.18	120,587	84	46
2019	477	0.33	0.18	120,587	84	46
2020	477	0.33	0.18	120,587	84	46
2021	477	0.33	0.18	120,587	84	46
2022	477	0.33	0.18	120,587	84	46
2023	477	0.33	0.18	120,587	84	46
2024	477	0.33	0.18	120,587	84	46

2.2.3.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.4 Window Film / Solar Screen Rebates

2.2.4.1 Program Description

Installing solar window film on pre-existing homes can help reflect the heat during hot summer days and help the efficiency of home cooling units. The window film/solar screen rebate program has been offered for several years and is designed to encourage customers to install solar shading on their windows. Participating customers will receive a rebate in the amount of \$1 per square foot for installation of solar shading film with a solar heat gain coefficient (SHGC) of 0.44 or shading coefficient of 0.5 or less on east-, west, and south-facing windows.

2.2.4.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

2.2.4.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the window film/solar screen rebates are shown in Tables 2-25, 2-26 and 2-27. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	194,103	97,052	90	90	0.09%
2016	199,302	99,651	90	180	0.18%
2017	204,872	102,436	90	270	0.26%
2018	210,333	105,167	90	360	0.34%
2019	215,478	107,739	90	450	0.42%
2020	220,677	110,339	90	540	0.49%
2021	225,815	112,908	90	630	0.56%
2022	230,988	115,494	90	720	0.62%
2023	236,332	118,166	90	810	0.69%
2024	241,713	120,857	90	900	0.74%

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	107	-0.01	0.03	9,555	-1	3
2016	107	-0.01	0.03	9,555	-1	3
2017	107	-0.01	0.03	9,555	-1	3
2018	107	-0.01	0.03	9,555	-1	3
2019	107	-0.01	0.03	9,555	-1	3
2020	107	-0.01	0.03	9,555	-1	3
2021	107	-0.01	0.03	9,555	-1	3
2022	107	-0.01	0.03	9,555	-1	3
2023	107	-0.01	0.03	9,555	-1	3
2024	107	-0.01	0.03	9,555	-1	3

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	111	-0.01	0.04	9,927	-1	3
2016	111	-0.01	0.04	9,927	-1	3
2017	111	-0.01	0.04	9,927	-1	3
2018	111	-0.01	0.04	9,927	-1	3
2019	111	-0.01	0.04	9,927	-1	3
2020	111	-0.01	0.04	9,927	-1	3
2021	111	-0.01	0.04	9,927	-1	3
2022	111	-0.01	0.04	9,927	-1	3
2023	111	-0.01	0.04	9,927	-1	3
2024	111	-0.01	0.04	9,927	-1	3

2.2.4.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.5 High Performance Windows Rebates

2.2.5.1 Program Description

Energy-efficient windows can help minimize heating, cooling, and lighting costs. The high performance windows rebate program has been offered for several years and is designed to encourage customers to install windows that improve energy efficiency in their homes. Customers will receive a \$2 rebate per square foot for the purchase of ENERGY STAR® rated energy efficient windows.

2.2.5.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor or the customer. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer’s bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

2.2.5.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the high performance windows rebates are shown in Tables 2-28, 2-29 and 2-30. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Table 2-28 – Residential High Performance Window Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	194,103	97,052	197	197	0%
2016	199,302	99,651	197	394	0%
2017	204,872	102,436	197	591	1%
2018	210,333	105,167	197	788	1%
2019	215,478	107,739	197	985	1%
2020	220,677	110,339	197	1,182	1%
2021	225,815	112,908	197	1,379	1%
2022	230,988	115,494	197	1,576	1%
2023	236,332	118,166	197	1,773	2%
2024	241,713	120,857	197	1,970	2%

Table 2-29 – Residential High Performance Window Survey kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	780	0.22	0.37	153,359	44	73
2016	780	0.22	0.37	153,359	44	73
2017	780	0.22	0.37	153,359	44	73
2018	780	0.22	0.37	153,359	44	73
2019	780	0.22	0.37	153,359	44	73
2020	780	0.22	0.37	153,359	44	73
2021	780	0.22	0.37	153,359	44	73
2022	780	0.22	0.37	153,359	44	73
2023	780	0.22	0.37	153,359	44	73
2024	780	0.22	0.37	153,359	44	73

Table 2-30 – Residential High Performance Window Reductions kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	810	0.23	0.38	159,340	46	76
2016	810	0.23	0.38	159,340	46	76
2017	810	0.23	0.38	159,340	46	76
2018	810	0.23	0.38	159,340	46	76
2019	810	0.23	0.38	159,340	46	76
2020	810	0.23	0.38	159,340	46	76
2021	810	0.23	0.38	159,340	46	76
2022	810	0.23	0.38	159,340	46	76
2023	810	0.23	0.38	159,340	46	76
2024	810	0.23	0.38	159,340	46	76

2.2.5.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.6 Efficient Electric Heat Pump Rebate Program

2.2.6.1 Program Description

The residential Energy Star heat pump rebate program provides rebates to qualifying customers in existing homes who install heat pumps having a seasonal energy efficiency ratio (SEER) of 15.0 or higher. Customers will obtain a rebate in the form of a credit on their bill ranging from \$20 to \$1,275, depending upon the SEER rating and capacity (tons) of the new heat pump. The following table illustrates the incentives available depending on the size and efficiency of the Heat Pump installed.

		Heat Pump SEER			
		15	16	17	18
Heat Pump Size (Tons)	1	\$ 80	\$ 130	\$ 175	\$ 215
	1 1/2	145	220	290	350
	2	205	310	400	480
	2 1/2	270	400	515	615
	3	335	490	625	745
	3 1/2	395	580	735	880
	4	460	670	850	1,010
	4 1/2	525	755	960	1,145
	5	590	845	1,075	1,275

2.2.6.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase or receipts are required to be attached to the application, and work must be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer’s bill or a check can be processed and sent to the property owner who may have paid for the improvement.

2.2.6.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the efficient electric heat pump rebates are shown in Tables 2-31, 2-32 and 2-33. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	194,103	5,823	1,013	1,013	17%
2016	199,302	5,979	1,013	2,026	34%
2017	204,872	6,146	1,013	3,039	49%
2018	210,333	6,310	1,013	4,052	64%
2019	215,478	6,464	1,013	5,065	78%
2020	220,677	6,620	1,013	6,078	92%
2021	225,815	6,774	1,013	7,091	105%
2022	230,988	6,930	1,013	8,104	117%
2023	236,332	7,090	1,013	9,117	129%
2024	241,713	7,251	1,013	10,130	140%

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	454	0.13	0.24	459,519	137	241
2016	454	0.13	0.24	459,519	137	241
2017	454	0.13	0.24	459,519	137	241
2018	454	0.13	0.24	459,519	137	241
2019	454	0.13	0.24	459,519	137	241
2020	454	0.13	0.24	459,519	137	241
2021	454	0.13	0.24	459,519	137	241
2022	454	0.13	0.24	459,519	137	241
2023	454	0.13	0.24	459,519	137	241
2024	454	0.13	0.24	459,519	137	241

Table 2-33 – Residential Heat Pump kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	471	0.14	0.25	477,440	142	251
2016	471	0.14	0.25	477,440	142	251
2017	471	0.14	0.25	477,440	142	251
2018	471	0.14	0.25	477,440	142	251
2019	471	0.14	0.25	477,440	142	251
2020	471	0.14	0.25	477,440	142	251
2021	471	0.14	0.25	477,440	142	251
2022	471	0.14	0.25	477,440	142	251
2023	471	0.14	0.25	477,440	142	251
2024	471	0.14	0.25	477,440	142	251

2.2.6.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.7 Residential New Home Rebate Program

2.2.7.1 Program Description

Previously named The Residential Gold Ring Home Program has been transformed into a more flexible “a la carte” program offering a variety of choices for the Builder or Home buyer. This transformation was based on feedback OUC received from the residential building community in order to increase the level of participation in OUC’s program. The chart below reflects an example of the incentives available.

Rebate	Rate of Rebate	Square Footage	Total
Cool/Reflective Roof	\$0.04 per sq. ft.	2,000	\$80
Block Wall Insulation	\$0.16 per sq. ft.	1,100	\$176
Ceiling Insulation Upgrade to R-38	\$0.04 per sq. ft.	2,000	\$80
Heat Pump	up to \$1,275	2,000	*\$460
Energy Star® Washing Machine	\$100	N/A	\$100
Energy Star® Heat Pump Water Heater	\$650	N/A	\$650
Solar Water Heater	\$1000	N/A	\$1,000

2.2.7.2 Description of Program Operation and Administration

The home builder supplies OUC with proof of purchase and rebate checks are processed and mailed to the home builder. Participation is tracked based on the number of rebates processed.

2.2.7.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for this program are shown in Tables 2-34, 2-35 and 2-36. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	194,103	2,340	23	23	1%
2016	199,302	2,507	23	46	2%
2017	204,872	2,457	23	69	3%
2018	210,333	2,315	23	92	4%
2019	215,478	2,340	23	115	5%
2020	220,677	2,312	23	138	6%
2021	225,815	2,328	23	161	7%
2022	230,988	2,405	23	184	8%
2023	236,332	2,421	23	207	9%
2024	241,713	2,421	23	230	9%

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	1,314	1.01	0.89	29,685	23	20
2016	1,314	1.01	0.89	29,685	23	20
2017	1,314	1.01	0.89	29,685	23	20
2018	1,314	1.01	0.89	29,685	23	20
2019	1,314	1.01	0.89	29,685	23	20
2020	1,314	1.01	0.89	29,685	23	20
2021	1,314	1.01	0.89	29,685	23	20
2022	1,314	1.01	0.89	29,685	23	20
2023	1,314	1.01	0.89	29,685	23	20
2024	1,314	1.01	0.89	29,685	23	20

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	1,365	1.05	0.92	30,843	24	21
2016	1,365	1.05	0.92	30,843	24	21
2017	1,365	1.05	0.92	30,843	24	21
2018	1,365	1.05	0.92	30,843	24	21
2019	1,365	1.05	0.92	30,843	24	21
2020	1,365	1.05	0.92	30,843	24	21
2021	1,365	1.05	0.92	30,843	24	21
2022	1,365	1.05	0.92	30,843	24	21
2023	1,365	1.05	0.92	30,843	24	21
2024	1,365	1.05	0.92	30,843	24	21

2.2.7.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

2.2.8 Residential Efficiency Delivered Program

2.2.8.1 Program Description

What was once referred to as the home energy fix-up program has now been revamped and expanded to allow for any OUC customer both Energy and Water to participate and renamed as the Efficiency Delivered program. The program is available to residential customers (single family homes) and provides up to \$2,000 of energy and water efficiency upgrades based on the needs of the customer’s home. A Conservation Specialist from OUC performs a survey at the home and determines which home improvements have the potential of saving the customer the most money. The program is an income based program which is the basis for how much OUC will help contribute toward the cost of improvements and consists of three household income tiers:

Household Income	OUC Contribution
Less than \$40,000	85% (not to exceed \$1,700)
\$40,001–\$60,000	50% (not to exceed \$1,000)
Greater than \$60,000	Rebates only

1) \$40,000 or less OUC will contribute 85 percent of the total cost, 2) \$40,001 to \$60,000 OUC will contribute 50 percent of the total cost, and 3) greater than \$60,000 OUC will contribute the rebate incentives that apply toward the total cost. Each customer must request and complete a free Residential Energy Survey. Ordinarily, Energy Survey recommendations require a customer to spend money replacing or adding energy conservation measures; however, customers may not have the discretionary income to implement these measures especially those in the lower income tier. Under this program, OUC will arrange for a licensed, approved contractor to perform the necessary repairs based on a negotiated and contracted rate. The remaining portion of the cost the customer is responsible for, can be paid directly to OUC or over an interest-free 12-month period on the participant's monthly electric bill. To be eligible for this program, the customer's account must be in good credit standing with the exception of our low-income customers who are only required to have a current balance. Some of the improvements covered under this program include ceiling insulation, duct system repair, pipe insulation, window film, window caulk, door caulk, door weather stripping, door sweep, threshold plate, air filter replacement, toilet replacement, irrigation repairs, water flow restrictors and minor plumbing repairs.

The purpose of the program is to reduce the energy and water costs especially for low-income households, particularly those households with elderly persons, disabled persons and children. Through this program, OUC helps to lower the bills of customers who may have difficulty paying their bills, thereby decreasing the potential for costly service disconnect fees and late charges. OUC believes that this program will help customers afford other essential living expenses. For others, this program offers a one-stop-shop to facilitate the implementation of a whole suite of conservation measures at reasonable costs and pre-screened qualified contractors.

2.2.8.2 Description of Program Operation and Administration

Efficiency Delivered contractor(s) are selected through a Request For Proposal (RFP) process on a routine basis. Eligible customers are referred to the participating contractor after the OUC Conservation Specialist inspection is complete. The Efficiency Delivered contractor then inspects the home and creates a proposal to install eligible measures. Once the customer accepts the proposal and signs the agreement the contractor calls the customer and schedules the work. Typically the work is completed within 45 days. Upon receipt of notice of completion and customer acceptance, payment to the contractor is processed and the customer's share of the conservation improvements is billed. Participation is tracked based on completed installations.

2.2.8.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for this program are shown in Tables 2-37, 2-38 and 2-39. The projected number of customers and program

participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC

Table 2-37 – Residential Efficiency Delivered Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	194,103	54,349	197	197	0%
2016	199,302	55,805	197	394	1%
2017	204,872	57,364	197	591	1%
2018	210,333	58,893	197	788	1%
2019	215,478	60,334	197	985	2%
2020	220,677	61,790	197	1,182	2%
2021	225,815	63,228	197	1,379	2%
2022	230,988	64,677	197	1,576	2%
2023	236,332	66,173	197	1,773	3%
2024	241,713	67,680	197	1,970	3%

Table 2-38 – Residential Efficiency Delivered kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	483	0.06	0.27	95,104	12	53
2016	483	0.06	0.27	95,104	12	53
2017	483	0.06	0.27	95,104	12	53
2018	483	0.06	0.27	95,104	12	53
2019	483	0.06	0.27	95,104	12	53
2020	483	0.06	0.27	95,104	12	53
2021	483	0.06	0.27	95,104	12	53
2022	483	0.06	0.27	95,104	12	53
2023	483	0.06	0.27	95,104	12	53
2024	483	0.06	0.27	95,104	12	53

Table 2-39 – Residential Efficiency Delivered kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	502	0.06	0.28	98,813	12	55
2016	502	0.06	0.28	98,813	12	55
2017	502	0.06	0.28	98,813	12	55
2018	502	0.06	0.28	98,813	12	55
2019	502	0.06	0.28	98,813	12	55
2020	502	0.06	0.28	98,813	12	55
2021	502	0.06	0.28	98,813	12	55
2022	502	0.06	0.28	98,813	12	55
2023	502	0.06	0.28	98,813	12	55
2024	502	0.06	0.28	98,813	12	55

2.2.8.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.0 Commercial/Industrial Programs

3.1 Commercial/Industrial Program Overview

The commercial/industrial DSM programs are offered to large scale OUC customers. These programs help reduce heating and cooling costs by improving the energy efficiency of buildings that are larger than a standard home. The commercial/industrial programs offered by OUC are:

- Energy Audits
- Efficient Electric Heat Pump Rebates
- Duct Repair Rebates
- Window Film/Solar Screen Rebates
- Ceiling Insulation Rebates
- Cool/Reflective Roof Rebates

3.2 Commercial/Industrial Program Descriptions

The remainder of this section presents information related to OUC's commercial/industrial DSM programs in a format consistent with the requirements of Chapter 25-17.0021, Section (4), F.A.C. Please refer to Section 1.4 for a discussion of the measurement and verification process.

3.2.1 Energy Audits

3.2.1.1 Program Description

The commercial/industrial energy audit program has been offered for several years and is focused on increasing the energy efficiency and energy conservation of commercial buildings and includes a free survey comprised of a physical walk-through inspection of the commercial facility performed by highly trained and experienced energy experts. The survey will examine heating and air conditioning systems including duct work, refrigeration equipment, lighting, water heating, motors, process equipment, and the thermal characteristics of the building including insulation. Following the inspection the customer receives a written report detailing cost-effective recommendations to make the facility more energy and water efficient. Participating customers are encouraged to participate in other OUC commercial programs and directly benefit from energy conservation, which decreases their electric and water bills.

3.2.1.2 Description of Program Operation and Administration

OUC customers can participate by calling the OUC Customer Service Call Center and requesting an appointment for a Walk-Through Energy. Participation is tracked through service orders that are produced when appointments are scheduled and completed.

3.2.1.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the energy audits are shown in Tables 3-1, 3-2 and 3-3. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC

Table 3-1 – Commercial Energy Survey Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	29,630	29,630	130	130	0%
2016	30,494	30,494	130	260	1%
2017	31,418	31,418	130	390	1%
2018	32,322	32,322	130	520	2%
2019	33,173	33,173	130	650	2%
2020	34,034	34,034	130	780	2%
2021	34,884	34,884	130	910	3%
2022	35,741	35,741	130	1,040	3%
2023	36,626	36,626	130	1,170	3%
2024	37,515	37,515	130	1,300	3%

Table 3-2 – Single Family Home Energy Walk-Through Survey kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	849	0.15	0.15	110,657	19	19
2016	849	0.15	0.15	110,657	19	19
2017	849	0.15	0.15	110,657	19	19
2018	849	0.15	0.15	110,657	19	19
2019	849	0.15	0.15	110,657	19	19
2020	849	0.15	0.15	110,657	19	19
2021	849	0.15	0.15	110,657	19	19
2022	849	0.15	0.15	110,657	19	19
2023	849	0.15	0.15	110,657	19	19
2024	849	0.15	0.15	110,657	19	19

Table 3-3 – Single Family Home Energy Walk-Through Survey Reductions kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	882	0.15	0.15	114,973	20	20
2016	882	0.15	0.15	114,973	20	20
2017	882	0.15	0.15	114,973	20	20
2018	882	0.15	0.15	114,973	20	20
2019	882	0.15	0.15	114,973	20	20
2020	882	0.15	0.15	114,973	20	20
2021	882	0.15	0.15	114,973	20	20
2022	882	0.15	0.15	114,973	20	20
2023	882	0.15	0.15	114,973	20	20
2024	882	0.15	0.15	114,973	20	20

3.2.1.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.2.2 Efficient Electric Heat Pump Rebates

3.2.2.1 Program Description

The commercial heat pump rebate program provides rebates to qualifying customers in existing buildings who install heat pumps having a seasonal energy efficiency ratio (SEER) of 15.0 or higher. Customers will obtain a rebate in the form of a credit on their bill ranging from \$80 to \$1,275, depending upon the SEER rating and capacity (tons) of the new heat pump. The following table illustrates the incentives available depending on the size and efficiency of the Heat Pump installed.

		Heat Pump SEER			
		15	16	17	18
Heat Pump Size (Tons)	1	\$ 80	\$ 130	\$ 175	\$ 215
	1 1/2	145	220	290	350
	2	205	310	400	480
	2 1/2	270	400	515	615
	3	335	490	625	745
	3 1/2	395	580	735	880
	4	460	670	850	1,010
	4 1/2	525	755	960	1,145
	5	590	845	1,075	1,275

3.2.2.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer’s bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

3.2.2.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the efficient electric heat pump rebates are shown in Tables 3-4, 3-5 and 3-6. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	29,630	1,383	40	40	3%
2016	30,494	1,423	40	80	6%
2017	31,418	1,466	40	120	8%
2018	32,322	1,508	40	160	11%
2019	33,173	1,548	40	200	13%
2020	34,034	1,588	40	240	15%
2021	34,884	1,628	40	280	17%
2022	35,741	1,668	40	320	19%
2023	36,626	1,709	40	360	21%
2024	37,515	1,751	40	400	23%

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	634	0.07	0.33	25,487	3	13
2016	634	0.07	0.33	25,487	3	13
2017	634	0.07	0.33	25,487	3	13
2018	634	0.07	0.33	25,487	3	13
2019	634	0.07	0.33	25,487	3	13
2020	634	0.07	0.33	25,487	3	13
2021	634	0.07	0.33	25,487	3	13
2022	634	0.07	0.33	25,487	3	13
2023	634	0.07	0.33	25,487	3	13
2024	634	0.07	0.33	25,487	3	13

Table 3-6 – Commercial Heat Pump kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	659	0.08	0.35	26,481	3	14
2016	659	0.08	0.35	26,481	3	14
2017	659	0.08	0.35	26,481	3	14
2018	659	0.08	0.35	26,481	3	14
2019	659	0.08	0.35	26,481	3	14
2020	659	0.08	0.35	26,481	3	14
2021	659	0.08	0.35	26,481	3	14
2022	659	0.08	0.35	26,481	3	14
2023	659	0.08	0.35	26,481	3	14
2024	659	0.08	0.35	26,481	3	14

3.2.2.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.2.3 Duct Repair Rebates

3.2.3.1 Program Description

The duct repair rebate program started in 2009. OUC will rebate 100 percent of cost, up to \$160. Qualifying customers must have an existing central air conditioning system of 5.5 tons or less and ducts must be sealed with mastic and fabric tape or Underwriters Laboratory (UL) approved duct tape.

3.2.3.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer’s bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

3.2.3.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the duct repair rebates are shown in Tables 3-7, 3-8 and 3-9. The projected number of customers and program

participants are forecasted from 2015 to 2024, with participation projections based on OUC’s expectation of annual participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Table 3-7 – Commercial Duct Repair Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	29,630	14,815	44	44	0.30%
2016	30,494	15,247	44	88	0.58%
2017	31,418	15,709	44	132	0.84%
2018	32,322	16,161	44	176	1.09%
2019	33,173	16,587	44	220	1.33%
2020	34,034	17,017	44	264	1.55%
2021	34,884	17,442	44	308	1.77%
2022	35,741	17,871	44	352	1.97%
2023	36,626	18,313	44	396	2.16%
2024	37,515	18,758	44	440	2.35%

Table 3-8 – Commercial Duct Repair kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	375	0.29	0.22	16,366	13	10
2016	375	0.29	0.22	16,366	13	10
2017	375	0.29	0.22	16,366	13	10
2018	375	0.29	0.22	16,366	13	10
2019	375	0.29	0.22	16,366	13	10
2020	375	0.29	0.22	16,366	13	10
2021	375	0.29	0.22	16,366	13	10
2022	375	0.29	0.22	16,366	13	10
2023	375	0.29	0.22	16,366	13	10
2024	375	0.29	0.22	16,366	13	10

Table 3-9 – Commercial Duct Repair kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	390	0.30	0.23	17,004	13	10
2016	390	0.30	0.23	17,004	13	10
2017	390	0.30	0.23	17,004	13	10
2018	390	0.30	0.23	17,004	13	10
2019	390	0.30	0.23	17,004	13	10
2020	390	0.30	0.23	17,004	13	10
2021	390	0.30	0.23	17,004	13	10
2022	390	0.30	0.23	17,004	13	10
2023	390	0.30	0.23	17,004	13	10
2024	390	0.30	0.23	17,004	13	10

3.2.3.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.2.4 Window Film/Solar Screen Rebates

3.2.4.1. Program Description

The window film/solar screen rebate program started in 2009 and are designed to help reflect the heat during hot summer days and retain heat on cool winter days. OUC will rebate customers \$1 per square foot for window tinting and solar screening with a solar heat gain coefficient (SHGC) of 0.44 or shading coefficient of 0.5 or less.

3.2.4.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

3.2.4.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the window film/solar screen rebates are shown in Tables 3-10, 3-11 and 3-12. The projected number of customers and program participants are forecasted from 2015 to 2024, with projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	29,630	28,149	9	9	0.03%
2016	30,494	28,969	9	18	0.06%
2017	31,418	29,847	9	27	0.09%
2018	32,322	30,706	9	36	0.12%
2019	33,173	31,514	9	45	0.14%
2020	34,034	32,332	9	54	0.17%
2021	34,884	33,140	9	63	0.19%
2022	35,741	33,954	9	72	0.21%
2023	36,626	34,795	9	81	0.23%
2024	37,515	35,639	9	90	0.25%

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	828	-0.05	0.18	7,124	0	2
2016	828	-0.05	0.18	7,124	0	2
2017	828	-0.05	0.18	7,124	0	2
2018	828	-0.05	0.18	7,124	0	2
2019	828	-0.05	0.18	7,124	0	2
2020	828	-0.05	0.18	7,124	0	2
2021	828	-0.05	0.18	7,124	0	2
2022	828	-0.05	0.18	7,124	0	2
2023	828	-0.05	0.18	7,124	0	2
2024	828	-0.05	0.18	7,124	0	2

Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	861	-0.05	0.18	7,402	0	2
2016	861	-0.05	0.18	7,402	0	2
2017	861	-0.05	0.18	7,402	0	2
2018	861	-0.05	0.18	7,402	0	2
2019	861	-0.05	0.18	7,402	0	2
2020	861	-0.05	0.18	7,402	0	2
2021	861	-0.05	0.18	7,402	0	2
2022	861	-0.05	0.18	7,402	0	2
2023	861	-0.05	0.18	7,402	0	2
2024	861	-0.05	0.18	7,402	0	2

3.2.4.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.2.5 Ceiling Insulation Rebates

3.2.5.1 Program Description

The ceiling insulation rebate program started in 2009 and was designed to increase a building’s resistance to heat loss and gain. Participating customers receive \$0.05 per square foot, for upgrading their attic insulation up to R-30. If the customer arranges an OUC pre-inspection and it is verified the existing insulation is R-11 or less, OUC will pay a rebate of \$0.14 per square foot.

3.2.5.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer’s bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

3.2.5.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the ceiling insulation rebates are shown in Tables 3-13, 3-14 and 3-15. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Table 3-13 – Commercial Ceiling Insulation Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	29,630	13,737	7	7	0.05%
2016	30,494	13,732	7	14	0.10%
2017	31,418	13,725	7	21	0.15%
2018	32,322	13,718	7	28	0.20%
2019	33,173	13,711	7	35	0.26%
2020	34,034	13,704	7	42	0.31%
2021	34,884	13,697	7	49	0.36%
2022	35,741	13,690	7	56	0.41%
2023	36,626	13,683	7	63	0.46%
2024	37,515	13,676	7	70	0.51%

Table 3-14 – Commercial Ceiling Insulation kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	1,977	2.85	1.55	13,048	19	10
2016	1,977	2.85	1.55	13,048	19	10
2017	1,977	2.85	1.55	13,048	19	10
2018	1,977	2.85	1.55	13,048	19	10
2019	1,977	2.85	1.55	13,048	19	10
2020	1,977	2.85	1.55	13,048	19	10
2021	1,977	2.85	1.55	13,048	19	10
2022	1,977	2.85	1.55	13,048	19	10
2023	1,977	2.85	1.55	13,048	19	10
2024	1,977	2.85	1.55	13,048	19	10

Table 3-15 –Commercial Ceiling Insulation kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	2,054	2.96	1.61	13,557	20	11
2016	2,054	2.96	1.61	13,557	20	11
2017	2,054	2.96	1.61	13,557	20	11
2018	2,054	2.96	1.61	13,557	20	11
2019	2,054	2.96	1.61	13,557	20	11
2020	2,054	2.96	1.61	13,557	20	11
2021	2,054	2.96	1.61	13,557	20	11
2022	2,054	2.96	1.61	13,557	20	11
2023	2,054	2.96	1.61	13,557	20	11
2024	2,054	2.96	1.61	13,557	20	11

3.2.5.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

3.2.6 Cool/Reflective Roof Rebates

3.2.6.1 Program Description

The cool/reflective roof rebate program started in 2009 and was designed to reflect the sun's rays and lower roof surface temperature while increasing the lifespan of the roof. OUC will rebate customers at \$0.14 per square foot for ENERGY STAR® cool/reflective roofing that has an initial solar reflectance greater than or equal to 0.70.

3.2.6.2 Description of Program Operation and Administration

Customers can participate by submitting a rebate application form available online at <http://www.OUC.com>. Proofs of purchase and/or receipts are required to be attached to the application and repairs can be performed by a contractor. Participation is tracked based on the number of rebates processed. Typically these rebates are credited on the customer's bill, or a check can be processed and sent to the property owner who may have paid for the improvement.

3.2.6.3 Projected Participation and Savings

The projected participation and corresponding kW and kWh reductions for the ceiling insulation rebates are shown in Tables 3-16, 3-17 and 3-18. The projected number of customers and program participants are forecasted from 2015 to 2024, with participation projections based on historical program participation. The per-customer kW and kWh reductions for these years are based on estimates developed by OUC.

