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VIA OVERNIGHT MAIL

September 28, 2006

Ms. Elizabeth O'Donnell
Executive Director
Kentucky Public Service Commission
211 Sower Boulevard
P.O. Box 615
Frankfort, Kentucky 40602-0615

Re: In the Matter of The Annual cost Recovery Filing for Demand Side Management by The Union Light, Heat and Power Company D/B/A Duke Energy Kentucky
Case No. 2006-00426

Dear Ms. O'Donnell:

Enclosed is an original and 10 copies of Duke Energy Kentucky's Filing of the Annual Status Report, Application for Continuation of The Energy Education and Bill Assistance (Payment Plus) Program and the Personalized Energy Report Program, and Adjustment of the 2006 DSM Cost Recovery Mechanism with Filing of the Amended Tariff Sheets for Gas Rider DSM (Second Revised Sheet No. 62) and Electric Rider DSM (Second Revised Sheet No. 78) in the above-referenced case.

Please date stamp and return the extra copies of this letter in the enclosed self-addressed envelope.

Thank you for your consideration in this matter.

Very truly yours,

John J. Finnigan, Jr.
Associate General Counsel

JJF/sew
cc: Hon. Larry Cook (w/encl)
Hon Richard G. Raff (w/encl.)
Hon. Florence W. Tandy (w/encl.)
Hon. Carl Melcher (w/encl.)

BEFORE THE
KENTUCKY PUBLIC SERVICE COMMISSION

In The Matter Of:	)	
	)	
THE ANNUAL COST RECOVERY FILING	)	CASE NO. 2006-00426
FOR DEMAND SIDE MANAGEMENT BY	)	
THE UNION LIGHT, HEAT AND POWER COMPANY	)	
D/B/A DUKE ENERGY KENTUCKY	)	

FILING OF THE ANNUAL STATUS REPORT, APPLICATION FOR CONTINUATION OF THE ENERGY EDUCATION AND BILL ASSISTANCE (PAYMENT PLUS) PROGRAM AND THE PERSONALIZED ENERGY REPORT PROGRAM, AND ADJUSTMENT OF THE 2006 DSM COST RECOVERY MECHANISM WITH FILING OF THE AMENDED TARIFF SHEETS FOR GAS RIDER DSM (SECOND REVISED SHEET NO. 62) AND ELECTRIC RIDER DSM (SECOND REVISED SHEET NO.78)

Now comes the Union Light Heat & Power Company d/b/a/ Duke Energy Kentucky (Duke Energy Kentucky) with the consensus of the Residential Collaborative and the Commercial and Industrial Collaborative, pursuant to this Commission's November 4, 2004 Order in Case No. 2003-00367, February 14, 2005 Order in Case No. 2004-00389, and April 4, 2006 Order in Case No. 2005-00402 to file the annual status report and to propose an adjustment to the 2006 Demand Side Management (DSM) Cost Recovery Riders (Application). The Applicant is Duke Energy Kentucky of 1697 Monmouth St., Newport, Kentucky 41071. The Residential Collaborative members are: Larry Cook (AG), Nina Creech (People Working Cooperatively), Joy Herald Rutan (League of Women Voters), Florence Tandy, the Northern Kentucky Community Action Commission (CAC), Beth Hodge (Brighton Center), Carl Melcher (Northern Kentucky Legal Aid), Karen Reagor (Kentucky NEED Project), Pat Dressman (Campbell County Fiscal Court), Monica Braunwart (Boone County Fiscal Court) and John Davies (Division of Energy). Please note that the United Way is an ongoing member of the Collaborative

whose representative left the agency. United Way has not filled that position on the Collaborative during the time of this filing. The Commercial & Industrial Collaborative members are Larry Cook (AG), Jim Smith (People Working Cooperatively), Karen Reagor (Kentucky NEED Project), John Cain (Wiseway Supply), Daniele Longo (Northern Kentucky Chamber of Commerce), Pat Dressman (Campbell County Fiscal Court), Ralph Dusing (Ashley Development), Bob Flick (Flick's Foods), Elizabeth Glazier, Russell Guy (Campbell County Fiscal Court), Kris Knochelmann (Knochelmann Heating & Air), Robert Lape (Kenton County Schools), Ed Monohan, Sr. (Monohan Development Company), Gary Sinclair (Kenton County Fiscal Court), and John Davies (Kentucky Office of Energy Policy).

With one exception, the members of both the Residential Collaborative and the Commercial & Industrial Collaborative agreed with this application. The representative from the Attorney General's office has indicated that an opinion on the application would be provided at a later date.

In addition to filing the annual status report, Duke Energy Kentucky and the Collaborative respectfully request a modification of Duke Energy Kentucky's DSM Riders to reflect the reconciliation of planned and actual expenditures, lost revenues, and shared savings.

I. INTRODUCTION

A. Background

On December 17, 2002, the Commission issued its Order in Case No. 2002-00358 approving Duke Energy Kentucky's plan to continue the following DSM programs

Residential Conservation and Energy Education, Residential Home Energy House Call, and Residential Comprehensive Energy Education for a three-year period ending December 31, 2005; to continue to fund the expansion and improvement of existing programs and the development of new programs; and to implement a revised low-income home energy assistance program as a pilot through May 31, 2004. The Commission, in its November 30, 2003 Order in Case No. 2003-00367, also approved the implementation of Power Manager, a residential direct load control program, through the year 2007.

This filing specifically addresses the requirements in the Commission's November 20, 2003 Order in Case No. 2003-00367, February 14, 2005 Order in Case 2004-00389, and April 4, 2006 Order in Case No. 2005-00402 that Duke Energy Kentucky's next scheduled DSM filing is due by September 30, 2006. In the status and reconciliation portion of this report, expenses are reported for the period July 1, 2005 through June 30, 2006. In addition, this filing makes application for continuation of the Energy Education and Bill Assistance (Payment Plus) program through 2009 to align the timing of these programs with those approved in the February April 4, 2006 Order in Case 2005-00402.

If the Commission is delayed in making its determination until after December 31, 2006, the Company requests the ability to continue implementing the current set of programs and to continue recovering costs for its existing DSM programs under its existing tariffs, until the effective date of new tariffs to be implemented pursuant to the Commission's order in this proceeding.

B. Definitions

For the purposes of this Application, the following terms will have the meanings

established in the Principles of Agreement, Demand Side Management (Exhibit 1 to the Application in Case No. 95-312, dated July 15, 1995):

1) **"DSM Revenue Requirements"** shall mean the revenue requirements associated with all Program Costs, Administrative Costs, Lost Revenues (less fuel savings), and the Shareholder Incentive.
2) **"Collaborative"** shall mean the Duke Energy Kentucky DSM Collaborative, which was established by the Signatories and other parties separately from this process.
3) **"Program Costs"** shall mean the costs incurred for planning, developing, implementing, monitoring and evaluating the DSM programs described in Section XI of the Principles of Agreement, Demand Side Management (pp. 11-19) and the DSM programs that have been approved by the Collaborative.
4) **"Administrative Costs"** shall mean the costs incurred by or on behalf of the collaborative process and that are approved by the Collaborative, including, but not limited to, costs for consultants, employees and administrative expenses.
5) **"Lost Revenues"** shall have the meaning in Section IV of the Principles of Agreement, Demand Side Management.
6) **"Shareholder Incentive"** shall have the meaning in Section IV of the Principles of Agreement, Demand Side Management.
7) **"DSM Cost Recovery Mechanism"** shall have the meaning in Section IV of the Principles of Agreement, Demand Side Management.
8) **"Voucher"** shall mean the credit receipt the customer receives from a social service agency. The voucher can be used by the customer as a partial payment

toward the utility bill.

II. STATUS OF CURRENT DSM PROGRAMS

Duke Energy Kentucky currently offers the following programs, the costs of which were recoverable through the DSM Cost Recovery Rider mechanism approved by the Commission in Case No. 2004-00389.

Program 1: Residential Conservation and Energy Education

Program 2: Residential Home Energy House Call

Program 3: Residential Comprehensive Energy Education Program (NEED)

Program 4: Program Administration, Development & Evaluation Funds

Program 5: Energy Education and Bill Assistance (Payment Plus)

Program 6: Power Manager

Program 7: Energy Star Products

Program 8: Energy Efficiency Website

Program 9: Personal Energy Report (PER)

Program 10: C&I High Efficiency Incentive

Program 11: Home Energy Assistance Pilot Program

Under the current DSM Agreement and prior Commission Orders, these programs will end December 2009 with the exception of the Payment Plus program, Personal Energy Report, and the Home Energy Assistance Pilot Program which are pilot programs approved through 2006. Results of these pilot programs are included in this filing. Duke Energy Kentucky requests approval to extend the Payment Plus program through 2009 and the

Personal Energy Report program through 2007, but not the Home Energy Assistance Pilot Program.

This section of the application provides a brief description of each current program, a review of the current status of each program, and information on any changes that may have been made to the programs. In addition, this section makes application for continuation of the Payment Plus program and a doubling of the funding for the C&I High Efficiency Incentive program due to its extreme success.

Program 1: Residential Conservation and Energy Education

The Residential Conservation and Energy Education program designed to help the Company's income-qualified customers reduce their energy consumption and lower their energy cost. This program specifically focuses on LIHEAP customers that meet the income qualification level (i.e., income below 130% of the federal poverty level). This program uses the LIHEAP intake process as well as other community outreach to improve participation. The program provides direct installation of weatherization and energy-efficiency measures and educates Duke Energy Kentucky's income-qualified customers about their energy usage and other opportunities to reduce energy consumption and lower their cost.

The Company estimates that at least 6,000 customers (number of single family owner occupied households with income below $25,000) within Duke Energy Kentucky's service area may qualify for services under this program. The program has provided weatherization services to 251 homes in 2000; 283 in 2001; 203 in 2002; 252 in 2003; 252 in 2004; 130 in 2005 and 140 in the first six months of 2006.

The program is structured so that the homes needing the most work and having the highest energy use per square foot, gets the most funding. The program does this by placing each home into one of two "Tier.". This allows the implementing agencies to spend the limited budgets where there is the most potential for savings and improves cost effectiveness. For each specific home in Tier 2, the field auditor uses the National Energy Audit Tool (NEAT) to determine which specific measures are cost effective for that home. The specific services provided within each Tier are described below.

The tier structure is defined as follows:

	Therm / square foot	kWh use/ square foot	Investment Allowed
Tier 1	0 < 1 therm / ft2	0 < 7 kWh / ft2	Up to $600
Tier 2	1 + therms / ft2	7 + kWh / ft2	All SIR ≥ 1.5 up to $4K

SIR = Savings - Investment Ratio

Tier One Services

Tier 1 services are provided to customers by Duke Energy Kentucky, through its subcontractors. Customers are considered Tier 1, if they use less than 1 therm per square foot per year and less than 7 kWh per square foot per year based on the last year of usage (weather adjusted) of Company supplied fuels. Square footage of the dwelling is based on conditioned space only, whether occupied or unoccupied. It does not include unconditioned or semi-conditioned space (non-heated basements). The total program dollars allowed per home for Tier One services is $600.00 per home.

Tier One services are as follows:

- Furnace Tune-up & Cleaning
- Furnace replacement if investment in repair over $500 (through Gas WX program)
- Venting check & repair
- Water Heater Wrap
- Pipe Wrap
- Waterbed mattress covers
- Cleaning of refrigerator coils
- Cleaning of dryer vents
- Compact Fluorescent Light (CFL) Bulbs
- Low-flow shower heads and aerators
- Weather-stripping doors & windows
- Limited structural corrections that affect health, safety, and energy up to $100
- Energy Education

Tier Two Services

Duke Energy Kentucky will provide Tier Two services to a customer, if they use at least 1 therm and/or 7 kWh per square foot per year based on the last year of usage of Duke Energy Kentucky supplied fuels.

Tier Two services are as follows:

- Tier One services plus:

- Additional cost-effective measures (with SIR $\geq$ 1.5) based upon the results of the NEAT audit. Through the NEAT audit, the utility can determine if the cost of energy saving measures pay for themselves over the life of the measure as determined by a standard heat loss/economic calculation (NEAT audit) utilizing the cost of gas and electric as provided by Duke Energy Kentucky. Such items can include but are not limited to attic insulation, wall insulation, crawl space insulation, floor insulation and sill box insulation. Safety measures applying to the installed technologies can be included within the scope of work considered in the NEAT audit as long as the SIR is greater than 1.5 including the safety changes.

Regardless of placement in a specific tier, Duke Energy Kentucky provides energy education to all customers in the program.

To increase the cost-effectiveness of this program and to provide more savings and bill control for the customer, the Collaborative and Duke Energy Kentucky proposed in the September 27, 2002 filing in Case No. 2002-00358 and subsequently received approval to expand this program to include refrigerators as a qualified measure in owner-occupied homes. Refrigerators consume a very large amount of electricity within the home. Through replacement of poor-performing units, customers can save an average of $96 per year. To determine replacement, the program weatherization provider performs a two-hour meter test of the existing refrigerator unit. If it is a high-energy consumer as determined by this test, the unit is replaced. The program replaces approximately 40% of the units tested. Replacing with a new Energy Star qualified refrigerator, which uses approximately 400 kWh, results in an overall savings to the average customer of 1,280

kWh per year. Refrigerators tested and replaced:

- 2003 = 116 tested and 47 replaced
- 2004 = 163 tested and 73 replaced
- 2005 = 115 tested and 39 replaced
- 2006 in first 6 months = 79 tested and 40 replaced

Due to the higher proportion of rental properties in Kentucky, this replacement rate is less than expected based on Duke Energy Kentucky's experience with this program in Ohio. The existing refrigerator being replaced is removed from the home and destroyed in an environmentally appropriate manner to assure that the units are not used as a second refrigerator in the home or do not end up in the secondary appliance market.

Since the impact evaluation was completed last year, no additional evaluations have been completed on this program.

Program 2: Residential Home Energy House Call

The Home Energy House Call (HEHC) program, implemented by Duke Energy Kentucky subcontractor Enertouch Inc. (d/b/a GoodCents Solutions), provides a comprehensive walk through in-home analysis by a qualified home energy specialist to identify energy savings opportunities in homes. The energy specialist analyzes the total home energy usage, checks the home for air infiltration, examines insulation levels in different areas of the home and checks appliances and heating/cooling systems. A comprehensive report specific to the customer's home and energy usage is then completed and mailed back to the customer within ten business days. The report focuses on the building envelope improvements as well as low-cost and no-cost improvements to

save energy. At the time of the home audit, the customer receives a kit containing several energy saving measures at no cost. The measures include a low-flow showerhead, two aerators, outlet gaskets, two compact fluorescent bulbs, and a motion sensor night-light. The auditors install the measures so customers can begin realizing an immediate savings on their electric bill or the customer may choose to install the measures themselves.

For the period of July 1, 2005 through June 30, 2006, a total of 606 audits were completed in Kentucky. This surpasses the annual goal of 500 by 106 audits. During this period, Duke Energy Kentucky dropped three mailings (Ft. Thomas, Newport, Alexandria) for a total of 13,012 pieces with a response rate of 5.8% and a conversion rate of 80%. The high response rate to this program, allows us to complete more audits with the marketing savings.

Customer satisfaction ratings for the program to-date remain high - 4.8 on a five-point scale (5 being most satisfied). This score is the result of survey cards completed and returned to Duke Energy Kentucky from customers who have received an audit. The survey asks them to rate five components of the program with comments. The survey card rate of return is approximately 40%.

Since the beginning of the program in 1996, over 3,499 customers have participated of which there were 485 in 2000; 500 in 2001; 513 in 2002; 507 in 2003; 569 in 2004; 506 in 2005; and 419 in the first six months of 2006.

Since the impact evaluation was completed last year, there have been no additional evaluations performed on this program.

Program 3: Residential Comprehensive Energy Education

The Residential Comprehensive Energy Education program is operated under subcontract by Kentucky National Energy Education Development (NEED). NEED was launched in 1980 to promote student understanding of the scientific, economic, and environmental impacts of energy. The program is currently available in 46 states, the U.S. Virgin Islands, and Guam.

The program has provided unbiased educational information on all energy sources, with an emphasis on the efficient use of energy. Energy education materials, emphasizing cooperative learning, are provided to teachers. Leadership Training Workshops are structured to educate teachers and students to return to their schools, communities, and families to conduct similar training and to implement behavioral changes that reduce energy consumption. Educational materials and Leadership Training workshops are designed to address students of all aptitudes and have been provided for students and teachers in grades K through 12.