Table 3-16 – Commercial Cool/Reflective Roof Participation					
Calendar Year	Total Number of Customers	Total Number of Eligible Customers	Projected Annual Average Number of Program Participants	Projected Cumulative Number of Program Participants	Projected Cumulative Penetration Level %
2015	29,630	1,975	12	12	1%
2016	30,494	2,033	12	24	1%
2017	31,418	2,095	12	36	2%
2018	32,322	2,155	12	48	2%
2019	33,173	2,212	12	60	3%
2020	34,034	2,269	12	72	3%
2021	34,884	2,326	12	84	4%
2022	35,741	2,383	12	96	4%
2023	36,626	2,442	12	108	4%
2024	37,515	2,501	12	120	5%

Table 3-17 – Commercial Cool/Reflective Roof kW and kWh Reductions (at the Meter)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	73,797	0.00	31.41	885,560	0	377
2016	73,797	0.00	31.41	885,560	0	377
2017	73,797	0.00	31.41	885,560	0	377
2018	73,797	0.00	31.41	885,560	0	377
2019	73,797	0.00	31.41	885,560	0	377
2020	73,797	0.00	31.41	885,560	0	377
2021	73,797	0.00	31.41	885,560	0	377
2022	73,797	0.00	31.41	885,560	0	377
2023	73,797	0.00	31.41	885,560	0	377
2024	73,797	0.00	31.41	885,560	0	377

Table 3-18 – Commercial Cool/Reflective Roof kW and kWh Reductions (at the Generator)						
Calendar Year	Per Customer kWh Reduction	Per Customer Winter kW Reduction	Per Customer Summer kW Reduction	Total Annual kWh Reduction	Total Annual Winter kW Reduction	Total Annual Summer kW Reduction
2015	76,675	0.00	32.63	920,096	0	392
2016	76,675	0.00	32.63	920,096	0	392
2017	76,675	0.00	32.63	920,096	0	392
2018	76,675	0.00	32.63	920,096	0	392
2019	76,675	0.00	32.63	920,096	0	392
2020	76,675	0.00	32.63	920,096	0	392
2021	76,675	0.00	32.63	920,096	0	392
2022	76,675	0.00	32.63	920,096	0	392
2023	76,675	0.00	32.63	920,096	0	392
2024	76,675	0.00	32.63	920,096	0	392

3.2.6.4 Cost-Effectiveness Analysis

OUC has used the Commission-approved cost-effectiveness methodologies required by Rule 25-17.008 to evaluate the cost-effectiveness of this program. The results of the cost-effectiveness tests are summarized in Appendix A.

Appendix A

This appendix presents the results of the cost-effectiveness test performed on the Demand-Side Management (DSM) programs described in OUC's 2010 DSM Plan. The cost-effectiveness tests were performed using the Florida Integrated Resource Evaluator (FIRE) model, which has been previously relied upon by the Florida Public Service Commission (PSC) in evaluating DSM measures. The FIRE model was selected for use in evaluating the cost-effectiveness of OUC's DSM programs as it provides the cost-effectiveness tests required pursuant to Rule 27-17.008, Florida Administrative Code (F.A.C). The FIRE model output is in a format that is consistent with the requirements of the *Florida Public Service Commission Cost Effectiveness Manual For Demand Side Management Programs and Self-Service Wheeling Proposals*, which is incorporated by reference into Rule 27-17.008.

The remainder of this appendix presents a description of the FIRE model, a qualitative, general discussion of the cost-effectiveness evaluations, a summary of the cost-effectiveness results, and the FIRE model output reports for each of OUC's DSM programs presented in OUC's DSM Plan.

A.1 Overview of the FIRE Model

The FIRE model is a computer-based program originally developed by Florida Power Corporation (now Progress Energy Florida, or PEF) in 1992 in order to evaluate the cost-effectiveness of DSM. The output format of the model was originally developed to be consistent with the specifications of the Florida Public Service Commission and amended Rule 25-17.008 F.A.C. issued on July 2, 1991. The FIRE model has been used to evaluate the cost-effectiveness of DSM in numerous Need for Power Applications approved by the PSC, including OUC's Stanton Energy Center Unit A (Final Order PSC-01-1103-FOF-EM) and Stanton Energy Center Unit B (Final Order PSC-06-0457-FOF-EM).

The FIRE model presents cost-effectiveness evaluations of three different tests - the Total Resources Cost (TRC) test, the Participant Test, and the Rate Impact (RIM) Test. The cost-effectiveness of each measure is developed with respect to a so-called "avoided unit."¹ The utility avoids construction of this unit through the implementation of a DSM program to slow the growth of energy demand. The cost of each DSM program is compared with the equivalent costs associated with the construction and operation of the avoided unit. Depending on the demand-side program under analysis,

¹ For purposes of OUC's DSM Plan, there is not avoided unit as OUC is not projected to require additional capacity to maintain reserve margins within the 10 year period considered in this filing.

this avoided unit may be avoided completely, may be deferred to a date further in the future, or may be supplanted by a different unit type due to changes in the utility's need profile.

The FIRE model requires two different types of input files: an input file containing data specific to the avoided unit and an input file containing data specific to the DSM program to be evaluated. The FIRE model provides various output sheets, including the three cost-effectiveness tests (RIM, Participant, and TRC tests).

A.1.1 FIRE Model Cost-Effectiveness Test

The three FIRE model cost effectiveness tests are explained as follows:

- RIM Test - The Rate Impact Test is used to best approximate the effect that the implementation of a particular measure would have upon a utility's rate payers. Costs and benefits related to the cash flow of a utility are incorporated into this test.
- Participant Test - The Participant Test measures the effect of the DSM measure on the participating customers. Only costs and benefits directly related to these customers are included in the analysis. Rebates or incentives available for participation in the demand-side program are included while their associated costs to the utility are ignored.
- TRC Test - The purpose of the TRC test is to measure the overall benefit-to-cost ratio of the demand-side program. This test incorporates the cost to both the utility and the participant. Additional externalities are also included if they can be quantified. These values include anything not otherwise included in the cost or benefit values, such as the environmental effects. Only external costs and benefits are included in this analysis. Costs to the utility and to the participating customer are included, while any transfer payments between the utility and its customers are not. These internal transfers are a cost to one party and a direct benefit to another and cancel out in the overall analysis.

A.2 General Discussion of the Cost-Effectiveness Results

As discussed previously, the FIRE model was used to evaluate the cost-effectiveness of the DSM programs included in OUC's 2015 DSM Plan. The FIRE model was selected as it is a model which has been used in numerous PSC proceedings and also because it provides output in a format consistent with PSC requirements for reporting the cost-effectiveness of DSM. Given that the PSC approved numeric conservation goals for the 2015 through 2024 period (Docket No. 130204), the FIRE model evaluation was performed for the same 10 year period. It should be noted that

several of OUC's DSM programs involve conservation measures with expected lives that exceed 10 years (i.e. heat pump rebates, insulation, window replacement, etc). As such, utilizing a 10 year evaluation period does not capture the entire life cycle benefits of those types of measures.

An important factor to consider when viewing the results of the cost-effectiveness analyses presented herein is that the program-specific assumptions were intended to be representative of OUC's average customer base. That is, energy savings corresponding to a given program were based on what may be achieved for a typical customer. For example, when evaluating the cost-effectiveness of OUC's residential ceiling insulation rebate program, reductions in energy loss achieved through increased insulation were based on average energy usage per residential. These energy reductions influence the cost-effectiveness results. However, it may not be correct to assume that the types of customers that participate in a given program are representative of an average customer profile. Stated otherwise, those customers that may choose to participate in a given DSM program will do so based on consideration of their own personal energy usage, their discretionary income, and other, non-quantifiable factors (such as the non-monetary value they place on energy efficiency).

When reviewing the results of the cost-effectiveness evaluations, all of the aforementioned factors should be considered. Taking such factors into consideration, the results of the cost-effectiveness evaluations should be viewed as useful for informational purposes, but not a definitive determinant of the overall benefits associated with OUC's DSM programs.

A.3 Summary of Cost-Effectiveness Results

Table A-1 summarizes the results of the cost-effectiveness evaluations of OUC's residential DSM programs. Table A-2 summarizes the results of the cost-effectiveness evaluations of OUC's commercial/industrial DSM programs. Analysis of Tables A-1 and A-2 indicate that there are programs for which Participant Test results are indicated as "1.0." Such results indicate that there are either no costs for the participating customer (i.e. energy surveys), or all costs are carried on the participating customers' utility bills such that benefits from participating in the program are used to offset the upfront costs that OUC pays, resulting in no out-of-pocket costs to the participating customer.

Table A-1			
Summary of Cost-Effectiveness Evaluations for OUC's Residential DSM Programs			
DSM Program	RIM	PT	TRC
Energy Surveys - SF - Walk-Through	0.08	1.0	0.10
Energy Surveys - MF - Walk-Through	0.05	1.0	0.05
Energy Surveys - SF - DVD	0.13	1.0	0.22
Energy Surveys - MF - DVD	0.13	1.0	0.22
Energy Surveys - SF - On-Line	0.10	1.0	0.15
Energy Surveys - MF - On-Line	0.09	1.0	0.13
Duct Repair	0.10	0.26	0.04
Ceiling Insulation	0.10	0.47	0.06
Window Film/Solar Screen	0.06	0.22	0.02
High Performance Windows	0.10	0.32	0.02
Efficient Electric Heat Pump - SEER 15	0.05	1.23	0.05
Efficient Electric Heat Pump - SEER 16	0.07	0.66	0.04
Efficient Electric Heat Pump - SEER 17	0.09	0.58	0.04
Efficient Electric Heat Pump - SEER 18	0.11	0.49	0.03
New Home	0.20	1.0	0.80
Residential Efficiency Delivered	0.07	2.94	0.13

Table A-2			
Summary of Cost-Effectiveness Evaluations for OUC's Commercial DSM Programs			
DSM Program	RIM	PT	TRC
Energy Audits	0.10	1.0	0.12
Efficient Electric Heat Pump - SEER 15	0.19	0.79	0.10
Efficient Electric Heat Pump - SEER 16	0.23	0.47	0.05
Efficient Electric Heat Pump - SEER 17	0.24	0.46	0.05
Efficient Electric Heat Pump - SEER 18	0.27	0.41	0.04
Duct Repair	0.15	0.07	0.01
Ceiling Insulation	0.10	9.72	0.60
Window Film/Solar Screen	0.06	5.62	0.28
Cool/Reflective Roof	0.25	0.69	0.19

A.4 FIRE Model Output Reports

The following tables present the results of the cost-effectiveness evaluations for OUC's DSM programs in a format that is consistent with the requirements of the *Florida Public Service Commission Cost Effectiveness Manual For Demand Side Management Programs and Self-Service Wheeling Proposals*, which is incorporated by reference into Rule 27-17.008. .

Residential Home Energy
Surveys – Single Family
Walk-Through

PROGRAM: Residential Single Family Survey Walk Through

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	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	273.7	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	263.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	432.24	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	0.00	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	0.00	%
(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	2015
(2) IN-SERVICE YEAR FOR A AVOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) AVOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Single Family Survey Walk Through

* Avoided Generation Unit: 7FA CT
 * Program Generation Equivalency Factor: 1.00

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
			UTILITY AVERAGE					
	CUMULATIVE TOTAL PARTICIPATING YEAR	ADJUSTED CUMULATIVE PARTICIPATING CUSTOMERS	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
2015	1487	1487	2.59	2.59	2.60	3.36	1	1
2016	2974	2974	2.89	2.87	2.90	3.65	1	1
2017	4461	4461	3.07	3.05	3.08	3.93	1	1
2018	5948	5948	3.22	3.20	3.22	4.05	1	1
2019	7435	7435	3.39	3.38	3.39	4.14	1	1
2020	8922	8922	3.60	3.60	3.60	4.34	1	1
2021	10409	10409	3.83	3.83	3.83	4.48	1	1
2022	11896	11896	4.05	4.04	4.05	4.67	1	1
2023	13383	13383	4.26	4.24	4.27	4.85	1	1
2024	14870	14870	4.47	4.44	4.48	5.06	1	1

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Single Family Survey Walk Through

* UNIT SIZE OF A VOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF A VOIDED 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Residential Single Family Survey Walk Through

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

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	A VOIDED TRANSMISSION CAPACITY COST \$(000)	A VOIDED TRANSMISSION O&M COST (000)	TOTAL A VOIDED TRANSMISSION COST \$(000)	A VOIDED DISTRIBUTION CAPACITY COST \$(000)	A VOIDED DISTRIBUTION O&M COST \$(000)	TOTAL A VOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.265339
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.527693
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	30.988108
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	45.584395
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	61.919047
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	80.470601
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	101.213327
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	123.195450
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	146.686620
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	171.731124
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	784.581704
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	559.834447

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Single Family Survey Walk Through

(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)
2015	203.4761	5.2653	0.0000	0.0000	5.2653	5.2653
2016	610.4282	17.5277	0.0000	0.0000	17.5277	17.5277
2017	1,017.3803	30.9881	0.0000	0.0000	30.9881	30.9881
2018	1,424.3325	45.5844	0.0000	0.0000	45.5844	45.5844
2019	1,831.2846	61.9190	0.0000	0.0000	61.9190	61.9190
2020	2,238.2367	80.4706	0.0000	0.0000	80.4706	80.4706
2021	2,645.1889	101.2133	0.0000	0.0000	101.2133	101.2133
2022	3,052.1410	123.1954	0.0000	0.0000	123.1954	123.1954
2023	3,459.0931	146.6866	0.0000	0.0000	146.6866	146.6866
2024	3,866.0453	171.7311	0.0000	0.0000	171.7311	171.7311
NOMINAL	20,347.6067	784.5817	0.0000	0.0000	784.5817	784.5817
NPV		559.8344	0.0000	0.0000	559.8344	559.8344

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Single Family Survey Walk Through

(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)
2015	642.7409	0.0000	642.7409	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	195.5405	5.0742	14.5052	19.5794	0.0000	0.0000	0.0000	0.0000
2016	658.8094	0.0000	658.8094	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	586.6215	16.9552	44.3859	61.3411	0.0000	0.0000	0.0000	0.0000
2017	675.2796	0.0000	675.2796	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	977.7025	29.9873	75.4560	105.4434	0.0000	0.0000	0.0000	0.0000
2018	692.1616	0.0000	692.1616	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,368.7835	44.0112	107.7512	151.7624	0.0000	0.0000	0.0000	0.0000
2019	709.4657	0.0000	709.4657	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,759.8645	59.6372	141.3080	200.9452	0.0000	0.0000	0.0000	0.0000
2020	727.2023	0.0000	727.2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,150.9455	77.4547	176.1640	253.6187	0.0000	0.0000	0.0000	0.0000
2021	745.3824	0.0000	745.3824	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,542.0265	97.3227	212.3577	309.6803	0.0000	0.0000	0.0000	0.0000
2022	764.0169	0.0000	764.0169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	2,933.1075	118.6595	249.9286	368.5882	0.0000	0.0000	0.0000	0.0000
2023	783.1174	0.0000	783.1174	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,324.1885	141.5567	288.9175	430.4742	0.0000	0.0000	0.0000	0.0000
2024	802.6953	0.0000	802.6953	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,715.2695	165.9048	329.3659	495.2707	0.0000	0.0000	0.0000	0.0000
NOMINAL	7,200.8715	0.0000	7,200.8715	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	19,554.0500	756.5636	1,640.1400	2,396.7036	0.0000	0.0000	0.0000	0.0000
NPV	5,664.3110	0.0000	5,664.3110	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		539.8313	1,182.4945	1,722.3258		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Single Family Survey Walk Through

(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)
2015	0.000	642.741	0.000	0.000	642.741	0.000	0.000	5.265	0.000	5.265	(637.476)	(637.476)
2016	0.000	658.809	0.000	0.000	658.809	0.000	0.000	17.528	0.000	17.528	(641.282)	(1,245.326)
2017	0.000	675.280	0.000	0.000	675.280	0.000	0.000	30.988	0.000	30.988	(644.292)	(1,824.191)
2018	0.000	692.162	0.000	0.000	692.162	0.000	0.000	45.584	0.000	45.584	(646.577)	(2,374.825)
2019	0.000	709.466	0.000	0.000	709.466	0.000	0.000	61.919	0.000	61.919	(647.547)	(2,897.535)
2020	0.000	727.202	0.000	0.000	727.202	0.000	0.000	80.471	0.000	80.471	(646.732)	(3,392.372)
2021	0.000	745.382	0.000	0.000	745.382	0.000	0.000	101.213	0.000	101.213	(644.169)	(3,859.553)
2022	0.000	764.017	0.000	0.000	764.017	0.000	0.000	123.195	0.000	123.195	(640.821)	(4,300.077)
2023	0.000	783.117	0.000	0.000	783.117	0.000	0.000	146.687	0.000	146.687	(636.431)	(4,714.775)
2024	0.000	802.695	0.000	0.000	802.695	0.000	0.000	171.731	0.000	171.731	(630.964)	(5,104.477)
NOMINAL	0.000	7,200.871	0.000	0.000	7,200.871	0.000	0.000	784.582	0.000	784.582	(6,416.290)	
NPV	0.000	5,664.311	0.000	0.000	5,664.311	0.000	0.000	559.834	0.000	559.834	(5,104.477)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.10

Residential Home Energy
Surveys – Multi Family
Walk-Through

PROGRAM: Residential Multi Family Survey Walk Through

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	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	208.1 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	200.0 KWH/CUST/YR

ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	594.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Multi Family Survey Walk Through

* Avoided Generation Unit: 7FA CT
 * 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
2015	607	607	2.59	2.59	2.60	3.36	1	1
2016	1214	1214	2.89	2.87	2.90	3.65	1	1
2017	1821	1821	3.07	3.05	3.08	3.93	1	1
2018	2428	2428	3.22	3.20	3.22	4.05	1	1
2019	3035	3035	3.39	3.38	3.39	4.14	1	1
2020	3642	3642	3.60	3.60	3.60	4.34	1	1
2021	4249	4249	3.83	3.83	3.83	4.48	1	1
2022	4856	4856	4.05	4.04	4.05	4.67	1	1
2023	5463	5463	4.26	4.24	4.27	4.85	1	1
2024	6070	6070	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Multi Family Survey Walk Through

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Multi Family Survey Walk Through

* INSERVICE COSTS OF A VOIDED TRANS. (000) = \$0
 * INSERVICE COSTS OF A VOIDED 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.634475
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.440975
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.619379
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	14.150382
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	19.221011
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	24.979815
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	31.418806
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	38.242532
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	45.534699
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	53.309055
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	243.551128
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	173.784719

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Multi Family Survey Walk Through

(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)
2015	63.1634	1.6345	0.0000	0.0000	1.6345	1.6345
2016	189.4901	5.4410	0.0000	0.0000	5.4410	5.4410
2017	315.8169	9.6194	0.0000	0.0000	9.6194	9.6194
2018	442.1436	14.1504	0.0000	0.0000	14.1504	14.1504
2019	568.4703	19.2210	0.0000	0.0000	19.2210	19.2210
2020	694.7971	24.9798	0.0000	0.0000	24.9798	24.9798
2021	821.1238	31.4188	0.0000	0.0000	31.4188	31.4188
2022	947.4506	38.2425	0.0000	0.0000	38.2425	38.2425
2023	1,073.7773	45.5347	0.0000	0.0000	45.5347	45.5347
2024	1,200.1041	53.3091	0.0000	0.0000	53.3091	53.3091
NOMINAL	6,316.3371	243.5511	0.0000	0.0000	243.5511	243.5511
NPV		173.7847	0.0000	0.0000	173.7847	173.7847

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Multi Family Survey Walk Through

(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)
2015	360.5580	0.0000	360.5580	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	60.7000	1.5751	4.5027	6.0779	0.0000	0.0000	0.0000	0.0000
2016	369.5720	0.0000	369.5720	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	182.1000	5.2633	13.7783	19.0416	0.0000	0.0000	0.0000	0.0000
2017	378.8112	0.0000	378.8112	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	303.5000	9.3087	23.4232	32.7319	0.0000	0.0000	0.0000	0.0000
2018	388.2815	0.0000	388.2815	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	424.9000	13.6620	33.4483	47.1103	0.0000	0.0000	0.0000	0.0000
2019	397.9886	0.0000	397.9886	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	546.3000	18.5127	43.8651	62.3777	0.0000	0.0000	0.0000	0.0000
2020	407.9383	0.0000	407.9383	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	667.7000	24.0436	54.6851	78.7287	0.0000	0.0000	0.0000	0.0000
2021	418.1367	0.0000	418.1367	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	789.1000	30.2111	65.9204	96.1315	0.0000	0.0000	0.0000	0.0000
2022	428.5902	0.0000	428.5902	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	910.5000	36.8345	77.5833	114.4177	0.0000	0.0000	0.0000	0.0000
2023	439.3049	0.0000	439.3049	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,031.9000	43.9423	89.6862	133.6285	0.0000	0.0000	0.0000	0.0000
2024	450.2875	0.0000	450.2875	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,153.3000	51.5004	102.2423	153.7427	0.0000	0.0000	0.0000	0.0000
NOMINAL	4,039.4689	0.0000	4,039.4689	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	6,070.0000	234.8537	509.1349	743.9886	0.0000	0.0000	0.0000	0.0000
NPV	3,177.5055	0.0000	3,177.5055	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		167.5753	367.0719	534.6472		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Multi Family Survey Walk Through

(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)
2015	0.000	360.558	0.000	0.000	360.558	0.000	0.000	1.634	0.000	1.634	(358.924)	(358.924)
2016	0.000	369.572	0.000	0.000	369.572	0.000	0.000	5.441	0.000	5.441	(364.131)	(704.071)
2017	0.000	378.811	0.000	0.000	378.811	0.000	0.000	9.619	0.000	9.619	(369.192)	(1,035.773)
2018	0.000	388.282	0.000	0.000	388.282	0.000	0.000	14.150	0.000	14.150	(374.131)	(1,354.388)
2019	0.000	397.989	0.000	0.000	397.989	0.000	0.000	19.221	0.000	19.221	(378.768)	(1,660.135)
2020	0.000	407.938	0.000	0.000	407.938	0.000	0.000	24.980	0.000	24.980	(382.958)	(1,953.150)
2021	0.000	418.137	0.000	0.000	418.137	0.000	0.000	31.419	0.000	31.419	(386.718)	(2,233.616)
2022	0.000	428.590	0.000	0.000	428.590	0.000	0.000	38.243	0.000	38.243	(390.348)	(2,501.955)
2023	0.000	439.305	0.000	0.000	439.305	0.000	0.000	45.535	0.000	45.535	(393.770)	(2,758.535)
2024	0.000	450.288	0.000	0.000	450.288	0.000	0.000	53.309	0.000	53.309	(396.978)	(3,003.721)
NOMINAL	0.000	4,039.469	0.000	0.000	4,039.469	0.000	0.000	243.551	0.000	243.551	(3,795.918)	
NPV	0.000	3,177.505	0.000	0.000	3,177.505	0.000	0.000	173.785	0.000	173.785	(3,003.721)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.05

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Multi Family Survey Walk Through

(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)
2015	6.078	0.000	0.000	0.000	6.078	0.000	0.000	0.000	0.000	6.078	6.078
2016	19.042	0.000	0.000	0.000	19.042	0.000	0.000	0.000	0.000	19.042	24.127
2017	32.732	0.000	0.000	0.000	32.732	0.000	0.000	0.000	0.000	32.732	53.535
2018	47.110	0.000	0.000	0.000	47.110	0.000	0.000	0.000	0.000	47.110	93.655
2019	62.378	0.000	0.000	0.000	62.378	0.000	0.000	0.000	0.000	62.378	144.007
2020	78.729	0.000	0.000	0.000	78.729	0.000	0.000	0.000	0.000	78.729	204.245
2021	96.131	0.000	0.000	0.000	96.131	0.000	0.000	0.000	0.000	96.131	273.964
2022	114.418	0.000	0.000	0.000	114.418	0.000	0.000	0.000	0.000	114.418	352.619
2023	133.629	0.000	0.000	0.000	133.629	0.000	0.000	0.000	0.000	133.629	439.691
2024	153.743	0.000	0.000	0.000	153.743	0.000	0.000	0.000	0.000	153.743	534.647
NOMINAL	743.989	0.000	0.000	0.000	743.989	0.000	0.000	0.000	0.000	743.989	
NPV	534.647	0.000	0.000	0.000	534.647	0.000	0.000	0.000	0.000	534.647	
	In-service year of generation unit:			2030							
				Discount rate:	5.50%						
				Benefit/Cost Ratio:	1.00						

Residential Home Energy
Surveys – Single Family
DVD

PROGRAM: Residential Single Family Survey Video & DVDs

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	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	136.3 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	131.0 KWH/CUST/YR

ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	97.80 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Single Family Survey Video & DVDs

* Avoided Generation Unit: 7FA CT
 * 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
2015	605	605	2.59	2.59	2.60	3.36	1	1
2016	1210	1210	2.89	2.87	2.90	3.65	1	1
2017	1815	1815	3.07	3.05	3.08	3.93	1	1
2018	2420	2420	3.22	3.20	3.22	4.05	1	1
2019	3025	3025	3.39	3.38	3.39	4.14	1	1
2020	3630	3630	3.60	3.60	3.60	4.34	1	1
2021	4235	4235	3.83	3.83	3.83	4.48	1	1
2022	4840	4840	4.05	4.04	4.05	4.67	1	1
2023	5445	5445	4.26	4.24	4.27	4.85	1	1
2024	6050	6050	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS
PROGRAM: Residential Single Family Survey Video & DVDs

* 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Residential Single Family Survey Video & DVDs

* INSERVICE COSTS OF A VOIDED TRANS. (000) = \$0
 * INSERVICE COSTS OF A VOIDED 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.067054
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.552096
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.279933
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.237961
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.548280
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	16.307868
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	20.511511
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	24.966325
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	29.726957
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	34.802382
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	159.000368
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	113.453937

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Single Family Survey Video & DVDs

(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)
2015	41.2357	1.0671	0.0000	0.0000	1.0671	1.0671
2016	123.7071	3.5521	0.0000	0.0000	3.5521	3.5521
2017	206.1785	6.2799	0.0000	0.0000	6.2799	6.2799
2018	288.6498	9.2380	0.0000	0.0000	9.2380	9.2380
2019	371.1212	12.5483	0.0000	0.0000	12.5483	12.5483
2020	453.5926	16.3079	0.0000	0.0000	16.3079	16.3079
2021	536.0640	20.5115	0.0000	0.0000	20.5115	20.5115
2022	618.5354	24.9663	0.0000	0.0000	24.9663	24.9663
2023	701.0068	29.7270	0.0000	0.0000	29.7270	29.7270
2024	783.4781	34.8024	0.0000	0.0000	34.8024	34.8024
NOMINAL	4,123.5692	159.0004	0.0000	0.0000	159.0004	159.0004
NPV		113.4539	0.0000	0.0000	113.4539	113.4539

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Single Family Survey Video & DVDs

(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)
2015	59.1690	0.0000	59.1690	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	39.6275	1.0283	2.9396	3.9679	0.0000	0.0000	0.0000	0.0000
2016	60.6482	0.0000	60.6482	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	118.8825	3.4361	8.9951	12.4312	0.0000	0.0000	0.0000	0.0000
2017	62.1644	0.0000	62.1644	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	198.1375	6.0771	15.2916	21.3688	0.0000	0.0000	0.0000	0.0000
2018	63.7185	0.0000	63.7185	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	277.3925	8.9191	21.8365	30.7556	0.0000	0.0000	0.0000	0.0000
2019	65.3115	0.0000	65.3115	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	356.6475	12.0859	28.6369	40.7228	0.0000	0.0000	0.0000	0.0000
2020	66.9443	0.0000	66.9443	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	435.9025	15.6967	35.7007	51.3974	0.0000	0.0000	0.0000	0.0000
2021	68.6179	0.0000	68.6179	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	515.1575	19.7230	43.0356	62.7586	0.0000	0.0000	0.0000	0.0000
2022	70.3333	0.0000	70.3333	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	594.4125	24.0471	50.6496	74.6967	0.0000	0.0000	0.0000	0.0000
2023	72.0917	0.0000	72.0917	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	673.6675	28.6874	58.5509	87.2383	0.0000	0.0000	0.0000	0.0000
2024	73.8940	0.0000	73.8940	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	752.9225	33.6216	66.7481	100.3697	0.0000	0.0000	0.0000	0.0000
NOMINAL	662.8929	0.0000	662.8929	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	3,962.7500	153.3223	332.3846	485.7069	0.0000	0.0000	0.0000	0.0000
NPV	521.4413	0.0000	521.4413	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		109.4002	239.6399	349.0400		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Single Family Survey Video & DVDs

(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)
2015	0.000	59.169	0.000	0.000	59.169	0.000	0.000	1.067	0.000	1.067	(58.102)	(58.102)
2016	0.000	60.648	0.000	0.000	60.648	0.000	0.000	3.552	0.000	3.552	(57.096)	(112.221)
2017	0.000	62.164	0.000	0.000	62.164	0.000	0.000	6.280	0.000	6.280	(55.884)	(162.431)
2018	0.000	63.719	0.000	0.000	63.719	0.000	0.000	9.238	0.000	9.238	(54.481)	(208.827)
2019	0.000	65.312	0.000	0.000	65.312	0.000	0.000	12.548	0.000	12.548	(52.763)	(251.419)
2020	0.000	66.944	0.000	0.000	66.944	0.000	0.000	16.308	0.000	16.308	(50.636)	(290.162)
2021	0.000	68.618	0.000	0.000	68.618	0.000	0.000	20.512	0.000	20.512	(48.106)	(325.051)
2022	0.000	70.333	0.000	0.000	70.333	0.000	0.000	24.966	0.000	24.966	(45.367)	(356.238)
2023	0.000	72.092	0.000	0.000	72.092	0.000	0.000	29.727	0.000	29.727	(42.365)	(383.843)
2024	0.000	73.894	0.000	0.000	73.894	0.000	0.000	34.802	0.000	34.802	(39.092)	(407.987)
NOMINAL	0.000	662.893	0.000	0.000	662.893	0.000	0.000	159.000	0.000	159.000	(503.893)	
NPV	0.000	521.441	0.000	0.000	521.441	0.000	0.000	113.454	0.000	113.454	(407.987)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.22

Residential Home Energy
Surveys – Multi Family
DVD

PROGRAM: Residential Multi Family Survey Video & DVDs

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	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	104.1 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	100.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	75.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Multi Family Survey Video & DVDs

* Avoided Generation Unit: 7FA CT
 * 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
2015	300	300	2.59	2.59	2.60	3.36	1	1
2016	600	600	2.89	2.87	2.90	3.65	1	1
2017	900	900	3.07	3.05	3.08	3.93	1	1
2018	1200	1200	3.22	3.20	3.22	4.05	1	1
2019	1500	1500	3.39	3.38	3.39	4.14	1	1
2020	1800	1800	3.60	3.60	3.60	4.34	1	1
2021	2100	2100	3.83	3.83	3.83	4.48	1	1
2022	2400	2400	4.05	4.04	4.05	4.67	1	1
2023	2700	2700	4.26	4.24	4.27	4.85	1	1
2024	3000	3000	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Multi Family Survey Video & DVDs

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

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) A VOIDED GEN UNIT CAPACITY COST \$(000)	(2A)* A VOIDED ANNUAL UNIT KWH GEN (000)	(3) A VOIDED UNIT FIXED O&M COST \$(000)	(4) A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	(5) A VOIDED GEN UNIT FUEL COST \$(000)	(6) REPLACEMENT FUEL COST \$(000)	(6A) A VOIDED PURCHASED CAPACITY COSTS \$(000)	(7) A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Multi Family Survey Video & DVDs

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

* INSERVICE COSTS OF A VOIDED 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.403907
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.344557
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.377112
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.496799
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.749838
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.172936
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7.764120
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.450379
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.252397
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.173572
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	60.185617
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	42.945153

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Multi Family Survey Video & DVDs

(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)
2015	15.6087	0.4039	0.0000	0.0000	0.4039	0.4039
2016	46.8262	1.3446	0.0000	0.0000	1.3446	1.3446
2017	78.0437	2.3771	0.0000	0.0000	2.3771	2.3771
2018	109.2612	3.4968	0.0000	0.0000	3.4968	3.4968
2019	140.4787	4.7498	0.0000	0.0000	4.7498	4.7498
2020	171.6961	6.1729	0.0000	0.0000	6.1729	6.1729
2021	202.9136	7.7641	0.0000	0.0000	7.7641	7.7641
2022	234.1311	9.4504	0.0000	0.0000	9.4504	9.4504
2023	265.3486	11.2524	0.0000	0.0000	11.2524	11.2524
2024	296.5661	13.1736	0.0000	0.0000	13.1736	13.1736
NOMINAL	1,560.8741	60.1856	0.0000	0.0000	60.1856	60.1856
NPV		42.9452	0.0000	0.0000	42.9452	42.9452

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Multi Family Survey Video & DVDs

(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)
2015	22.5000	0.0000	22.5000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	15.0000	0.3892	1.1127	1.5019	0.0000	0.0000	0.0000	0.0000
2016	23.0625	0.0000	23.0625	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	45.0000	1.3006	3.4049	4.7055	0.0000	0.0000	0.0000	0.0000
2017	23.6391	0.0000	23.6391	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	75.0000	2.3003	5.7883	8.0886	0.0000	0.0000	0.0000	0.0000
2018	24.2300	0.0000	24.2300	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	105.0000	3.3761	8.2656	11.6418	0.0000	0.0000	0.0000	0.0000
2019	24.8358	0.0000	24.8358	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	135.0000	4.5748	10.8398	15.4146	0.0000	0.0000	0.0000	0.0000
2020	25.4567	0.0000	25.4567	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	165.0000	5.9416	13.5136	19.4552	0.0000	0.0000	0.0000	0.0000
2021	26.0931	0.0000	26.0931	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	195.0000	7.4657	16.2901	23.7557	0.0000	0.0000	0.0000	0.0000
2022	26.7454	0.0000	26.7454	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	225.0000	9.1024	19.1721	28.2746	0.0000	0.0000	0.0000	0.0000
2023	27.4141	0.0000	27.4141	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	255.0000	10.8589	22.1630	33.0219	0.0000	0.0000	0.0000	0.0000
2024	28.0994	0.0000	28.0994	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	285.0000	12.7266	25.2658	37.9924	0.0000	0.0000	0.0000	0.0000
NOMINAL	252.0761	0.0000	252.0761	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,500.0000	58.0363	125.8159	183.8522	0.0000	0.0000	0.0000	0.0000
NPV	198.2867	0.0000	198.2867	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		41.4107	90.7097	132.1204		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Multi Family Survey Video & DVDs

(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)
2015	0.000	22.500	0.000	0.000	22.500	0.000	0.000	0.404	0.000	0.404	(22.096)	(22.096)
2016	0.000	23.063	0.000	0.000	23.063	0.000	0.000	1.345	0.000	1.345	(21.718)	(42.682)
2017	0.000	23.639	0.000	0.000	23.639	0.000	0.000	2.377	0.000	2.377	(21.262)	(61.785)
2018	0.000	24.230	0.000	0.000	24.230	0.000	0.000	3.497	0.000	3.497	(20.733)	(79.441)
2019	0.000	24.836	0.000	0.000	24.836	0.000	0.000	4.750	0.000	4.750	(20.086)	(95.655)
2020	0.000	25.457	0.000	0.000	25.457	0.000	0.000	6.173	0.000	6.173	(19.284)	(110.410)
2021	0.000	26.093	0.000	0.000	26.093	0.000	0.000	7.764	0.000	7.764	(18.329)	(123.703)
2022	0.000	26.745	0.000	0.000	26.745	0.000	0.000	9.450	0.000	9.450	(17.295)	(135.592)
2023	0.000	27.414	0.000	0.000	27.414	0.000	0.000	11.252	0.000	11.252	(16.162)	(146.123)
2024	0.000	28.099	0.000	0.000	28.099	0.000	0.000	13.174	0.000	13.174	(14.926)	(155.342)
NOMINAL	0.000	252.076	0.000	0.000	252.076	0.000	0.000	60.186	0.000	60.186	(191.890)	
NPV	0.000	198.287	0.000	0.000	198.287	0.000	0.000	42.945	0.000	42.945	(155.342)	
				Discount Rate:	5.50%							
				Benefit/Cost Ratio [col (11) / col (6)]:	0.22							

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Multi Family Survey Video & DVDs

(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)
2015	1.502	0.000	0.000	0.000	1.502	0.000	0.000	0.000	0.000	1.502	1.502
2016	4.706	0.000	0.000	0.000	4.706	0.000	0.000	0.000	0.000	4.706	5.962
2017	8.089	0.000	0.000	0.000	8.089	0.000	0.000	0.000	0.000	8.089	13.229
2018	11.642	0.000	0.000	0.000	11.642	0.000	0.000	0.000	0.000	11.642	23.144
2019	15.415	0.000	0.000	0.000	15.415	0.000	0.000	0.000	0.000	15.415	35.587
2020	19.455	0.000	0.000	0.000	19.455	0.000	0.000	0.000	0.000	19.455	50.472
2021	23.756	0.000	0.000	0.000	23.756	0.000	0.000	0.000	0.000	23.756	67.701
2022	28.275	0.000	0.000	0.000	28.275	0.000	0.000	0.000	0.000	28.275	87.138
2023	33.022	0.000	0.000	0.000	33.022	0.000	0.000	0.000	0.000	33.022	108.655
2024	37.992	0.000	0.000	0.000	37.992	0.000	0.000	0.000	0.000	37.992	132.120
NOMINAL	183.852	0.000	0.000	0.000	183.852	0.000	0.000	0.000	0.000	183.852	
NPV	132.120	0.000	0.000	0.000	132.120	0.000	0.000	0.000	0.000	132.120	
	In-service year of generation unit:			2030							
				Discount rate:	5.50%						
				Benefit/Cost Ratio:	1.00						

Residential Home Energy
Surveys – Single Family
Online

PROGRAM: Residential Single Family Survey On Line

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	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	136.3 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	131.0 KWH/CUST/YR

ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	146.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Single Family Survey On Line

* Avoided Generation Unit: 7FA CT
 * 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
2015	806	806	2.59	2.59	2.60	3.36	1	1
2016	1612	1612	2.89	2.87	2.90	3.65	1	1
2017	2418	2418	3.07	3.05	3.08	3.93	1	1
2018	3224	3224	3.22	3.20	3.22	4.05	1	1
2019	4030	4030	3.39	3.38	3.39	4.14	1	1
2020	4836	4836	3.60	3.60	3.60	4.34	1	1
2021	5642	5642	3.83	3.83	3.83	4.48	1	1
2022	6448	6448	4.05	4.04	4.05	4.67	1	1
2023	7254	7254	4.26	4.24	4.27	4.85	1	1
2024	8060	8060	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Single Family Survey On Line

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Single Family Survey On Line

* 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.421563
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.732214
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8.366324
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.307102
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	16.717213
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	21.725854
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	27.326079
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	33.260922
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	39.603186
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	46.364826
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	211.825284
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	151.146898

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Single Family Survey On Line

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	A VOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET A VOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2015	54.9355	1.4216	0.0000	0.0000	1.4216	1.4216
2016	164.8065	4.7322	0.0000	0.0000	4.7322	4.7322
2017	274.6774	8.3663	0.0000	0.0000	8.3663	8.3663
2018	384.5484	12.3071	0.0000	0.0000	12.3071	12.3071
2019	494.4194	16.7172	0.0000	0.0000	16.7172	16.7172
2020	604.2903	21.7259	0.0000	0.0000	21.7259	21.7259
2021	714.1613	27.3261	0.0000	0.0000	27.3261	27.3261
2022	824.0323	33.2609	0.0000	0.0000	33.2609	33.2609
2023	933.9032	39.6032	0.0000	0.0000	39.6032	39.6032
2024	1,043.7742	46.3648	0.0000	0.0000	46.3648	46.3648
NOMINAL	5,493.5484	211.8253	0.0000	0.0000	211.8253	211.8253
NPV		151.1469	0.0000	0.0000	151.1469	151.1469

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Single Family Survey On Line

(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)
2015	117.6760	0.0000	117.6760	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	52.7930	1.3700	3.9162	5.2861	0.0000	0.0000	0.0000	0.0000
2016	120.6179	0.0000	120.6179	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	158.3790	4.5777	11.9835	16.5612	0.0000	0.0000	0.0000	0.0000
2017	123.6333	0.0000	123.6333	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	263.9650	8.0961	20.3720	28.4681	0.0000	0.0000	0.0000	0.0000
2018	126.7242	0.0000	126.7242	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	369.5510	11.8824	29.0912	40.9736	0.0000	0.0000	0.0000	0.0000
2019	129.8923	0.0000	129.8923	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	475.1370	16.1012	38.1510	54.2522	0.0000	0.0000	0.0000	0.0000
2020	133.1396	0.0000	133.1396	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	580.7230	20.9116	47.5616	68.4732	0.0000	0.0000	0.0000	0.0000
2021	136.4681	0.0000	136.4681	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	686.3090	26.2757	57.3334	83.6090	0.0000	0.0000	0.0000	0.0000
2022	139.8798	0.0000	139.8798	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	791.8950	32.0363	67.4770	99.5133	0.0000	0.0000	0.0000	0.0000
2023	143.3768	0.0000	143.3768	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	897.4810	38.2182	78.0034	116.2216	0.0000	0.0000	0.0000	0.0000
2024	146.9612	0.0000	146.9612	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,003.0670	44.7918	88.9239	133.7157	0.0000	0.0000	0.0000	0.0000
NOMINAL	1,318.3692	0.0000	1,318.3692	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5,279.3000	204.2608	442.8132	647.0740	0.0000	0.0000	0.0000	0.0000
NPV	1,037.0485	0.0000	1,037.0485	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		145.7463	319.2558	465.0021		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Single Family Survey On Line

(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)
2015	0.000	117.676	0.000	0.000	117.676	0.000	0.000	1.422	0.000	1.422	(116.254)	(116.254)
2016	0.000	120.618	0.000	0.000	120.618	0.000	0.000	4.732	0.000	4.732	(115.886)	(226.099)
2017	0.000	123.633	0.000	0.000	123.633	0.000	0.000	8.366	0.000	8.366	(115.267)	(329.661)
2018	0.000	126.724	0.000	0.000	126.724	0.000	0.000	12.307	0.000	12.307	(114.417)	(427.100)
2019	0.000	129.892	0.000	0.000	129.892	0.000	0.000	16.717	0.000	16.717	(113.175)	(518.457)
2020	0.000	133.140	0.000	0.000	133.140	0.000	0.000	21.726	0.000	21.726	(111.414)	(603.703)
2021	0.000	136.468	0.000	0.000	136.468	0.000	0.000	27.326	0.000	27.326	(109.142)	(682.858)
2022	0.000	139.880	0.000	0.000	139.880	0.000	0.000	33.261	0.000	33.261	(106.619)	(756.152)
2023	0.000	143.377	0.000	0.000	143.377	0.000	0.000	39.603	0.000	39.603	(103.774)	(823.770)
2024	0.000	146.961	0.000	0.000	146.961	0.000	0.000	46.365	0.000	46.365	(100.596)	(885.902)
NOMINAL	0.000	1,318.369	0.000	0.000	1,318.369	0.000	0.000	211.825	0.000	211.825	(1,106.544)	
NPV	0.000	1,037.048	0.000	0.000	1,037.048	0.000	0.000	151.147	0.000	151.147	(885.902)	
				Discount Rate:	5.50%							
				Benefit/Cost Ratio [col (11) / col (6)]:	0.15							

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Single Family Survey On Line

(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)
2015	5.286	0.000	0.000	0.000	5.286	0.000	0.000	0.000	0.000	5.286	5.286
2016	16.561	0.000	0.000	0.000	16.561	0.000	0.000	0.000	0.000	16.561	20.984
2017	28.468	0.000	0.000	0.000	28.468	0.000	0.000	0.000	0.000	28.468	46.561
2018	40.974	0.000	0.000	0.000	40.974	0.000	0.000	0.000	0.000	40.974	81.455
2019	54.252	0.000	0.000	0.000	54.252	0.000	0.000	0.000	0.000	54.252	125.248
2020	68.473	0.000	0.000	0.000	68.473	0.000	0.000	0.000	0.000	68.473	177.639
2021	83.609	0.000	0.000	0.000	83.609	0.000	0.000	0.000	0.000	83.609	238.276
2022	99.513	0.000	0.000	0.000	99.513	0.000	0.000	0.000	0.000	99.513	306.686
2023	116.222	0.000	0.000	0.000	116.222	0.000	0.000	0.000	0.000	116.222	382.415
2024	133.716	0.000	0.000	0.000	133.716	0.000	0.000	0.000	0.000	133.716	465.002
NOMINAL	647.074	0.000	0.000	0.000	647.074	0.000	0.000	0.000	0.000	647.074	
NPV	465.002	0.000	0.000	0.000	465.002	0.000	0.000	0.000	0.000	465.002	
	In-service year of generation unit:			2030							
				Discount rate:	5.50%						
				Benefit/Cost Ratio:	1.00						

Residential Home Energy
Surveys – Multi Family
Online

PROGRAM: Residential Multi Family Survey On Line

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	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	104.1 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	100.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	123.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Multi Family Survey On Line

* Avoided Generation Unit: 7FA CT
 * 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
2015	345	345	2.59	2.59	2.60	3.36	1	1
2016	690	690	2.89	2.87	2.90	3.65	1	1
2017	1035	1035	3.07	3.05	3.08	3.93	1	1
2018	1380	1380	3.22	3.20	3.22	4.05	1	1
2019	1725	1725	3.39	3.38	3.39	4.14	1	1
2020	2070	2070	3.60	3.60	3.60	4.34	1	1
2021	2415	2415	3.83	3.83	3.83	4.48	1	1
2022	2760	2760	4.05	4.04	4.05	4.67	1	1
2023	3105	3105	4.26	4.24	4.27	4.85	1	1
2024	3450	3450	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Multi Family Survey On Line

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

(1) Year	(1A)* VALUE OF DEFERRAL FACTOR	(2) A VOIDED GEN UNIT CAPACITY COST \$(000)	(2A)* A VOIDED ANNUAL UNIT KWH GEN (000)	(3) A VOIDED UNIT FIXED O&M COST \$(000)	(4) A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	(5) A VOIDED GEN UNIT FUEL COST \$(000)	(6) REPLACEMENT FUEL COST \$(000)	(6A) A VOIDED PURCHASED CAPACITY COSTS \$(000)	(7) A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Multi Family Survey On Line

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

* INSERVICE COSTS OF A VOIDED 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.464493
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.546241
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.733679
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.021319
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.462314
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7.098877
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8.928738
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.867935
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.940256
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	15.149608
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	69.213459
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	49.386926

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Multi Family Survey On Line

(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)
2015	17.9501	0.4645	0.0000	0.0000	0.4645	0.4645
2016	53.8502	1.5462	0.0000	0.0000	1.5462	1.5462
2017	89.7503	2.7337	0.0000	0.0000	2.7337	2.7337
2018	125.6504	4.0213	0.0000	0.0000	4.0213	4.0213
2019	161.5505	5.4623	0.0000	0.0000	5.4623	5.4623
2020	197.4506	7.0989	0.0000	0.0000	7.0989	7.0989
2021	233.3507	8.9287	0.0000	0.0000	8.9287	8.9287
2022	269.2508	10.8679	0.0000	0.0000	10.8679	10.8679
2023	305.1509	12.9403	0.0000	0.0000	12.9403	12.9403
2024	341.0510	15.1496	0.0000	0.0000	15.1496	15.1496
NOMINAL	1,795.0052	69.2135	0.0000	0.0000	69.2135	69.2135
NPV		49.3869	0.0000	0.0000	49.3869	49.3869

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Multi Family Survey On Line

(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)
2015	42.4350	0.0000	42.4350	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	17.2500	0.4476	1.2796	1.7272	0.0000	0.0000	0.0000	0.0000
2016	43.4959	0.0000	43.4959	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	51.7500	1.4957	3.9156	5.4113	0.0000	0.0000	0.0000	0.0000
2017	44.5833	0.0000	44.5833	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	86.2500	2.6454	6.6565	9.3019	0.0000	0.0000	0.0000	0.0000
2018	45.6979	0.0000	45.6979	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	120.7500	3.8825	9.5055	13.3880	0.0000	0.0000	0.0000	0.0000
2019	46.8403	0.0000	46.8403	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	155.2500	5.2610	12.4658	17.7268	0.0000	0.0000	0.0000	0.0000
2020	48.0113	0.0000	48.0113	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	189.7500	6.8328	15.5407	22.3735	0.0000	0.0000	0.0000	0.0000
2021	49.2116	0.0000	49.2116	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	224.2500	8.5855	18.7336	27.3191	0.0000	0.0000	0.0000	0.0000
2022	50.4419	0.0000	50.4419	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	258.7500	10.4678	22.0480	32.5157	0.0000	0.0000	0.0000	0.0000
2023	51.7029	0.0000	51.7029	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	293.2500	12.4877	25.4874	37.9752	0.0000	0.0000	0.0000	0.0000
2024	52.9955	0.0000	52.9955	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	327.7500	14.6356	29.0557	43.6913	0.0000	0.0000	0.0000	0.0000
NOMINAL	475.4155	0.0000	475.4155	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,725.0000	66.7418	144.6883	211.4300	0.0000	0.0000	0.0000	0.0000
NPV	373.9688	0.0000	373.9688	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		47.6223	104.3161	151.9384		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Multi Family Survey On Line

(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)
2015	0.000	42.435	0.000	0.000	42.435	0.000	0.000	0.464	0.000	0.464	(41.971)	(41.971)
2016	0.000	43.496	0.000	0.000	43.496	0.000	0.000	1.546	0.000	1.546	(41.950)	(81.733)
2017	0.000	44.583	0.000	0.000	44.583	0.000	0.000	2.734	0.000	2.734	(41.850)	(119.333)
2018	0.000	45.698	0.000	0.000	45.698	0.000	0.000	4.021	0.000	4.021	(41.677)	(154.825)
2019	0.000	46.840	0.000	0.000	46.840	0.000	0.000	5.462	0.000	5.462	(41.378)	(188.226)
2020	0.000	48.011	0.000	0.000	48.011	0.000	0.000	7.099	0.000	7.099	(40.912)	(219.530)
2021	0.000	49.212	0.000	0.000	49.212	0.000	0.000	8.929	0.000	8.929	(40.283)	(248.745)
2022	0.000	50.442	0.000	0.000	50.442	0.000	0.000	10.868	0.000	10.868	(39.574)	(275.949)
2023	0.000	51.703	0.000	0.000	51.703	0.000	0.000	12.940	0.000	12.940	(38.763)	(301.207)
2024	0.000	52.996	0.000	0.000	52.996	0.000	0.000	15.150	0.000	15.150	(37.846)	(324.582)
NOMINAL	0.000	475.416	0.000	0.000	475.416	0.000	0.000	69.213	0.000	69.213	(406.202)	
NPV	0.000	373.969	0.000	0.000	373.969	0.000	0.000	49.387	0.000	49.387	(324.582)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.13

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Multi Family Survey On Line

(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)
2015	1.727	0.000	0.000	0.000	1.727	0.000	0.000	0.000	0.000	1.727	1.727
2016	5.411	0.000	0.000	0.000	5.411	0.000	0.000	0.000	0.000	5.411	6.856
2017	9.302	0.000	0.000	0.000	9.302	0.000	0.000	0.000	0.000	9.302	15.214
2018	13.388	0.000	0.000	0.000	13.388	0.000	0.000	0.000	0.000	13.388	26.615
2019	17.727	0.000	0.000	0.000	17.727	0.000	0.000	0.000	0.000	17.727	40.925
2020	22.373	0.000	0.000	0.000	22.373	0.000	0.000	0.000	0.000	22.373	58.043
2021	27.319	0.000	0.000	0.000	27.319	0.000	0.000	0.000	0.000	27.319	77.856
2022	32.516	0.000	0.000	0.000	32.516	0.000	0.000	0.000	0.000	32.516	100.209
2023	37.975	0.000	0.000	0.000	37.975	0.000	0.000	0.000	0.000	37.975	124.953
2024	43.691	0.000	0.000	0.000	43.691	0.000	0.000	0.000	0.000	43.691	151.938
NOMINAL	211.430	0.000	0.000	0.000	211.430	0.000	0.000	0.000	0.000	211.430	
NPV	151.938	0.000	0.000	0.000	151.938	0.000	0.000	0.000	0.000	151.938	
	In-service year of generation unit:			2030							
				Discount rate:	5.50%						
				Benefit/Cost Ratio:	1.00						

Residential Duct Repair/Replacement

PROGRAM: Residential Energy Efficiency Duct Repair

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.22 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.23 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	318.5 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	306.1 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	222.00 \$/CUST	29970
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR	
(3) UTILITY COST ESCALATION RATE	2.5 %	
(4) CUSTOMER EQUIPMENT COST	1,139.44 \$/CUST	
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %	
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR	
(7) CUSTOMER O & M ESCALATION RATE	2.5 %	
(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	2.5 %	
(12)* UTILITY DISCOUNT RATE	5.50 %	
(13)* UTILITY AFUDC RATE	0.00 %	
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	157.00 \$/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	2015
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) AVOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Duct Repair

* Avoided Generation Unit: 7FA CT
 * 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
2015	269	269	2.59	2.59	2.60	2.59	1	1
2016	538	538	2.89	2.87	2.90	2.66	1	1
2017	807	807	3.07	3.05	3.08	2.73	1	1
2018	1076	1076	3.22	3.20	3.22	2.79	1	1
2019	1345	1345	3.39	3.38	3.39	2.86	1	1
2020	1614	1614	3.60	3.60	3.60	2.94	1	1
2021	1883	1883	3.83	3.83	3.83	3.01	1	1
2022	2152	2152	4.05	4.04	4.05	3.08	1	1
2023	2421	2421	4.26	4.24	4.27	3.16	1	1
2024	2690	2690	4.47	4.44	4.48	3.24	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Energy Efficiency Duct Repair

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Energy Efficiency Duct Repair

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

* INSERVICE COSTS OF A VOIDED 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.108456
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.689920
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.523598
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.596400
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.035161
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	16.940623
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	21.307370
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	25.935033
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	30.880380
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	36.152734
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	165.169675
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	117.856015

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Energy Efficiency Duct Repair

(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)
2015	42.8357	1.1085	0.0000	0.0000	1.1085	1.1085
2016	128.5070	3.6899	0.0000	0.0000	3.6899	3.6899
2017	214.1783	6.5236	0.0000	0.0000	6.5236	6.5236
2018	299.8496	9.5964	0.0000	0.0000	9.5964	9.5964
2019	385.5209	13.0352	0.0000	0.0000	13.0352	13.0352
2020	471.1923	16.9406	0.0000	0.0000	16.9406	16.9406
2021	556.8636	21.3074	0.0000	0.0000	21.3074	21.3074
2022	642.5349	25.9350	0.0000	0.0000	25.9350	25.9350
2023	728.2062	30.8804	0.0000	0.0000	30.8804	30.8804
2024	813.8776	36.1527	0.0000	0.0000	36.1527	36.1527
NOMINAL	4,283.5661	165.1697	0.0000	0.0000	165.1697	165.1697
NPV		117.8560	0.0000	0.0000	117.8560	117.8560

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Energy Efficiency Duct Repair

(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)
2015	59.7180	0.0000	59.7180	42.2330	0.0000	42.2330	306.5097	0.0000	306.5097	41.1651	1.0682	3.0536	4.1218	0.0000	0.0000	0.0000	0.0000
2016	61.2110	0.0000	61.2110	42.2330	0.0000	42.2330	314.1724	0.0000	314.1724	123.4952	3.5694	9.3441	12.9135	0.0000	0.0000	0.0000	0.0000
2017	62.7412	0.0000	62.7412	42.2330	0.0000	42.2330	322.0268	0.0000	322.0268	205.8254	6.3129	15.8850	22.1979	0.0000	0.0000	0.0000	0.0000
2018	64.3098	0.0000	64.3098	42.2330	0.0000	42.2330	330.0774	0.0000	330.0774	288.1555	9.2652	22.6837	31.9489	0.0000	0.0000	0.0000	0.0000
2019	65.9175	0.0000	65.9175	42.2330	0.0000	42.2330	338.3294	0.0000	338.3294	370.4856	12.5548	29.7481	42.3029	0.0000	0.0000	0.0000	0.0000
2020	67.5654	0.0000	67.5654	42.2330	0.0000	42.2330	346.7876	0.0000	346.7876	452.8158	16.3057	37.0859	53.3916	0.0000	0.0000	0.0000	0.0000
2021	69.2546	0.0000	69.2546	42.2330	0.0000	42.2330	355.4573	0.0000	355.4573	535.1459	20.4883	44.7054	65.1937	0.0000	0.0000	0.0000	0.0000
2022	70.9859	0.0000	70.9859	42.2330	0.0000	42.2330	364.3437	0.0000	364.3437	617.4761	24.9801	52.6148	77.5950	0.0000	0.0000	0.0000	0.0000
2023	72.7606	0.0000	72.7606	42.2330	0.0000	42.2330	373.4523	0.0000	373.4523	699.8062	29.8004	60.8227	90.6232	0.0000	0.0000	0.0000	0.0000
2024	74.5796	0.0000	74.5796	42.2330	0.0000	42.2330	382.7886	0.0000	382.7886	782.1363	34.9262	69.3379	104.2641	0.0000	0.0000	0.0000	0.0000
NOMINAL	669.0436	0.0000	669.0436	422.3300	0.0000	422.3300	3,433.9452	0.0000	3,433.9452	4,116.5070	159.2713	345.2813	504.5526	0.0000	0.0000	0.0000	0.0000
NPV	526.2795	0.0000	526.2795	335.8451	0.0000	335.8451	2,701.1916	0.0000	2,701.1916		113.6450	248.9380	362.5830		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Residential Ceiling Insulation