The Kentucky NEED program follows national guidelines for materials used in teaching, but also offers additional services such as: hosting teacher/student workshops, sponsoring teacher attendance at summer training conferences, sponsoring attendance at a National Youth Awards Conference for award-winning teachers and students, and providing curricula, free of charge, to teachers.

Overall, the program has reached teachers and students in 71 schools in the six counties served by Duke Energy Kentucky. There are currently 158 teachers enrolled in the program. At a minimum, these teachers have impacted over 5,000 students. In addition, many of the teachers have multiple classes, so the number is potentially higher. Students who attend workshops are encouraged to mentor other students in their schools

– further spreading the message of energy conservation. Teams of high school students serve as facilitators at workshops. Through this approach, all grade levels are either directly or indirectly presented the energy efficiency and conservation message. Several of the student teams have made presentations to community groups, sharing their knowledge of energy, promoting energy conservation and demonstrating that the actions of each person impact energy efficiency. It is intended that these students will also share this information with their families and reduce consumption in their homes.

Due to efforts of the Kentucky NEED program, the Kentucky Division of Energy has been awarded a Special Projects grant from the U.S. Department of Energy. This Rebuild Kentucky project, which began in January 2002, established a new partnership to implement an Energy Smart Schools program in six Northern Kentucky counties. Kentucky NEED is a cost share partner in this project.

The program addresses: (1) building energy efficiency improvements through retrofits, financed by use of energy saving performance contracts (ESPC) and improved new construction; (2) school transportation practices; (3) educational programs; (4) procurement practices; and (5) linkages between school facilities and activities within the surrounding community. Successful elements of the Energy Smart Schools program will be marketed to other schools statewide.

To improve and better document the energy savings associated with the program, a change was made in 2004 adding a new survey instrument for use in the classroom and an energy savings "kit" as a teaching tool. New curriculum was developed around this kit and survey to allow teachers to have actual in-home measures assessed and implemented. The result of this change has demonstrated that measures are being

installed in the home. These kits include CFL's, low-flow shower heads, faucet aerators, water temperature gauge, outlet insulation pads and flow meter bag.

The kits were tested in the spring of 2003 and began full application in the new school year beginning September 2003 when the science curriculum deals with these issues. The number of kits distributed from 2003-2005 totaled 985. For the first six months of 2006, 300 kits were distributed. Other activities in the 2005 - 2006 school year included: twelve teachers from six various schools in the service territory attended a five day training conference for the NEED summer teacher training workshop, 182 teachers received NEED materials; and one teacher/student training workshop with 16 teachers and 72 students took place in January 2006. Two additional workshops are scheduled for fall 2006. Twelve teacher in-service programs took place at nine schools in the service territory. These workshops are hosted by NEED at the request of Northern Kentucky University to provide training and materials for education majors. There were four teachers who attended the NEED summer conference and one teacher who completed the Kentucky Energy tour. NEED promotes efficiency and conservation practices using lessons from the "Building Buddies" with kits, Monitoring & Mentoring with kit, Learning & 'Conserving with kit, Energy House, Today in Energy and the Energy Conservation Contract. Four schools also received assistance in designing and implementing an energy efficiency program for their schools. Kentucky NEED will work with the Kentucky Office of Renewable Energy and Energy Efficiency to develop and facilitate the Kentucky Energy Smart Schools programs. NEED hosted the fourth annual High Performance Schools Workshop. The Glenn O. Swing School received the 2005-2006 State Elementary School of the Year award for student energy efficiency

program. The Twenhofel Middle School was named the Middle School of the Year, NEED National Rookie of the Year – Junior level. Both schools attended the national conference in Washington, D.C. summer of 2006. The Glenn O. Swing Elementary NEED Team also received an award from the Kentucky Environmental Quality Commission.

Since the impact evaluation was completed last year, no additional evaluations have been completed on this program.

Program 4: Program Administration, Development, & Evaluation Funds

This program captures costs for the administration and support of the Collaborative and Duke Energy Kentucky's overall DSM effort. In addition, these funds are used for program development and evaluation. Program development funds are utilized for the redesign of programs and for the development of new programs or program enhancements such as the refrigerator replacement portion of the Residential Conservation and Energy Education program. Funds have also been utilized for impact evaluation and cost-effectiveness tests that are included as appendices to this filing. Funds going forward will be used to again monitor, evaluate and analyze these programs to improve cost effectiveness. While more than half of the total funds have been spent for the twelve-month period ending June 30, the evaluation study for Payment Plus was not completed until after July 1 so these funds will continue to be needed to cover costs for the current year's activities as well as future evaluations.

Program 5: Pilot Program: Home Energy Assistance Plus (renamed Payment Plus *)*

Since January 2002, the Residential Collaborative and Duke Energy Kentucky have been testing an innovative home energy assistance program called Payment Plus. The pilot program was designed to impact participants' behavior (e.g., encourage meeting utility bill payments as well as eliminate arrearages) and to generate energy conservation impacts. That program was extended with Order 2004-00389 as a pilot through 2006 looking at both the early participants and new participants each year.

The pilot program has three parts:

1. Energy & Budget Counseling – to help customers understand how to control their energy usage and how to manage their household bills, a combined education/counseling approach is used.
2. Weatherization – participants in this program are required to have their homes weatherized as part of the normal Residential Conservation and Energy Education (low-income weatherization) program unless weatherized in past program years.
3. Bill Assistance – to provide an incentive for these customers to participate in the education and weatherization, and to help them get control of their bills, payment assistance credits are provided to each customer when they complete the other aspects of the program. The credits are: $200 for participating in the energy efficiency counseling, $150 for participating in the budgeting counseling, and $150 to participate in the Residential Conservation and Energy Education program. If all of the requirements are completed, a household could receive up to a total of $500. This allows for approximately 125 homes to participate per year as some customers do not complete all three steps or already had the weatherization completed prior to the program.

This program is offered over six winter months per year starting in October. Customers are tracked and the program evaluated after two years to see if customer energy consumption dropped and changes in bill paying habits occurred.

As a pilot, this program has been evaluated since its original test in 2001. Over the last five years, participants have been monitored and compared to a control group of customers with similar arrearages and incomes. This evaluation has looked at not only energy savings, but arrearage and payment practices. It is the only long-term impact and process evaluation in the country looking at both energy savings and arrearages from a single program. As a result, there is long-term evidence that the program is effective at both saving natural gas and having a positive impact on arrearages. The evaluation firm has recommended that the program continue.

> *This program has been evaluated over a number of years in its "pilot" status. These evaluations show that the program has evolved to point where the implementation efforts are efficient and effective, and customer satisfaction is high. In addition, the evaluations show strong and long-term natural gas energy savings, short-term electric savings and to some degree, impacts on arrearage and payment levels. TecMarket Works recommends that the Payment Plus move beyond the pilot status into a standard program component of Duke's low-income service portfolio.*

Copies of the evaluation report at included in Appendix A.

The cost-effectiveness model shows an UCT score of 1.45. Nationally, low-income programs do not pass cost effectiveness tests so the Collaborative is excited about the level of these results. The other test results are as follows: the overall Total Resource Cost (TRC) Test is 1.45; the Ratepayer Impact (RIM) Test is 0.32; and the Participant

Test is infinite.

Given the positive evaluation results, the Collaborative proposes to make Payment Plus an ongoing program and requests funding authorization through 2009 like other ongoing programs. The Collaborative also recommends that the program dollars be increased to $150,000 (from the current $75,000) to add additional participants (up to 80 additional participants) and to add a new component of the program as recommended in the evaluation report. This additional component would involve including a follow-up reinforcement of energy education for past program participants to encourage and increase energy saving behaviors.

Program 6: Power Manager

The purpose of the Power Manager program is to reduce demand by controlling residential air conditioning usage during peak demand conditions in the summer months. The program is offered to residential customers with central air conditioning. Duke Energy Kentucky attaches a load control device to the customer's compressor to enable Duke Energy Kentucky to cycle the customer's air conditioner off and on when the load on Duke Energy Kentucky's system reaches peak levels. Customers receive financial incentives for participating in this program based upon the cycling option selected. If a customer selects Option A, their air conditioner is cycled to achieve a 1 kW reduction in load. If a customer selects Option B, the air conditioner is cycled to achieve a 1.5 kW load reduction. Incentives are provided at the time of installation: $25 for Option A and $35 for Option B. In addition, when a cycling event occurs, a Variable Daily Event Incentive based upon marginal costs is also provided.

The cycling of the customer's air-conditioning system will have minimal impact on the operation of the air-conditioning system or on the customer's comfort level. The load control device has built-in safe guards to prevent the "short cycling" of the air-conditioning system. The air-conditioning system will always run the minimum amount of time required by the manufacturer. The cycling simply causes the air-conditioning system to run less which is no different than what it does on milder days. Research from other programs, including previous Duke Energy Ohio and Duke Energy Kentucky programs, has shown that the indoor temperature should rise approximately one to two degrees for control Option A and approximately two to three degrees for control Option B. Additionally, the indoor fan will continue to run and circulate air during the cycling event.

The initial design of Power Manager has been structured on the same basic principles as Duke Energy Kentucky's innovative PowerShare® program. Power Manager will couple direct load control with a flavor of "real time pricing" through the Variable Daily Event Incentive structure as described above. By implementing the Variable Daily Event Incentive structure, Duke Energy Kentucky can educate customers on the real time cost of electricity. Duke Energy Kentucky will continue to explore opportunities to cross-market the Power Manager program with Duke Energy Kentucky's other DSM programs thus tying both conservation and peak load management together as one package.

In 2005 Duke Energy Kentucky mailed 180,806 Power Manager marketing pieces and had 2,743 customers enrolled in the program. In addition 2,991 switch installations were completed. The cumulative installations as of the end of 2005 total 5,193 switches.

More customers were installed than the yearly 2,500 installation goal to make up for installations from 2004 that were not completed due to system problems. The average 2005 direct mail response rate was approximately 2.43%. The Power Manager direct mail piece was enhanced in the fall of 2005 to enable customers to have a better understanding of the differences between the two cycling options, A and B, via temperature change information. Cross marketing with the Home Energy House Call program is successful; 21 switches were sold by the Home Energy House Call auditors as part of the audit process and were installed during 2005.

As of the end of June 2006, Duke Energy Kentucky already had an additional total of 957 customers enrolled and 713 switch installations completed.

The modeling results for Power Manager has a UCT of 1.9 with a TRC of 1.9, a RIM of 1.9, and a Participant Test that is infinite. The Power Manager program has been approved for implementation through 2007. Duke Kentucky is providing the test results since this is the first year of the program in which we can evaluate actual implementation results.

The 2005 control event season load impact evaluation for the 86 load research study participants has been completed. Research from the load impact evaluation has shown that the weather can vary significantly across the service territory. The estimated load impacts achieved for the peak hour on the peak day was 2.4 MW. While this was below the targeted reduction of 4.5 MW, possible sources for the lower impact error include issues related to the percent of cycling model. In addition, the difference between forecasted and actual temperatures in the peak hour accounts for approximately 0.5 MW of this deficit.

The 2006 load research impacts studies will incorporate an approximate sample size of 95 customers. In addition, 75 customers will have interval metering installed on their homes to increase the sample size used to calculate load reduction. The new 2006 predicted temperature model will help achieve greater kW impacts because higher temperatures will be utilized for cycling percentage modeling due to the hot weather that was experienced in the summer of 2005.

Program 7: Energy Star Products

As approved in Order 2004-00389, the Energy Star Products program provides market incentives and market support through retailers to build market share and usage of Energy Star products. Special incentives to buyers and in-store support stimulate demand for the products and make it easier for store participation. The programs targets Residential customers' purchase of specified technologies through retail stores and special sales events. The first year of the program focuses on compact fluorescent lamps (bulbs) and torchiere lamps. An additional measure, clothes washers, was also evaluated. While the clothes washer passed the UCT, it was considered non-economic due to the cost to participants. The Residential Collaborative chose to not implement this measure as part of the program. Technologies may change over the future years of program operation based on new technologies and market responses.

There are several market barriers addressed through the program. The first is price. Purchase rewards are provided for customers to lower first cost of the item and stimulate interest. The second barrier is retailer participation. Through retail education, in-field sales support (signs, ads, *etc.*), and stimulated market demand retailers stock more product,

provide special promotions and plan sales strategies around these Energy Star products. Additional support is provided through manufacturer relationships that often can reduce prices through special large-scale purchases. Coordination will occur with the national Energy Star initiatives such as "Change a Light, Change the World" promotion.

The intent is to provide incentives or "customer rewards" through special in-store "Instant Reward" events that occur in stores at the time of purchase. Technology incentives start at the following levels:

- Lighting = $2 per bulb — Savings per unit = 66 kWh
- Torchiere Lamps = $20 — Savings per unit = 388 kWh

Training is provided to sales staff of the retailers and sales aids provided.

Duke Energy Kentucky has contracted with the Wisconsin Energy Conservation Corporation (WECC) to provide this service. Recognized as the national leader in this program and located in the region, Duke Energy Kentucky is taking advantage of WECC's current activity to control costs and leverage other activity.

To reduce administrative costs and maintain cost-effectiveness of the program a revised approach to the market was implemented. Instead of year-round activities for the program, special campaigns are held at different times of the year and at different locations to promote these Energy Star Products. Two sales events have taken place in this filing period. The first event took place at Covington's City Hall with the support of Covington's Mayor Callery. Eight Do-It-Best retail stores participated in the sales promotion that lasted through February of 2006 and resulted in the sale of 24,616 CFL's. A second event took place during April 2006 as part of Duke Energy Kentucky's promotion of Earth Day. This sales promotion targeted Alexandria and Ludlow. Four True Value Hardware retailers in these areas participated in this sales promotion. The

final results of this event have not been determined but as of June, 2,269 CFL's were purchased. Plans for the Fall 2006 campaigns are underway to include torchiere promotions.

An Energy Star Products program has also been filed in the Duke Energy Ohio territory. If the program is implemented in Ohio, the KY program will be reviewed for potential expansion back to the previous approach.

Program 8: Energy Efficiency Website

As approved in Order 2004-00389, Energy Zone™ is Duke Energy Kentucky's enhanced energy efficiency web site. It provides Duke Energy Kentucky customers the most advanced programs, tools, and measures available to manage their energy and achieve load impacts. The website features a multi-tiered design providing the consumer the opportunity to receive quick customized energy tips and, if they choose, the ability to complete an online audit and receive ten self-install energy efficiency measures. The marketing of the Energy Efficiency Website is an initiative meant to diversify and increase the reach of Duke Energy Kentucky's DSM programs.

To get customers to the website for its efficiency recommendations, an incentive of an Energy Efficiency Starter Kit will be sent to customers who complete an audit. The kit provides the customer with the following measures:

(1) 15w CFL Bulb
(1) 20w CFL Bulb
(1) 2.0 GPM Earth Showerhead
(1) Dual Setting Touch Flow Kitchen Aerator with Swivel
(1) 1.5 GPM Standard Faucet Aerator
(1) LimeLite Nite Light

(1) Pkg. Toilet Dye Tablets
(2) Switch/Outlet Draft Stoppers
(1) Energy Star Efficiency Guide

The average cost per kit is $17.

The largest barrier to success of the program is making the customer aware of the website. For those customers interested in how they use energy and lowering their energy bill, the website contains an audit tool, an appliance efficiency calculator, efficient products e-catalog and a library of energy information. The challenge is to get them to visit the website, which Duke Energy Kentucky expects to occur primarily through direct marketing to the end user and promotion through the Call Center Customer Service Representative. Since Indiana's expansion of this program did not occur, Duke Energy Kentucky plans to promote this program through its current E-bill customers.

Due to technical problems, the addition of the energy kits to the program through the website did not begin until May 2006. Initial requests for kits are being processed and sent to customers. The program will increase promotion and awareness building and results will be assessed next year.

Program 9: Personal Energy Report (PER)

The Personalized Energy Report (PER) provides the Duke Energy Kentucky customer with a customized energy report aimed at helping them better manage their energy costs. With rising energy costs in all aspects of daily life, the customer is searching for information they can use and ideas they can implement which will impact their monthly energy bill. The PER program also includes the *"Energy Efficiency Starter Kit"* containing nine easily installed measures which demonstrate how easy it is to move

towards improved home energy efficiency. For purposes of this pilot program, Duke Kentucky has agreed to test the efficacy of the kit by sending it to 25% of the survey respondents. The program targets single family residential customers in the Duke Energy Kentucky market that have not received measures through the Home Energy House Call energy efficiency audit or Residential Conservation & Energy Education programs within the last three years.

The program gives information on the entire home from an energy usage standpoint providing energy tips and information regarding how they use energy and what simple, low cost/no cost measures can be undertaken to lower their energy bill. The reason this program is needed is because customers lack education on how they individually consume energy in their home and the steps which can be taken to lower their energy bills. This program is meant to educate the customer and put at their disposal, information, customized tips and simple to install measures which can all lower their energy costs.

To get this information, a customer completes an energy survey which generates the personalized energy report. Both are excellent educational tools. This stimulates the customer to think about how they use energy and then PER provides them with tools and information to lower their energy costs. Additionally, PER provides instructions on how to install the energy measures demonstrating how easy it is to improve their efficiency.

To gain customer participation, the PER program commences with a letter to the customer, offering the Personalized Energy Report if they would return a short, 14 question survey about their home. The survey asks very simple questions such as age of home, number of occupants, types of fuel used to cool, heat and cook. Once returned,

the survey is used to generate a customized energy report. The report contains the following information:

- Month-to Month Comparisons of electric and/or gas usage including the amount of the bill
- Predictions of customer's usage based on 95th percentile weather conditions (extremely hot summer/extremely cold winter) and 5th percentile weather conditions (extremely mild summer/extremely mild winter). Also includes bill amounts based on 2006 tariffs.
- Trend chart showing usage of electric and/or gas by kWh/CF by month and amount of monthly bill
- Bill comparison of Duke Energy Kentucky vs. the average national electric and/or gas rate
- A disaggregation of how the customer uses electricity and/or gas
- Description of Budget Bill
- Customized energy tips

Customized tips are based upon the customer's specific answers to questions in the survey. As an example

- If the age of the home is over 30 years, plastic window kits would be a recommend measure
- If over 50% of the ducts are in the attic, adding duct insulation would also be a measure.

As part of quality control, Duke Energy Kentucky completes a follow-up survey with a sub-segment of the customers who received the offer and those who also responded to determine what drove their responses. An additional sub-segment of customers who received the "*Energy Efficiency Starter Kit*" also receive the survey and include questions regarding installation of the measures found in the kit.

For the 25% of customers who received The "*Energy Efficiency Starter Kit*", the kit contains the following items:

- 2 each 1.5 GPM showerheads
- 1 each Kitchen Swivel Aerator 2.2 GPM
- 1 each Bathroom Aerator 1.0 GPM
- 1 each Bath Aerator 1.5GPM
- 1 each Small Roll Teflon Tape
- 1 each 15 Watt CFL Mini Spiral
- 1 each 20 Watt CFL Mini Spiral
- 2 each 17' Roll Door Weatherstrip
- 1 each Combination Pack Switch/Outlet Gasket Insulators
- Installation instructions for all measures

Duke Energy Kentucky is using a similar kit in the Home Energy House Call and NEED programs with great success. In those programs, the average participant is saving between 240 and 360 kWh and between 10 and 16 therms per year.

In mid- May Duke Energy Kentucky mailed 6,250 letters and surveys to customers. As of the end of June, 1,417 PER report and kit requests were received. This

is a 22.7% response rate. At the time of this filing, the initial pilot program is being completed (Oct 1, 2006). Preliminary results show that customers who were not offered kits had a 19.3% response rate to the mailing with 6,807 customers receiving reports. The test group who were offered the kits had a 23.9% response rate to the mailing with 2,810 surveys being completed and kits sent out. Since this is a pilot program with results just being finalized, the Collaborative proposes to continue this pilot test at the same funding level through the next year. Duke Energy Kentucky and the Collaborative propose that time be allowed to complete an evaluation of the program, report the results and make a recommendation on te program at the next filing on September 30, 2007.

Program 10: C&I High Efficiency Incentive

Order 2004-00389 approved a new program for Duke Energy Kentucky to provide incentives to small commercial and industrial customers to install high efficiency equipment in applications involving new construction, retrofit, and replacement of failed equipment. This program was to be jointly implemented with the Duke Energy Indiana territory to reduce administrative costs and leverage promotion. The current Duke Energy Indiana program has been around for many years and promotes limited prescriptive incentives for motor, lighting and cooling equipment types. The approved Duke Energy Kentucky program not only included these technologies, but also expanded the program to include additional technologies to cover more applications and end uses. These same expanded technologies were included in the Duke Energy Indiana filing, but funding for the expanded technologies was rejected. Consequently the Duke Energy Kentucky program technology offering was scaled back from the original proposal to match the

current Indiana offering in lighting, motors and HVAC technologies only. However, a new C&I expanded program is pending in Duke Energy Ohio's territory for implementation in that state. If it is approved there, the Kentucky technologies will again be expanded. The technologies to be initially offered in both the Duke Energy Kentucky and Duke Energy Ohio territories include the following:

High-Efficiency Incentive Lighting

- 8 ft 1 & 2 Lamp T-8/ E Ballast
- 8 ft HO 1 & 2 T-8/ EB
- 4 ft 1-4 T-8 /EB
- 3 ft 1-4 T-8 /EB
- 2 ft 1-4 T-8 /EB
- LED Exit Signs New/Electronic
- CFL Fixture
- CFL Screw in
- T-5 with Elec Ballast replacing T-12
- T-5 HO with Elec Ballast replacing T-12
- Tubular Skylight
- Hi Bay Fluorescent 4LT5HO
- Hi Bay Fluorescent 6LF32T8
- Hi Bay Fluorescent 8L 42W CFL
- 320 Metal Halide Pulse Start

High Efficiency Incentive HVAC

- Packaged Terminal AC
- Unitary AC & Heat Pump
    - <65,000 BTUH 1 Phase
    - <65,000 BTUH 3 Phase
    - 65-135,000 BTUH
    - 135-240,000 BTUH
    - 240,000-760,000 + BTUH
- Rooftop HP & AC
    - <65,000 BTUH 3 Phase
    - 65-135,000 BTUH
    - 135-240,000 BTUH
    - 240,000-760,000 + BTUH
- Ground Source HP – Closed Loop
    - <135,000 BTUH @ 59 degrees F
    - <135,000 BTUH @ 77 degrees F

High Efficiency Incentive Motors 1 to 250 hp

Greater than 1500 hours per year

High Efficiency Pumps 1.5 to 20 hp

Incentives are provided through the market providers (contractors & retail stores) based on Duke Energy Kentucky's cost-effectiveness modeling but with a high-end limit of 50% of measure cost. Using the Duke Energy Kentucky cost-effectiveness model assures cost-effectiveness over the life of the measure. Primary delivery of the program is through the existing market channels, equipment providers and contractors. Duke Energy Kentucky is using its current DSM team to manage and support the program. Additional outside technical assistance is being retained to analyze technical applications and provide customer/market provider assistance as necessary. Duke Energy Kentucky also will provide education and training to its market providers to understand the program and the appropriate applications for the technologies. Full program operations began in the last quarter of 2005. Results to date were beyond expectation. In the first nine months of the program, 36 applications were processed totaling $313,350 in incentives. Duke Energy Kentucky attributes this to high installation rates of T-8, T-5 High Output, and High Bay Lighting technologies and to a pent up demand in the marketplace. To respond to the market, we made the following adjustments to the program in order to serve more customers and remain cost effective:

- Incentives for T-8, T-5 and High Bay fixtures are no longer eligible in a "new construction" application, only retrofit applications. The new construction market is utilizing these technologies as a normal practice so incentives are now not needed.

- The incentive levels for T-8 High Bay and T-5 High Output High Bay fixtures were adjusted to align with price changes in the market.
- A cap of $50,000 per facility per calendar year was implemented in an effort to serve more customers.
- A reservation system was instituted during the proposal stage, to ensure that customers will receive their incentives once the project is complete.

Even given these changes, the program still needs to increase its budget to respond to market demand and customer opportunities. The C&I Collaborative is requesting that the budget be increased by 100% to allow Duke Energy Kentucky to capture existing potential and not loose momentum in the marketplace. These increases will still be cost effective as each technology has been modeled as cost effective within the given administrative costs. The total program budget also includes lost margins for measures installed in the prior year.

Program 11: Home Energy Assistance Pilot Program

On November 21, 2005, the Company filed an amended application in which it sought approval of a pilot Home Energy Assistance (HEA) program for a twelve-month period. The program was designed to aid customers with the high costs of natural gas. Duke Energy Kentucky and its Collaborative proposed and received approval from the Kentucky Public Service Commission to provide additional "energy assistance" through this program. Duke Energy Kentucky notified customers of these charges through a bill message included on customers' bills during the twelve-month period these charges

would be in effect. The bill message separately itemizes this charge, and states that the additional $0.10 charge is for an energy assistance program approved by the Kentucky Public Service Commission. The funds generated are administered by the Northern Kentucky Community Action Commission (CAC) on a discretionary basis. Duke Energy Kentucky tracks the collection of funds by type of service (gas or electric) and works with the CAC to implement procedures to disburse the funds according to customers with the like type of service. In this manner, funds raised through gas charges are credited to gas bills and funds raised through electric charges would be credited to electric bills.

The following are the results of the efforts through June 30, 2006:

Total Budget	$241,295	
	$ 33,178	Administration
	$208,117	Benefits

Total costs through June 30, 2006	$112,622
Customers Served	1,364

This program will continue through its twelve-month authorized period. At this time, the Company is not requesting continuation of the program. The Company viewed this as a one-time program driven by high natural gas costs following the storms that affected gas supplies. The Company reserves the right to pursue this program again pending a return of natural gas price volatility.

III. CALCULATION OF THE 2007 DSM COST RECOVERY MECHANISM

The reconciliation of the DSM rider involves a comparison of projected vs. actual program expenses, lost revenues, and shared savings as well as inclusion of the prior year's reconciliation. The actual cost of residential and non-residential program expenditures, lost revenues, and shared savings for this reporting period was $2.3 million. The projected level of expenditures is $3.7 million.

Lost revenues are computed using the applicable marginal block rate net of fuel costs and other variable costs times the estimated kWh savings for a three-year period from installation of the DSM measure. The estimate of kWh savings is based upon the results from any recently completed impact evaluation studies and actual customer participation. Lost revenues accumulate over a three-year period from the installation of each measure, unless a general rate case has occurred.

With respect to shared savings, Duke Energy Kentucky utilized the shared incentive of 10% of the total savings net of the costs of measures, incentives to customers, marketing, impact evaluation, and administration. The savings are estimated by multiplying the number of participants for each measure times the UCT value and then subtracting the program costs. Shared savings only are valued for new installation of new DSM measures.

Outline of DSM Activity

Duke Energy Kentucky is planning to offer the following DSM programs in Duke Kentucky's service territory in 2007:

Program 1: Residential Conservation and Energy Education (Low-Income Weatherization)

Program 2: Residential Home Energy House Call

Program 3: Residential Comprehensive Energy Education Program (NEED)

Program 4: Program Management, Development and Evaluation Funds

Program 5: Pilot Program Energy Education & Bill Assistance Program (Payment Plus)

Program 6: Power Manager

Program 7 Energy Star Products

Program 8 Energy Efficiency Website

Program 9 Personal Energy Report (PER)

Program 10 C&I High Efficiency Incentive

2007 DSM Riders

In accordance with the Commission's Order in Case No. 95-312, the Joint Applicants submit the proposed DSM Riders (Appendices B and C). The riders are intended to recover projected 2007 program costs, lost revenues and shared savings, to reconcile the actual DSM revenue requirement as previously defined to the revenue recovered under the DSM Riders for the period July 1, 2005 through June 30, 2006. Appendix D, page 1 of 5, tabulates the reconciliation of the DSM Revenue Requirement associated with the prior reconciliation, Duke Energy Kentucky's program costs, lost revenues, and shared savings between July 1, 2005 and June 30, 2006, and the revenues collected through the DSM Riders over the same period. The calculation of lost revenues and shared savings only covers the period from the time of the Order in Case 2004-00389 to June 30, 2006. The true-up adjustment is based upon the difference between the actual DSM revenue requirement and the revenues collected during the period July 1, 2005

through June 30, 2006.

The actual DSM revenue requirement for the period July 1, 2005 through June 30, 2006, consists of: (1) program expenditures, lost revenues, and shared savings; and (2) amounts approved for recovery in the previous reconciliation filing. The actual program costs incurred are reflected in column (2) labeled "Projected Program Costs 7/2005 to 6/2006."

Appendix D, page 5 of 5 contains the calculation of the 2006 Residential DSM Riders. The calculation includes the reconciliation adjustments calculated in Appendix D, page 1 of 5 and the DSM revenue requirement for 2007. The residential DSM revenue requirement for 2007 includes the costs associated with the Residential DSM programs, the program development funds, the pilot Energy Education and Bill Assistance Program (Payment Plus), the Power Manager program, the Energy Star Products program, the Energy Efficiency Website program, the Personalized Energy Report program, and any applicable net lost revenues and shared savings (Appendix D, pages 2 and 3 of 5). Total revenue requirements are incorporated along with the projected electric and gas volumes (Appendix D, page 4 of 5) in the calculation of the Residential DSM Rider.

Appendix D, page 5 of 5 also contains the calculation of the 2007 Commercial and Industrial DSM Rider. The calculation includes the reconciliation adjustments calculated in Appendix D, page 1 of 5 and the DSM revenue requirement for 2006. The Commercial & Industrial DSM revenue requirement for 2007 includes the costs associated with the commercial and industrial DSM program (C&I High Efficiency Incentive) and the associated net lost revenues and shared savings (Appendix D, pages 2 and 3 of 5). Total revenue requirements are incorporated along with the projected electric volumes (Appendix

D, page 4 of 5) in the calculation of the Residential DSM Rider.

The Company's proposed 2007 DSM Riders, shown as Appendices B and C, replace the current DSM Riders, which were implemented in the first available billing cycle of April, 2006. The electric DSM rider, proposed to be effective with the first billing cycle in January 2006, is applicable to service provided under Duke Energy Kentucky's electric service tariffs as follows:

Residential Electric Service provided under:

Rate RS, Residential Service, Sheet No. 30

Non-Residential Electric Service provided under:

Rate DS, Service at Secondary Distribution Voltage, Sheet No. 40

Rate DT, Time-of-Day Rate for Service at Distribution Voltage, Sheet No. 41

Rate EH, Optional Rate for Electric Space Heating, Sheet No. 42

Rate SP, Seasonal Sports, Sheet No. 43

Rate GS-FL, Optional Unmetered General Service Rate for Small Fixed Loads, Sheet No. 44

Rate DP, Service at Primary Distribution Voltage, Sheet No. 45

Rate RTP-M, Real Time Pricing – Market-Based Pricing, Sheet No. 59

Rate RTP, Experimental Real Time Pricing Program, Sheet No. 99

The gas DSM rider is applicable to service provided under the following residential gas service tariff:

Rate RS, Residential Service, Sheet No. 30

Duke Energy Kentucky respectfully requests that, if the Commission cannot issue

an Order within the time-frame sought in this filing, the Company be permitted to continue the current set of DSM programs and to collect revenues under the existing DSM Riders until the effective date of new tariffs issued under the Commission's Order in this filing.

Calculation of the Residential Charge

The proposed residential charge per kWh for 2007 was calculated by dividing the sum of: (1) the reconciliation amount calculated in Appendix D, page 1 of 5; and (2) the DSM Revenue Requirement associated with the DSM programs projected for calendar year 2007, by the projected sales for calendar year 2007. DSM Program Costs for 2007 include the total implementation costs plus program rebates, lost revenues, and shared savings. The calculations in support of the residential recovery mechanism are provided in Appendix D, page 5 of 5.

Calculation of the Non-Residential Charge

The proposed non-residential charge per kWh for 2007 was calculated by dividing the sum of: (1) the reconciliation amount calculated in Appendix D, page 1 of 5; and (2) the DSM Revenue Requirement associated with the DSM program projected for calendar year 2007, by the projected sales for calendar year 2007. DSM Program Cost for 2007 includes the total implementation costs plus program rebates, lost revenues and shared savings.

Allocation of the DSM Revenue Requirement

As required by KRS 278.285(3), the DSM Cost Recovery Mechanism attributes the costs to be recovered to the respective class that benefits from the programs. The amounts associated with the reconciliation of the Rider are similarly allocated as demonstrated in Appendix D, page 2 of 5. The costs for the Power Manager program are fully allocated to

the residential electric class, since this is the class benefiting from the implementation of the program. As required, qualifying industrial customers are permitted to "opt-out" of participation in, and payment for, the DSM programs. In fact, all of Duke Energy Kentucky's Rate TT customers met the "opt-out" requirements prior to the implementation of the DSM Riders in May 1996, and are not subject to the DSM Cost Recovery Mechanism.

WHEREFORE, the Joint Applicants respectfully request that the Commission review and approve this Application.