PROGRAM: Residential Energy Efficiency Insulation

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.17 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.18 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	477.7 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	459.1 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	334.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	919.21 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	227.00 \$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Insulation

* Avoided Generation Unit: 7FA CT
 * 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
2015	253	253	2.59	2.59	2.60	3.36	1	1
2016	506	506	2.89	2.87	2.90	3.65	1	1
2017	759	759	3.07	3.05	3.08	3.93	1	1
2018	1012	1012	3.22	3.20	3.22	4.05	1	1
2019	1265	1265	3.39	3.38	3.39	4.14	1	1
2020	1518	1518	3.60	3.60	3.60	4.34	1	1
2021	1771	1771	3.83	3.83	3.83	4.48	1	1
2022	2024	2024	4.05	4.04	4.05	4.67	1	1
2023	2277	2277	4.26	4.24	4.27	4.85	1	1
2024	2530	2530	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Energy Efficiency Insulation

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Energy Efficiency Insulation

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

* INSERVICE COSTS OF A VOIDED 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.563822
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.205781
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.203567
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.538710
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	18.390154
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	23.900024
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	30.060680
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	36.589440
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	43.566392
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	51.004690
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	233.023260
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	166.272610

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Energy Efficiency Insulation

(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)
2015	60.4330	1.5638	0.0000	0.0000	1.5638	1.5638
2016	181.2991	5.2058	0.0000	0.0000	5.2058	5.2058
2017	302.1652	9.2036	0.0000	0.0000	9.2036	9.2036
2018	423.0313	13.5387	0.0000	0.0000	13.5387	13.5387
2019	543.8973	18.3902	0.0000	0.0000	18.3902	18.3902
2020	664.7634	23.9000	0.0000	0.0000	23.9000	23.9000
2021	785.6295	30.0607	0.0000	0.0000	30.0607	30.0607
2022	906.4956	36.5894	0.0000	0.0000	36.5894	36.5894
2023	1,027.3617	43.5664	0.0000	0.0000	43.5664	43.5664
2024	1,148.2277	51.0047	0.0000	0.0000	51.0047	51.0047
NOMINAL	6,043.3039	233.0233	0.0000	0.0000	233.0233	233.0233
NPV		166.2726	0.0000	0.0000	166.2726	166.2726

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Energy Efficiency Insulation

(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)
2015	84.5020	0.0000	84.5020	57.4310	0.0000	57.4310	232.5598	0.0000	232.5598	58.0762	1.5071	4.3081	5.8151	0.0000	0.0000	0.0000	0.0000
2016	86.6146	0.0000	86.6146	57.4310	0.0000	57.4310	238.3738	0.0000	238.3738	174.2285	5.0358	13.1828	18.2185	0.0000	0.0000	0.0000	0.0000
2017	88.7799	0.0000	88.7799	57.4310	0.0000	57.4310	244.3331	0.0000	244.3331	290.3808	8.9063	22.4107	31.3170	0.0000	0.0000	0.0000	0.0000
2018	90.9994	0.0000	90.9994	57.4310	0.0000	57.4310	250.4415	0.0000	250.4415	406.5331	13.0715	32.0024	45.0739	0.0000	0.0000	0.0000	0.0000
2019	93.2744	0.0000	93.2744	57.4310	0.0000	57.4310	256.7025	0.0000	256.7025	522.6854	17.7124	41.9689	59.6814	0.0000	0.0000	0.0000	0.0000
2020	95.6063	0.0000	95.6063	57.4310	0.0000	57.4310	263.1201	0.0000	263.1201	638.8377	23.0043	52.3213	75.3255	0.0000	0.0000	0.0000	0.0000
2021	97.9964	0.0000	97.9964	57.4310	0.0000	57.4310	269.6981	0.0000	269.6981	754.9900	28.9051	63.0709	91.9760	0.0000	0.0000	0.0000	0.0000
2022	100.4463	0.0000	100.4463	57.4310	0.0000	57.4310	276.4405	0.0000	276.4405	871.1423	35.2423	74.2296	109.4719	0.0000	0.0000	0.0000	0.0000
2023	102.9575	0.0000	102.9575	57.4310	0.0000	57.4310	283.3515	0.0000	283.3515	987.2946	42.0428	85.8094	127.8522	0.0000	0.0000	0.0000	0.0000
2024	105.5314	0.0000	105.5314	57.4310	0.0000	57.4310	290.4353	0.0000	290.4353	1,103.4469	49.2743	97.8227	147.0970	0.0000	0.0000	0.0000	0.0000
NOMINAL	946.7082	0.0000	946.7082	574.3100	0.0000	574.3100	2,605.4562	0.0000	2,605.4562	5,807.6150	224.7018	487.1268	711.8286	0.0000	0.0000	0.0000	0.0000
NPV	744.6945	0.0000	744.6945	456.7025	0.0000	456.7025	2,049.4900	0.0000	2,049.4900		160.3316	351.2046	511.5362		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Energy Efficiency Insulation

(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)	CUMULATIVE DISCOUNTED NET BENEFITS \$(000)	CUMULATIVE DISCOUNTED BENEFITS \$(000)	CUMULATIVE DISCOUNTED COSTS \$(000)	Benefit to Cost Ratio
2015	0.000	84.502	232.560	0.000	317.062	0.000	0.000	1.564	0.000	1.564	(315.498)	(315.498)	2	317	0.00	
2016	0.000	86.615	238.374	0.000	324.988	0.000	0.000	5.206	0.000	5.206	(319.783)	(618.609)	6	625	0.01	
2017	0.000	88.780	244.333	0.000	333.113	0.000	0.000	9.204	0.000	9.204	(323.909)	(909.627)	15	924	0.02	
2018	0.000	90.999	250.441	0.000	341.441	0.000	0.000	13.539	0.000	13.539	(327.902)	(1,188.873)	26	1,215	0.02	
2019	0.000	93.274	256.703	0.000	349.977	0.000	0.000	18.390	0.000	18.390	(331.587)	(1,456.535)	41	1,498	0.03	
2020	0.000	95.606	263.120	0.000	358.726	0.000	0.000	23.900	0.000	23.900	(334.826)	(1,712.722)	59	1,772	0.03	
2021	0.000	97.996	269.698	0.000	367.694	0.000	0.000	30.061	0.000	30.061	(337.634)	(1,957.590)	81	2,039	0.04	
2022	0.000	100.446	276.441	0.000	376.887	0.000	0.000	36.589	0.000	36.589	(340.297)	(2,191.523)	106	2,298	0.05	
2023	0.000	102.957	283.352	0.000	386.309	0.000	0.000	43.566	0.000	43.566	(342.743)	(2,414.853)	135	2,550	0.05	
2024	0.000	105.531	290.435	0.000	395.967	0.000	0.000	51.005	0.000	51.005	(344.962)	(2,627.912)	166	2,794	0.06	
NOMINAL	0.000	946.708	2,605.456	0.000	3,552.164	0.000	0.000	233.023	0.000	233.023	(3,319.141)					
NPV	0.000	744.695	2,049.490	0.000	2,794.185	0.000	0.000	166.273	0.000	166.273	(2,627.912)					

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.06

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Energy Efficiency Insulation

(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)	CUMULATIVE DISCOUNTED BENEFITS \$(000)	CUMULATIVE DISCOUNTED COSTS \$(000)	Benefit to Cost Ratio
2015	5.815	0.000	57.431	0.000	63.246	232.560	0.000	0.000	232.560	(169.314)	(169.314)	63	233	0.27
2016	18.219	0.000	57.431	0.000	75.650	238.374	0.000	0.000	238.374	(162.724)	(323.555)	135	459	0.29
2017	31.317	0.000	57.431	0.000	88.748	244.333	0.000	0.000	244.333	(155.585)	(463.341)	215	678	0.32
2018	45.074	0.000	57.431	0.000	102.505	250.441	0.000	0.000	250.441	(147.937)	(589.325)	302	891	0.34
2019	59.681	0.000	57.431	0.000	117.112	256.703	0.000	0.000	256.703	(139.590)	(702.005)	397	1,099	0.36
2020	75.326	0.000	57.431	0.000	132.757	263.120	0.000	0.000	263.120	(130.364)	(801.750)	498	1,300	0.38
2021	91.976	0.000	57.431	0.000	149.407	269.698	0.000	0.000	269.698	(120.291)	(888.991)	606	1,495	0.41
2022	109.472	0.000	57.431	0.000	166.903	276.441	0.000	0.000	276.441	(109.538)	(964.291)	721	1,685	0.43
2023	127.852	0.000	57.431	0.000	185.283	283.352	0.000	0.000	283.352	(98.068)	(1,028.192)	842	1,870	0.45
2024	147.097	0.000	57.431	0.000	204.528	290.435	0.000	0.000	290.435	(85.907)	(1,081.251)	968	2,049	0.47
NOMINAL	711.829	0.000	574.310	0.000	1,286.139	2,605.456	0.000	0.000	2,605.456	(1,319.318)				
NPV	511.536	0.000	456.703	0.000	968.239	2,049.490	0.000	0.000	2,049.490	(1,081.251)				
In-service year of generation unit:				2030										
Discount rate:				5.50%										
Benefit/Cost Ratio:				0.47										

Residential Window Film/Solar Screen

PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.03	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.03	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	111.0	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	106.6	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	77.00	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	866.93	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(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	2.5	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	155.00	\$/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	2015
(2) IN-SERVICE YEAR FOR A AVOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) AVOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

* Avoided Generation Unit: 7FA CT
 * 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
2015	90	90	2.59	2.59	2.60	3.36	1	1
2016	180	180	2.89	2.87	2.90	3.65	1	1
2017	270	270	3.07	3.05	3.08	3.93	1	1
2018	360	360	3.22	3.20	3.22	4.05	1	1
2019	450	450	3.39	3.38	3.39	4.14	1	1
2020	540	540	3.60	3.60	3.60	4.34	1	1
2021	630	630	3.83	3.83	3.83	4.48	1	1
2022	720	720	4.05	4.04	4.05	4.67	1	1
2023	810	810	4.26	4.24	4.27	4.85	1	1
2024	900	900	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

* UNIT SIZE OF A AVOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF A 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	A VOIDED TRANSMISSION CAPACITY COST \$(000)	A VOIDED TRANSMISSION O&M COST (000)	TOTAL A VOIDED TRANSMISSION COST \$(000)	A VOIDED DISTRIBUTION CAPACITY COST \$(000)	A VOIDED DISTRIBUTION O&M COST \$(000)	TOTAL A VOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.129218
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.430151
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.760486
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.118696
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.519568
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.974846
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.483897
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.023365
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.599867
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.214489
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	19.254582
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.739013

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(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)
2015	4.9935	0.1292	0.0000	0.0000	0.1292	0.1292
2016	14.9806	0.4302	0.0000	0.0000	0.4302	0.4302
2017	24.9677	0.7605	0.0000	0.0000	0.7605	0.7605
2018	34.9548	1.1187	0.0000	0.0000	1.1187	1.1187
2019	44.9419	1.5196	0.0000	0.0000	1.5196	1.5196
2020	54.9290	1.9748	0.0000	0.0000	1.9748	1.9748
2021	64.9161	2.4839	0.0000	0.0000	2.4839	2.4839
2022	74.9032	3.0234	0.0000	0.0000	3.0234	3.0234
2023	84.8903	3.5999	0.0000	0.0000	3.5999	3.5999
2024	94.8774	4.2145	0.0000	0.0000	4.2145	4.2145
NOMINAL	499.3548	19.2546	0.0000	0.0000	19.2546	19.2546
NPV		13.7390	0.0000	0.0000	13.7390	13.7390

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(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)
2015	6.9300	0.0000	6.9300	13.9500	0.0000	13.9500	78.0233	0.0000	78.0233	4.7988	0.1245	0.3560	0.4805	0.0000	0.0000	0.0000	0.0000
2016	7.1033	0.0000	7.1033	13.9500	0.0000	13.9500	79.9739	0.0000	79.9739	14.3964	0.4161	1.0893	1.5054	0.0000	0.0000	0.0000	0.0000
2017	7.2808	0.0000	7.2808	13.9500	0.0000	13.9500	81.9733	0.0000	81.9733	23.9940	0.7359	1.8518	2.5877	0.0000	0.0000	0.0000	0.0000
2018	7.4629	0.0000	7.4629	13.9500	0.0000	13.9500	84.0226	0.0000	84.0226	33.5916	1.0801	2.6443	3.7244	0.0000	0.0000	0.0000	0.0000
2019	7.6494	0.0000	7.6494	13.9500	0.0000	13.9500	86.1232	0.0000	86.1232	43.1892	1.4636	3.4679	4.9314	0.0000	0.0000	0.0000	0.0000
2020	7.8407	0.0000	7.8407	13.9500	0.0000	13.9500	88.2762	0.0000	88.2762	52.7868	1.9008	4.3233	6.2241	0.0000	0.0000	0.0000	0.0000
2021	8.0367	0.0000	8.0367	13.9500	0.0000	13.9500	90.4832	0.0000	90.4832	62.3844	2.3884	5.2115	7.5999	0.0000	0.0000	0.0000	0.0000
2022	8.2376	0.0000	8.2376	13.9500	0.0000	13.9500	92.7452	0.0000	92.7452	71.9820	2.9120	6.1336	9.0456	0.0000	0.0000	0.0000	0.0000
2023	8.4435	0.0000	8.4435	13.9500	0.0000	13.9500	95.0639	0.0000	95.0639	81.5796	3.4740	7.0904	10.5644	0.0000	0.0000	0.0000	0.0000
2024	8.6546	0.0000	8.6546	13.9500	0.0000	13.9500	97.4405	0.0000	97.4405	91.1772	4.0715	8.0830	12.1545	0.0000	0.0000	0.0000	0.0000
NOMINAL	77.6394	0.0000	77.6394	139.5000	0.0000	139.5000	874.1253	0.0000	874.1253	479.8800	18.5670	40.2510	58.8180	0.0000	0.0000	0.0000	0.0000
NPV	61.0723	0.0000	61.0723	110.9331	0.0000	110.9331	687.5997	0.0000	687.5997		13.2481	29.0198	42.2680		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Energy Efficiency Window Film/Solar Screen Rev 1

(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)
2015	0.000	6.930	78.023	0.000	84.953	0.000	0.000	0.129	0.000	0.129	(84.824)	(84.824)
2016	0.000	7.103	79.974	0.000	87.077	0.000	0.000	0.430	0.000	0.430	(86.647)	(166.954)
2017	0.000	7.281	81.973	0.000	89.254	0.000	0.000	0.760	0.000	0.760	(88.494)	(246.461)
2018	0.000	7.463	84.023	0.000	91.485	0.000	0.000	1.119	0.000	1.119	(90.367)	(323.419)
2019	0.000	7.649	86.123	0.000	93.773	0.000	0.000	1.520	0.000	1.520	(92.253)	(397.887)
2020	0.000	7.841	88.276	0.000	96.117	0.000	0.000	1.975	0.000	1.975	(94.142)	(469.918)
2021	0.000	8.037	90.483	0.000	98.520	0.000	0.000	2.484	0.000	2.484	(96.036)	(539.568)
2022	0.000	8.238	92.745	0.000	100.983	0.000	0.000	3.023	0.000	3.023	(97.959)	(606.909)
2023	0.000	8.444	95.064	0.000	103.507	0.000	0.000	3.600	0.000	3.600	(99.908)	(672.009)
2024	0.000	8.655	97.440	0.000	106.095	0.000	0.000	4.214	0.000	4.214	(101.881)	(734.933)
NOMINAL	0.000	77.639	874.125	0.000	951.765	0.000	0.000	19.255	0.000	19.255	(932.510)	
NPV	0.000	61.072	687.600	0.000	748.672	0.000	0.000	13.739	0.000	13.739	(734.933)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.02

Residential High Performance Windows

PROGRAM: Residential Energy Efficiency High Performance Windows

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.37 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.39 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	811.7 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	780.1 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	566.68 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	6,376.70 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,500.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	317.00 \$/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	2015
(2) IN-SERVICE YEAR FOR A AVOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) AVOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Energy Efficiency High Performance Windows

* UNIT SIZE OF A VOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF A VOIDED 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Residential Energy Efficiency High Performance Windows

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	A VOIDED TRANSMISSION CAPACITY COST \$(000)	A VOIDED TRANSMISSION O&M COST (000)	TOTAL A VOIDED TRANSMISSION COST \$(000)	A VOIDED DISTRIBUTION CAPACITY COST \$(000)	A VOIDED DISTRIBUTION O&M COST \$(000)	TOTAL A VOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.068968
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.887352
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.176503
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.911985
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	24.330542
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	31.620211
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	39.770882
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	48.408562
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	57.639210
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	67.480226
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	308.294441
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	219.981994

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency High Performance Windows

(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)
2015	79.9541	2.0690	0.0000	0.0000	2.0690	2.0690
2016	239.8624	6.8874	0.0000	0.0000	6.8874	6.8874
2017	399.7706	12.1765	0.0000	0.0000	12.1765	12.1765
2018	559.6788	17.9120	0.0000	0.0000	17.9120	17.9120
2019	719.5871	24.3305	0.0000	0.0000	24.3305	24.3305
2020	879.4953	31.6202	0.0000	0.0000	31.6202	31.6202
2021	1,039.4036	39.7709	0.0000	0.0000	39.7709	39.7709
2022	1,199.3118	48.4086	0.0000	0.0000	48.4086	48.4086
2023	1,359.2201	57.6392	0.0000	0.0000	57.6392	57.6392
2024	1,519.1283	67.4802	0.0000	0.0000	67.4802	67.4802
NOMINAL	7,995.4121	308.2944	0.0000	0.0000	308.2944	308.2944
NPV		219.9820	0.0000	0.0000	219.9820	219.9820

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Energy Efficiency High Performance Windows

(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)
2015	111.6360	0.0000	111.6360	62.4490	0.0000	62.4490	1,256.2101	0.0000	1,256.2101	76.8359	1.9939	5.6997	7.6935	0.0000	0.0000	0.0000	0.0000
2016	114.4269	0.0000	114.4269	62.4490	0.0000	62.4490	1,287.6154	0.0000	1,287.6154	230.5077	6.6624	17.4410	24.1035	0.0000	0.0000	0.0000	0.0000
2017	117.2875	0.0000	117.2875	62.4490	0.0000	62.4490	1,319.8057	0.0000	1,319.8057	384.1796	11.7833	29.6498	41.4330	0.0000	0.0000	0.0000	0.0000
2018	120.2197	0.0000	120.2197	62.4490	0.0000	62.4490	1,352.8009	0.0000	1,352.8009	537.8514	17.2938	42.3399	59.6337	0.0000	0.0000	0.0000	0.0000
2019	123.2252	0.0000	123.2252	62.4490	0.0000	62.4490	1,386.6209	0.0000	1,386.6209	691.5232	23.4339	55.5257	78.9597	0.0000	0.0000	0.0000	0.0000
2020	126.3058	0.0000	126.3058	62.4490	0.0000	62.4490	1,421.2864	0.0000	1,421.2864	845.1950	30.4351	69.2221	99.6572	0.0000	0.0000	0.0000	0.0000
2021	129.4635	0.0000	129.4635	62.4490	0.0000	62.4490	1,456.8186	0.0000	1,456.8186	998.8668	38.2421	83.4441	121.6862	0.0000	0.0000	0.0000	0.0000
2022	132.7001	0.0000	132.7001	62.4490	0.0000	62.4490	1,493.2391	0.0000	1,493.2391	1,152.5387	46.6262	98.2072	144.8335	0.0000	0.0000	0.0000	0.0000
2023	136.0176	0.0000	136.0176	62.4490	0.0000	62.4490	1,530.5700	0.0000	1,530.5700	1,306.2105	55.6235	113.5276	169.1510	0.0000	0.0000	0.0000	0.0000
2024	139.4180	0.0000	139.4180	62.4490	0.0000	62.4490	1,568.8343	0.0000	1,568.8343	1,459.8823	65.1908	129.4214	194.6123	0.0000	0.0000	0.0000	0.0000
NOMINAL	1,250.7003	0.0000	1,250.7003	624.4900	0.0000	624.4900	#####	0.0000	#####	7,683.5910	297.2850	644.4785	941.7635	0.0000	0.0000	0.0000	0.0000
NPV	983.8192	0.0000	983.8192	496.6066	0.0000	496.6066	#####	0.0000	#####		212.1219	464.6507	676.7727		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS

PROGRAM: Residential Energy Efficiency High Performance Windows

(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)
2015	0.000	111.636	1,256.210	0.000	1,367.846	0.000	0.000	2.069	0.000	2.069	(1,365.777)	(1,365.777)
2016	0.000	114.427	1,287.615	0.000	1,402.042	0.000	0.000	6.887	0.000	6.887	(1,395.155)	(2,688.199)
2017	0.000	117.288	1,319.806	0.000	1,437.093	0.000	0.000	12.177	0.000	12.177	(1,424.917)	(3,968.419)
2018	0.000	120.220	1,352.801	0.000	1,473.021	0.000	0.000	17.912	0.000	17.912	(1,455.109)	(5,207.609)
2019	0.000	123.225	1,386.621	0.000	1,509.846	0.000	0.000	24.331	0.000	24.331	(1,485.516)	(6,406.742)
2020	0.000	126.306	1,421.286	0.000	1,547.592	0.000	0.000	31.620	0.000	31.620	(1,515.972)	(7,566.664)
2021	0.000	129.463	1,456.819	0.000	1,586.282	0.000	0.000	39.771	0.000	39.771	(1,546.511)	(8,688.265)
2022	0.000	132.700	1,493.239	0.000	1,625.939	0.000	0.000	48.409	0.000	48.409	(1,577.531)	(9,772.718)
2023	0.000	136.018	1,530.570	0.000	1,666.588	0.000	0.000	57.639	0.000	57.639	(1,608.948)	(10,821.107)
2024	0.000	139.418	1,568.834	0.000	1,708.252	0.000	0.000	67.480	0.000	67.480	(1,640.772)	(11,834.496)
NOMINAL	0.000	1,250.700	14,073.801	0.000	15,324.502	0.000	0.000	308.294	0.000	308.294	(15,016.207)	
NPV	0.000	983.819	11,070.658	0.000	12,054.478	0.000	0.000	219.982	0.000	219.982	(11,834.496)	

Discount Rate: 5.50%

Benefit/Cost Ratio [col (11) / col (6)]: 0.02

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Energy Efficiency High Performance Windows

(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)	CUMULATIVE DISCOUNTED BENEFITS \$(000)	CUMULATIVE DISCOUNTED COSTS \$(000)	Benefit to Cost Ratio
2015	7.694	295.500	62.449	0.000	365.643	1,256.210	0.000	0.000	1,256.210	(890.568)	(890.568)	366	1,256	0.29
2016	24.103	295.500	62.449	0.000	382.052	1,287.615	0.000	0.000	1,287.615	(905.563)	(1,748.921)	728	2,477	0.29
2017	41.433	295.500	62.449	0.000	399.382	1,319.806	0.000	0.000	1,319.806	(920.424)	(2,575.878)	1,087	3,662	0.30
2018	59.634	295.500	62.449	0.000	417.583	1,352.801	0.000	0.000	1,352.801	(935.218)	(3,372.323)	1,442	4,815	0.30
2019	78.960	295.500	62.449	0.000	436.909	1,386.621	0.000	0.000	1,386.621	(949.712)	(4,138.946)	1,795	5,934	0.30
2020	99.657	295.500	62.449	0.000	457.606	1,421.286	0.000	0.000	1,421.286	(963.680)	(4,876.291)	2,145	7,021	0.31
2021	121.686	295.500	62.449	0.000	479.635	1,456.819	0.000	0.000	1,456.819	(977.183)	(5,584.989)	2,493	8,078	0.31
2022	144.833	295.500	62.449	0.000	502.782	1,493.239	0.000	0.000	1,493.239	(990.457)	(6,265.866)	2,839	9,104	0.31
2023	169.151	295.500	62.449	0.000	527.100	1,530.570	0.000	0.000	1,530.570	(1,003.470)	(6,919.725)	3,182	10,102	0.31
2024	194.612	295.500	62.449	0.000	552.561	1,568.834	0.000	0.000	1,568.834	(1,016.273)	(7,547.405)	3,523	11,071	0.32
NOMINAL	941.763	2,955.000	624.490	0.000	4,521.253	14,073.801	0.000	0.000	14,073.801	(9,552.548)				
NPV	676.773	2,349.874	496.607	0.000	3,523.253	11,070.658	0.000	0.000	11,070.658	(7,547.405)				
In-service year of generation unit:				2030										
Discount rate:				5.50%										
Benefit/Cost Ratio:				0.32										

Residential Efficient Electric Heat Pump Rebates – SEER 15

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.17 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.18 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	328.3 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	315.5 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	528.20 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	470.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(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	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	466.41 \$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

* UNIT SIZE OF A AVOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF A 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

* 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.565641
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8.540717
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	15.099573
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22.211904
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	30.171288
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	39.210902
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	49.318208
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	60.029435
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	71.475975
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	83.679408
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	382.303049
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	272.790475

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(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)
2015	99.1478	2.5656	0.0000	0.0000	2.5656	2.5656
2016	297.4433	8.5407	0.0000	0.0000	8.5407	8.5407
2017	495.7388	15.0996	0.0000	0.0000	15.0996	15.0996
2018	694.0343	22.2119	0.0000	0.0000	22.2119	22.2119
2019	892.3299	30.1713	0.0000	0.0000	30.1713	30.1713
2020	1,090.6254	39.2109	0.0000	0.0000	39.2109	39.2109
2021	1,288.9209	49.3182	0.0000	0.0000	49.3182	49.3182
2022	1,487.2164	60.0294	0.0000	0.0000	60.0294	60.0294
2023	1,685.5120	71.4760	0.0000	0.0000	71.4760	71.4760
2024	1,883.8075	83.6794	0.0000	0.0000	83.6794	83.6794
NOMINAL	9,914.7763	382.3030	0.0000	0.0000	382.3030	382.3030
NPV		272.7905	0.0000	0.0000	272.7905	272.7905

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(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)
2015	319.0299	0.0000	319.0299	281.7094	0.0000	281.7094	283.8780	0.0000	283.8780	95.2810	2.4725	7.0679	9.5404	0.0000	0.0000	0.0000	0.0000
2016	327.0057	0.0000	327.0057	281.7094	0.0000	281.7094	290.9750	0.0000	290.9750	285.8430	8.2618	21.6279	29.8897	0.0000	0.0000	0.0000	0.0000
2017	335.1808	0.0000	335.1808	281.7094	0.0000	281.7094	298.2494	0.0000	298.2494	476.4050	14.6119	36.7674	51.3794	0.0000	0.0000	0.0000	0.0000
2018	343.5604	0.0000	343.5604	281.7094	0.0000	281.7094	305.7056	0.0000	305.7056	666.9670	21.4453	52.5039	73.9492	0.0000	0.0000	0.0000	0.0000
2019	352.1494	0.0000	352.1494	281.7094	0.0000	281.7094	313.3482	0.0000	313.3482	857.5290	29.0594	68.8551	97.9146	0.0000	0.0000	0.0000	0.0000
2020	360.9531	0.0000	360.9531	281.7094	0.0000	281.7094	321.1819	0.0000	321.1819	1,048.0910	37.7413	85.8394	123.5807	0.0000	0.0000	0.0000	0.0000
2021	369.9769	0.0000	369.9769	281.7094	0.0000	281.7094	329.2115	0.0000	329.2115	1,238.6530	47.4224	103.4755	150.8979	0.0000	0.0000	0.0000	0.0000
2022	379.2264	0.0000	379.2264	281.7094	0.0000	281.7094	337.4418	0.0000	337.4418	1,429.2150	57.8192	121.7827	179.6019	0.0000	0.0000	0.0000	0.0000
2023	388.7070	0.0000	388.7070	281.7094	0.0000	281.7094	345.8778	0.0000	345.8778	1,619.7770	68.9763	140.7808	209.7571	0.0000	0.0000	0.0000	0.0000
2024	398.4247	0.0000	398.4247	281.7094	0.0000	281.7094	354.5248	0.0000	354.5248	1,810.3390	80.8404	160.4901	241.3305	0.0000	0.0000	0.0000	0.0000
NOMINAL	3,574.2143	0.0000	3,574.2143	2,817.0939	0.0000	2,817.0939	3,180.3939	0.0000	3,180.3939	9,528.1000	368.6507	799.1909	1,167.8415	0.0000	0.0000	0.0000	0.0000
NPV	2,811.5293	0.0000	2,811.5293	2,240.2081	0.0000	2,240.2081	2,501.7444	0.0000	2,501.7444		263.0435	576.1940	839.2375		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 15