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing filing was served on the following via ordinary United States mail, postage prepaid, this 28th day of September, 2006:

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Final Draft Report

An Evaluation of the Payment Plus Pilot Program

Results of a Process, Energy Consumption and Arrearage Effects Evaluation

September 12, 2006

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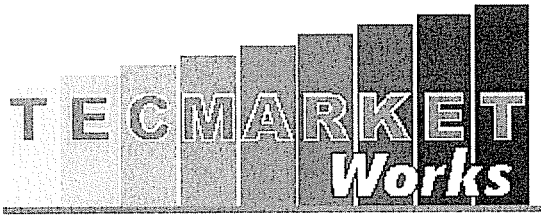

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Executive Summary

About This Report

This report presents the results of a process and impact evaluation of Duke Energy's Payment Plus Pilot Program. This program provides energy efficiency, conservation and financial management training to participants along with home weatherization services. Participants receive financial incentives in the form of arrearage credits to their account in order to encourage participation. Together the training and weatherization services are expected to lower participant's utility bills and improve their payment performance. The program was first implemented from January through May of 2002 (Pilot Program I). The program was evaluated, modified and implemented again in June through November 2003 (Pilot Program II). Pilot III was implemented from December 2003 through March 2004 to test modifications to the program implemented after the completion of Pilot Program II. This report presents the evaluation results from a process evaluation of Pilot Program IV, implemented in August and September of 2004), and an effects evaluation (arrearage, payments and energy savings) of Pilot Programs I, II and III.

This report is presented in five sections as noted in the following table.

Table 1 Evaluation Report Contents

Section One: Pilot Program IV	Section Two: Pilot Program IV	Sections Three - Five: Pilot Programs I, II, and III
1. Interview results with program designers, managers and implementers	2. Interview results with participants	3. Assessment of weather-normalized energy savings, 4. Assessment of arrearage effects, 5. Assessment of payment effects

The first section provides the results from the Pilot Program IV process evaluation. The process evaluation employed in-depth interviews with program design, planning and implementation staff.

The evaluation efforts employed to develop the findings presented in section two included reviews of monthly-metered energy consumption records of Pilot Program I, II and III participants and a comparison group of matched non-participants. The analysis presented in section two is an assessment of the program's energy impacts and employs a weather-normalized assessment of pre- and post-program energy use adjusted to account for normal changes in consumption through the use of a comparison group. Section three presents the assessment of the programs' effects on arrearage levels, and section four includes the assessment of various payment effects such as the number of days needed to pay the bill and the percent of the billed amount paid. Sections three and four also employ the use of a matched comparison group to assess the net effects of the program on arrearage levels and payment effects. Finally, the findings presented in section five are the results of the customer interviews conducted in 2006 with Pilot IV participants and

those that enrolled but did not participate. These findings are compared to the sections of the participant survey completed in 2003 with Pilot II participants.

The findings presented in sections two through four are based on the reviews of the usage data for 2 to 17 Pilot I participants (depending on the analysis conducted) who had at least one year pre and two years of post-program account information. Because of the small size of the Pilot I population the findings associated with Pilot I participants should be assessed with caution. The findings for Pilot Program II are drawn from 36 participants, and Pilot III has 33 participants, each having at least one year of pre and one year of post-program energy usage and account information. These findings from Pilots II and III are more reliable than the findings from Pilot I.

Summary of Findings

An overview of the key findings identified through this evaluation is presented in this section.

This program has been evaluated over a number of years in its "pilot" status. These evaluations show that the program has evolved to point where the implementation efforts are efficient and effective, and customer satisfaction is high. In addition, the evaluations show strong and long-term natural gas energy savings, short-term electric savings and to some degree, impacts on arrearage and payment levels. TecMarket Works recommends that the Payment Plus move beyond the pilot status into a standard program component of Duke's low-income service portfolio.

Significant Process Evaluation Findings

Pilot IV

TecMarket Works interviewed seven individuals associated with the design, management and operations of the program and reviewed the energy and budgeting workshop materials. The significant findings from these activities are reported below:

1. The process used to enroll Crisis participants has improved to the level at which the Northern Kentucky Community Action Commission (NKCAC) has to turn down applicants. The latest Pilot Program was at full capacity. All potential enrollees should continue to be pre-screened before the program is offered to make sure that the program is only offered to eligible customers.

2. The communications and working relationships between People Working Cooperatively (PWC) and NKCAC have significantly improved. There is better and more consistent coordination of services, with times and dates of Pilot training sessions rapidly communicated between the organizations, PWC has been available to attend training sessions and answer questions about the weatherization. This has increased enrollments into the weatherization program.

In addition, Duke managers have been given advanced notice of meetings, allowing their participation.

3. PWC has made an effort to contact landlords to help Pilot participants obtain the needed permission for weatherization. While contact is difficult, when accomplished, the landlords have been positive about the program and allowed weatherization to go forward. However, this issue remains a participation barrier for renters.

4. The interviewed managers at NKCAC and PWC report that they would like to see the following program changes:

    a. Continue to try and reach the more rural areas of the targeted counties. If these customers can be cost effectively served, recruit and provide training sessions throughout the counties into more rural areas of the service territory to allow more rural low-income customers an opportunity to participate without having to travel great distances.

    b. Let the service providers know that they are free to piggy-back or coordinate the program with other social services provided by the implementation agencies to expand services and increase demand and enrollment success.

Significant Participant Interview Findings

Pilot IV

TecMarket Works was able interview twenty-five participants of the Pilot IV Program. The significant findings from these interviews are reported below:

1. The driving force for participation was to receive the bill credits. Eighty percent cited the credits as the primary reason they chose to enroll. Thirty-six percent said that they participated in order to learn how to save energy.

2. Program participants understood the program and the procedure for applying their credits better than in the past. This was an area of confusion for past participants that appears to have been eliminated.

3. Reported problems with getting the credits applied to their bills has dropped significantly. Very few of these issues are now being raised by participants. The process involved in applying credits was streamlined after the previous evaluation, with the intent of reducing or eliminating these types of complaints. This goal appears to have been achieved.

4. Participants are still very satisfied with the Training Sessions. On a scale of 1-10, average scores for all aspects of the training sessions were high across most response categories for both sessions (energy & budgeting). Satisfaction was

particularly high when rating the instructor's knowledge (9.4 & 9.6), comprehensiveness of subject matter (9.2 & 9.3), and presentation skills of instructor (9.2 & 9.4). The convenience of attending the session was the only response group that received satisfaction scores below 9 (8.6 & 8.8) indicating that there was less satisfaction with the convenience of attending the sessions, but these satisfaction scores are very good scores when using a 10-point scale.

Significant Energy Consumption Analysis Findings

Pilots I, II and III Combined

TecMarket Works examined customer billing and payment records for three of the Pilot Programs' participants for a period of at least six months prior to the program and from one to four years following the program. The results of this analysis are presented below and in Sections Three and Four of this report. The combined energy impact analysis results include:

1. Over the longer period of this study the pilot participants have not been able to reduce their electrical consumption. This is different from the previous evaluation in which the participants experienced reduced electric consumption.

2. Pilot participants who were not weatherized are still able to decrease their consumption of natural gas in all Pilots except Pilot I. The weatherized participants over the successive pilots continue to save natural gas.

3. Weatherization is a key component of the Payment Plus Pilot Program for savings natural gas over the long-term. While kilowatt-hour savings are no longer present, participants have experienced electric savings for a significant period of time in past evaluations. These savings have eroded as the months and years have passed. It may be possible to recoup some of these savings by re-communicating tips on how to save electricity with past participants, or by allowing past participants to re-enroll in the energy training session (with or without program credits). However, these follow-up efforts may need to be cost effective, a difficult challenge when the extra savings my be additional short-term electric savings.

Significant Billing Analysis Evaluation Findings

Each of the Pilots are discussed separately in this section.

Pilot I

When reading the results of this assessment the reader is cautioned about using these findings as conclusive. There were not many participants that had enough pre- and post-program billing and payment data to include in the assessment. This means that the sample's precision level and the confidence interval are not rigorous enough to draw decisive conclusions, but instead should be considered indicators of results. Significant finding from the billing analysis include:

1. Arrearage levels for participants have substantially decreased in the years following participation (from $719 to $434), and non-participant arrearage levels increased slightly.

2. Likewise, there is also a trend suggesting that participants are beginning to pay a higher portion of their bill following participation. Participants paid, on average, about 47% of their utility bill during any given month before the program. Since participation, they have increased the percent of the bill paid to just over 56%. Participants appear to be increasing this amount while non-participants appear to be decreasing this amount.

3. Pilot I participants have been successful at decreasing their disconnection rates relative to the comparison group. In the post-program years, the comparison group has had a disconnection rate of 5.97%, while the participants have kept their disconnection rate quite low at 2.24%.

Pilot II

TecMarket Works examined customer billing and payment records for a period of two years prior to the program and for three years following the Pilot II program (although some months are excluded due to poor sample size). The results of this analysis are presented below and in Sections Three and Four of this report. Significant findings include:

1. Pilot II participants have experienced a decrease in their arrearage levels in the months after participation. In the two years of post-program months, arrearages decreased by an average of 13%, whereas the comparison group arrearages increased by 7%.

2. Participants were able to limit the level of erosion of the amount of the payments they made each month relative to the total amount due on their bills. Participants were paying about 51% of the amount due before the program, after participation, they paid about 45% of the total bill. Likewise, the comparison group also decreased the amount they paid relative to what they owed during the same time, dropping from 45% to 30% of the bill paid.

Pilot III

Pilot III has the strongest sample size for this analysis. There were typically data from at least 30 participants in each of the months analyzed, and a very strong comparison group of about 100-500 customers.

1. The mean arrearages of the Pilot III participants have increased slightly since participating in the program, at about the same level as the comparison group. There has been little change in this area.

2. Disconnections have decreased since participation. Before the program, the disconnection rate was 3.1%, and since then it has dropped to 2.4%. The comparison group's disconnection rate has increased from 3.8% to 4.4% in this same time period.

3. The percent of the bill paid by Pilot III participants has remained steady, while the comparison group has been paying less of their bill during the same time period.

Introduction

This report presents the results of a mini process evaluation of the Payment Plus Pilot Program IV and an effects evaluation of Pilot Programs I, II and III. The process evaluation examined Pilot Program IV operations while the effects evaluation examined the effects of the program on the payment effects and energy consumption of Pilot Program I, II and III participants.

To conduct the process evaluation we interviewed program managers, designers and implementers employed the Northern Kentucky Community Action Commission (NKCAC), and People Working Cooperatively (PWC).

Program Description – Payment Plus Pilot Programs III and IV

The Payment Plus Pilot Program is a small test program originally contracted to be implemented in six counties in northern Kentucky during the period from January to May of 2004. However, the program provider was unable to meet this obligation and the program was implemented in only two counties. Of those that participated, most participants came from Boone, Kenton or Campbell counties; however, one or two participants each came from Gallatin, Grant and Pendleton counties. In total 90 participants enrolled and participated in Pilot III, and 120 enrolled in Pilot IV. Each successive Pilot is designed or is operated somewhat differently than the others, allowing Duke Energy to obtain experience in different configurations of the program.

The primary purpose of the Pilot Program is to help low-income customers with significant arrearage and payment problems obtain the information and skills needed to control their consumption, reduce their utility bills and be capable of managing their energy accounts in a way that results in lower arrearage levels. The program provides each participant with significant credits (up to $500.00) to their past-due arrearage levels in an effort to help move them out of debt and improve payment behaviors.

The program has three phases of service delivery. The first phase is participation in an energy education workshop designed to teach participants how to manage their energy use. The second phase is a workshop on financial management designed to teach participants how to manage their financial affairs so that they can live within their income levels and pay their bills on time. The third phase is a weatherization service in which their home is weatherized to make it more energy efficient. Participants were required to complete the energy workshop, but were not required to attend the budgeting workshop or have their home weatherized. However, to obtain the $500 participation credit the participants need to complete all three phases of the program. For further details on how the credits are applied, see Item 4 in Program Theory and Operations on page 10.

The program is funded by Duke Energy and implemented by the Northern Kentucky Community Action Commission (NKCAC) in concert with People Working Cooperatively (PWC). NKCAC manages and administers the program and provides the participant training services. After the participants receive the program training and

during the weatherization services, the participants are referred to the state for additional weatherization services that are not provided under the Duke program.

Pilot Program IV was designed to build on the experience of Pilot Program I, II and III, and to continue the testing of the program. The Pilot Program IV effort was planned to serve 120 participants who had high levels of debt (arrearage) to Duke Energy.

The participants attended one or two training sessions (energy education and budgeting) and 45 of the 120 participants participated in the weatherization program. Attendance at the budgeting session and participation in the weatherization program were optional. Full participants took advantage of all three components of the program and received $500 dollars in arrearage credits, free weatherization of their homes, and training that provides them with the skills they need to conserve energy and better manage their household budgets. These participants realized the greatest benefits from the program in terms of incentives and in reduced energy consumption. Other participants enrolled in the program, attended the first training session (energy) and did not attend the second session but went on to obtain weatherization services, or attended the second session but did not go on to obtain weatherization services. These "partial" participants received partial credits depending on which components of the program they completed.

Program Theory and Operations

The program theory is simple and easily understood. The primary theory is founded on the belief that many low-income customers with high arrears can gain improved control over their bills and begin to pay down their utility debt if they are provided with the skills and support services needed to assist them through this effort. The program is grounded in the theory that providing participants with a significant reduction to their current arrears will place them in a better position to gain control over their utility bill. The credits provided by the program provide a financial helping-hand to the participants. However, the program is also designed from the theory that participants need more than financial assistance to be able to effectively manage their account. As a result, the program provides training on how to reduce consumption by implementing effective energy management strategies. In addition to the energy training, the program also weatherizes their home so that it is technically more energy efficient. Combined, the training and the weatherization measures provide a foundation for reducing consumption to be more consistent with participant's ability to pay for that consumption. Finally, the program theory indicates that the participant's ability to manage their energy bill is, to some degree, a function of their financial management skills. To improve participant's financial management skills the program provides educational efforts aimed at helping participants establish household budgets and live within their budget. The program theory is based on the belief that these three program services, linked with substantial bill credits to start them on an improved payment path, provides a platform from which participants can begin to gain control over their accounts.

The Pilot Program IV services were implemented through a series of efforts that were coordinated across the contractor teams. The implementation tasks are described below:

1. NKCAC agreed to manage and administer the program for Duke Energy through a contractual agreement between the two organizations.
2. Duke Energy identified low-income customers who had high arrears and who might need help in gaining control over their bills. (High arrears are undefined by Duke Energy, but typically mean that the customer had an arrearage above the $300 in total credits provided by the program, with a few exceptions as determined by Duke Energy.)
3. The individuals on the Duke Energy list were contacted by NKCAC via a program introduction letter explaining the program and requesting that interested customers contact NKCAC to enroll in the program. The goal of the outreach effort was to enroll 120 participants. NKCAC supplemented this effort with phone calls to improve the enrollment response from the letter.
4. Program participants were required to successfully complete one task. The other two tasks were optional. These were:
    a. Required Task: Attend one of the Energy Efficiency Training Sessions held in August and September of 2004. These workshops discussed and demonstrated methods to reduce energy consumption and gain control over their energy bill. In return, participants received a credit of $200 applied to their arrearage.
    b. Optional Task 1: Attend a Financial Management Session held in August and September of 2004, which discussed and demonstrated household budgeting and management techniques to help participants understand their income levels and be able to live at or below their income level. In return for attending this second training session, the participants received a $150 credit that was applied to their arrearage.
    c. Optional Task 2: Receive an energy audit of their home to identify measures needed to lower energy costs, and receive weatherization services consistent with the audit results, program offerings, and approved measures. Both homeowners and renters could receive weatherization services. However, if the participant rented, they needed to obtain the permissions of the owner to conduct the audit and install the weatherization measures. After weatherization is complete, the customer received a credit of $150 to their arrearage. This weatherization service is a separate but coordinated program that is offered in conjunction with the Payment Plus Program. The weatherization program is an ongoing program funded by Duke Energy and run by the NKCAC.

Evaluation Methodology

The study methodology consisted of four parts. These are:

1. A process evaluation of Pilot Program IV in which TecMarket Works interviewed key program managers and staff in late June. The interviews were designed to review program operations and experiences and to identify and discuss implementation issues associated with the program's design or operations, particularly associated with problem areas identified in previous studies;
2. A weather-normalized energy usage analysis to determine if participation in the first three Pilot Programs resulted in energy-related consumption changes; and
3. An arrearage analysis in which TecMarket Works examined Pilot I, II and III participant's billing and payment streams to determine if the program had an effect on how bills are paid and how arrearages are managed.
4. A survey of Pilot IV enrollees was conducted to measure satisfaction levels, to identify implementation issues, and to identify barriers to program participation.

Mini Process Evaluation

The mini process evaluation included onsite interviews with key Duke Energy, NKCAC, and PWC program delivery staff. These interviews focused on the design, planning, and implementation of the program and a review of the goals and objectives associated with the program. Interviews were conducted with the following individuals.

1. Kathy Schroder, Duke Program Manager
2. Florence Tandy, NKCAC Director
3. Pamela Whitehorn, NKCAC Program Implementation Manager
4. Lillian Caldwell, NKCAC Educational Director
5. Nina Creech, PWC Weatherization Program Manager
6. Stacy O'Leary, PWC Program Operations Staff
7. Diana Adams, PWC Program Operations Staff
8. Al Loving, PWC Weatherization Program Supervisor

The interviews were conducted in June 2006, and followed a formal evaluation interview protocol. This protocol is provided in Appendix A of this report and allows the reader to see the range and scope of the questions addressed during the mini process interviews.

Energy Savings Analysis

Energy savings for Pilot Program I, II and III participants were determined by looking at the change in energy usage of the participants compared to the change in usage of a comparison group of eligible customers who did not participate in the program. The Princeton Scorekeeping Method (PRISM™) ™ software was utilized in this analysis. PRISM™ is capable of providing weather-normalized data analysis of energy use. Analysis was done on eight groups of participants for both kWh and therm consumption. The groups are: weatherized participants from each of the three Pilots analyzed, non-weatherized participants from each of the Pilots, and then the three pilots were combined to get results from the Pilot Program over the three Pilots.

The analysis used two matched comparison groups of low-income customers who had not been weatherized, had two or three years of billing data, and had arrearage levels of $500 or more at some point in the study period. The comparison group was analyzed to be sure that the mix of customer's energy needs were similar. The same comparison group used in a previous evaluation was used with the participants' data from Pilots I and II and contained reliable data from 49 customers for therm comparison and 20 for kWh comparison. A new comparison group was pulled for the Pilot III analysis that contained 95 customers for therm comparison and 36 customers for kWh comparison. These comparison groups were combined when the overall analysis of the combined three Pilots was performed, resulting in a comparison group of 157 customers for the therm comparison, and 56 for the kWh comparison.

After the comparison groups were selected by Duke Energy, data cleaning was conducted to eliminate those customers that did not have sufficient data for the study or included accounts in which there was a tenant change and resulted in the comparison population sizes reported above. These customers were randomly assigned false participation dates to establish the pre- and post-program analysis periods for the comparison group.

Participants' data was also separated into pre and post periods. Participants who were weatherized at some point after the program workshops had their pre data begin before the workshops and their post data begins two months after the weatherization measures were completed on their home. Data between these two dates was not included in the analysis. Participants who were not weatherized, or who were weatherized before the pre data started had their post data start two months after participating in the workshops.

The data that was used for this analysis was provided from Duke Energy's monthly-metered account database. The data was provided in therms and kWh per month per customer for up to three years before the program and for up to twenty-four months after the program.

This report presents the savings in kilowatt-hours of electricity and therms of natural gas. Mean and median summaries are provided for each of the groups of participants in order to allow comparisons between the mean and median, which can indicate when a group of participants have a household with unusually high or low savings. A description of the PRISM™ software is below.

PRISM™ Analysis
Program impacts were examined using PRISM™ Advanced Version 1.0 software for Windows developed at Princeton University's Center for Energy and Environmental Studies.

PRISM™ is a commercially available analysis software package designed to estimate energy savings for heating and/or cooling loads in residential and small commercial buildings. The current Advanced Version permits users to enter and edit data from a variety of sources, to carry out sophisticated reliability checks, to eliminate cases that do not meet standards, and to display results in graphical and textual forms.

PRISM™ allows the user to estimate the change in energy consumption per heating or cooling degree-day for the periods before and after measures are installed in homes by combining energy consumption and weather data. By subtracting the estimate of energy use per degree-day after the measures are installed from the value before the measures are installed and multiplying by an appropriate annual degree-day value, total annual normalized energy savings can be estimated.

Degree-days vary from year to year, which potentially presents a problem for deciding on a value for annual degree-days. This is especially problematic if one is trying to determine paybacks. For example, one could normalize the savings to the period preceding the installation of measures or the period after. If one selects a warm period, then savings may be too low and paybacks too long. If one selects a cool period for normalization, then the estimate of paybacks may be too high.

PRISM™ mitigates this problem by effectively averaging temperatures over a twelve-year period and providing an estimate of degree-days that is typical for the region of the study, although not one that necessarily matches the specific weather conditions in any given year. The advantage of normalizing to the PRISM™ recommended period is that the results will be consistent from study to study over a period of time. The same end can be achieved by consistently using the same user selected time frame. For this study (and previous evaluations of the Payment Plus Program) we chose the period from January 1, 1992 through December 31, 2002, recommended by PRISM™ support.

A major feature of PRISM™ is the ability to evaluate cases against reliability criteria. The first criterion is the R^2 value (explained variance), a measure of the fit of the degree-day and energy consumption data, or in statistical lingo, the amount of variance in energy consumption explained by changes in degree-days. Energy consumption is assumed to be a linear function of degree-day. R^2 varies from 0 to 1. If R^2 is close to zero, it means that factors other than outdoor temperature are driving energy consumption. If the R^2 is close to 1 it means that outdoor temperature is almost entirely responsible for energy consumption. Outdoor temperature is usually the overriding factor in both heating and air conditioning fuel use and the goal of the weatherization program is to improve the thermal characteristics of the building shell and the fuel use rate of the heating and air conditioning systems to reduce fuel use related to outdoor temperature. The PRISM™ default for R^2 is at .7. This means that at least seventy percent of energy use is

temperature dependant. If less than 70 percent of the energy used in a building is temperature related, then it becomes difficult to understand the effects of the weatherization measures and the case is dropped from the analysis. We used .7 in this study although all of the R^2 values in this study were .85 or higher. In other words, 85 percent or more of heating fuel use in this study is temperature driven. PRISM™ has a second measure of reliability which is the coefficient of variation for the normalized annual consumption (CV(NAC)). Normalized annual consumption is the amount of fuel consumed by a unit for a typical weather year. When estimating normalized annual consumption some estimates may have a very tight error band while others may have a band that is quite wide. In estimating the average consumption we want estimates of unit consumption that are very close to the actual and we want to eliminate values that may not be very close because they may cause the estimates of the average consumption for all units to vary significantly from the actual. Because the variation in the estimates of normalized annual consumption generally will be higher in homes with higher consumption, the estimate of the variation in normalized annual consumption is divided by the estimate of normalized consumption to obtain CV(NAC). This provides a standardized measure of the variability of the normalized consumption that is comparable across homes. The PRISM™ default for CV(NAC) is 7 percent and that is the value used in this study.

Arrearage Analysis

The arrearage analysis was approached by analyzing changes in monthly arrearage levels for the Pilot I, II and III participants as compared to two comparison groups and comparing changes across these groups over time. Arrearage amounts were established by examining each customer's monthly past due debt. Each of the Pilots were evaluated separately, and then combined to assess the program's overall effects on arrearages and payment effects. Because each Pilot has different program participation dates, the Pilot participants that are included in this analysis varies from month to month throughout the analysis period. This analysis adjusts for changing sample size so that the results are automatically weighted appropriately.

Payment Effects Analysis

Payment effects analysis assessments include the average percent of the bill paid each month for the participants and comparison groups over time, the average number of disconnect orders issued and filled for the participant and test group following program participation, the percent of customers in Pilots I, II and III and the comparison group that made a payment of any amount in each billing cycle, and the average number of days it took customers to pay their bill for the participants and comparison groups for Pilot I, II, and III.

Percent of bill paid was established by calculating the total payments made by the customer and the percent of bill the total payments covered for each customer for each month and calculating an overall average for each group across the pre- and post-program analysis months.

The frequency of disconnects was a simple averaging of the disconnect codes placed in the account record for the participant and comparison group over the pre- and post-program period for Pilot participants.

We also analyzed the *number of days between a billing and a payment* for Pilot participants before and after the program. The estimated number of days uses the bill issue date, (not the date the bill may have been received and/or opened) and the date that the first payment made in that month was recorded. Before analysis of the number of days between the billing and the customer payment, all payments or credits from sources other than the customer (NKCAC, corrections, etc.) were eliminated. As a result the number of days to make a payment toward a bill is based solely on the customer's payments.

Customer Interviews

TecMarket Works' staff conducted interviews with twenty-five customers who enrolled in the Payment Plus Pilot IV Program. The program enrolled 120 participants in October and November of 2005. Of the 120 participants who were enrolled before the first workshop, forty-five finished the program and received all their credits. The remaining participants were Partial Participants, and fit into one of three groups depending on what aspects of the program they completed. The results of these interviews are compared to the results reported in the previous evaluation which included a participant survey of Pilot II participants. The questions were exactly the same, but the survey length was shortened to address satisfaction rates in this evaluation.

Table 2 and

Table 3 present the number of participants and the levels to which they participated in Pilot II and IV.

Table 2 Summary of Participation Status of Pilot II Enrollees

	Dropouts	Participants n = 78			
		Full Participants	Partial Participants n = 45		
Definition:	Enrolled, but did not participate.	Attended both training sessions and received weatherization services	Attended energy training session only	Attended energy and financial management training sessions	Attended energy training session and received weatherization services
Enrollees	25	33	12	27	6
Percent	32%	42%	15%	35%	8%
Credits Provided	$0	$500	$200	$350	$350

Table 3 Summary of Participation Status of Pilot IV Enrollees

	Dropouts	Participants n = 121			
		Full Participants	Partial Participants n = 79		
Definition:	Enrolled, but did not participate.	Attended both training sessions and received weatherization services	Attended energy training session only	Attended energy and financial management training sessions	Attended energy training session and received weatherization services
Enrollees	0	42[b]	16	57[a]	6
Percent	0%	35%	13%	47%	5%
Credits Provided	$0	$500	$200	$350	$350

[a] A small portion of this group may still be eligible to receive weatherization services.
[b] Note: 17 of these 42 participants were weatherized before their participation in the Payment Plus Program.

There was only one participant interview protocol used for the survey of Pilot IV participants, and it can be found in Appendix B. The previous protocol was not included here as it contains questions that were not asked in this evaluation.

Section I: Pilot Program IV Process Interview Results

This section of the report provides the results of the mini process evaluation. The results are presented for each of the primary researchable issues identified for investigation during the process evaluation planning efforts. These researchable issues were based on the results of the process evaluation of Pilot III done in 2004, in order to gauge the effectiveness of any changes implemented since then.

Outreach and Enrollment Process Has Improved

The program participation goal for Pilot IV was set at 120 customers, and is the number of customers that could be enrolled in the program within the budget set and approved by the Commission. This amount was considered to be a reasonable number that could be handled by the program contractors during the fourth round of the test program and also was considered a reasonable number of participants to support the evaluation. The program enrolled 120 customers who participated in Pilot IV, allowing the program to reach 100% of their participation goal. The method of enrollment for this Pilot was a simple letter sent out to eligible customers, and the demand exceeded the supplied space for the program, with no follow-up phone calls necessary.

The letterhead mast used in the mailing to potential participants included the Duke Energy logos as well as those from NKCAC, but the envelope's return address indicated the mailing was from NKCAC. This approach may have helped improve the recruitment rate over previous programs because the low-income population may trust or be receptive to messages from NKCAC more than Duke Energy.

There is room for expansion of enrollment initiatives if the program is developed from a Pilot program into a full program, and NKCAC indicated that they can recruit more participants. NKCAC also indicates that that can coordinate with other programs and other low-income customers to let them know about the Payment Plus Program.

From the last process evaluation, there were two suggested improvements to the enrollment methods: *a) the enrollment process needs to be improved to increase the enrollment rate of targeted customers, and b) the process for enrolling Crisis participants into the Pilot Program needs to be changed so that the process does not cause damage to [Duke's] customer relationships.* These two issues have been resolved, as the enrollment process now focuses on a list of eligible customers supplied by Duke Energy. As a result, NKCAC indicated that there were no problems filling the classes to capacity, and NKCAC believes that there are many more customers that would enroll in the program if it is offered again.

Changes to the Enrollment Outreach Effort

We previously recommended that the customer enrollment letter should not be relied upon as the primary method of motivating arreared customers to join the Program, due to the 5% to 16% enrollment rate from the letters two years ago. However, this is no longer

a concern, as the latest enrollment effort resulted in a demand for the program that exceeded the supply.

A comparison of the enrollment letters suggests there may be some key differences in the two letters that influenced participation decisions. In reviewing the previous 2003 letter and the more recent letter used in 2005, there is a great deal of similarity across the two letters however, there was also a significant amount of dissimilarity as noted below.

The letter used in 2003 was sent on Cinergy letterhead while the letter used in 2005 was sent on stationary that included both the Cinergy letterhead graphics and the letterhead graphics of NKCAC. This new letterhead helped convey the legitimacy of the program to the customer by including the graphics of both of the trusted organizations.

An analysis of the two letters suggest that the previous letter used in 2003 is easer to read and is written at a lower grade-level than the more successful 2005 letter used in the more recent enrollment effort. The previous letter was written at a Flesch Grade Point Level of 7.5 while the recent letter was written at the 8.4 grade level, almost a full grade point difference. The Flesch readability score for the previous letter is 65.2, making it 2 percent easier to read than the current letter with a readability score of 63.1 (note: the higher the score the easier it is to read and understand the letter). These numbers suggest the previous letter would have a higher enrollment rate because it is easier to read and understand. However, this is not the case.

The primary difference in the letters are that the more recent and more successful letter indicates that the customer is part of a "select group" of Duke customer who are being invited to participate in a Pilot Program. This was not indicated in the previous letter. The more recent letter also places Duke as the first mentioned organization to offer the program, listing Northern Kentucky Community Action Commission as the second organization, while in the previous letter the "community action agency" was placed first.

Both letters note that the customer can participate in "*three easy steps*." However the previous letter says that each participant must attend three 1-hour budget management sessions, while the recent letter says that the participant must attend one 2-hour session on money saving and bill payment tips. This may be the most striking difference between the two letters. Attending a "*budget management*" session may not be the most attractive motivator for this target group, but to require them to attend three such sessions may be a very significant barrier. However, the most recent letter requires the participant to attend only one session on saving money and payment tips; something that is very likely to be a selling point rather than a participation barrier.

A second significant difference is that in the previous letter the customer is told they will receive $50.00 for attending each of the three budget management sessions, while the newer letter indicates that the participant will receive $150 for attending the single money saving and payment tips session. The more recent letter provides a less intrusive and more convenient way to get the education (one session instead of three) and pays them more money for their effort ($150 a session instead of $50 per session).

Finally, the weatherization step requires the customer to let the "community action agency" weatherize their home, while the more recent letter says that a Cinergy-approved weatherization provider will weatherize their home. The second letter provides a credibility guarantee for the weatherization services making them "Cinergy approved". This may make it seem like it is a more trustworthy service provider whose work is seen by Cinergy as being trusted.

In summary, while the two letters are similar, there are striking differences in the way the program is offered and in the offerings provided. The key difference in the success of the second, more recent letter may not be associated with the letter at all, but is most likely the program change that provides more money for attending less sessions and the elimination of the use of the term *budget management* from the session description.

Reasons for Non Participation in the Pilot Program

We asked all interviewees why they thought high arreared customers who have trouble paying their bills would not want to participate in the Pilot Program. We received a number of responses to this question. The primary responses include:

1. The customer is not sure if the offer is real, unsure about the real purpose of the program, don't believe it,
2. Their arrearage may not be that high anymore, so attending would not result in full credit or any credit.
3. A very small percent may have felt that the gas prices were too high for them to travel to the session (at the time there was a lot of news about rising gasoline prices).

Reasons for Dropping Out after Enrolling

We also asked interviewees to speculate on why customers would enroll in the program and then not take part in the program. We received many of the same answers to the questions on why customers do not participate when offered the program. The reasons provided by interviewees include the following:

1. Some may not be able to plan well, they may forget about a 9am meeting.
2. The large incentive is provided first, then the incentive drops off so that participants get the main dollar benefit after the energy workshop, then get less incentives even though the budget workshop is longer. These customers suggested that Duke may want to restructure the incentive so that participants receive more as they move through the program, not less.
3. They thought that enrollment was required under LIHEAP and lost interest when they learned that participation was optional,
4. They had no child care during the workshop,
5. There was no convenient transportation to the workshops,
6. They could not take off work at the time of the workshops,
7. The timing of the workshops does not fit their personal schedule,

8. They are handicapped, or have trouble getting around,
9. Renters could not obtain landlord approval,
10. They were told that participation would not stop their disconnection, and
11. Reconsidered after seeing what they had to do.