(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)
2015	0.000	319.030	283.878	0.000	602.908	0.000	0.000	2.566	0.000	2.566	(600.342)	(600.342)
2016	0.000	327.006	290.975	0.000	617.981	0.000	0.000	8.541	0.000	8.541	(609.440)	(1,178.011)
2017	0.000	335.181	298.249	0.000	633.430	0.000	0.000	15.100	0.000	15.100	(618.331)	(1,733.551)
2018	0.000	343.560	305.706	0.000	649.266	0.000	0.000	22.212	0.000	22.212	(627.054)	(2,267.559)
2019	0.000	352.149	313.348	0.000	665.498	0.000	0.000	30.171	0.000	30.171	(635.326)	(2,780.405)
2020	0.000	360.953	321.182	0.000	682.135	0.000	0.000	39.211	0.000	39.211	(642.924)	(3,272.328)
2021	0.000	369.977	329.211	0.000	699.188	0.000	0.000	49.318	0.000	49.318	(649.870)	(3,743.644)
2022	0.000	379.226	337.442	0.000	716.668	0.000	0.000	60.029	0.000	60.029	(656.639)	(4,195.042)
2023	0.000	388.707	345.878	0.000	734.585	0.000	0.000	71.476	0.000	71.476	(663.109)	(4,627.123)
2024	0.000	398.425	354.525	0.000	752.949	0.000	0.000	83.679	0.000	83.679	(669.270)	(5,040.483)

NOMINAL 0.000 3,574.214 3,180.394 0.000 6,754.608 0.000 0.000 382.303 0.000 382.303 (6,372.305)

NPV 0.000 2,811.529 2,501.744 0.000 5,313.274 0.000 0.000 272.790 0.000 272.790 (5,040.483)

Discount Rate: 5.50%

Benefit/Cost Ratio [col (11) / col (6)]: 0.05

Residential Efficient Electric Heat Pump Rebates – SEER 16

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.26	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.27	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	536.9	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	516.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	528.20	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	1,760.46	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	528.14	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	466.41	\$/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	2015
(2) IN-SERVICE YEAR FOR A AVOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) AVOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

* Avoided Generation Unit: 7FA CT
 * 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
2015	239	239	2.59	2.59	2.60	3.36	1	1
2016	478	478	2.89	2.87	2.90	3.65	1	1
2017	717	717	3.07	3.05	3.08	3.93	1	1
2018	956	956	3.22	3.20	3.22	4.05	1	1
2019	1195	1195	3.39	3.38	3.39	4.14	1	1
2020	1434	1434	3.60	3.60	3.60	4.34	1	1
2021	1673	1673	3.83	3.83	3.83	4.48	1	1
2022	1912	1912	4.05	4.04	4.05	4.67	1	1
2023	2151	2151	4.26	4.24	4.27	4.85	1	1
2024	2390	2390	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

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

(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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

* 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.660218
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.526670
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.770884
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	14.373250
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	19.523742
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	25.373247
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	31.913652
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	38.844852
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	46.251870
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	54.148672
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	247.387059
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	176.521829

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(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)
2015	64.1582	1.6602	0.0000	0.0000	1.6602	1.6602
2016	192.4746	5.5267	0.0000	0.0000	5.5267	5.5267
2017	320.7910	9.7709	0.0000	0.0000	9.7709	9.7709
2018	449.1074	14.3733	0.0000	0.0000	14.3733	14.3733
2019	577.4238	19.5237	0.0000	0.0000	19.5237	19.5237
2020	705.7401	25.3732	0.0000	0.0000	25.3732	25.3732
2021	834.0565	31.9137	0.0000	0.0000	31.9137	31.9137
2022	962.3729	38.8449	0.0000	0.0000	38.8449	38.8449
2023	1,090.6893	46.2519	0.0000	0.0000	46.2519	46.2519
2024	1,219.0057	54.1487	0.0000	0.0000	54.1487	54.1487
NOMINAL	6,415.8195	247.3871	0.0000	0.0000	247.3871	247.3871
NPV		176.5218	0.0000	0.0000	176.5218	176.5218

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(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)
2015	126.2387	0.0000	126.2387	111.4711	0.0000	111.4711	420.7496	0.0000	420.7496	61.6560	1.5999	4.5736	6.1736	0.0000	0.0000	0.0000	0.0000
2016	129.3946	0.0000	129.3946	111.4711	0.0000	111.4711	431.2683	0.0000	431.2683	184.9681	5.3462	13.9954	19.3415	0.0000	0.0000	0.0000	0.0000
2017	132.6295	0.0000	132.6295	111.4711	0.0000	111.4711	442.0500	0.0000	442.0500	308.2801	9.4553	23.7921	33.2474	0.0000	0.0000	0.0000	0.0000
2018	135.9452	0.0000	135.9452	111.4711	0.0000	111.4711	453.1013	0.0000	453.1013	431.5922	13.8772	33.9751	47.8523	0.0000	0.0000	0.0000	0.0000
2019	139.3439	0.0000	139.3439	111.4711	0.0000	111.4711	464.4288	0.0000	464.4288	554.9042	18.8043	44.5559	63.3602	0.0000	0.0000	0.0000	0.0000
2020	142.8275	0.0000	142.8275	111.4711	0.0000	111.4711	476.0395	0.0000	476.0395	678.2163	24.4223	55.5464	79.9687	0.0000	0.0000	0.0000	0.0000
2021	146.3982	0.0000	146.3982	111.4711	0.0000	111.4711	487.9405	0.0000	487.9405	801.5283	30.6869	66.9587	97.6455	0.0000	0.0000	0.0000	0.0000
2022	150.0581	0.0000	150.0581	111.4711	0.0000	111.4711	500.1390	0.0000	500.1390	924.8404	37.4146	78.8052	116.2198	0.0000	0.0000	0.0000	0.0000
2023	153.8096	0.0000	153.8096	111.4711	0.0000	111.4711	512.6425	0.0000	512.6425	1,048.1524	44.6344	91.0988	135.7332	0.0000	0.0000	0.0000	0.0000
2024	157.6548	0.0000	157.6548	111.4711	0.0000	111.4711	525.4586	0.0000	525.4586	1,171.4645	52.3116	103.8526	156.1642	0.0000	0.0000	0.0000	0.0000
NOMINAL	1,414.3000	0.0000	1,414.3000	1,114.7110	0.0000	1,114.7110	4,713.8183	0.0000	4,713.8183	6,165.6025	238.5526	517.1538	755.7065	0.0000	0.0000	0.0000	0.0000
NPV	1,112.5091	0.0000	1,112.5091	886.4400	0.0000	886.4400	3,707.9586	0.0000	3,707.9586		170.2146	372.8532	543.0679		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(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)
2015	0.000	126.239	420.750	0.000	546.988	0.000	0.000	1.660	0.000	1.660	(545.328)	(545.328)
2016	0.000	129.395	431.268	0.000	560.663	0.000	0.000	5.527	0.000	5.527	(555.136)	(1,071.524)
2017	0.000	132.630	442.050	0.000	574.680	0.000	0.000	9.771	0.000	9.771	(564.909)	(1,579.067)
2018	0.000	135.945	453.101	0.000	589.047	0.000	0.000	14.373	0.000	14.373	(574.673)	(2,068.467)
2019	0.000	139.344	464.429	0.000	603.773	0.000	0.000	19.524	0.000	19.524	(584.249)	(2,540.082)
2020	0.000	142.827	476.040	0.000	618.867	0.000	0.000	25.373	0.000	25.373	(593.494)	(2,994.185)
2021	0.000	146.398	487.941	0.000	634.339	0.000	0.000	31.914	0.000	31.914	(602.425)	(3,431.091)
2022	0.000	150.058	500.139	0.000	650.197	0.000	0.000	38.845	0.000	38.845	(611.352)	(3,851.357)
2023	0.000	153.810	512.643	0.000	666.452	0.000	0.000	46.252	0.000	46.252	(620.200)	(4,255.479)
2024	0.000	157.655	525.459	0.000	683.113	0.000	0.000	54.149	0.000	54.149	(628.965)	(4,643.946)

NOMINAL 0.000 1,414.300 4,713.818 0.000 6,128.118 0.000 0.000 247.387 0.000 247.387 (5,880.731)

NPV 0.000 1,112.509 3,707.959 0.000 4,820.468 0.000 0.000 176.522 0.000 176.522 (4,643.946)

Discount Rate: 5.50%

Benefit/Cost Ratio [col (11) / col (6)]: 0.04

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 16

(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)	CUMULATIVE DISCOUNTED BENEFITS \$(000)	CUMULATIVE DISCOUNTED COSTS \$(000)	Benefit to Cost Ratio
2015	6.174	126.225	111.471	0.000	243.870	420.750	0.000	0.000	420.750	(176.880)	(176.880)	244	421	0.58
2016	19.342	126.225	111.471	0.000	257.038	431.268	0.000	0.000	431.268	(174.231)	(342.028)	488	830	0.59
2017	33.247	126.225	111.471	0.000	270.943	442.050	0.000	0.000	442.050	(171.107)	(495.759)	731	1,227	0.60
2018	47.852	126.225	111.471	0.000	285.548	453.101	0.000	0.000	453.101	(167.553)	(638.449)	974	1,613	0.60
2019	63.360	126.225	111.471	0.000	301.056	464.429	0.000	0.000	464.429	(163.373)	(770.326)	1,217	1,987	0.61
2020	79.969	126.225	111.471	0.000	317.665	476.040	0.000	0.000	476.040	(158.375)	(891.505)	1,460	2,352	0.62
2021	97.646	126.225	111.471	0.000	335.342	487.941	0.000	0.000	487.941	(152.599)	(1,002.176)	1,703	2,706	0.63
2022	116.220	126.225	111.471	0.000	353.916	500.139	0.000	0.000	500.139	(146.223)	(1,102.696)	1,947	3,049	0.64
2023	135.733	126.225	111.471	0.000	373.429	512.643	0.000	0.000	512.643	(139.213)	(1,193.407)	2,190	3,383	0.65
2024	156.164	126.225	111.471	0.000	393.860	525.459	0.000	0.000	525.459	(131.598)	(1,274.686)	2,433	3,708	0.66
NOMINAL	755.706	1,262.249	1,114.711	0.000	3,132.666	4,713.818	0.000	0.000	4,713.818	(1,581.152)				
NPV	543.068	1,003.765	886.440	0.000	2,433.273	3,707.959	0.000	0.000	3,707.959	(1,274.686)				
In-service year of generation unit:				2030										
Discount rate:				5.50%										
Benefit/Cost Ratio:				0.66										

Residential Efficient Electric Heat Pump Rebates – SEER 17

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.42 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.44 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	782.9 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	752.4 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	528.20 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	2,611.47 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	783.44 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	466.41 \$/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	2015
(2) IN-SERVICE YEAR FOR A AVOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) AVOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

* Avoided Generation Unit: 7FA CT
 * 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
2015	78	78	2.59	2.59	2.60	3.36	1	1
2016	156	156	2.89	2.87	2.90	3.65	1	1
2017	234	234	3.07	3.05	3.08	3.93	1	1
2018	312	312	3.22	3.20	3.22	4.05	1	1
2019	390	390	3.39	3.38	3.39	4.14	1	1
2020	468	468	3.60	3.60	3.60	4.34	1	1
2021	546	546	3.83	3.83	3.83	4.48	1	1
2022	624	624	4.05	4.04	4.05	4.67	1	1
2023	702	702	4.26	4.24	4.27	4.85	1	1
2024	780	780	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

* UNIT SIZE OF A AVOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF A 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

* 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.790105
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.630167
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.650007
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.840293
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.291434
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.075239
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	15.187847
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	18.486435
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22.011468
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	25.769590
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	117.732584
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	84.007511

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

(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)
2015	30.5332	0.7901	0.0000	0.0000	0.7901	0.7901
2016	91.5995	2.6302	0.0000	0.0000	2.6302	2.6302
2017	152.6658	4.6500	0.0000	0.0000	4.6500	4.6500
2018	213.7322	6.8403	0.0000	0.0000	6.8403	6.8403
2019	274.7985	9.2914	0.0000	0.0000	9.2914	9.2914
2020	335.8648	12.0752	0.0000	0.0000	12.0752	12.0752
2021	396.9312	15.1878	0.0000	0.0000	15.1878	15.1878
2022	457.9975	18.4864	0.0000	0.0000	18.4864	18.4864
2023	519.0638	22.0115	0.0000	0.0000	22.0115	22.0115
2024	580.1301	25.7696	0.0000	0.0000	25.7696	25.7696
NOMINAL	3,053.3166	117.7326	0.0000	0.0000	117.7326	117.7326
NPV		84.0075	0.0000	0.0000	84.0075	84.0075

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
 PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

(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)
2015	41.1992	0.0000	41.1992	36.3797	0.0000	36.3797	203.6946	0.0000	203.6946	29.3424	0.7614	2.1766	2.9380	0.0000	0.0000	0.0000	0.0000
2016	42.2292	0.0000	42.2292	36.3797	0.0000	36.3797	208.7869	0.0000	208.7869	88.0271	2.5443	6.6604	9.2047	0.0000	0.0000	0.0000	0.0000
2017	43.2849	0.0000	43.2849	36.3797	0.0000	36.3797	214.0066	0.0000	214.0066	146.7119	4.4998	11.3228	15.8226	0.0000	0.0000	0.0000	0.0000
2018	44.3671	0.0000	44.3671	36.3797	0.0000	36.3797	219.3568	0.0000	219.3568	205.3966	6.6042	16.1689	22.7731	0.0000	0.0000	0.0000	0.0000
2019	45.4762	0.0000	45.4762	36.3797	0.0000	36.3797	224.8407	0.0000	224.8407	264.0813	8.9490	21.2044	30.1534	0.0000	0.0000	0.0000	0.0000
2020	46.6131	0.0000	46.6131	36.3797	0.0000	36.3797	230.4617	0.0000	230.4617	322.7661	11.6227	26.4348	38.0575	0.0000	0.0000	0.0000	0.0000
2021	47.7785	0.0000	47.7785	36.3797	0.0000	36.3797	236.2233	0.0000	236.2233	381.4508	14.6040	31.8659	46.4699	0.0000	0.0000	0.0000	0.0000
2022	48.9729	0.0000	48.9729	36.3797	0.0000	36.3797	242.1288	0.0000	242.1288	440.1356	17.8058	37.5037	55.3095	0.0000	0.0000	0.0000	0.0000
2023	50.1973	0.0000	50.1973	36.3797	0.0000	36.3797	248.1821	0.0000	248.1821	498.8203	21.2417	43.3543	64.5960	0.0000	0.0000	0.0000	0.0000
2024	51.4522	0.0000	51.4522	36.3797	0.0000	36.3797	254.3866	0.0000	254.3866	557.5051	24.8953	49.4239	74.3192	0.0000	0.0000	0.0000	0.0000
NOMINAL	461.5707	0.0000	461.5707	363.7969	0.0000	363.7969	2,282.0680	0.0000	2,282.0680	2,934.2372	113.5282	246.1158	359.6440	0.0000	0.0000	0.0000	0.0000
NPV	363.0783	0.0000	363.0783	289.2984	0.0000	289.2984	1,795.1082	0.0000	1,795.1082		81.0059	177.4425	258.4484		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 17

(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)
2015	0.000	41.199	203.695	0.000	244.894	0.000	0.000	0.790	0.000	0.790	(244.104)	(244.104)
2016	0.000	42.229	208.787	0.000	251.016	0.000	0.000	2.630	0.000	2.630	(248.386)	(479.541)
2017	0.000	43.285	214.007	0.000	257.292	0.000	0.000	4.650	0.000	4.650	(252.642)	(706.527)
2018	0.000	44.367	219.357	0.000	263.724	0.000	0.000	6.840	0.000	6.840	(256.884)	(925.293)
2019	0.000	45.476	224.841	0.000	270.317	0.000	0.000	9.291	0.000	9.291	(261.026)	(1,135.997)
2020	0.000	46.613	230.462	0.000	277.075	0.000	0.000	12.075	0.000	12.075	(265.000)	(1,338.757)
2021	0.000	47.778	236.223	0.000	284.002	0.000	0.000	15.188	0.000	15.188	(268.814)	(1,533.713)
2022	0.000	48.973	242.129	0.000	291.102	0.000	0.000	18.486	0.000	18.486	(272.615)	(1,721.119)
2023	0.000	50.197	248.182	0.000	298.379	0.000	0.000	22.011	0.000	22.011	(276.368)	(1,901.200)
2024	0.000	51.452	254.387	0.000	305.839	0.000	0.000	25.770	0.000	25.770	(280.069)	(2,074.179)
NOMINAL	0.000	461.571	2,282.068	0.000	2,743.639	0.000	0.000	117.733	0.000	117.733	(2,625.906)	
NPV	0.000	363.078	1,795.108	0.000	2,158.186	0.000	0.000	84.008	0.000	84.008	(2,074.179)	

Discount Rate: 5.50%

Benefit/Cost Ratio [col (11) / col (6)]: 0.04

Residential Efficient Electric Heat Pump Rebates – SEER 18

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.46	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.48	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	990.6	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	952.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	528.20	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	4,097.30	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,229.19	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	466.41	\$/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	2015
(2) IN-SERVICE YEAR FOR A AVOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) AVOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	0.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

* Avoided Generation Unit: 7FA CT
 * 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
2015	91	91	2.59	2.59	2.60	3.36	1	1
2016	182	182	2.89	2.87	2.90	3.65	1	1
2017	273	273	3.07	3.05	3.08	3.93	1	1
2018	364	364	3.22	3.20	3.22	4.05	1	1
2019	455	455	3.39	3.38	3.39	4.14	1	1
2020	546	546	3.60	3.60	3.60	4.34	1	1
2021	637	637	3.83	3.83	3.83	4.48	1	1
2022	728	728	4.05	4.04	4.05	4.67	1	1
2023	819	819	4.26	4.24	4.27	4.85	1	1
2024	910	910	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

* UNIT SIZE OF A AVOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF A 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

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

* INSERVICE COSTS OF A VOIDED 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.166316
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.882530
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.864124
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	10.097323
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.715585
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.824909
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22.419596
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	27.288819
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	32.492309
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	38.039875
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	173.791386
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	124.007996

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(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)
2015	45.0716	1.1663	0.0000	0.0000	1.1663	1.1663
2016	135.2149	3.8825	0.0000	0.0000	3.8825	3.8825
2017	225.3582	6.8641	0.0000	0.0000	6.8641	6.8641
2018	315.5015	10.0973	0.0000	0.0000	10.0973	10.0973
2019	405.6448	13.7156	0.0000	0.0000	13.7156	13.7156
2020	495.7881	17.8249	0.0000	0.0000	17.8249	17.8249
2021	585.9314	22.4196	0.0000	0.0000	22.4196	22.4196
2022	676.0747	27.2888	0.0000	0.0000	27.2888	27.2888
2023	766.2180	32.4923	0.0000	0.0000	32.4923	32.4923
2024	856.3612	38.0399	0.0000	0.0000	38.0399	38.0399
NOMINAL	4,507.1645	173.7914	0.0000	0.0000	173.7914	173.7914
NPV		124.0080	0.0000	0.0000	124.0080	124.0080

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(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)
2015	48.0658	0.0000	48.0658	42.4430	0.0000	42.4430	372.8546	0.0000	372.8546	43.3139	1.1240	3.2130	4.3370	0.0000	0.0000	0.0000	0.0000
2016	49.2674	0.0000	49.2674	42.4430	0.0000	42.4430	382.1760	0.0000	382.1760	129.9416	3.7557	9.8318	13.5876	0.0000	0.0000	0.0000	0.0000
2017	50.4991	0.0000	50.4991	42.4430	0.0000	42.4430	391.7304	0.0000	391.7304	216.5693	6.6424	16.7141	23.3566	0.0000	0.0000	0.0000	0.0000
2018	51.7616	0.0000	51.7616	42.4430	0.0000	42.4430	401.5237	0.0000	401.5237	303.1970	9.7488	23.8678	33.6166	0.0000	0.0000	0.0000	0.0000
2019	53.0556	0.0000	53.0556	42.4430	0.0000	42.4430	411.5617	0.0000	411.5617	389.8247	13.2101	31.3009	44.5110	0.0000	0.0000	0.0000	0.0000
2020	54.3820	0.0000	54.3820	42.4430	0.0000	42.4430	421.8508	0.0000	421.8508	476.4524	17.1569	39.0218	56.1786	0.0000	0.0000	0.0000	0.0000
2021	55.7416	0.0000	55.7416	42.4430	0.0000	42.4430	432.3971	0.0000	432.3971	563.0801	21.5578	47.0390	68.5968	0.0000	0.0000	0.0000	0.0000
2022	57.1351	0.0000	57.1351	42.4430	0.0000	42.4430	443.2070	0.0000	443.2070	649.7078	26.2841	55.3613	81.6453	0.0000	0.0000	0.0000	0.0000
2023	58.5635	0.0000	58.5635	42.4430	0.0000	42.4430	454.2872	0.0000	454.2872	736.3355	31.3560	63.9976	95.3536	0.0000	0.0000	0.0000	0.0000
2024	60.0276	0.0000	60.0276	42.4430	0.0000	42.4430	465.6443	0.0000	465.6443	822.9632	36.7493	72.9573	109.7066	0.0000	0.0000	0.0000	0.0000
NOMINAL	538.4992	0.0000	538.4992	424.4297	0.0000	424.4297	4,177.2327	0.0000	4,177.2327	4,331.3850	167.5851	363.3047	530.8898	0.0000	0.0000	0.0000	0.0000
NPV	423.5913	0.0000	423.5913	337.5148	0.0000	337.5148	3,285.8725	0.0000	3,285.8725		119.5771	261.9324	381.5095		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS

PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(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)
2015	0.000	48.066	372.855	0.000	420.920	0.000	0.000	1.166	0.000	1.166	(419.754)	(419.754)
2016	0.000	49.267	382.176	0.000	431.443	0.000	0.000	3.883	0.000	3.883	(427.561)	(825.025)
2017	0.000	50.499	391.730	0.000	442.229	0.000	0.000	6.864	0.000	6.864	(435.365)	(1,216.180)
2018	0.000	51.762	401.524	0.000	453.285	0.000	0.000	10.097	0.000	10.097	(443.188)	(1,593.605)
2019	0.000	53.056	411.562	0.000	464.617	0.000	0.000	13.716	0.000	13.716	(450.902)	(1,957.580)
2020	0.000	54.382	421.851	0.000	476.233	0.000	0.000	17.825	0.000	17.825	(458.408)	(2,308.324)
2021	0.000	55.742	432.397	0.000	488.139	0.000	0.000	22.420	0.000	22.420	(465.719)	(2,646.085)
2022	0.000	57.135	443.207	0.000	500.342	0.000	0.000	27.289	0.000	27.289	(473.053)	(2,971.279)
2023	0.000	58.563	454.287	0.000	512.851	0.000	0.000	32.492	0.000	32.492	(480.358)	(3,284.280)
2024	0.000	60.028	465.644	0.000	525.672	0.000	0.000	38.040	0.000	38.040	(487.632)	(3,585.456)
NOMINAL	0.000	538.499	4,177.233	0.000	4,715.732	0.000	0.000	173.791	0.000	173.791	(4,541.940)	
NPV	0.000	423.591	3,285.872	0.000	3,709.464	0.000	0.000	124.008	0.000	124.008	(3,585.456)	

Discount Rate: 5.50%

Benefit/Cost Ratio [col (11) / col (6)]: 0.03

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Residential Energy Efficiency (SF) Efficient Electric Heat Pump SEER 18

(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)	CUMULATIVE DISCOUNTED BENEFITS \$(000)	CUMULATIVE DISCOUNTED COSTS \$(000)	Benefit to Cost Ratio
2015	4.337	111.856	42.443	0.000	158.636	372.855	0.000	0.000	372.855	(214.218)	(214.218)	159	373	0.43
2016	13.588	111.856	42.443	0.000	167.887	382.176	0.000	0.000	382.176	(214.289)	(417.336)	318	735	0.43
2017	23.357	111.856	42.443	0.000	177.656	391.730	0.000	0.000	391.730	(214.074)	(609.672)	477	1,087	0.44
2018	33.617	111.856	42.443	0.000	187.916	401.524	0.000	0.000	401.524	(213.608)	(791.583)	637	1,429	0.45
2019	44.511	111.856	42.443	0.000	198.810	411.562	0.000	0.000	411.562	(212.751)	(963.319)	798	1,761	0.45
2020	56.179	111.856	42.443	0.000	210.478	421.851	0.000	0.000	421.851	(211.373)	(1,125.048)	959	2,084	0.46
2021	68.597	111.856	42.443	0.000	222.896	432.397	0.000	0.000	432.397	(209.501)	(1,276.987)	1,121	2,398	0.47
2022	81.645	111.856	42.443	0.000	235.945	443.207	0.000	0.000	443.207	(207.262)	(1,419.467)	1,283	2,702	0.47
2023	95.354	111.856	42.443	0.000	249.653	454.287	0.000	0.000	454.287	(204.634)	(1,552.807)	1,445	2,998	0.48
2024	109.707	111.856	42.443	0.000	264.006	465.644	0.000	0.000	465.644	(201.638)	(1,677.344)	1,609	3,286	0.49
NOMINAL	530.890	1,118.564	424.430	0.000	2,073.883	4,177.233	0.000	0.000	4,177.233	(2,103.349)				
NPV	381.510	889.504	337.515	0.000	1,608.528	3,285.872	0.000	0.000	3,285.872	(1,677.344)				
	In-service year of generation unit:			2030										
	Discount rate:			5.50%										
	Benefit/Cost Ratio:			0.49										

New Home Rebate

PROGRAM: Residential Energy Efficiency Gold Ring

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.89 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.93 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	1,366.8 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	1,313.5 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	465.50 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	700.00 \$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2018
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	120.0557 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	10.74022 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	15 %
(16) A VOIDED GENERATING UNIT FUEL COST	3.363149 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Residential Energy Efficiency Gold Ring

* Avoided Generation Unit: 7FA CT
 * 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
2015	23	23	2.59	2.59	2.60	3.36	1	1
2016	46	46	2.89	2.87	2.90	3.65	1	1
2017	69	69	3.07	3.05	3.08	3.93	1	1
2018	92	92	3.22	3.20	3.22	4.05	1	1
2019	115	115	3.39	3.38	3.39	4.14	1	1
2020	138	138	3.60	3.60	3.60	4.34	1	1
2021	161	161	3.83	3.83	3.83	4.48	1	1
2022	184	184	4.05	4.04	4.05	4.67	1	1
2023	207	207	4.26	4.24	4.27	4.85	1	1
2024	230	230	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
 PLANT: 2018 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)
2009	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2010	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2011	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2012	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2013	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2014	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2015	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2016	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2017	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2018	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2018

PLANT COSTS (2010 \$) \$120.06
 AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Energy Efficiency Gold Ring