Reasons for Non Participation in Weatherization

We also asked interviewees about the reasons participants might have for not wanting the weatherization service provided with the Pilot Program. We received only a few answers to this question, however one interviewee indicated that all participants in Pilot III that were eligible for weatherization did receive or were receiving this service, indicating that participants who are eligible for weatherization and meet the documentation requirements will receive weatherization services. Reasons for not getting weatherization services that were provided by interviewees include:

1. Landlords do not want anyone seeing the condition of the home because of code or housing violations, unsafe or non-working equipment or structures, etc,
2. Tenants do not want to contact their landlord to request permission because they may be behind on rent.
3. They do not want people to see how they live or the condition of their home,

NKCAC has been working with PWC to get more participants to utilize the weatherization service. Applications were handed out at each of the sessions, and PWC has attended all of the energy education sessions.

Communication and Coordination Issues Between NKCAC and PWC Resolved

In previous year, there was a strained relationship between NKCAC and PWC that influenced these two organization's ability to work cooperatively in a way that collectively benefited the program and Duke Energy's customers. These issues appear to have been resolved (due to staff changes at NKCAC), with both organizations now praising the other in their timeliness and response to communications.

Increase Renter's Ability to Obtain Landlord's Approval

PWC managers indicated in both process evaluations that the program should consider helping renters obtain landlord permission for weatherization services by attempting to contact the landlord when the participant extends contact permission. PWC has made an effort to contact landlords, and when contact is made and the process, the work, and the liability issues are explained, the landlords have been open to the weatherization work being done.

Program Changes Interviewees Would Like to See

We asked managers to report the changes that they would like to see if the program is continued. Only a few recommendations were expressed by the managers, indicating that managers are more satisfied with the program than in the previous pilots. However a few of the interviewed managers provided recommendations for improvements. The recommendations provided by the interviewees include:

1. Reduced class sizes: The classes may have been too large, as there were a few side conversations that may have been distracting.

2. The letter introducing the program to eligible customers may need to be further simplified, as there were some senior customers that did not respond that could really use the assistance that the program provides.

3. Have Al Loving at the Energy Education sessions to explain the weatherization component to the participants, and answer any questions they have about specific audit or installation issues.

4. Collapse the tier system for weatherization. All the customers are low-income and need assistance. Staff suggested that some customers are low consumers because of the condition of their home and they should not be penalized because they manage their consumption better than others.

5. Clearly communicate the timeline for weatherization to the customers, so that they understand that they need to fill out the paperwork and submit it in a prompt manner in order to receive the services and the credit in a timely manner.

6. Expand the geographical area that the program serves. There are 37 municipalities in the area, and some of the customers may be reluctant to travel to the city to attend classes.

Tracking System Adequate for Current Program Structure

Managers indicated that the master tracking spreadsheet established for the program by Duke Energy works well for keeping track of program participants and for the administration of the program. They report that this system is updated frequently. However, in the past a manager noted that if the program was to move into a full-scale program with additional funds and higher participation goals, the program should consider moving to an internet based database design that serves the different stakeholders and can be used to feed information into other databases at the organizational level.

Overall Benefits to the Participants

Interviewed managers were asked to describe what the primary program benefits are to participants. We received a number of responses to this question, including:

- **Quality Information**: Participants gain a great deal of knowledge that will help them manage their bills, control their energy and improve their lives. They learn to save energy, to reduce their bills, to finance and budget their lives.

- **Weatherization**: Participants are offered free energy audits and weatherization services that will help their homes be more energy efficient, and reducing their energy bills and improving comfort levels.

- **Arrearage Assistance**: The program provides a helping hand to give them a bit of a start down the road of improved financial management. It is not everything and will take some time, but it is a start.

- **Reduced Crisis Events**: Hopefully this program will help some people manage on their own and avoid the long-term hardships of crisis events.

What Ratepayers Are Receiving

Managers were also asked what benefits ratepayers receive from programs like the Pilot Program. These responses are presented below:

- **Satisfaction**: Ratepayers can be satisfied that their utility and our society is providing help to their neighbors. The debt load that Duke carries affects all customers because it is a factor in rate increases.

Section II – Pilot IV Participant Interview Results

A total of twenty-six interviews were conducted with participating low-income customers of the Payment Plus Pilot IV Program. All of the interviewees took part in one or more program events, including twenty participants who took part in both training sessions and had weatherization measures installed in their homes. This group of participants are called "full participants," participating fully in all program components. We also interviewed five participants who completed one or two components, but who did not complete all three. These customers are called partial participants, having taken advantage of part of the program offerings.

This report presents a comparison of the results from the Pilot Program II evaluation completed in 2004 with the Pilot Program IV evaluation results. In reviewing these comparisons the reader should keep in mind that the Pilot II evaluation results are based on 51 interviews. The results from the Pilot Program IV evaluation are based on interviews with 26 participants across 121 participants.

Recalling Participation or Enrollment in the Program

Of the twenty-six interviews conducted with participants, only one person could not recall participating in the program. (This customer was a partial participant, attending the energy training session and receiving weatherization services.) All others contacted recalled enrolling in the program. It is not unusual for a very small percent of low-income program enrollees to not remember participation for a variety of reasons, including the health and mental state of the participant.

Issues with Credits Being Applied to the Participants' Bills

In the Pilot II evaluation, many customers reported that they had issues with getting the credits applied to their bills. In the Pilot II survey, 18 out of 49 customers (37%) reported problems with getting the credits applied to their bill. Only 3 out of 25 (12%) reported problems in the Pilot IV evaluation.

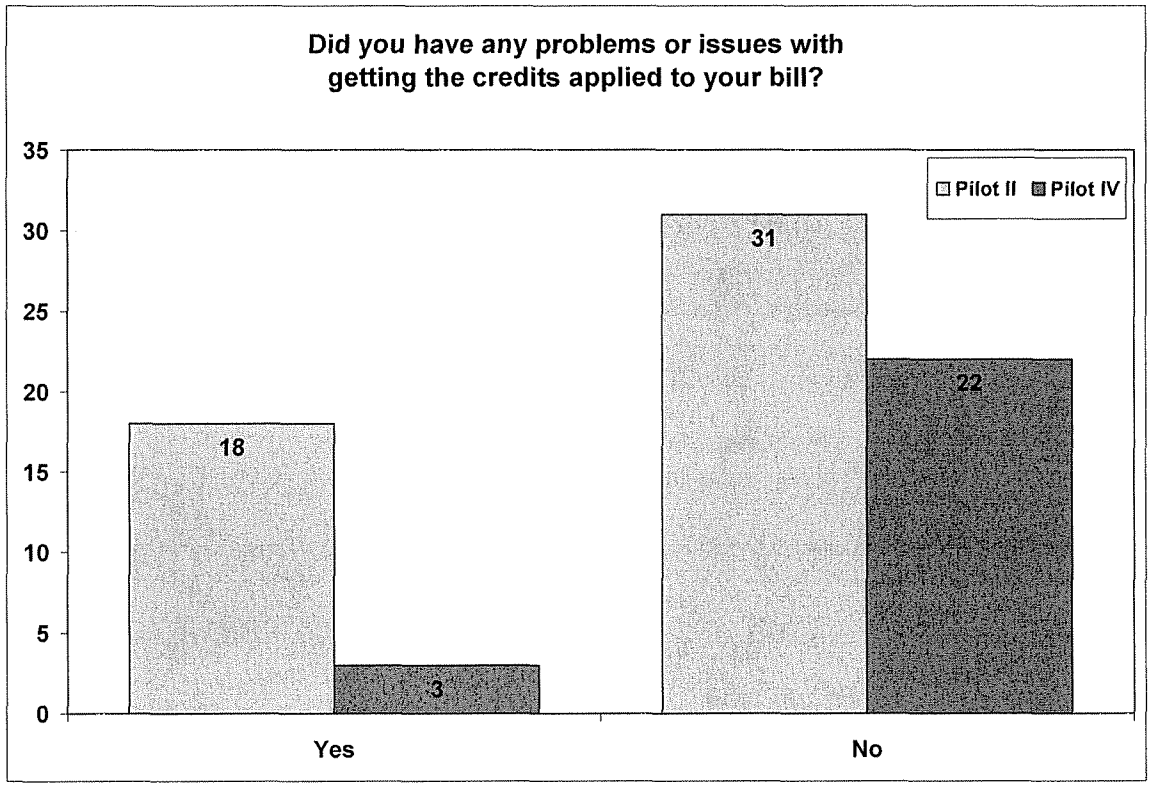

Figure 1 Pilot II and Pilot IV Participants reporting problems with credits being applied

Main Reasons for Participation or Enrollment

Twenty of the twenty-five respondents (80%) indicated that they enrolled in the program for one primary reason: to receive the bill credits. Fourteen (56%) of the participants indicated that they enrolled so that they could save energy in their home by learning conservation measures in the Energy Training Session, or by obtaining the weatherization services.

It is interesting to note that one of the customers reported that they enrolled in the program to attend the Financial Training session or to learn how to better manage their household income (in contrast to none reporting this for Pilot II). These results indicate that this aspect of the program is not viewed as much of a factor in the participation decision process.

Table 4 Main Reasons Given for Enrolling in the Program

	Pilot II (n=51)		Pilot IV (n=25)	
	Frequency	Percent	Frequency	Percent
To receive the bill credits	37	73%	20	80%
To save energy in my home	10	20%	9	36%
To obtain weatherization services	9	18%	6	24%
To find ways to reduce my utility bills	7	14%	5	20%
To avoid disconnect	3	6%	1	4%
For help paying current bill	2	4%	0	0%
To make my home more comfortable	2	4%	0	0%
Other	1	2%	1	4%

[a] Percent figures add up to over 100% as multiple answers were allowed.

Why Customers Aren't Getting Weatherization

Only four participants interviewed were asked about why they did not receive weatherization services, as most of the interviewees received weatherization. One interviewee has been too busy with personal matters to fill out the application, another claims to have had communication issues with the program staff[1]. Another of the interviewees is a renter whose landlord will not allow the work to be done, and the fourth interviewee stated that the home he occupied was already energy efficient and that he did not need the service.

Satisfaction with the Training Sessions

During the interviews, participants were asked to rate their satisfaction with specific aspects of the program's training sessions. Participants were asked to score their satisfaction using a 10-point scale where a 1 means very unsatisfied and a 10 means very satisfied. We asked participants to rate their satisfaction with the convenience of attending, comprehensiveness, materials, credits provided, the instructor's knowledge and the instructor's presentation skills. Selected results for both evaluated Pilot groups are presented in the following figures. We asked these questions for each of the two training sessions. A score of less than 7 (on a 10 point scale) typically means that there is at least some level of dissatisfaction with a program component. When participants provide a score of 7 or less in a response, they were asked how that aspect of the program could be improved.

[1] Duke Energy, NKCAC, and PWC have all indicated that the program staff and administration made many attempts at contacting customers to discuss issues and resolve complaints.

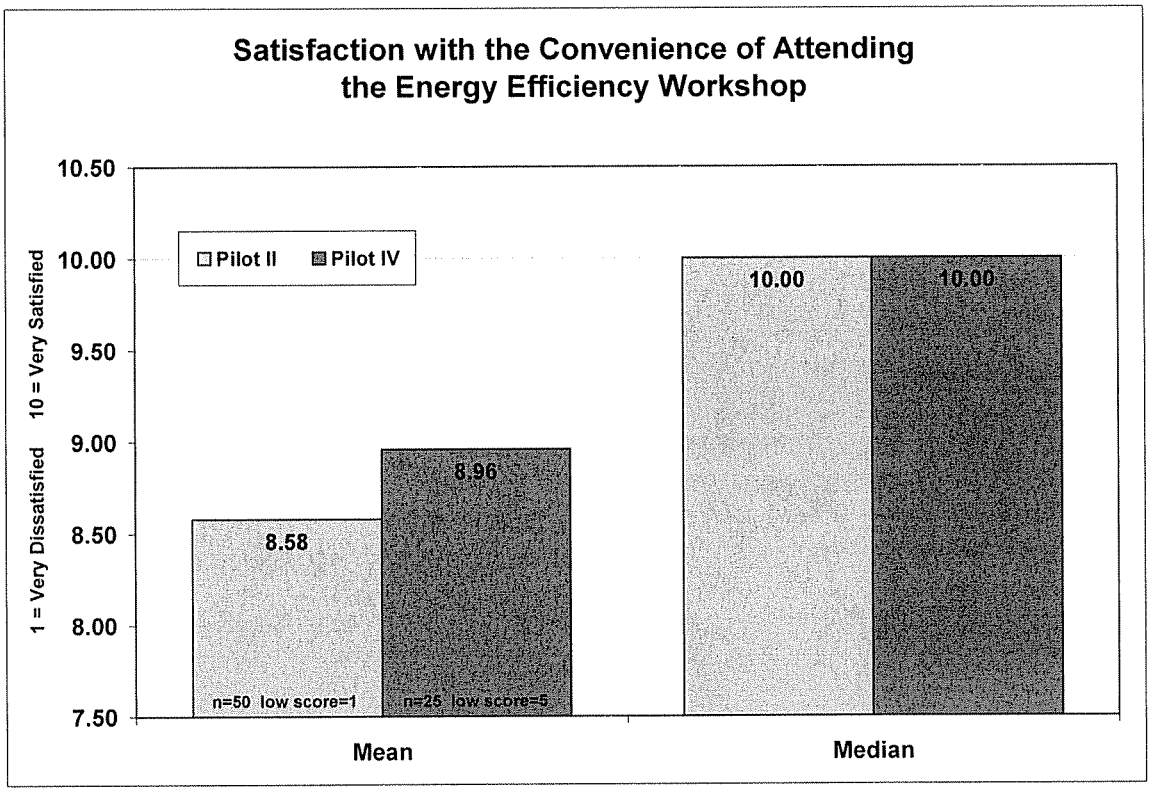

Figure 2 Satisfaction with the Convenience of Attending the Energy Efficiency Workshop