* UNIT SIZE OF A VOIDED GENERATION UNIT = 85 kW
 * INSERVICE COSTS OF A VOIDED GEN. UNIT (000) = \$0

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0178	10.2291	111.9566	0.0000	0.0000	6.3769	4.5391	0.0000	12.0668
2019	0.0178	10.2520	111.9566	0.0000	0.0000	6.9111	4.6404	0.0000	12.5227
2020	0.0178	10.2754	111.9566	0.0000	0.0000	7.1731	4.8560	0.0000	12.5925
2021	0.0178	10.6575	111.9566	0.0000	0.0000	7.4597	5.0176	0.0000	13.0996
2022	0.0178	10.6822	111.9566	0.0000	0.0000	7.7754	5.2306	0.0000	13.2269
2023	0.0178	10.7074	111.9566	0.0000	0.0000	8.0239	5.4290	0.0000	13.3024
2024	0.0178	11.1097	111.9566	0.0000	0.0000	8.4112	5.6617	0.0000	13.8592
NOMINAL		73.9133	783.6964	0.0000	0.0000	52.1312	35.3744	0.0000	90.6701
NPV		53.7602		0.0000	0.0000	37.6763	25.5959	0.0000	65.8405

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Residential Energy Efficiency Gold Ring

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	A VOIDED TRANSMISSION CAPACITY COST \$(000)	A VOIDED TRANSMISSION O&M COST (000)	TOTAL A VOIDED TRANSMISSION COST \$(000)	A VOIDED DISTRIBUTION CAPACITY COST \$(000)	A VOIDED DISTRIBUTION O&M COST \$(000)	TOTAL A VOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.406741
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.353992
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.393791
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.521335
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.783166
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.216250
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7.818598
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.516689
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.331351
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.266007
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	60.607919
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	43.246485

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Energy Efficiency Gold Ring

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	A VOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET A VOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2015	15.7183	0.4067	0.0000	0.0000	0.4067	0.4067
2016	47.1548	1.3540	0.0000	0.0000	1.3540	1.3540
2017	78.5913	2.3938	0.0000	0.0000	2.3938	2.3938
2018	110.0278	3.5213	0.0000	0.0000	3.5213	3.5213
2019	141.4644	4.7832	0.0000	0.0000	4.7832	4.7832
2020	172.9009	6.2162	0.0000	0.0000	6.2162	6.2162
2021	204.3374	7.8186	0.0000	0.0000	7.8186	7.8186
2022	235.7739	9.5167	0.0000	0.0000	9.5167	9.5167
2023	267.2105	11.3314	0.0000	0.0000	11.3314	11.3314
2024	298.6470	13.2660	0.0000	0.0000	13.2660	13.2660
NOMINAL	1,571.8262	60.6079	0.0000	0.0000	60.6079	60.6079
NPV		43.2465	0.0000	0.0000	43.2465	43.2465

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Energy Efficiency Gold Ring

(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)
2015	10.7065	0.0000	10.7065	16.1000	0.0000	16.1000	0.0000	0.0000	0.0000	15.1053	0.3920	1.1205	1.5125	0.0000	0.0000	0.0000	0.0000
2016	10.9742	0.0000	10.9742	16.1000	0.0000	16.1000	0.0000	0.0000	0.0000	45.3158	1.3098	3.4288	4.7385	0.0000	0.0000	0.0000	0.0000
2017	11.2485	0.0000	11.2485	16.1000	0.0000	16.1000	0.0000	0.0000	0.0000	75.5263	2.3165	5.8289	8.1454	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	105.7368	3.3998	8.3236	11.7234	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	135.9473	4.6069	10.9159	15.5228	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	166.1578	5.9833	13.6084	19.5917	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	196.3683	7.5181	16.4044	23.9224	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	226.5788	9.1663	19.3067	28.4730	0.0000	0.0000	0.0000	0.0000
2023	13.0448	0.0000	13.0448	16.1000	0.0000	16.1000	0.0000	0.0000	0.0000	256.7893	10.9351	22.3185	33.2536	0.0000	0.0000	0.0000	0.0000
2024	13.3710	0.0000	13.3710	16.1000	0.0000	16.1000	0.0000	0.0000	0.0000	286.9998	12.8159	25.4431	38.2590	0.0000	0.0000	0.0000	0.0000
NOMINAL	59.3450	0.0000	59.3450	80.5000	0.0000	80.5000	0.0000	0.0000	0.0000	1,510.5250	58.4436	126.6987	185.1422	0.0000	0.0000	0.0000	0.0000
NPV	47.9731	0.0000	47.9731	66.2603	0.0000	66.2603	0.0000	0.0000	0.0000		41.7013	91.3462	133.0474		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Energy Efficiency Gold Ring

(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)
2010	0.000	10.707	0.000	0.000	10.707	0.000	0.000	0.407	0.000	0.407	(10.300)	(10.300)
2011	0.000	10.974	0.000	0.000	10.974	0.000	0.000	1.354	0.000	1.354	(9.620)	(19.419)
2012	0.000	11.249	0.000	0.000	11.249	0.000	0.000	2.394	0.000	2.394	(8.855)	(27.374)
2013	0.000	11.530	0.000	0.000	11.530	0.000	0.000	3.521	0.000	3.521	(8.009)	(34.195)
2014	0.000	11.818	0.000	0.000	11.818	0.000	0.000	4.783	0.000	4.783	(7.035)	(39.873)
2015	0.000	12.114	0.000	0.000	12.114	0.000	0.000	6.216	0.000	6.216	(5.897)	(44.386)
2016	0.000	12.416	0.000	0.000	12.416	0.000	0.000	7.819	0.000	7.819	(4.598)	(47.720)
2017	0.000	12.727	0.000	0.000	12.727	0.000	0.000	9.517	0.000	9.517	(3.210)	(49.927)
2018	0.000	13.045	0.000	0.000	13.045	25.148	0.000	11.331	0.000	36.480	23.435	(34.657)
2019	0.000	13.371	0.000	0.000	13.371	25.878	0.000	13.266	0.000	39.144	25.773	(18.739)
NOMINAL	0.000	119.951	0.000	0.000	119.951	51.026	0.000	60.608	0.000	111.634	(8.317)	
NPV	0.000	94.355	0.000	0.000	94.355	32.370	0.000	43.246	0.000	75.616	(18.739)	
				Discount Rate:	5.50%							
				Benefit/Cost Ratio [col (11) / col (6)]:	0.80							

Residential Efficiency Delivered

PROGRAM: Residential Efficiency Delivered

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.27 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.28 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	502.9 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	483.3 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	351.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	264.01 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	538.00 \$/CUST
(15)* UTILITY RECURRING REBATE/INCENTIVE	0.00 \$/CUST/YR
(16)* UTILITY REBATE/INCENTIVE ESCAL RATE	2.5 %

* 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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	7.418 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	0.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

PROGRAM: Residential Efficiency Delivered

* Avoided Generation Unit: 7FA CT
 * 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
2015	197	197	2.59	2.59	2.60	3.36	1	1
2016	394	394	2.89	2.87	2.90	3.65	1	1
2017	591	591	3.07	3.05	3.08	3.93	1	1
2018	788	788	3.22	3.20	3.22	4.05	1	1
2019	985	985	3.39	3.38	3.39	4.14	1	1
2020	1182	1182	3.60	3.60	3.60	4.34	1	1
2021	1379	1379	3.83	3.83	3.83	4.48	1	1
2022	1576	1576	4.05	4.04	4.05	4.67	1	1
2023	1773	1773	4.26	4.24	4.27	4.85	1	1
2024	1970	1970	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Residential Efficiency Delivered

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Residential Efficiency Delivered

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

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	A VOIDED TRANSMISSION CAPACITY COST \$(000)	A VOIDED TRANSMISSION O&M COST (000)	TOTAL A VOIDED TRANSMISSION COST \$(000)	A VOIDED DISTRIBUTION CAPACITY COST \$(000)	A VOIDED DISTRIBUTION O&M COST \$(000)	TOTAL A VOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.281733
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.266740
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7.543388
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.096540
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	15.072859
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	19.588835
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	24.638206
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	29.989280
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	35.707700
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	41.804245
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	190.989525
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	136.279644

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Residential Efficiency Delivered

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	A VOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET A VOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2015	49.5319	1.2817	0.0000	0.0000	1.2817	1.2817
2016	148.5956	4.2667	0.0000	0.0000	4.2667	4.2667
2017	247.6593	7.5434	0.0000	0.0000	7.5434	7.5434
2018	346.7231	11.0965	0.0000	0.0000	11.0965	11.0965
2019	445.7868	15.0729	0.0000	0.0000	15.0729	15.0729
2020	544.8505	19.5888	0.0000	0.0000	19.5888	19.5888
2021	643.9143	24.6382	0.0000	0.0000	24.6382	24.6382
2022	742.9780	29.9893	0.0000	0.0000	29.9893	29.9893
2023	842.0418	35.7077	0.0000	0.0000	35.7077	35.7077
2024	941.1055	41.8042	0.0000	0.0000	41.8042	41.8042
NOMINAL	4,953.1868	190.9895	0.0000	0.0000	190.9895	190.9895
NPV		136.2796	0.0000	0.0000	136.2796	136.2796

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Residential Efficiency Delivered

(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)
2015	69.1470	0.0000	69.1470	105.9860	0.0000	105.9860	52.0100	0.0000	52.0100	47.6001	1.2352	3.5310	4.7662	0.0000	0.0000	0.0000	0.0000
2016	70.8757	0.0000	70.8757	108.6357	0.0000	108.6357	53.3102	0.0000	53.3102	142.8004	4.1274	10.8048	14.9322	0.0000	0.0000	0.0000	0.0000
2017	72.6476	0.0000	72.6476	111.3515	0.0000	111.3515	54.6430	0.0000	54.6430	238.0006	7.2998	18.3681	25.6679	0.0000	0.0000	0.0000	0.0000
2018	74.4638	0.0000	74.4638	114.1353	0.0000	114.1353	56.0090	0.0000	56.0090	333.2009	10.7136	26.2297	36.9433	0.0000	0.0000	0.0000	0.0000
2019	76.3253	0.0000	76.3253	116.9887	0.0000	116.9887	57.4093	0.0000	57.4093	428.4011	14.5174	34.3984	48.9158	0.0000	0.0000	0.0000	0.0000
2020	78.2335	0.0000	78.2335	119.9134	0.0000	119.9134	58.8445	0.0000	58.8445	523.6014	18.8547	42.8833	61.7380	0.0000	0.0000	0.0000	0.0000
2021	80.1893	0.0000	80.1893	122.9113	0.0000	122.9113	60.3156	0.0000	60.3156	618.8016	23.6911	51.6939	75.3850	0.0000	0.0000	0.0000	0.0000
2022	82.1941	0.0000	82.1941	125.9840	0.0000	125.9840	61.8235	0.0000	61.8235	714.0019	28.8851	60.8397	89.7249	0.0000	0.0000	0.0000	0.0000
2023	84.2489	0.0000	84.2489	129.1336	0.0000	129.1336	63.3691	0.0000	63.3691	809.2021	34.4589	70.3307	104.7897	0.0000	0.0000	0.0000	0.0000
2024	86.3551	0.0000	86.3551	132.3620	0.0000	132.3620	64.9533	0.0000	64.9533	904.4024	40.3860	80.1770	120.5630	0.0000	0.0000	0.0000	0.0000
NOMINAL	774.6802	0.0000	774.6802	1,187.4016	0.0000	1,187.4016	582.6875	0.0000	582.6875	4,760.0125	184.1691	399.2568	583.4259	0.0000	0.0000	0.0000	0.0000
NPV	609.3748	0.0000	609.3748	934.0275	0.0000	934.0275	458.3506	0.0000	458.3506		131.4103	287.8528	419.2631		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Residential Efficiency Delivered

(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)
2015	0.000	69.147	52.010	0.000	121.157	0.000	0.000	1.282	0.000	1.282	(119.875)	(119.875)
2016	0.000	70.876	53.310	0.000	124.186	0.000	0.000	4.267	0.000	4.267	(119.919)	(233.543)
2017	0.000	72.648	54.643	0.000	127.291	0.000	0.000	7.543	0.000	7.543	(119.747)	(341.130)
2018	0.000	74.464	56.009	0.000	130.473	0.000	0.000	11.097	0.000	11.097	(119.376)	(442.792)
2019	0.000	76.325	57.409	0.000	133.735	0.000	0.000	15.073	0.000	15.073	(118.662)	(538.578)
2020	0.000	78.233	58.845	0.000	137.078	0.000	0.000	19.589	0.000	19.589	(117.489)	(628.473)
2021	0.000	80.189	60.316	0.000	140.505	0.000	0.000	24.638	0.000	24.638	(115.867)	(712.505)
2022	0.000	82.194	61.824	0.000	144.018	0.000	0.000	29.989	0.000	29.989	(114.028)	(790.892)
2023	0.000	84.249	63.369	0.000	147.618	0.000	0.000	35.708	0.000	35.708	(111.910)	(863.813)
2024	0.000	86.355	64.953	0.000	151.308	0.000	0.000	41.804	0.000	41.804	(109.504)	(931.446)
NOMINAL	0.000	774.680	582.688	0.000	1,357.368	0.000	0.000	190.990	0.000	190.990	(1,166.378)	
NPV	0.000	609.375	458.351	0.000	1,067.725	0.000	0.000	136.280	0.000	136.280	(931.446)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.13

Commercial Energy Audits

PROGRAM: Commercial Energy Audit

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.15 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.16 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	883.0 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	848.6 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	1,137.80 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	0.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	2.847 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	8.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

* Avoided Generation Unit: 7FA CT
 * 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
2015	130	130	2.59	2.59	2.60	3.36	1	1
2016	260	260	2.89	2.87	2.90	3.65	1	1
2017	390	390	3.07	3.05	3.08	3.93	1	1
2018	520	520	3.22	3.20	3.22	4.05	1	1
2019	650	650	3.39	3.38	3.39	4.14	1	1
2020	780	780	3.60	3.60	3.60	4.34	1	1
2021	910	910	3.83	3.83	3.83	4.48	1	1
2022	1040	1040	4.05	4.04	4.05	4.67	1	1
2023	1170	1170	4.26	4.24	4.27	4.85	1	1
2024	1300	1300	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Commercial Energy Audit

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Commercial Energy Audit

* 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.485272
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.944296
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	8.741274
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	12.858664
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	17.466421
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	22.699532
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	28.550740
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	34.751562
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	41.378064
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	48.442737
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	221.318562
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	157.920780

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Energy Audit

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	A VOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET A VOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2015	57.3975	1.4853	0.0000	0.0000	1.4853	1.4853
2016	172.1925	4.9443	0.0000	0.0000	4.9443	4.9443
2017	286.9875	8.7413	0.0000	0.0000	8.7413	8.7413
2018	401.7825	12.8587	0.0000	0.0000	12.8587	12.8587
2019	516.5775	17.4664	0.0000	0.0000	17.4664	17.4664
2020	631.3725	22.6995	0.0000	0.0000	22.6995	22.6995
2021	746.1675	28.5507	0.0000	0.0000	28.5507	28.5507
2022	860.9625	34.7516	0.0000	0.0000	34.7516	34.7516
2023	975.7575	41.3781	0.0000	0.0000	41.3781	41.3781
2024	1,090.5525	48.4427	0.0000	0.0000	48.4427	48.4427
NOMINAL	5,739.7503	221.3186	0.0000	0.0000	221.3186	221.3186
NPV		157.9208	0.0000	0.0000	157.9208	157.9208

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Commercial Energy Audit

(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)
2015	147.9140	0.0000	147.9140	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	55.1590	1.4314	2.5003	3.9317	0.0000	0.0000	0.0000	0.0000
2016	151.6119	0.0000	151.6119	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	165.4770	4.7828	7.6650	12.4478	0.0000	0.0000	0.0000	0.0000
2017	155.4021	0.0000	155.4021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	275.7950	8.4590	13.0544	21.5133	0.0000	0.0000	0.0000	0.0000
2018	159.2872	0.0000	159.2872	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	386.1130	12.4149	18.6758	31.0907	0.0000	0.0000	0.0000	0.0000
2019	163.2694	0.0000	163.2694	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	496.4310	16.8228	24.5371	41.3598	0.0000	0.0000	0.0000	0.0000
2020	167.3511	0.0000	167.3511	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	606.7490	21.8488	30.6460	52.4948	0.0000	0.0000	0.0000	0.0000
2021	171.5349	0.0000	171.5349	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	717.0670	27.4532	37.0108	64.4640	0.0000	0.0000	0.0000	0.0000
2022	175.8233	0.0000	175.8233	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	827.3850	33.4720	43.6397	77.1118	0.0000	0.0000	0.0000	0.0000
2023	180.2188	0.0000	180.2188	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	937.7030	39.9310	50.5415	90.4725	0.0000	0.0000	0.0000	0.0000
2024	184.7243	0.0000	184.7243	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	1,048.0210	46.7992	57.7249	104.5241	0.0000	0.0000	0.0000	0.0000
NOMINAL	1,657.1370	0.0000	1,657.1370	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	5,515.9000	213.4151	285.9955	499.4106	0.0000	0.0000	0.0000	0.0000
NPV	1,303.5283	0.0000	1,303.5283	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		152.2782	206.0810	358.3592		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Audit

(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)
2015	0.000	147.914	0.000	0.000	147.914	0.000	0.000	1.485	0.000	1.485	(146.429)	(146.429)
2016	0.000	151.612	0.000	0.000	151.612	0.000	0.000	4.944	0.000	4.944	(146.668)	(285.450)
2017	0.000	155.402	0.000	0.000	155.402	0.000	0.000	8.741	0.000	8.741	(146.661)	(417.218)
2018	0.000	159.287	0.000	0.000	159.287	0.000	0.000	12.859	0.000	12.859	(146.429)	(541.918)
2019	0.000	163.269	0.000	0.000	163.269	0.000	0.000	17.466	0.000	17.466	(145.803)	(659.613)
2020	0.000	167.351	0.000	0.000	167.351	0.000	0.000	22.700	0.000	22.700	(144.652)	(770.291)
2021	0.000	171.535	0.000	0.000	171.535	0.000	0.000	28.551	0.000	28.551	(142.984)	(873.990)
2022	0.000	175.823	0.000	0.000	175.823	0.000	0.000	34.752	0.000	34.752	(141.072)	(970.967)
2023	0.000	180.219	0.000	0.000	180.219	0.000	0.000	41.378	0.000	41.378	(138.841)	(1,061.436)
2024	0.000	184.724	0.000	0.000	184.724	0.000	0.000	48.443	0.000	48.443	(136.282)	(1,145.607)
NOMINAL	0.000	1,657.137	0.000	0.000	1,657.137	0.000	0.000	221.319	0.000	221.319	(1,435.818)	
NPV	0.000	1,303.528	0.000	0.000	1,303.528	0.000	0.000	157.921	0.000	157.921	(1,145.607)	
				Discount Rate:	5.50%							
				Benefit/Cost Ratio [col (11)/ col (6)]:	0.12							

Commercial Efficient Electric Heat Pump Rebates – SEER 15

PROGRAM: Commercial Heat Pump SEER 15

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.17 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.18 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	328.3 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	315.5 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	19.03 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	470.00 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	141.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	84.58 \$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	2.847 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	8.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

PROGRAM: Commercial Heat Pump SEER 15

* Avoided Generation Unit: 7FA CT
 * 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
2015	7	7	2.59	2.59	2.60	3.36	1	1
2016	14	14	2.89	2.87	2.90	3.65	1	1
2017	21	21	3.07	3.05	3.08	3.93	1	1
2018	28	28	3.22	3.20	3.22	4.05	1	1
2019	35	35	3.39	3.38	3.39	4.14	1	1
2020	42	42	3.60	3.60	3.60	4.34	1	1
2021	49	49	3.83	3.83	3.83	4.48	1	1
2022	56	56	4.05	4.04	4.05	4.67	1	1
2023	63	63	4.26	4.24	4.27	4.85	1	1
2024	70	70	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Commercial Heat Pump SEER 15

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Commercial Heat Pump SEER 15

* 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.029734
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.098981
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.174993
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.257420
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.349663
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.454426
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.571562
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.695697
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.828355
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.969783
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.430614
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.161443

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Heat Pump SEER 15

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	A VOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET A VOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2015	1.1491	0.0297	0.0000	0.0000	0.0297	0.0297
2016	3.4472	0.0990	0.0000	0.0000	0.0990	0.0990
2017	5.7453	0.1750	0.0000	0.0000	0.1750	0.1750
2018	8.0434	0.2574	0.0000	0.0000	0.2574	0.2574
2019	10.3415	0.3497	0.0000	0.0000	0.3497	0.3497
2020	12.6396	0.4544	0.0000	0.0000	0.4544	0.4544
2021	14.9377	0.5716	0.0000	0.0000	0.5716	0.5716
2022	17.2358	0.6957	0.0000	0.0000	0.6957	0.6957
2023	19.5339	0.8284	0.0000	0.0000	0.8284	0.8284
2024	21.8320	0.9698	0.0000	0.0000	0.9698	0.9698
NOMINAL	114.9050	4.4306	0.0000	0.0000	4.4306	4.4306
NPV		3.1614	0.0000	0.0000	3.1614	3.1614

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Commercial Heat Pump SEER 15

(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)
2015	0.1332	0.0000	0.1332	0.5920	0.0000	0.5920	3.2900	0.0000	3.2900	1.1042	0.0287	0.0886	0.1172	0.0000	0.0000	0.0000	0.0000
2016	0.1365	0.0000	0.1365	0.5920	0.0000	0.5920	3.3722	0.0000	3.3722	3.3127	0.0957	0.2718	0.3676	0.0000	0.0000	0.0000	0.0000
2017	0.1399	0.0000	0.1399	0.5920	0.0000	0.5920	3.4565	0.0000	3.4565	5.5212	0.1693	0.4636	0.6329	0.0000	0.0000	0.0000	0.0000
2018	0.1434	0.0000	0.1434	0.5920	0.0000	0.5920	3.5429	0.0000	3.5429	7.7297	0.2485	0.6641	0.9127	0.0000	0.0000	0.0000	0.0000
2019	0.1470	0.0000	0.1470	0.5920	0.0000	0.5920	3.6315	0.0000	3.6315	9.9381	0.3368	0.8737	1.2105	0.0000	0.0000	0.0000	0.0000
2020	0.1507	0.0000	0.1507	0.5920	0.0000	0.5920	3.7223	0.0000	3.7223	12.1466	0.4374	1.0927	1.5301	0.0000	0.0000	0.0000	0.0000
2021	0.1545	0.0000	0.1545	0.5920	0.0000	0.5920	3.8154	0.0000	3.8154	14.3551	0.5496	1.3214	1.8710	0.0000	0.0000	0.0000	0.0000
2022	0.1583	0.0000	0.1583	0.5920	0.0000	0.5920	3.9107	0.0000	3.9107	16.5636	0.6701	1.5601	2.2302	0.0000	0.0000	0.0000	0.0000
2023	0.1623	0.0000	0.1623	0.5920	0.0000	0.5920	4.0085	0.0000	4.0085	18.7720	0.7994	1.8093	2.6087	0.0000	0.0000	0.0000	0.0000
2024	0.1663	0.0000	0.1663	0.5920	0.0000	0.5920	4.1087	0.0000	4.1087	20.9805	0.9369	2.0692	3.0061	0.0000	0.0000	0.0000	0.0000
NOMINAL	1.4923	0.0000	1.4923	5.9204	0.0000	5.9204	36.8589	0.0000	36.8589	110.4237	4.2724	10.2146	14.4870	0.0000	0.0000	0.0000	0.0000
NPV	1.1739	0.0000	1.1739	4.7080	0.0000	4.7080	28.9937	0.0000	28.9937		3.0485	7.3574	10.4059		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Heat Pump SEER 15

(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)
2015	0.000	0.133	3.290	0.000	3.423	0.000	0.000	0.030	0.000	0.030	(3.393)	(3.393)
2016	0.000	0.137	3.372	0.000	3.509	0.000	0.000	0.099	0.000	0.099	(3.410)	(6.625)
2017	0.000	0.140	3.457	0.000	3.596	0.000	0.000	0.175	0.000	0.175	(3.421)	(9.699)
2018	0.000	0.143	3.543	0.000	3.686	0.000	0.000	0.257	0.000	0.257	(3.429)	(12.620)
2019	0.000	0.147	3.632	0.000	3.779	0.000	0.000	0.350	0.000	0.350	(3.429)	(15.388)
2020	0.000	0.151	3.722	0.000	3.873	0.000	0.000	0.454	0.000	0.454	(3.419)	(18.003)
2021	0.000	0.154	3.815	0.000	3.970	0.000	0.000	0.572	0.000	0.572	(3.398)	(20.468)
2022	0.000	0.158	3.911	0.000	4.069	0.000	0.000	0.696	0.000	0.696	(3.373)	(22.787)
2023	0.000	0.162	4.009	0.000	4.171	0.000	0.000	0.828	0.000	0.828	(3.342)	(24.965)
2024	0.000	0.166	4.109	0.000	4.275	0.000	0.000	0.970	0.000	0.970	(3.305)	(27.006)
NOMINAL	0.000	1.492	36.859	0.000	38.351	0.000	0.000	4.431	0.000	4.431	(33.921)	
NPV	0.000	1.174	28.994	0.000	30.168	0.000	0.000	3.161	0.000	3.161	(27.006)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.10

Commercial Efficient Electric Heat Pump Rebates – SEER 16

PROGRAM: Commercial Heat Pump SEER 16

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.26 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.27 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	536.9 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	516.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	19.03 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	1,760.46 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	528.14 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	84.58 \$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	2.847 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	8.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 16

* Avoided Generation Unit: 7FA CT
 * 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
2015	13	13	2.59	2.59	2.60	3.36	1	1
2016	26	26	2.89	2.87	2.90	3.65	1	1
2017	39	39	3.07	3.05	3.08	3.93	1	1
2018	52	52	3.22	3.20	3.22	4.05	1	1
2019	65	65	3.39	3.38	3.39	4.14	1	1
2020	78	78	3.60	3.60	3.60	4.34	1	1
2021	91	91	3.83	3.83	3.83	4.48	1	1
2022	104	104	4.05	4.04	4.05	4.67	1	1
2023	117	117	4.26	4.24	4.27	4.85	1	1
2024	130	130	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Commercial Heat Pump SEER 16

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Commercial Heat Pump SEER 16

* 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.090305
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.300615
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.531474
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.781813
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.061967
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.380142
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.735898
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.112911
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.515806
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.945341
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.456272
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.601657

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Heat Pump SEER 16

(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)
2015	3.4898	0.0903	0.0000	0.0000	0.0903	0.0903
2016	10.4694	0.3006	0.0000	0.0000	0.3006	0.3006
2017	17.4490	0.5315	0.0000	0.0000	0.5315	0.5315
2018	24.4286	0.7818	0.0000	0.0000	0.7818	0.7818
2019	31.4082	1.0620	0.0000	0.0000	1.0620	1.0620
2020	38.3877	1.3801	0.0000	0.0000	1.3801	1.3801
2021	45.3673	1.7359	0.0000	0.0000	1.7359	1.7359
2022	52.3469	2.1129	0.0000	0.0000	2.1129	2.1129
2023	59.3265	2.5158	0.0000	0.0000	2.5158	2.5158
2024	66.3061	2.9453	0.0000	0.0000	2.9453	2.9453
NOMINAL	348.9795	13.4563	0.0000	0.0000	13.4563	13.4563
NPV		9.6017	0.0000	0.0000	9.6017	9.6017

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Commercial Heat Pump SEER 16

(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)
2015	0.2474	0.0000	0.2474	1.0995	0.0000	1.0995	22.8860	0.0000	22.8860	3.3537	0.0870	0.2577	0.3447	0.0000	0.0000	0.0000	0.0000
2016	0.2536	0.0000	0.2536	1.0995	0.0000	1.0995	23.4581	0.0000	23.4581	10.0611	0.2908	0.7911	1.0819	0.0000	0.0000	0.0000	0.0000
2017	0.2599	0.0000	0.2599	1.0995	0.0000	1.0995	24.0446	0.0000	24.0446	16.7685	0.5143	1.3490	1.8633	0.0000	0.0000	0.0000	0.0000
2018	0.2664	0.0000	0.2664	1.0995	0.0000	1.0995	24.6457	0.0000	24.6457	23.4759	0.7548	1.9323	2.6871	0.0000	0.0000	0.0000	0.0000
2019	0.2731	0.0000	0.2731	1.0995	0.0000	1.0995	25.2618	0.0000	25.2618	30.1832	1.0228	2.5419	3.5647	0.0000	0.0000	0.0000	0.0000
2020	0.2799	0.0000	0.2799	1.0995	0.0000	1.0995	25.8934	0.0000	25.8934	36.8906	1.3284	3.1787	4.5072	0.0000	0.0000	0.0000	0.0000
2021	0.2869	0.0000	0.2869	1.0995	0.0000	1.0995	26.5407	0.0000	26.5407	43.5980	1.6692	3.8438	5.5129	0.0000	0.0000	0.0000	0.0000
2022	0.2940	0.0000	0.2940	1.0995	0.0000	1.0995	27.2042	0.0000	27.2042	50.3054	2.0351	4.5379	6.5730	0.0000	0.0000	0.0000	0.0000
2023	0.3014	0.0000	0.3014	1.0995	0.0000	1.0995	27.8843	0.0000	27.8843	57.0128	2.4278	5.2622	7.6901	0.0000	0.0000	0.0000	0.0000
2024	0.3089	0.0000	0.3089	1.0995	0.0000	1.0995	28.5814	0.0000	28.5814	63.7202	2.8454	6.0177	8.8631	0.0000	0.0000	0.0000	0.0000
NOMINAL	2.7714	0.0000	2.7714	10.9950	0.0000	10.9950	256.4002	0.0000	256.4002	335.3693	12.9757	29.7123	42.6880	0.0000	0.0000	0.0000	0.0000
NPV	2.1800	0.0000	2.1800	8.7435	0.0000	8.7435	201.6881	0.0000	201.6881		9.2586	21.4019	30.6605		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Heat Pump SEER 16