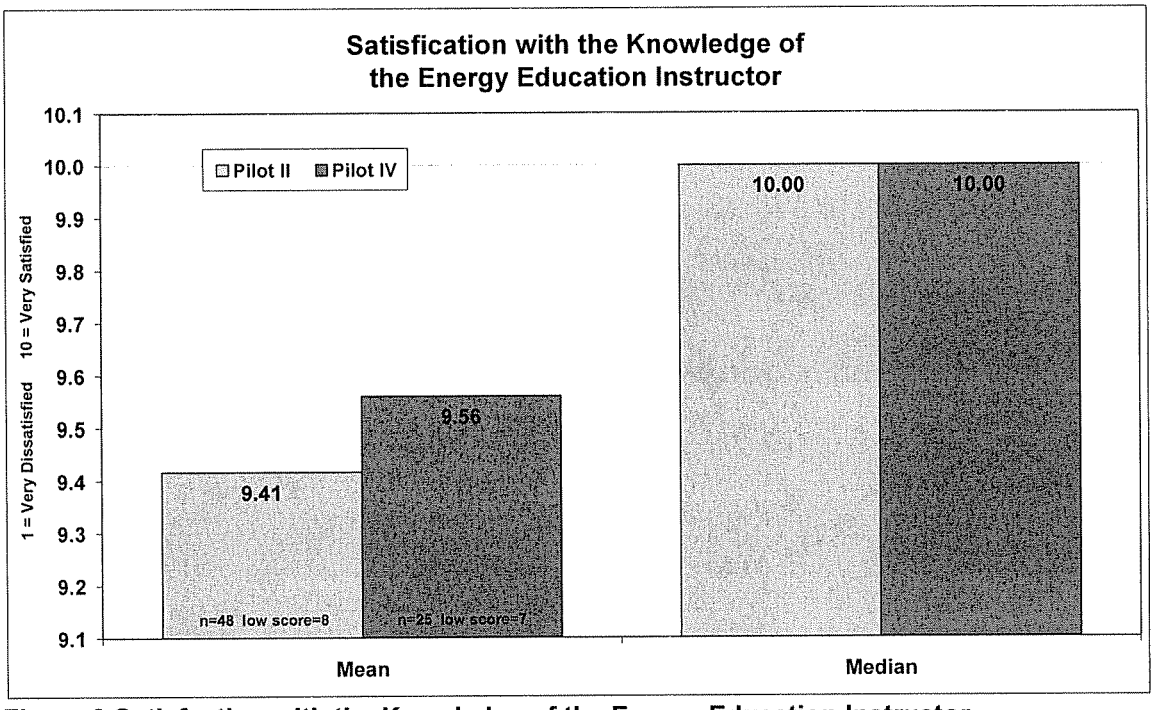

Figure 3 Satisfaction with the Knowledge of the Energy Education Instructor

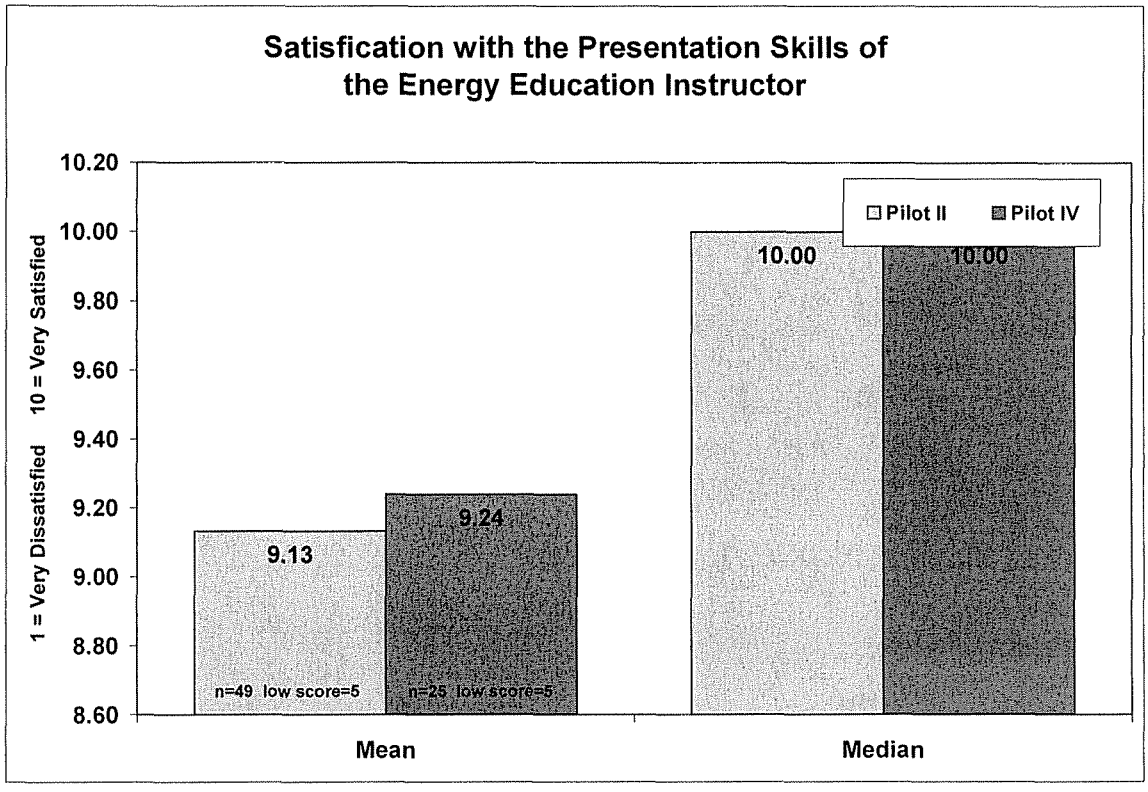

Figure 4 Satisfaction with the Presentation Skills of the Energy Education Instructor

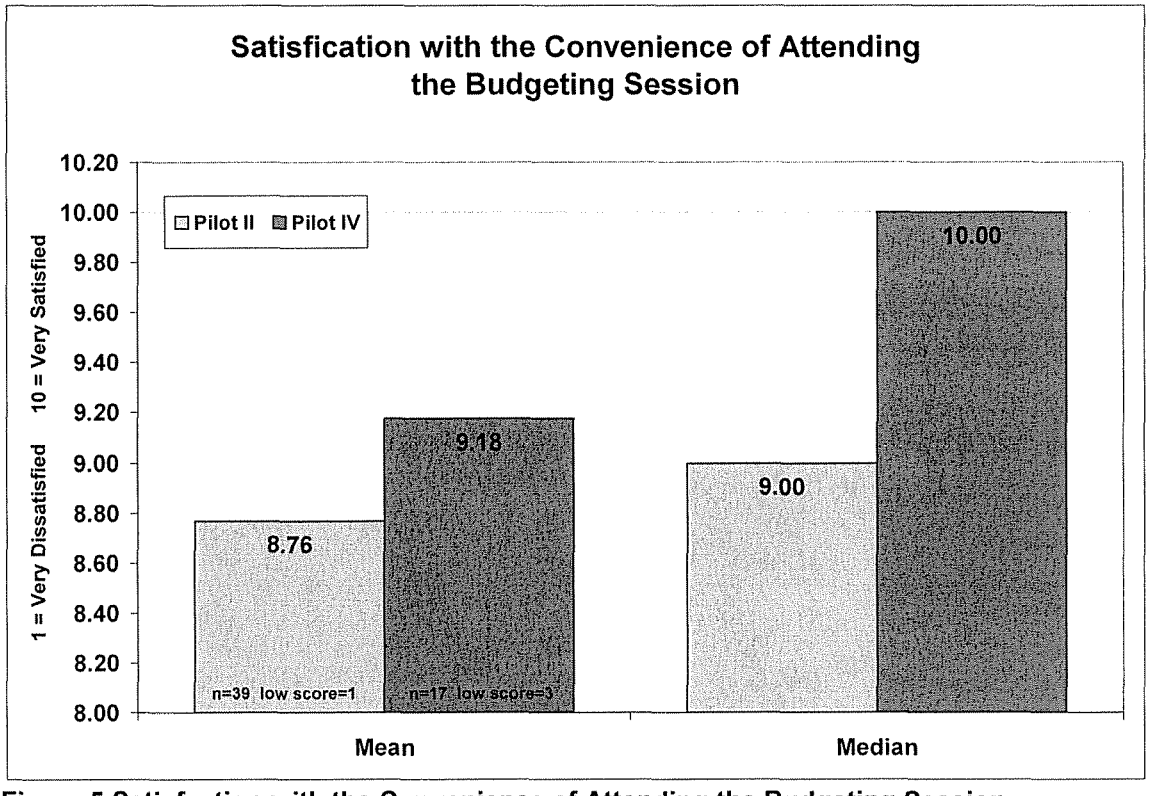

Figure 5 Satisfaction with the Convenience of Attending the Budgeting Session

Pilot IV participants report their highest levels of satisfaction with the instructor knowledge in the energy session. Satisfaction with the comprehensiveness of the subjects covered and the instructor's presentation also score high with means over 9.0 for the energy session. The area of lowest satisfaction with the energy session was the materials handed out at this session. The explanations for this are: 1) At one of the energy sessions, there were not enough packets to distribute, and 2) At another session, two different packets were handed out, which led to some confusion, having to always check pages. All aspects of the budget training session scored a mean of over 9. Overall, convenience of attending the sessions has improved, and so has the rating of the instructor's presentation skills. Table 5 presents the satisfaction scores for the program participants of both Pilot II and Pilot IV.

Table 5 Mean Satisfaction Scores for Training Sessions

1 = very dissatisfied, 10 = very satisfied. **Customer Satisfaction with:**	**Pilot II**		**Pilot IV**	
	Energy Session (n=50)	**Financial Session** (n=39)	**Energy Session** (n=25)	**Financial Session** (n=17)
Bill Credits Provided	9.47	9.77	Not asked	
Instructor Knowledge	9.42	9.47	9.56	9.35
Comprehensiveness of Subjects	9.27	9.31	9.20	9.29
Materials Handed Out	9.16	9.49	8.36	9.41
Instructor Presentation Skills	9.13	9.23	9.24	9.35
Convenience of Attending	8.58	8.77	8.96	9.18

The comments of Pilot IV participants scoring satisfaction below a 7 are summarized below.

There were only three customers that had to rearrange their schedules to attend the training sessions. A few customers complained of the materials: one said the materials were too complicated and hard to follow, while two others thought that there was room for more information.

We also asked the participants if the sessions were too long, too short, or about right. Table 6 indicates that the majority of customers thought that the sessions were about the right length of time.

Table 6 Customer Opinions on the Length of the Training Sessions

Pilot II Score	**Too Long**		**About Right**		**Too Short**	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
Energy Session (n=49)	5	8%	43	86%	1	2%
Financial Session (n=39)	4	10%	33	85%	2	5%
Pilot IV Score						
Energy Session	1	4%	23	92%	1	4%

(n=25)						
Financial Session (n=17)	1	7%	14	82%	2	14%

Satisfaction with Weatherization Services

Program participants who had received their weatherization service before the evaluation interview were very satisfied with the quality of the measures installed and the information provided in past evaluations. Satisfaction scores for Pilot IV have increased in every measurement of satisfaction except for the scheduling of weatherization, which dropped slightly, but still remains high, see Table 7and the figures below.

Table 7 Customer Satisfaction with Weatherization Services

Satisfaction with:	Pilot I (n=10)	Pilot II (n=22)	Pilot IV (n=20)
Information on the Installed Measures	10	9.30	9.50
Quality of the Measures Installed	10	9.25	9.64
Scheduling the Energy Audit	9.6	8.82	8.94
Weatherization Services Overall	8.7	8.71	9.00
Scheduling Weatherization	9.6	8.43	7.65

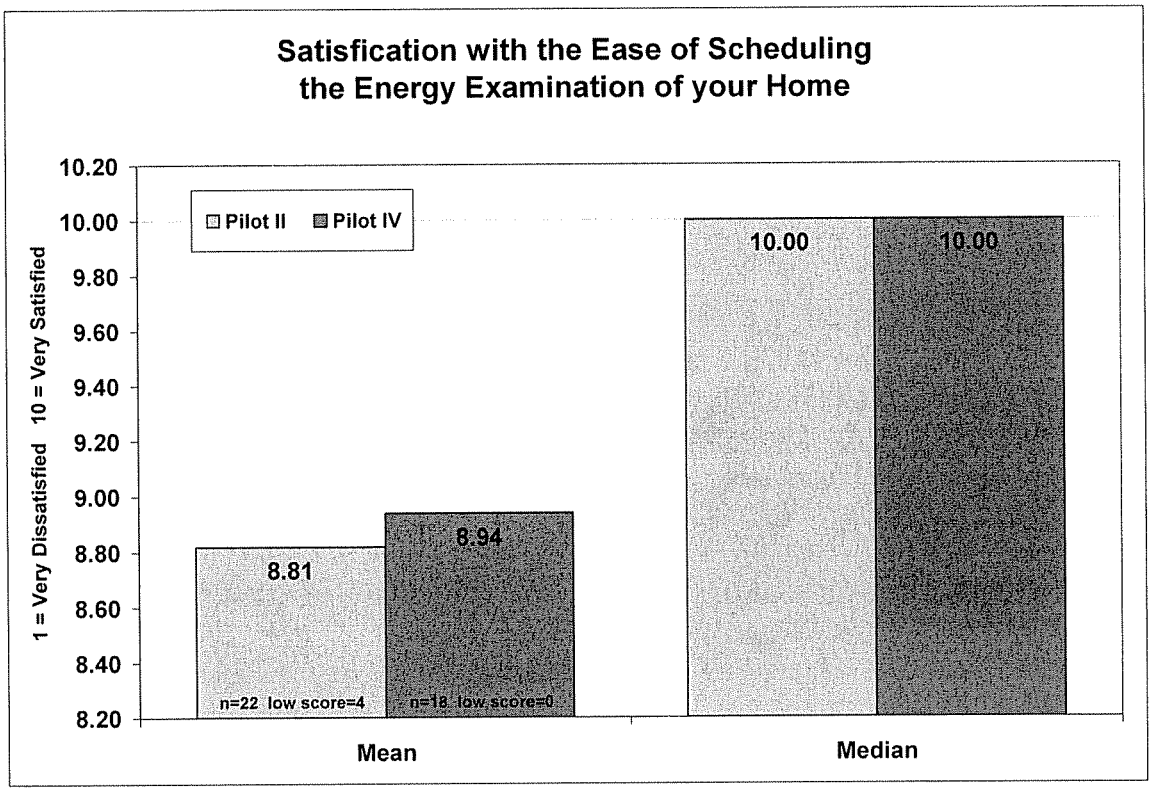

Figure 6 Satisfaction with the Ease of Scheduling the Energy Examination of your Home

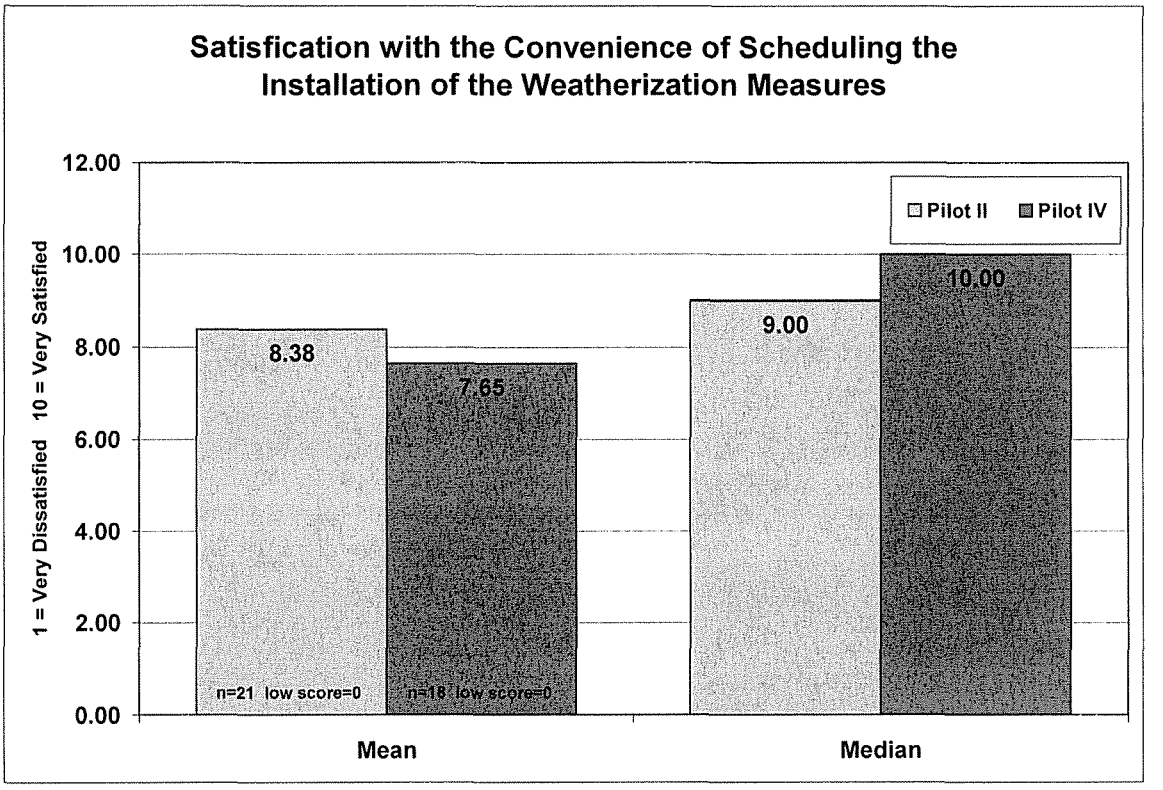

Figure 7 Satisfaction with the Convenience of Scheduling the Installation of the Weatherization Measures

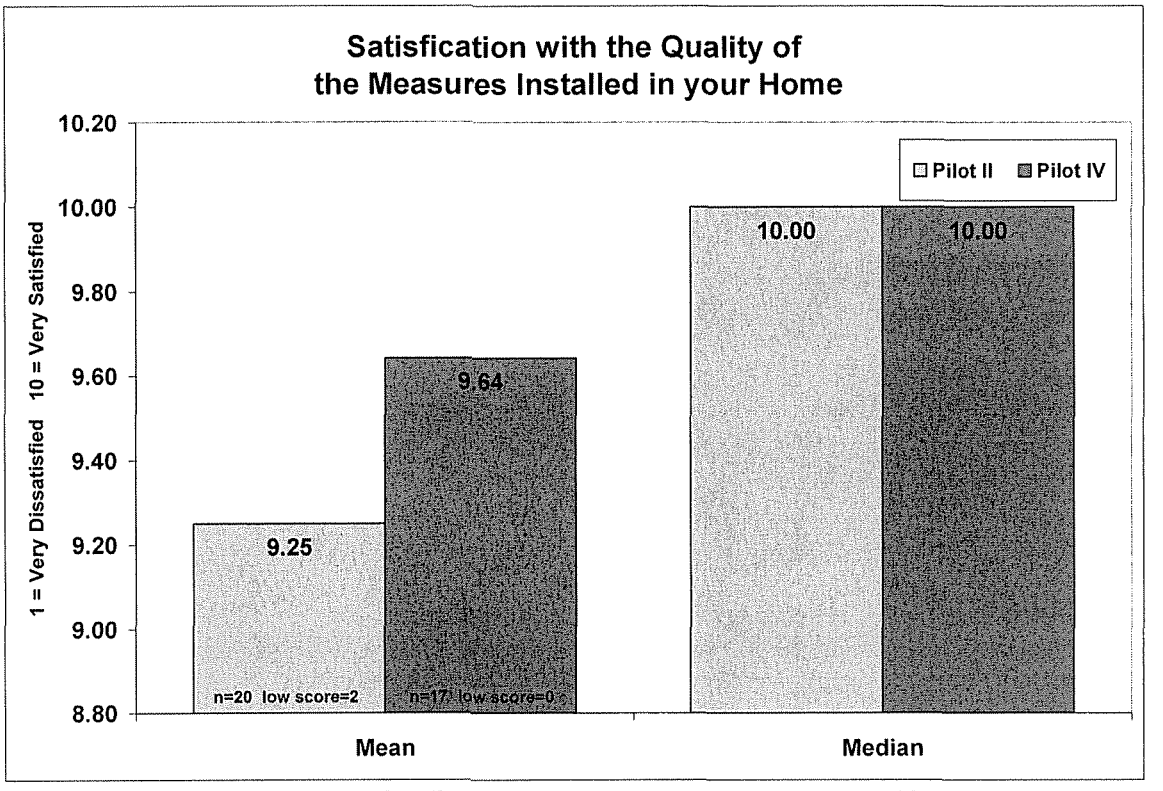

Figure 8 Satisfaction with the Quality of the Measures Installed in your Home

The drop in scores for Pilot IV is primarily due to a couple of customers providing lower scores and as a result, should not be interpreted as a systematic drop in customer satisfaction. With only 20 respondents, a couple of low-scoring participants can significantly affect the average score. The median score across all weatherization scores for all Pilots (I, II, and IV) is 10 on the 10 point scale used, with only one exception: the median satisfaction score with the scheduling of weatherization services received a median score of 9 in Pilot Program II.