(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)
2015	0.000	0.247	22.886	0.000	23.133	0.000	0.000	0.090	0.000	0.090	(23.043)	(23.043)
2016	0.000	0.254	23.458	0.000	23.712	0.000	0.000	0.301	0.000	0.301	(23.411)	(45.234)
2017	0.000	0.260	24.045	0.000	24.304	0.000	0.000	0.531	0.000	0.531	(23.773)	(66.592)
2018	0.000	0.266	24.646	0.000	24.912	0.000	0.000	0.782	0.000	0.782	(24.130)	(87.142)
2019	0.000	0.273	25.262	0.000	25.535	0.000	0.000	1.062	0.000	1.062	(24.473)	(106.897)
2020	0.000	0.280	25.893	0.000	26.173	0.000	0.000	1.380	0.000	1.380	(24.793)	(125.867)
2021	0.000	0.287	26.541	0.000	26.828	0.000	0.000	1.736	0.000	1.736	(25.092)	(144.065)
2022	0.000	0.294	27.204	0.000	27.498	0.000	0.000	2.113	0.000	2.113	(25.385)	(161.516)
2023	0.000	0.301	27.884	0.000	28.186	0.000	0.000	2.516	0.000	2.516	(25.670)	(178.242)
2024	0.000	0.309	28.581	0.000	28.890	0.000	0.000	2.945	0.000	2.945	(25.945)	(194.267)

NOMINAL	0.000	2.771	256.400	0.000	259.172	0.000	0.000	13.456	0.000	13.456	(245.715)
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NPV	0.000	2.180	201.688	0.000	203.868	0.000	0.000	9.602	0.000	9.602	(194.267)
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Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.05

Commercial Efficient Electric Heat Pump Rebates – SEER 17

PROGRAM: Commercial Heat Pump SEER 17

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.42 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.44 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	782.9 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	752.4 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	19.03 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	2,611.47 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	783.44 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	84.58 \$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	2.847 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	8.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 17

* Avoided Generation Unit: 7FA CT
 * 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
2015	13	13	2.59	2.59	2.60	3.36	1	1
2016	26	26	2.89	2.87	2.90	3.65	1	1
2017	39	39	3.07	3.05	3.08	3.93	1	1
2018	52	52	3.22	3.20	3.22	4.05	1	1
2019	65	65	3.39	3.38	3.39	4.14	1	1
2020	78	78	3.60	3.60	3.60	4.34	1	1
2021	91	91	3.83	3.83	3.83	4.48	1	1
2022	104	104	4.05	4.04	4.05	4.67	1	1
2023	117	117	4.26	4.24	4.27	4.85	1	1
2024	130	130	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Commercial Heat Pump SEER 17

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

AVOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Commercial Heat Pump SEER 17

* 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.131684
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.438361
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.775001
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.140049
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.548572
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.012540
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.531308
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.081072
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.668578
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.294932
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	19.622097
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	14.001252

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Heat Pump SEER 17

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	A VOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET A VOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2015	5.0889	0.1317	0.0000	0.0000	0.1317	0.1317
2016	15.2666	0.4384	0.0000	0.0000	0.4384	0.4384
2017	25.4443	0.7750	0.0000	0.0000	0.7750	0.7750
2018	35.6220	1.1400	0.0000	0.0000	1.1400	1.1400
2019	45.7997	1.5486	0.0000	0.0000	1.5486	1.5486
2020	55.9775	2.0125	0.0000	0.0000	2.0125	2.0125
2021	66.1552	2.5313	0.0000	0.0000	2.5313	2.5313
2022	76.3329	3.0811	0.0000	0.0000	3.0811	3.0811
2023	86.5106	3.6686	0.0000	0.0000	3.6686	3.6686
2024	96.6884	4.2949	0.0000	0.0000	4.2949	4.2949
NOMINAL	508.8861	19.6221	0.0000	0.0000	19.6221	19.6221
NPV		14.0013	0.0000	0.0000	14.0013	14.0013

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Commercial Heat Pump SEER 17

(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)
2015	0.2474	0.0000	0.2474	1.0995	0.0000	1.0995	33.9491	0.0000	33.9491	4.8904	0.1269	0.4013	0.5282	0.0000	0.0000	0.0000	0.0000
2016	0.2536	0.0000	0.2536	1.0995	0.0000	1.0995	34.7978	0.0000	34.7978	14.6712	0.4240	1.2319	1.6560	0.0000	0.0000	0.0000	0.0000
2017	0.2599	0.0000	0.2599	1.0995	0.0000	1.0995	35.6678	0.0000	35.6678	24.4520	0.7067	2.1010	2.8078	0.0000	0.0000	0.0000	0.0000
2018	0.2664	0.0000	0.2664	1.0995	0.0000	1.0995	36.5595	0.0000	36.5595	34.2328	0.9894	3.0099	3.9993	0.0000	0.0000	0.0000	0.0000
2019	0.2731	0.0000	0.2731	1.0995	0.0000	1.0995	37.4734	0.0000	37.4734	44.0136	1.2721	3.9599	5.2321	0.0000	0.0000	0.0000	0.0000
2020	0.2799	0.0000	0.2799	1.0995	0.0000	1.0995	38.4103	0.0000	38.4103	53.7943	1.5548	4.9526	6.5075	0.0000	0.0000	0.0000	0.0000
2021	0.2869	0.0000	0.2869	1.0995	0.0000	1.0995	39.3705	0.0000	39.3705	63.5751	1.8375	5.9895	7.8270	0.0000	0.0000	0.0000	0.0000
2022	0.2940	0.0000	0.2940	1.0995	0.0000	1.0995	40.3548	0.0000	40.3548	73.3559	2.1202	7.0719	9.1921	0.0000	0.0000	0.0000	0.0000
2023	0.3014	0.0000	0.3014	1.0995	0.0000	1.0995	41.3637	0.0000	41.3637	83.1367	2.4029	8.2016	10.6045	0.0000	0.0000	0.0000	0.0000
2024	0.3089	0.0000	0.3089	1.0995	0.0000	1.0995	42.3978	0.0000	42.3978	92.9175	2.6856	9.3802	12.0658	0.0000	0.0000	0.0000	0.0000
NOMINAL	2.7714	0.0000	2.7714	10.9950	0.0000	10.9950	380.3447	0.0000	380.3447	489.0395	14.1204	46.2999	60.4203	0.0000	0.0000	0.0000	0.0000
NPV	2.1800	0.0000	2.1800	8.7435	0.0000	8.7435	299.1847	0.0000	299.1847		10.2376	33.3489	43.5865		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Heat Pump SEER 17

(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)
2015	0.000	0.247	33.949	0.000	34.196	0.000	0.000	0.132	0.000	0.132	(34.065)	(34.065)
2016	0.000	0.254	34.798	0.000	35.051	0.000	0.000	0.438	0.000	0.438	(34.613)	(66.873)
2017	0.000	0.260	35.668	0.000	35.928	0.000	0.000	0.775	0.000	0.775	(35.153)	(98.456)
2018	0.000	0.266	36.559	0.000	36.826	0.000	0.000	1.140	0.000	1.140	(35.686)	(128.847)
2019	0.000	0.273	37.473	0.000	37.747	0.000	0.000	1.549	0.000	1.549	(36.198)	(158.066)
2020	0.000	0.280	38.410	0.000	38.690	0.000	0.000	2.013	0.000	2.013	(36.678)	(186.130)
2021	0.000	0.287	39.371	0.000	39.657	0.000	0.000	2.531	0.000	2.531	(37.126)	(213.055)
2022	0.000	0.294	40.355	0.000	40.649	0.000	0.000	3.081	0.000	3.081	(37.568)	(238.881)
2023	0.000	0.301	41.364	0.000	41.665	0.000	0.000	3.669	0.000	3.669	(37.996)	(263.639)
2024	0.000	0.309	42.398	0.000	42.707	0.000	0.000	4.295	0.000	4.295	(38.412)	(287.363)
NOMINAL	0.000	2.771	380.345	0.000	383.116	0.000	0.000	19.622	0.000	19.622	(363.494)	
NPV	0.000	2.180	299.185	0.000	301.365	0.000	0.000	14.001	0.000	14.001	(287.363)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.05

Commercial Efficient Electric Heat Pump Rebates – SEER 18

PROGRAM: Commercial Heat Pump SEER 18

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.46 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.48 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	990.6 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	952.0 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	19.03 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	4,097.30 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	1,229.19 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	0.0 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	84.58 \$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	2.847 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	8.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Heat Pump SEER 18

* Avoided Generation Unit: 7FA CT
 * 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
2015	7	7	2.59	2.59	2.60	3.36	1	1
2016	14	14	2.89	2.87	2.90	3.65	1	1
2017	21	21	3.07	3.05	3.08	3.93	1	1
2018	28	28	3.22	3.20	3.22	4.05	1	1
2019	35	35	3.39	3.38	3.39	4.14	1	1
2020	42	42	3.60	3.60	3.60	4.34	1	1
2021	49	49	3.83	3.83	3.83	4.48	1	1
2022	56	56	4.05	4.04	4.05	4.67	1	1
2023	63	63	4.26	4.24	4.27	4.85	1	1
2024	70	70	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Commercial Heat Pump SEER 18

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Commercial Heat Pump SEER 18

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	A VOIDED TRANSMISSION CAPACITY COST \$(000)	A VOIDED TRANSMISSION O&M COST (000)	TOTAL A VOIDED TRANSMISSION COST \$(000)	A VOIDED DISTRIBUTION CAPACITY COST \$(000)	A VOIDED DISTRIBUTION O&M COST \$(000)	TOTAL A VOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.089717
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.298656
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.528010
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.776717
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.055045
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.371147
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.724584
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.099140
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.499408
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.926144
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.368568
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.539077

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Heat Pump SEER 18

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	A VOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET A VOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2015	3.4670	0.0897	0.0000	0.0000	0.0897	0.0897
2016	10.4011	0.2987	0.0000	0.0000	0.2987	0.2987
2017	17.3352	0.5280	0.0000	0.0000	0.5280	0.5280
2018	24.2693	0.7767	0.0000	0.0000	0.7767	0.7767
2019	31.2034	1.0550	0.0000	0.0000	1.0550	1.0550
2020	38.1375	1.3711	0.0000	0.0000	1.3711	1.3711
2021	45.0716	1.7246	0.0000	0.0000	1.7246	1.7246
2022	52.0057	2.0991	0.0000	0.0000	2.0991	2.0991
2023	58.9398	2.4994	0.0000	0.0000	2.4994	2.4994
2024	65.8739	2.9261	0.0000	0.0000	2.9261	2.9261
NOMINAL	346.7050	13.3686	0.0000	0.0000	13.3686	13.3686
NPV		9.5391	0.0000	0.0000	9.5391	9.5391

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Commercial Heat Pump SEER 18

(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)
2015	0.1332	0.0000	0.1332	0.5920	0.0000	0.5920	28.6811	0.0000	28.6811	3.3318	0.0865	0.2494	0.3359	0.0000	0.0000	0.0000	0.0000
2016	0.1365	0.0000	0.1365	0.5920	0.0000	0.5920	29.3982	0.0000	29.3982	9.9955	0.2889	0.7655	1.0544	0.0000	0.0000	0.0000	0.0000
2017	0.1399	0.0000	0.1399	0.5920	0.0000	0.5920	30.1331	0.0000	30.1331	16.6592	0.5110	1.3054	1.8163	0.0000	0.0000	0.0000	0.0000
2018	0.1434	0.0000	0.1434	0.5920	0.0000	0.5920	30.8864	0.0000	30.8864	23.3228	0.7499	1.8698	2.6197	0.0000	0.0000	0.0000	0.0000
2019	0.1470	0.0000	0.1470	0.5920	0.0000	0.5920	31.6586	0.0000	31.6586	29.9865	1.0162	2.4595	3.4757	0.0000	0.0000	0.0000	0.0000
2020	0.1507	0.0000	0.1507	0.5920	0.0000	0.5920	32.4501	0.0000	32.4501	36.6502	1.3198	3.0756	4.3954	0.0000	0.0000	0.0000	0.0000
2021	0.1545	0.0000	0.1545	0.5920	0.0000	0.5920	33.2613	0.0000	33.2613	43.3139	1.6583	3.7189	5.3772	0.0000	0.0000	0.0000	0.0000
2022	0.1583	0.0000	0.1583	0.5920	0.0000	0.5920	34.0928	0.0000	34.0928	49.9775	2.0219	4.3903	6.4121	0.0000	0.0000	0.0000	0.0000
2023	0.1623	0.0000	0.1623	0.5920	0.0000	0.5920	34.9452	0.0000	34.9452	56.6412	2.4120	5.0908	7.5028	0.0000	0.0000	0.0000	0.0000
2024	0.1663	0.0000	0.1663	0.5920	0.0000	0.5920	35.8188	0.0000	35.8188	63.3049	2.8269	5.8214	8.6482	0.0000	0.0000	0.0000	0.0000
NOMINAL	1.4923	0.0000	1.4923	5.9204	0.0000	5.9204	321.3256	0.0000	321.3256	333.1835	12.8912	28.7465	41.6377	0.0000	0.0000	0.0000	0.0000
NPV	1.1739	0.0000	1.1739	4.7080	0.0000	4.7080	252.7594	0.0000	252.7594		9.1982	20.7065	29.9047		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

Commercial Duct Repair

PROGRAM: Commercial Energy Efficiency Duct

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.22 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.23 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	390.6 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	375.4 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	46.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	5,091.30 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00 \$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5 %
(10)* INCREASED SUPPLY COSTS	0.00 \$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	160.00 \$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	2.847 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	8.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Duct

* Avoided Generation Unit: 7FA CT
 * 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
2015	44	44	2.59	2.59	2.60	3.36	1	1
2016	88	88	2.89	2.87	2.90	3.65	1	1
2017	132	132	3.07	3.05	3.08	3.93	1	1
2018	176	176	3.22	3.20	3.22	4.05	1	1
2019	220	220	3.39	3.38	3.39	4.14	1	1
2020	264	264	3.60	3.60	3.60	4.34	1	1
2021	308	308	3.83	3.83	3.83	4.48	1	1
2022	352	352	4.05	4.04	4.05	4.67	1	1
2023	396	396	4.26	4.24	4.27	4.85	1	1
2024	440	440	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

A VOIDED GENERATION UNIT BENEFITS

PROGRAM: Commercial Energy Efficiency Duct

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

(1)	(1A)*	(2)	(2A)*	(3)	(4)	(5)	(6)	(6A)	(7)
Year	VALUE OF DEFERRAL FACTOR	A VOIDED GEN UNIT CAPACITY COST \$(000)	A VOIDED ANNUAL UNIT KWH GEN (000)	A VOIDED UNIT FIXED O&M COST \$(000)	A VOIDED GEN UNIT VARIABLE O&M COST \$(000)	A VOIDED GEN UNIT FUEL COST \$(000)	REPLACEMENT FUEL COST \$(000)	A VOIDED PURCHASED CAPACITY COSTS \$(000)	A VOIDED GEN UNIT BENEFITS \$(000)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Commercial Energy Efficiency Duct

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	A VOIDED TRANSMISSION CAPACITY COST \$(000)	A VOIDED TRANSMISSION O&M COST (000)	TOTAL A VOIDED TRANSMISSION COST \$(000)	A VOIDED DISTRIBUTION CAPACITY COST \$(000)	A VOIDED DISTRIBUTION O&M COST \$(000)	TOTAL A VOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.222362
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.740216
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.308667
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.925086
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.614919
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.398374
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.274365
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	5.202698
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.194759
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7.252420
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	33.133867
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	23.642509

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Energy Efficiency Duct

(1)	(2)	(3)	(4)	(5)	(6)	(7)
YEAR	REDUCTION IN KWH GENERATION NET NEW CUST KWH (000)	A VOIDED MARGINAL FUEL COST - REDUCED KWH \$(000)	INCREASE IN KWH GENERATION NET NEW CUST KWH (000)	INCREASED MARGINAL FUEL COST - INCREASE KWH \$(000)	NET A VOIDED PROGRAM FUEL SAVINGS \$(000)	EFFECTIVE PROGRAM FUEL SAVINGS \$(000)
2015	8.5930	0.2224	0.0000	0.0000	0.2224	0.2224
2016	25.7791	0.7402	0.0000	0.0000	0.7402	0.7402
2017	42.9652	1.3087	0.0000	0.0000	1.3087	1.3087
2018	60.1513	1.9251	0.0000	0.0000	1.9251	1.9251
2019	77.3374	2.6149	0.0000	0.0000	2.6149	2.6149
2020	94.5235	3.3984	0.0000	0.0000	3.3984	3.3984
2021	111.7096	4.2744	0.0000	0.0000	4.2744	4.2744
2022	128.8957	5.2027	0.0000	0.0000	5.2027	5.2027
2023	146.0818	6.1948	0.0000	0.0000	6.1948	6.1948
2024	163.2679	7.2524	0.0000	0.0000	7.2524	7.2524
NOMINAL	859.3049	33.1339	0.0000	0.0000	33.1339	33.1339
NPV		23.6425	0.0000	0.0000	23.6425	23.6425

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Commercial Energy Efficiency Duct

(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)
2015	2.0240	0.0000	2.0240	7.0400	0.0000	7.0400	224.0172	0.0000	224.0172	8.2579	0.2143	0.6997	0.9140	0.0000	0.0000	0.0000	0.0000
2016	2.0746	0.0000	2.0746	7.0400	0.0000	7.0400	229.6176	0.0000	229.6176	24.7738	0.7160	2.1482	2.8642	0.0000	0.0000	0.0000	0.0000
2017	2.1265	0.0000	2.1265	7.0400	0.0000	7.0400	235.3581	0.0000	235.3581	41.2896	1.2664	3.6638	4.9302	0.0000	0.0000	0.0000	0.0000
2018	2.1796	0.0000	2.1796	7.0400	0.0000	7.0400	241.2420	0.0000	241.2420	57.8054	1.8586	5.2490	7.1077	0.0000	0.0000	0.0000	0.0000
2019	2.2341	0.0000	2.2341	7.0400	0.0000	7.0400	247.2731	0.0000	247.2731	74.3213	2.5186	6.9062	9.4248	0.0000	0.0000	0.0000	0.0000
2020	2.2900	0.0000	2.2900	7.0400	0.0000	7.0400	253.4549	0.0000	253.4549	90.8371	3.2710	8.6380	11.9090	0.0000	0.0000	0.0000	0.0000
2021	2.3472	0.0000	2.3472	7.0400	0.0000	7.0400	259.7913	0.0000	259.7913	107.3530	4.1101	10.4469	14.5569	0.0000	0.0000	0.0000	0.0000
2022	2.4059	0.0000	2.4059	7.0400	0.0000	7.0400	266.2861	0.0000	266.2861	123.8688	5.0111	12.3356	17.3467	0.0000	0.0000	0.0000	0.0000
2023	2.4660	0.0000	2.4660	7.0400	0.0000	7.0400	272.9432	0.0000	272.9432	140.3846	5.9781	14.3068	20.2850	0.0000	0.0000	0.0000	0.0000
2024	2.5277	0.0000	2.5277	7.0400	0.0000	7.0400	279.7668	0.0000	279.7668	156.9005	7.0064	16.3636	23.3700	0.0000	0.0000	0.0000	0.0000
NOMINAL	22.6756	0.0000	22.6756	70.4000	0.0000	70.4000	2,509.7502	0.0000	2,509.7502	825.7920	31.9506	80.7578	112.7084	0.0000	0.0000	0.0000	0.0000
NPV	17.8370	0.0000	17.8370	55.9835	0.0000	55.9835	1,974.2063	0.0000	1,974.2063		22.7978	58.1673	80.9650		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Efficiency Duct

(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)
2015	0.000	2.024	224.017	0.000	226.041	0.000	0.000	0.222	0.000	0.222	(225.819)	(225.819)
2016	0.000	2.075	229.618	0.000	231.692	0.000	0.000	0.740	0.000	0.740	(230.952)	(444.731)
2017	0.000	2.126	235.358	0.000	237.485	0.000	0.000	1.309	0.000	1.309	(236.176)	(656.923)
2018	0.000	2.180	241.242	0.000	243.422	0.000	0.000	1.925	0.000	1.925	(241.497)	(862.585)
2019	0.000	2.234	247.273	0.000	249.507	0.000	0.000	2.615	0.000	2.615	(246.892)	(1,061.881)
2020	0.000	2.290	253.455	0.000	255.745	0.000	0.000	3.398	0.000	3.398	(252.346)	(1,254.960)
2021	0.000	2.347	259.791	0.000	262.138	0.000	0.000	4.274	0.000	4.274	(257.864)	(1,441.975)
2022	0.000	2.406	266.286	0.000	268.692	0.000	0.000	5.203	0.000	5.203	(263.489)	(1,623.107)
2023	0.000	2.466	272.943	0.000	275.409	0.000	0.000	6.195	0.000	6.195	(269.214)	(1,798.527)
2024	0.000	2.528	279.767	0.000	282.294	0.000	0.000	7.252	0.000	7.252	(275.042)	(1,968.401)
NOMINAL	0.000	22.676	2,509.750	0.000	2,532.426	0.000	0.000	33.134	0.000	33.134	(2,499.292)	
NPV	0.000	17.837	1,974.206	0.000	1,992.043	0.000	0.000	23.643	0.000	23.643	(1,968.401)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.01

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Commercial Energy Efficiency Duct

(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
TAX CREDITS	UTILITY REBATES	OTHER BENEFITS	TOTAL BENEFITS	CUSTOMER EQUIPMENT COSTS	CUSTOMER O & M COSTS	OTHER COSTS	TOTAL COSTS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS	CUMULATIVE DISCOUNTED BENEFITS	CUMULATIVE DISCOUNTED COSTS	Benefit to Cost Ratio
\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
0.000	7.040	0.000	7.954	224.017	0.000	0.000	224.017	(216.063)	(216.063)	8	224	0.04
0.000	7.040	0.000	9.904	229.618	0.000	0.000	229.618	(219.713)	(424.322)	17	442	0.04
0.000	7.040	0.000	11.970	235.358	0.000	0.000	235.358	(223.388)	(625.026)	28	653	0.04
0.000	7.040	0.000	14.148	241.242	0.000	0.000	241.242	(227.094)	(818.422)	40	859	0.05
0.000	7.040	0.000	16.465	247.273	0.000	0.000	247.273	(230.808)	(1,004.735)	53	1,058	0.05
0.000	7.040	0.000	18.949	253.455	0.000	0.000	253.455	(234.506)	(1,184.163)	68	1,252	0.05
0.000	7.040	0.000	21.597	259.791	0.000	0.000	259.791	(238.194)	(1,356.913)	84	1,441	0.06
0.000	7.040	0.000	24.387	266.286	0.000	0.000	266.286	(241.899)	(1,523.203)	100	1,624	0.06
0.000	7.040	0.000	27.325	272.943	0.000	0.000	272.943	(245.618)	(1,683.248)	118	1,801	0.07
0.000	7.040	0.000	30.410	279.767	0.000	0.000	279.767	(249.357)	(1,837.258)	137	1,974	0.07
0.000	70.400	0.000	183.108	2,509.750	0.000	0.000	#####	(2,326.642)				
0.000	55.983	0.000	136.948	1,974.206	0.000	0.000	#####	(1,837.258)				

> year of generation unit: 2030
Discount rate: 5.50%
Benefit/Cost Ratio: 0.07

Commercial Window Film/Solar Screen

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	0.19 KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	0.20 KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9 %
(4) GENERATION KWH REDUCTION PER CUSTOMER	926.7 KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9 %
(6) GROUP LINE LOSS MULTIPLIER	1.0000
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0 KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	890.6 KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10 YEARS
(2) GENERATOR ECONOMIC LIFE	20 YEARS
(3) T & D ECONOMIC LIFE	20 YEARS
(4) K FACTOR FOR GENERATION	0.22
(5) K FACTOR FOR T & D	0.00
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	108.00 \$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00 \$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5 %
(4) CUSTOMER EQUIPMENT COST	402.80 \$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5 %
(6) CUSTOMER O & M COST	0.00 \$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5 %
(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	2.5 %
(12)* UTILITY DISCOUNT RATE	5.50 %
(13)* UTILITY AFUDC RATE	0.00 %
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	2,126.00 \$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	2.847 CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0 %
(3) CUSTOMER DEMAND CHARGE PER KW	8.00 \$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5 %
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

* Avoided Generation Unit: 7FA CT
 * 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
2015	9	9	2.59	2.59	2.60	3.36	1	1
2016	18	18	2.89	2.87	2.90	3.65	1	1
2017	27	27	3.07	3.05	3.08	3.93	1	1
2018	36	36	3.22	3.20	3.22	4.05	1	1
2019	45	45	3.39	3.38	3.39	4.14	1	1
2020	54	54	3.60	3.60	3.60	4.34	1	1
2021	63	63	3.83	3.83	3.83	4.48	1	1
2022	72	72	4.05	4.04	4.05	4.67	1	1
2023	81	81	4.26	4.24	4.27	4.85	1	1
2024	90	90	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

* UNIT SIZE OF A AVOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF A 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	A VOIDED TRANSMISSION CAPACITY COST \$(000)	A VOIDED TRANSMISSION O&M COST (000)	TOTAL A VOIDED TRANSMISSION COST \$(000)	A VOIDED DISTRIBUTION CAPACITY COST \$(000)	A VOIDED DISTRIBUTION O&M COST \$(000)	TOTAL A VOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.107911
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.359223
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.635088
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.934233
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.269005
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.649211
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.074324
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.524839
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.006280
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.519557
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	16.079671
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.473571

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(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)
2015	4.1702	0.1079	0.0000	0.0000	0.1079	0.1079
2016	12.5105	0.3592	0.0000	0.0000	0.3592	0.3592
2017	20.8508	0.6351	0.0000	0.0000	0.6351	0.6351
2018	29.1911	0.9342	0.0000	0.0000	0.9342	0.9342
2019	37.5314	1.2690	0.0000	0.0000	1.2690	1.2690
2020	45.8717	1.6492	0.0000	0.0000	1.6492	1.6492
2021	54.2120	2.0743	0.0000	0.0000	2.0743	2.0743
2022	62.5523	2.5248	0.0000	0.0000	2.5248	2.5248
2023	70.8927	3.0063	0.0000	0.0000	3.0063	3.0063
2024	79.2330	3.5196	0.0000	0.0000	3.5196	3.5196
NOMINAL	417.0156	16.0797	0.0000	0.0000	16.0797	16.0797
NPV		11.4736	0.0000	0.0000	11.4736	11.4736

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET: UTILITY COSTS, PARTICIPANT COSTS, AND REV LOSS/GAIN
PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(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)
2015	0.9720	0.0000	0.9720	19.1340	0.0000	19.1340	3.6252	0.0000	3.6252	4.0075	0.1040	0.1962	0.3002	0.0000	0.0000	0.0000	0.0000
2016	0.9963	0.0000	0.9963	19.1340	0.0000	19.1340	3.7158	0.0000	3.7158	12.0226	0.3475	0.6015	0.9490	0.0000	0.0000	0.0000	0.0000
2017	1.0212	0.0000	1.0212	19.1340	0.0000	19.1340	3.8087	0.0000	3.8087	20.0376	0.6146	1.0247	1.6393	0.0000	0.0000	0.0000	0.0000
2018	1.0467	0.0000	1.0467	19.1340	0.0000	19.1340	3.9039	0.0000	3.9039	28.0526	0.9020	1.4663	2.3683	0.0000	0.0000	0.0000	0.0000
2019	1.0729	0.0000	1.0729	19.1340	0.0000	19.1340	4.0015	0.0000	4.0015	36.0677	1.2222	1.9269	3.1491	0.0000	0.0000	0.0000	0.0000
2020	1.0997	0.0000	1.0997	19.1340	0.0000	19.1340	4.1016	0.0000	4.1016	44.0827	1.5874	2.4072	3.9946	0.0000	0.0000	0.0000	0.0000
2021	1.1272	0.0000	1.1272	19.1340	0.0000	19.1340	4.2041	0.0000	4.2041	52.0978	1.9946	2.9078	4.9024	0.0000	0.0000	0.0000	0.0000
2022	1.1554	0.0000	1.1554	19.1340	0.0000	19.1340	4.3092	0.0000	4.3092	60.1128	2.4319	3.4294	5.8613	0.0000	0.0000	0.0000	0.0000
2023	1.1843	0.0000	1.1843	19.1340	0.0000	19.1340	4.4170	0.0000	4.4170	68.1278	2.9011	3.9727	6.8738	0.0000	0.0000	0.0000	0.0000
2024	1.2139	0.0000	1.2139	19.1340	0.0000	19.1340	4.5274	0.0000	4.5274	76.1429	3.4001	4.5383	7.9385	0.0000	0.0000	0.0000	0.0000
NOMINAL	10.8897	0.0000	10.8897	191.3400	0.0000	191.3400	40.6145	0.0000	40.6145	400.7520	15.5055	22.4709	37.9764	0.0000	0.0000	0.0000	0.0000
NPV	8.5660	0.0000	8.5660	152.1573	0.0000	152.1573	31.9480	0.0000	31.9480		11.0636	16.1909	27.2545		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(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)
2015	0.000	0.972	3.625	0.000	4.597	0.000	0.000	0.108	0.000	0.108	(4.489)	(4.489)
2016	0.000	0.996	3.716	0.000	4.712	0.000	0.000	0.359	0.000	0.359	(4.353)	(8.615)
2017	0.000	1.021	3.809	0.000	4.830	0.000	0.000	0.635	0.000	0.635	(4.195)	(12.384)
2018	0.000	1.047	3.904	0.000	4.951	0.000	0.000	0.934	0.000	0.934	(4.016)	(15.805)
2019	0.000	1.073	4.002	0.000	5.074	0.000	0.000	1.269	0.000	1.269	(3.805)	(18.876)
2020	0.000	1.100	4.102	0.000	5.201	0.000	0.000	1.649	0.000	1.649	(3.552)	(21.594)
2021	0.000	1.127	4.204	0.000	5.331	0.000	0.000	2.074	0.000	2.074	(3.257)	(23.956)
2022	0.000	1.155	4.309	0.000	5.465	0.000	0.000	2.525	0.000	2.525	(2.940)	(25.977)
2023	0.000	1.184	4.417	0.000	5.601	0.000	0.000	3.006	0.000	3.006	(2.595)	(27.668)
2024	0.000	1.214	4.527	0.000	5.741	0.000	0.000	3.520	0.000	3.520	(2.222)	(29.040)

NOMINAL	0.000	10.890	40.614	0.000	51.504	0.000	0.000	16.080	0.000	16.080	(35.425)
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NPV	0.000	8.566	31.948	0.000	40.514	0.000	0.000	11.474	0.000	11.474	(29.040)
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Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.28

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Commercial Energy Efficiency Window Film & Solar Screen

(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)			
TAX CREDITS	UTILITY REBATES	OTHER BENEFITS	TOTAL BENEFITS	CUSTOMER EQUIPMENT COSTS	CUSTOMER O & M COSTS	OTHER COSTS	TOTAL COSTS	NET BENEFITS	CUMULATIVE DISCOUNTED NET BENEFITS	CUMULATIVE DISCOUNTED BENEFITS	CUMULATIVE DISCOUNTED COSTS	Benefit to Cost Ratio
\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	\$(000)	
0.000	19.134	0.000	19.434	3.625	0.000	0.000	3.625	15.809	15.809	19	4	5.36
0.000	19.134	0.000	20.083	3.716	0.000	0.000	3.716	16.367	31.323	38	7	5.38
0.000	19.134	0.000	20.773	3.809	0.000	0.000	3.809	16.965	46.565	57	11	5.41
0.000	19.134	0.000	21.502	3.904	0.000	0.000	3.904	17.598	61.552	75	14	5.43
0.000	19.134	0.000	22.283	4.002	0.000	0.000	4.002	18.282	76.309	93	17	5.46
0.000	19.134	0.000	23.129	4.102	0.000	0.000	4.102	19.027	90.867	111	20	5.48
0.000	19.134	0.000	24.036	4.204	0.000	0.000	4.204	19.832	105.250	129	23	5.51
0.000	19.134	0.000	24.995	4.309	0.000	0.000	4.309	20.686	119.471	146	26	5.55
0.000	19.134	0.000	26.008	4.417	0.000	0.000	4.417	21.591	133.539	163	29	5.58
0.000	19.134	0.000	27.072	4.527	0.000	0.000	4.527	22.545	147.464	179	32	5.62
0.000	191.340	0.000	229.316	40.614	0.000	0.000	40.614	188.702				
0.000	152.157	0.000	179.412	31.948	0.000	0.000	31.948	147.464				
20 year of generation unit:		2030										
Discount rate:		5.50%										
Benefit/Cost Ratio:		5.62										

Commercial Ceiling Insulation

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	3.41	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	3.55	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	4,525.9	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	4,349.4	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	528.00	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	652.20	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(8)* CUSTOMER TAX CREDIT PER INSTALLATION	0.00	\$/CUST
(9)* CUSTOMER TAX CREDIT ESCALATION RATE	2.5	%
(10)* INCREASED SUPPLY COSTS	0.00	\$/CUST/YR
(11)* SUPPLY COSTS ESCALATION RATE	2.5	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	3,911.00	\$/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. A VOIDED GENERATOR, TRANS. AND DIST. COSTS

(1) BASE YEAR	2015
(2) IN-SERVICE YEAR FOR A VOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR A VOIDED T & D	2030
(4) BASE YEAR A VOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR A VOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) A VOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) A VOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) A VOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* A VOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	2.847	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	8.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

* Avoided Generation Unit: 7FA CT
 * 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
2015	7	7	2.59	2.59	2.60	3.36	1	1
2016	14	14	2.89	2.87	2.90	3.65	1	1
2017	21	21	3.07	3.05	3.08	3.93	1	1
2018	28	28	3.22	3.20	3.22	4.05	1	1
2019	35	35	3.39	3.38	3.39	4.14	1	1
2020	42	42	3.60	3.60	3.60	4.34	1	1
2021	49	49	3.83	3.83	3.83	4.48	1	1
2022	56	56	4.05	4.04	4.05	4.67	1	1
2023	63	63	4.26	4.24	4.27	4.85	1	1
2024	70	70	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 --->		<---- FORM 2.4 --->		<---- FORM 2.5 ---->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

* UNIT SIZE OF A AVOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF A 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS
PROGRAM: Commercial Energy Efficiency Ceiling Insulation

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

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

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Year	A VOIDED TRANSMISSION CAPACITY COST \$(000)	A VOIDED TRANSMISSION O&M COST (000)	TOTAL A VOIDED TRANSMISSION COST \$(000)	A VOIDED DISTRIBUTION CAPACITY COST \$(000)	A VOIDED DISTRIBUTION O&M COST \$(000)	TOTAL A VOIDED DISTRIBUTION COST \$(000)	PROGRAM FUEL SAVINGS \$(000)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.409910
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1.364544
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2.412447
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	3.548778
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	4.820443
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	6.264695
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	7.879531
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	9.590855
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	11.419660
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	13.369393
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	61.080256
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	43.583518

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

(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)
2015	15.8408	0.4099	0.0000	0.0000	0.4099	0.4099
2016	47.5223	1.3645	0.0000	0.0000	1.3645	1.3645
2017	79.2038	2.4124	0.0000	0.0000	2.4124	2.4124
2018	110.8853	3.5488	0.0000	0.0000	3.5488	3.5488
2019	142.5668	4.8204	0.0000	0.0000	4.8204	4.8204
2020	174.2484	6.2647	0.0000	0.0000	6.2647	6.2647
2021	205.9299	7.8795	0.0000	0.0000	7.8795	7.8795
2022	237.6114	9.5909	0.0000	0.0000	9.5909	9.5909
2023	269.2929	11.4197	0.0000	0.0000	11.4197	11.4197
2024	300.9744	13.3694	0.0000	0.0000	13.3694	13.3694
NOMINAL	1,584.0760	61.0803	0.0000	0.0000	61.0803	61.0803
NPV		43.5835	0.0000	0.0000	43.5835	43.5835

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Commercial Energy Efficiency Ceiling Insulation

(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)
2015	3.6960	0.0000	3.6960	27.3770	0.0000	27.3770	4.5654	0.0000	4.5654	15.2230	0.3950	1.5792	1.9742	0.0000	0.0000	0.0000	0.0000
2016	3.7884	0.0000	3.7884	27.3770	0.0000	27.3770	4.6795	0.0000	4.6795	45.6689	1.3200	4.8494	6.1694	0.0000	0.0000	0.0000	0.0000
2017	3.8831	0.0000	3.8831	27.3770	0.0000	27.3770	4.7965	0.0000	4.7965	76.1149	2.3345	8.2734	10.6079	0.0000	0.0000	0.0000	0.0000
2018	3.9802	0.0000	3.9802	27.3770	0.0000	27.3770	4.9164	0.0000	4.9164	106.5608	3.4263	11.8565	15.2828	0.0000	0.0000	0.0000	0.0000
2019	4.0797	0.0000	4.0797	27.3770	0.0000	27.3770	5.0393	0.0000	5.0393	137.0067	4.6428	15.6045	20.2473	0.0000	0.0000	0.0000	0.0000
2020	4.1817	0.0000	4.1817	27.3770	0.0000	27.3770	5.1653	0.0000	5.1653	167.4527	6.0299	19.5231	25.5530	0.0000	0.0000	0.0000	0.0000
2021	4.2862	0.0000	4.2862	27.3770	0.0000	27.3770	5.2945	0.0000	5.2945	197.8986	7.5766	23.6185	31.1951	0.0000	0.0000	0.0000	0.0000
2022	4.3934	0.0000	4.3934	27.3770	0.0000	27.3770	5.4268	0.0000	5.4268	228.3446	9.2377	27.8968	37.1345	0.0000	0.0000	0.0000	0.0000
2023	4.5032	0.0000	4.5032	27.3770	0.0000	27.3770	5.5625	0.0000	5.5625	258.7905	11.0203	32.3645	43.3848	0.0000	0.0000	0.0000	0.0000
2024	4.6158	0.0000	4.6158	27.3770	0.0000	27.3770	5.7016	0.0000	5.7016	289.2364	12.9158	37.0281	49.9439	0.0000	0.0000	0.0000	0.0000
NOMINAL	41.4077	0.0000	41.4077	273.7700	0.0000	273.7700	51.1479	0.0000	51.1479	1,522.2970	58.8990	182.5938	241.4929	0.0000	0.0000	0.0000	0.0000
NPV	32.5719	0.0000	32.5719	217.7072	0.0000	217.7072	40.2337	0.0000	40.2337		42.0263	131.5049	173.5312		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Efficiency Ceiling Insulation

(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)
2015	0.000	3.696	4.565	0.000	8.261	0.000	0.000	0.410	0.000	0.410	(7.851)	(7.851)
2016	0.000	3.788	4.680	0.000	8.468	0.000	0.000	1.365	0.000	1.365	(7.103)	(14.585)
2017	0.000	3.883	4.797	0.000	8.680	0.000	0.000	2.412	0.000	2.412	(6.267)	(20.215)
2018	0.000	3.980	4.916	0.000	8.897	0.000	0.000	3.549	0.000	3.549	(5.348)	(24.770)
2019	0.000	4.080	5.039	0.000	9.119	0.000	0.000	4.820	0.000	4.820	(4.299)	(28.240)
2020	0.000	4.182	5.165	0.000	9.347	0.000	0.000	6.265	0.000	6.265	(3.082)	(30.598)
2021	0.000	4.286	5.294	0.000	9.581	0.000	0.000	7.880	0.000	7.880	(1.701)	(31.832)
2022	0.000	4.393	5.427	0.000	9.820	0.000	0.000	9.591	0.000	9.591	(0.229)	(31.989)
2023	0.000	4.503	5.562	0.000	10.066	0.000	0.000	11.420	0.000	11.420	1.354	(31.107)
2024	0.000	4.616	5.702	0.000	10.317	0.000	0.000	13.369	0.000	13.369	3.052	(29.222)
NOMINAL	0.000	41.408	51.148	0.000	92.556	0.000	0.000	61.080	0.000	61.080	(31.475)	
NPV	0.000	32.572	40.234	0.000	72.806	0.000	0.000	43.584	0.000	43.584	(29.222)	

Discount Rate: 5.50%
Benefit/Cost Ratio [col (11) / col (6)]: 0.60

Cool/Reflective Roof

PROGRAM: Commercial Energy Efficiency Cool Roof

I. PROGRAM DEMAND SAVINGS AND LINE LOSSES

(1) CUSTOMER KW REDUCTION AT THE METER	37.69	KW /CUST
(2) GENERATOR KW REDUCTION PER CUSTOMER	39.22	KW GEN/CUST
(3) KW LINE LOSS PERCENTAGE	3.9	%
(4) GENERATION KWH REDUCTION PER CUSTOMER	92,149.8	KWH/CUST/YR
(5) KWH LINE LOSS PERCENTAGE	3.9	%
(6) GROUP LINE LOSS MULTIPLIER	1.0000	
(7) CUSTOMER KWH PROGRAM INCREASE AT METER	0.0	KWH/CUST/YR
(8)* CUSTOMER KWH REDUCTION AT METER	88,556.0	KWH/CUST/YR

II. ECONOMIC LIFE AND K FACTORS

(1) STUDY PERIOD FOR CONSERVATION PROGRAM	10	YEARS
(2) GENERATOR ECONOMIC LIFE	20	YEARS
(3) T & D ECONOMIC LIFE	20	YEARS
(4) K FACTOR FOR GENERATION	0.22	
(5) K FACTOR FOR T & D	0.00	
(6)* SWITCH REV REQ(0) OR VAL-OF-DEF (1)	1	

III. UTILITY AND CUSTOMER COSTS

(1)** UTILITY NONRECURRING COST PER CUSTOMER	10,752.00	\$/CUST
(2)** UTILITY RECURRING COST PER CUSTOMER	0.00	\$/CUST/YR
(3) UTILITY COST ESCALATION RATE	2.5	%
(4) CUSTOMER EQUIPMENT COST	66,455.20	\$/CUST
(5) CUSTOMER EQUIPMENT ESCALATION RATE	2.5	%
(6) CUSTOMER O & M COST	0.00	\$/CUST/YR
(7) CUSTOMER O & M ESCALATION RATE	2.5	%
(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	2.5	%
(12)* UTILITY DISCOUNT RATE	5.50	%
(13)* UTILITY AFUDC RATE	0.00	%
(14)* UTILITY NON RECURRING REBATE/INCENTIVE	3,481.00	\$/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	2015
(2) IN-SERVICE YEAR FOR AVOIDED GENERATING UNIT	2030
(3) IN-SERVICE YEAR FOR AVOIDED T & D	2030
(4) BASE YEAR AVOIDED GENERATING UNIT COST	0 \$/KW
(5) BASE YEAR AVOIDED TRANSMISSION COST	0 \$/KW
(6) BASE YEAR DISTRIBUTION COST	0 \$/KW
(7) GEN, TRAN, & DIST COST ESCALATION RATE	0 %
(8) GENERATOR FIXED O & M COST	0 \$/KW/YR
(9) GENERATOR FIXED O&M ESCALATION RATE	2.5 %
(10) TRANSMISSION FIXED O & M COST	0 \$/KW/YR
(11) DISTRIBUTION FIXED O & M COST	0 \$/KW/YR
(12) T&D FIXED O&M ESCALATION RATE	0 %
(13) AVOIDED GEN UNIT VARIABLE O & M COSTS	0 CENTS/KWH
(14) GENERATOR VARIABLE O&M COST ESCALATION RATE	2.5 %
(15) GENERATOR CAPACITY FACTOR	0 %
(16) AVOIDED GENERATING UNIT FUEL COST	0 CENTS/KWH
(17) AVOIDED GEN UNIT FUEL ESCALATION RATE	2.5 %
(18)* AVOIDED PURCHASE CAPACITY COST PER KW	0 \$/KW/YR
(19)* CAPACITY COST ESCALATION RATE	2.5 %

V. NON-FUEL ENERGY AND DEMAND CHARGES

(1) NON-FUEL COST IN CUSTOMER BILL	2.847	CENTS/KWH
(2) NON-FUEL ESCALATION RATE	2.0	%
(3) CUSTOMER DEMAND CHARGE PER KW	8.00	\$/KW/MO
(4) DEMAND CHARGE ESCALATION RATE	2.5	%
(5)* DIVERSITY and ANNUAL DEMAND ADJUSTMENT FACTOR FOR CUSTOMER BILL	1.0	

* FIRE Program Version Number: 1.03

PROGRAM: Commercial Energy Efficiency Cool Roof

* Avoided Generation Unit: 7FA CT
 * 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
2015	12	12	2.59	2.59	2.60	3.36	1	1
2016	24	24	2.89	2.87	2.90	3.65	1	1
2017	36	36	3.07	3.05	3.08	3.93	1	1
2018	48	48	3.22	3.20	3.22	4.05	1	1
2019	60	60	3.39	3.38	3.39	4.14	1	1
2020	72	72	3.60	3.60	3.60	4.34	1	1
2021	84	84	3.83	3.83	3.83	4.48	1	1
2022	96	96	4.05	4.04	4.05	4.67	1	1
2023	108	108	4.26	4.24	4.27	4.85	1	1
2024	120	120	4.47	4.44	4.48	5.06	1	1

INPUTS FOR OTHER COSTS & BENEFITS - EXTERNALLY CALC., FORMS 2.3, 2.4, & 2.5

	(1)	(2)	(3)	(4)	(5)	(6)
	<-- FORM 2.3 -->		<--- FORM 2.4 --->		<--- FORM 2.5 --->	
	Total Resource Test		Participants Test		Rate Impact Test	
	OTHER	OTHER	OTHER	OTHER	OTHER	OTHER
	COSTS	BENEFITS	COSTS	BENEFITS	COSTS	BENEFITS
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)
2015	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
2017	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
2019	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
2021	0.0	0.0	0.0	0.0	0.0	0.0
2022	0.0	0.0	0.0	0.0	0.0	0.0
2023	0.0	0.0	0.0	0.0	0.0	0.0
2024	0.0	0.0	0.0	0.0	0.0	0.0

CALCULATION OF AFUDC AND IN-SERVICE COST OF PLANT
PLANT: 2030 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)
2021	-9	200.0%	1.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2022	-8	200.0%	3.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2023	-7	200.0%	9.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2024	-6	200.0%	27.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2025	-5	200.0%	81.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2026	-4	200.0%	243.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2027	-3	200.0%	729.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2028	-2	200.0%	2187.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2029	-1	200.0%	6561.0000	0.0%	0.00	0.00	0.00	0.00	0.00	0.00
2030	0			0.0%	0.00			0.00	0.00	
				0.00	0.00			0.00	0.00	

IN-SERVICE YEAR = 2030
PLANT COSTS (2015 \$) \$0.00
AFUDC RATE: 0.00%

AVOIDED GENERATION UNIT BENEFITS

PROGRAM: Commercial Energy Efficiency Cool Roof

* UNIT SIZE OF A VOIDED GENERATION UNIT = 0 kW
 * INSERVICE COSTS OF A VOIDED 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)
2015	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2016	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2017	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2018	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2019	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2020	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2022	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2023	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2024	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NOMINAL		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NPV		0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

A VOIDED T & D AND PROGRAM FUEL BENEFITS

PROGRAM: Commercial Energy Efficiency Cool Roof

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

* INSERVICE COSTS OF A VOIDED 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)
2015	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	14.307331
2016	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	47.627418
2017	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	84.202957
2018	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	123.864961
2019	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	168.250567
2020	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	218.660088
2021	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	275.023610
2022	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	334.754900
2023	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	398.586675
2024	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	466.639274
NOMINAL	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	2,131.917780
NPV	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	1,521.219530

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

* WORKSHEET : DSM PROGRAM FUEL SAVINGS
PROGRAM: Commercial Energy Efficiency Cool Roof

(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)
2015	552.8988	14.3073	0.0000	0.0000	14.3073	14.3073
2016	1,658.6963	47.6274	0.0000	0.0000	47.6274	47.6274
2017	2,764.4938	84.2030	0.0000	0.0000	84.2030	84.2030
2018	3,870.2913	123.8650	0.0000	0.0000	123.8650	123.8650
2019	4,976.0888	168.2506	0.0000	0.0000	168.2506	168.2506
2020	6,081.8863	218.6601	0.0000	0.0000	218.6601	218.6601
2021	7,187.6838	275.0236	0.0000	0.0000	275.0236	275.0236
2022	8,293.4813	334.7549	0.0000	0.0000	334.7549	334.7549
2023	9,399.2788	398.5867	0.0000	0.0000	398.5867	398.5867
2024	10,505.0763	466.6393	0.0000	0.0000	466.6393	466.6393
NOMINAL	55,289.8751	2,131.9178	0.0000	0.0000	2,131.9178	2,131.9178
NPV		1,521.2195	0.0000	0.0000	1,521.2195	1,521.2195

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

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

PROGRAM: Commercial Energy Efficiency Cool Roof

(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)
2015	129.0240	0.0000	129.0240	41.7720	0.0000	41.7720	797.4624	0.0000	797.4624	531.3357	13.7879	36.8366	50.6245	0.0000	0.0000	0.0000	0.0000
2016	132.2496	0.0000	132.2496	41.7720	0.0000	41.7720	817.3990	0.0000	817.3990	1,594.0071	46.0719	113.0455	159.1175	0.0000	0.0000	0.0000	0.0000
2017	135.5558	0.0000	135.5558	41.7720	0.0000	41.7720	837.8339	0.0000	837.8339	2,656.6785	81.4836	192.7337	274.2173	0.0000	0.0000	0.0000	0.0000
2018	138.9447	0.0000	138.9447	41.7720	0.0000	41.7720	858.7798	0.0000	858.7798	3,719.3499	119.5901	276.0220	395.6121	0.0000	0.0000	0.0000	0.0000
2019	142.4184	0.0000	142.4184	41.7720	0.0000	41.7720	880.2493	0.0000	880.2493	4,782.0213	162.0503	363.0352	525.0855	0.0000	0.0000	0.0000	0.0000
2020	145.9788	0.0000	145.9788	41.7720	0.0000	41.7720	902.2555	0.0000	902.2555	5,844.6927	210.4650	453.9019	664.3669	0.0000	0.0000	0.0000	0.0000
2021	149.6283	0.0000	149.6283	41.7720	0.0000	41.7720	924.8119	0.0000	924.8119	6,907.3641	264.4517	548.7547	813.2063	0.0000	0.0000	0.0000	0.0000
2022	153.3690	0.0000	153.3690	41.7720	0.0000	41.7720	947.9322	0.0000	947.9322	7,970.0355	322.4296	647.7302	970.1598	0.0000	0.0000	0.0000	0.0000
2023	157.2032	0.0000	157.2032	41.7720	0.0000	41.7720	971.6305	0.0000	971.6305	9,032.7069	384.6474	750.9697	1,135.6170	0.0000	0.0000	0.0000	0.0000
2024	161.1333	0.0000	161.1333	41.7720	0.0000	41.7720	995.9213	0.0000	995.9213	10,095.3783	450.8076	858.6182	1,309.4258	0.0000	0.0000	0.0000	0.0000
NOMINAL	1,445.5051	0.0000	1,445.5051	417.7200	0.0000	417.7200	8,934.2757	0.0000	8,934.2757	53,133.5700	2,055.7851	4,241.6478	6,297.4329	0.0000	0.0000	0.0000	0.0000
NPV	1,137.0555	0.0000	1,137.0555	332.1791	0.0000	332.1791	7,027.8322	0.0000	7,027.8322		1,466.8656	3,055.4534	4,522.3190		0.0000	0.0000	0.0000

* SUPPLEMENTAL INFORMATION NOT SPECIFIED IN WORKBOOK

TOTAL RESOURCE COST TESTS
PROGRAM: Commercial Energy Efficiency Cool Roof

(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)
2015	0.000	129.024	797.462	0.000	926.486	0.000	0.000	14.307	0.000	14.307	(912.179)	(912.179)
2016	0.000	132.250	817.399	0.000	949.649	0.000	0.000	47.627	0.000	47.627	(902.021)	(1,767.175)
2017	0.000	135.556	837.834	0.000	973.390	0.000	0.000	84.203	0.000	84.203	(889.187)	(2,566.067)
2018	0.000	138.945	858.780	0.000	997.725	0.000	0.000	123.865	0.000	123.865	(873.860)	(3,310.258)
2019	0.000	142.418	880.249	0.000	1,022.668	0.000	0.000	168.251	0.000	168.251	(854.417)	(3,999.958)
2020	0.000	145.979	902.256	0.000	1,048.234	0.000	0.000	218.660	0.000	218.660	(829.574)	(4,634.694)
2021	0.000	149.628	924.812	0.000	1,074.440	0.000	0.000	275.024	0.000	275.024	(799.417)	(5,214.467)
2022	0.000	153.369	947.932	0.000	1,101.301	0.000	0.000	334.755	0.000	334.755	(766.546)	(5,741.419)
2023	0.000	157.203	971.630	0.000	1,128.834	0.000	0.000	398.587	0.000	398.587	(730.247)	(6,217.248)
2024	0.000	161.133	995.921	0.000	1,157.055	0.000	0.000	466.639	0.000	466.639	(690.415)	(6,643.668)
NOMINAL	0.000	1,445.505	8,934.276	0.000	10,379.781	0.000	0.000	2,131.918	0.000	2,131.918	(8,247.863)	
NPV	0.000	1,137.056	7,027.832	0.000	8,164.888	0.000	0.000	1,521.220	0.000	1,521.220	(6,643.668)	
				Discount Rate:	5.50%							
				Benefit/Cost Ratio [col (11) / col (6)]:	0.19							

PARTICIPANT COSTS AND BENEFITS
PROGRAM: Commercial Energy Efficiency Cool Roof

(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)	CUMULATIVE DISCOUNTED BENEFITS \$(000)	CUMULATIVE DISCOUNTED COSTS \$(000)	Benefit to Cost Ratio
2015	50.624	0.000	41.772	0.000	92.396	797.462	0.000	0.000	797.462	(705.066)	(705.066)	92	797	0.12
2016	159.117	0.000	41.772	0.000	200.889	817.399	0.000	0.000	817.399	(616.509)	(1,289.435)	283	1,572	0.18
2017	274.217	0.000	41.772	0.000	315.989	837.834	0.000	0.000	837.834	(521.845)	(1,758.288)	567	2,325	0.24
2018	395.612	0.000	41.772	0.000	437.384	858.780	0.000	0.000	858.780	(421.396)	(2,117.154)	939	3,056	0.31
2019	525.086	0.000	41.772	0.000	566.858	880.249	0.000	0.000	880.249	(313.392)	(2,370.129)	1,397	3,767	0.37
2020	664.367	0.000	41.772	0.000	706.139	902.256	0.000	0.000	902.256	(196.117)	(2,520.185)	1,937	4,457	0.43
2021	813.206	0.000	41.772	0.000	854.978	924.812	0.000	0.000	924.812	(69.834)	(2,570.831)	2,557	5,128	0.50
2022	970.160	0.000	41.772	0.000	1,011.932	947.932	0.000	0.000	947.932	64.000	(2,526.835)	3,253	5,780	0.56
2023	1,135.617	0.000	41.772	0.000	1,177.389	971.630	0.000	0.000	971.630	205.759	(2,392.763)	4,020	6,413	0.63
2024	1,309.426	0.000	41.772	0.000	1,351.198	995.921	0.000	0.000	995.921	355.277	(2,173.334)	4,854	7,028	0.69
NOMINAL	6,297.433	0.000	417.720	0.000	6,715.153	8,934.276	0.000	0.000	8,934.276	(2,219.123)				
NPV	4,522.319	0.000	332.179	0.000	4,854.498	7,027.832	0.000	0.000	7,027.832	(2,173.334)				
In-service year of generation unit:				2030										
Discount rate:				5.50%										
Benefit/Cost Ratio:				0.69										