When customers gave a score of 7 or lower, we asked them for suggestions to improve the service. The few comments received regarding the scheduling of the energy audit all mentioned issues such as the auditors not showing up when they said they were going to, or the process simply taking too long. Only one customer felt that she didn't get enough information from the weatherization installers who seemed to be in a hurry. One customer would like to receive additional weatherization services in addition to the refrigerator provided.

Views of the Overall Program

We also asked the customers how satisfied they were with specific aspects of the program. The results indicate very high satisfaction that has remained steady from Pilot II to Pilot IV.

Table 8 presents the satisfaction scores for the aspects of the program that were measured.

Table 8 Mean Satisfaction Scores of Program

Satisfaction with:	Pilot II Mean Score	Pilot IV Mean Score
Overall Program	9.58	9.39
Ease of Filling out Application Forms	9.09	9.52
Communication during the Application Process	8.91	8.83
Communication during Sessions and Weatherization	8.81	

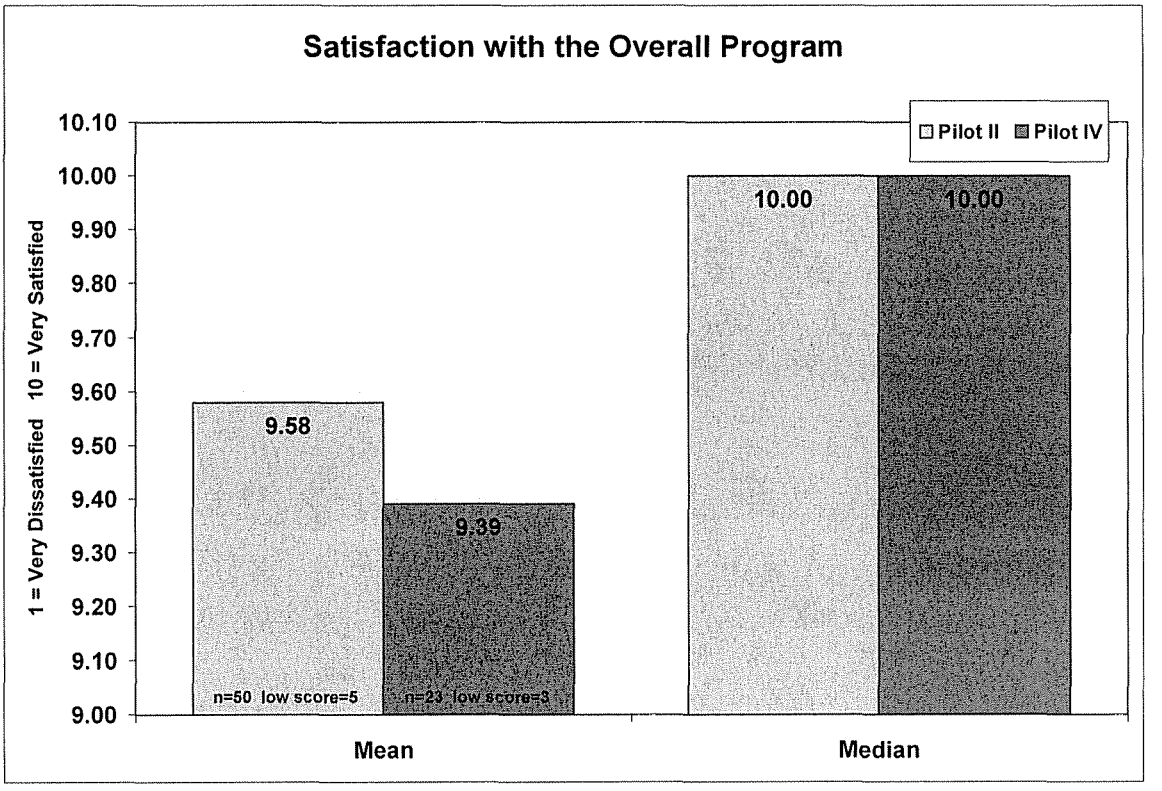

Figure 9 Satisfaction with the Overall Program

Participant's Recommendations for Improvements

Participants were asked for suggestions for changes and what additional services the program could offer to improve the program. One man thought that special consideration should be given to those that have legitimate reasons for missing a training session, such as a hospital stay in which documentation can be provided. Other customers would like to have the credits applied to their bill regardless of their arrearage level (they would like to see their balance move into a credit situation if they participate according to the program requirements).

Actions Take as a Result of Participation

One of the goals of the interview is to determine if participants have used the skills they learned during the two workshops. To accomplish this goal we asked participants "*What actions, if any, have you taken in your home to save energy and reduce your utility bills as a result of what you learned in the this program?*" and "*What actions, if any, have you taken in your home to better manage your household budget as a result of what you learned in the this program?*" The responses to these questions demonstrate that participants are using the information and skills gained during the workshops to take actions that save energy, and that they have made adjustments to the way they handle their money. The actions that the participants report taking following the workshops are presented below:

Actions taken as a result of participation in the Energy Training Session:

1. Keeping the freezer full.
2. Replaced the refrigerator.
3. CFLs (four participants)
4. Sealed drafts.
5. Turning the lights off. (four participants)
6. Using cold water for clothes. (two participants)
7. Stripping over doors.
8. Keeping windows closed.
9. Using ceiling fans more often.
10. Sealed the windows. (three participants)
11. Using less hot water, taking cooler showers.
12. Weatherized the house - but other stuff was done already - he is pretty EE already.

Actions taken as a result of participation in the Financial Training Session:

1. Trying to get on even billing to get caught up.
2. More careful about where money is spent.
3. Quit smoking.
4. Thinking about using budget billing.
5. Cut down on some excess stuff we don't need.
6. Paying more attention - working on it, but money's tight.
7. Cooking two meals at once, using the microwave to reheat.

Overall, it seems that the participants were able to incorporate a significant amount of what they learned into their lives and the lives of their families.

Section III: Energy Use Analysis and Findings

One of the goals of the Payment Plus Program is for the participants to learn ways to be more energy efficient. In this analysis, we examined and compared energy usage of Pilot Program I, II and III participants, and two comparison groups of non-participants (one for Pilots I and II, another for Pilot III), over the years before and after the program.

Energy Use Evaluation - Pilots I, II and III

Sample Size

Many of the customers in both the participant and the comparison group did not have a history of account information prior to program enrollment, or they had moved shortly after the program, making their consumption data unavailable or not relevant for the analysis. As a result, many accounts from both groups had to be eliminated from this study. Table 9 below indicates the number of customers that were analyzed in each of the groups studied.

Table 9 Sample Sizes for Energy Analysis

Group	kWh		Therm	
	Participants	Comparison [a]	Participants	Comparison [a]
Pilot I Weatherized	3	20	5	49
Pilot I Not Weatherized			2	
Pilot II Weatherized	7	20	11	49
Pilot II Not Weatherized			11	
Pilot III Weatherized	6	36	13	95
Pilot III Not Weatherized			4	
All Pilots Weatherized	16	56	29	144
All Pilots Not Weatherized			17	

[a] All customers known to have received weatherization services were removed from the comparison groups.

The comparison groups consists of about 300 low-income customers with payment and arrearage histories that are similar to the participants. There are two comparison groups used in this study, one to compare with Pilots I and II, which consists of the same customers used in the comparison group of the previous evaluation of Pilots I and II, and a third comparison group which was created for the analysis of Pilot III. These comparison groups are combined when all Pilot participants were combined in order to determine a full program effect on energy consumption.

Some of the groups are rather small, specifically those in the Pilot I study because the enrollment process did not consider available account history as instructed by Duke managers, and because four years have passed and several participants have moved. The

therm savings analysis of Pilot III non-weatherized customers also has a low sample size (6 customers). Due to these low numbers, the findings can only be viewed as anecdotal or representative of these groups as a whole, but not statistically accurate for these three groups.

Statistical Precision

All of the analytical runs done in PRISM™ provide a R^2 and CV(NAC) value that indicates the strength of the results provided. These values are provided in the table below. The higher the R^2 value (maximum value is 1.000), and the lower the CV value, the better the data. For more information on PRISM™ and these statistics, please see the section on methodology.

Table 10 R^2 and CV (NAC) Associated with PRISM™ Energy Usage Analysis

Group	Statistic	Comparison	Participants
Pilot I kWh Analysis			
	R^2 – PRE	.955 (+/- .015)	.961 (+/- .073)
	R^2 – POST	.937 (+/- .025)	.982 (+/- .074)
	CV (NAC) % – PRE	3.3 (+/- 0.6)	4.5 (+/- 1.7)
	CV (NAC) % – POST	3.8 (+/- 0.7)	3.9 (+/- 0.9)
Pilot I Therm Analysis – Weatherized			
	R^2 – PRE	.997 (+/- .001)	.999 (+/- .003)
	R^2 – POST	.995 (+/- .003)	.980 (+/- .015)
	CV (NAC) % – PRE	2.4 (+/- 0.3)	1.2 (+/- 1.2)
	CV (NAC) % – POST	3.7 (+/- 0.3)	3.2 (+/- 0.2)
Pilot I Therm Analysis – Not Weatherized			
	R^2 – PRE	.997 (+/- .001)	.997 (+/- .002)
	R^2 – POST	.995 (+/- .003)	.998 (+/- .002)
	CV (NAC) % – PRE	2.4 (+/- 0.3)	2.5 (+/- 0.1)
	CV (NAC) % – POST	3.7 (+/- 0.3)	1.7 (+/- 0.6)
Pilot II kWh Analysis			
	R^2 – PRE	.955 (+/- .015)	.940 (+/- .033)
	R^2 – POST	.937 (+/- .025)	.855 (+/- .063)
	CV (NAC) % – PRE	3.3 (+/- 0.6)	3.9 (+/- 0.8)
	CV (NAC) % – POST	3.8 (+/- 0.7)	3.1 (+/- 0.6)
Pilot II Therm Analysis – Weatherized			
	R^2 – PRE	.997 (+/- .001)	.990 (+/- .011)
	R^2 – POST	.995 (+/- .003)	.966 (+/- .014)
	CV (NAC) % – PRE	2.4 (+/- 0.4)	2.6 (+/- 0.9)
	CV (NAC) % – POST	3.7 (+/- 0.4)	3.1 (+/- 0.7)
Pilot II Therm Analysis – Not Weatherized			
	R^2 – PRE	.997 (+/- .001)	.993 (+/- .018)
	R^2 – POST	.995 (+/- .003)	.983 (+/- .020)
	CV (NAC) % – PRE	2.4 (+/- 0.3)	3.0 (+/- 0.4)
	CV (NAC) % – POST	3.7 (+/- 0.3)	3.5 (+/- 0.6)
Pilot III kWh Analysis			
	R^2 – PRE	.945 (+/- .013)	.921 (+/- .029)
	R^2 – POST	.917 (+/- .021)	.868 (+/- .049)
	CV (NAC) % – PRE	3.8 (+/- 0.4)	5.3 (+/- 0.5)
	CV (NAC) % – POST	3.5 (+/- 0.3)	3.7 (+/- 0.7)
Pilot III Therm Analysis – Weatherized			
	R^2 – PRE	.989 (+/- .002)	.986 (+/- .009)
	R^2 – POST	.980 (+/- .003)	.988 (+/- .012)
	CV (NAC) % – PRE	3.0 (+/- 0.2)	2.6 (+/- 1.4)
	CV (NAC) % – POST	3.7 (+/- 0.3)	3.2 (+/- 1.4)
Pilot III Therm Analysis – Not Weatherized			
	R^2 – PRE	.990 (+/- .002)	.986 (+/- .004)
	R^2 – POST	.989 (+/- .003)	.988 (+/- .006)
	CV (NAC) % – PRE	3.0 (+/- 0.2)	3.1 (+/- 0.5)
	CV (NAC) % – POST	3.7 (+/- 0.3)	3.0 (+/- 0.5)

Changes in Electricity Consumption Between Participants and Comparison Group

None of the Pilot participants were successful at reducing their electrical consumption over the long-term. Figure 10 shows the three groups analyzed separately and then combined in PRISM,™ and their annual electrical savings.

Figure 10 below shows that in each Pilot, annual comparison-adjusted kilowatt-hour consumption increases over the longer-term period. Pilot I participants increased their consumption by 339 kWhs per year, while the comparison group decreased their consumption by 290 kWhs per year, resulting in an adjusted increase for the Pilot I participants of 629 kWhs per year. Pilot II I participants increased their consumption by 296 kWhs per year, but with the application of the comparison group, their consumption increases to 585 kWhs per year. Pilot III also increased their consumption. Their annual increase is estimated to be 530 kWhs, and the comparison group increased their consumption as well, but not as much (319 kWhs per year) – giving Pilot III participants a comparison-adjusted increase of 211 kWhs per year. While in the short term there may be electric energy savings (see previous studies), but in the long term the electric savings appear to erode and approach their pre-participation levels.

This relative condition also holds when the different groups are combined and assessed as a single group, although the levels change as a function of the combining effect. When these three Pilot groups are combined (as a single unit) and the two comparison groups are combined, the increase in consumption is not as drastic. Combined, the Pilot participants increase their consumption by only 392 kWhs per year. When the two comparison groups are combined, their consumption increases by 102 kWhs per year. The end result of all the Pilot participants is a mean increase in annual consumption of 290 kWhs per year, or about 24 kWhs per month.

This does not mean that all participants increase their consumption, as we will see when these results are compared to the median savings (below). Also, the fact that four years have passed since the Pilot I participants attended the training session on how to decrease energy consumption needs to be considered, as well as the fact that this estimate is based on the analysis of only 3 participants that had reliable data. Many of the participants may have had changes in their kWh consumption due to factors beyond poor energy consumption behaviors. Changes such as more people living in the home, in-home illness, more medical equipment, larger televisions, or computer equipment all can have a profound effect on energy use. While these customers may still be turning off the lights when not in use and using CFLs, other factors may be hiding the savings that we would expect to see.

These increases in consumption are a new phenomenon, two years ago when Pilot I and II participants were analyzed, they were still at a decreased level of consumption when compared to their consumption before the program. This evaluation of kWh consumption tells a completely different story: the decreased consumption of kWh may not be for the long-term.

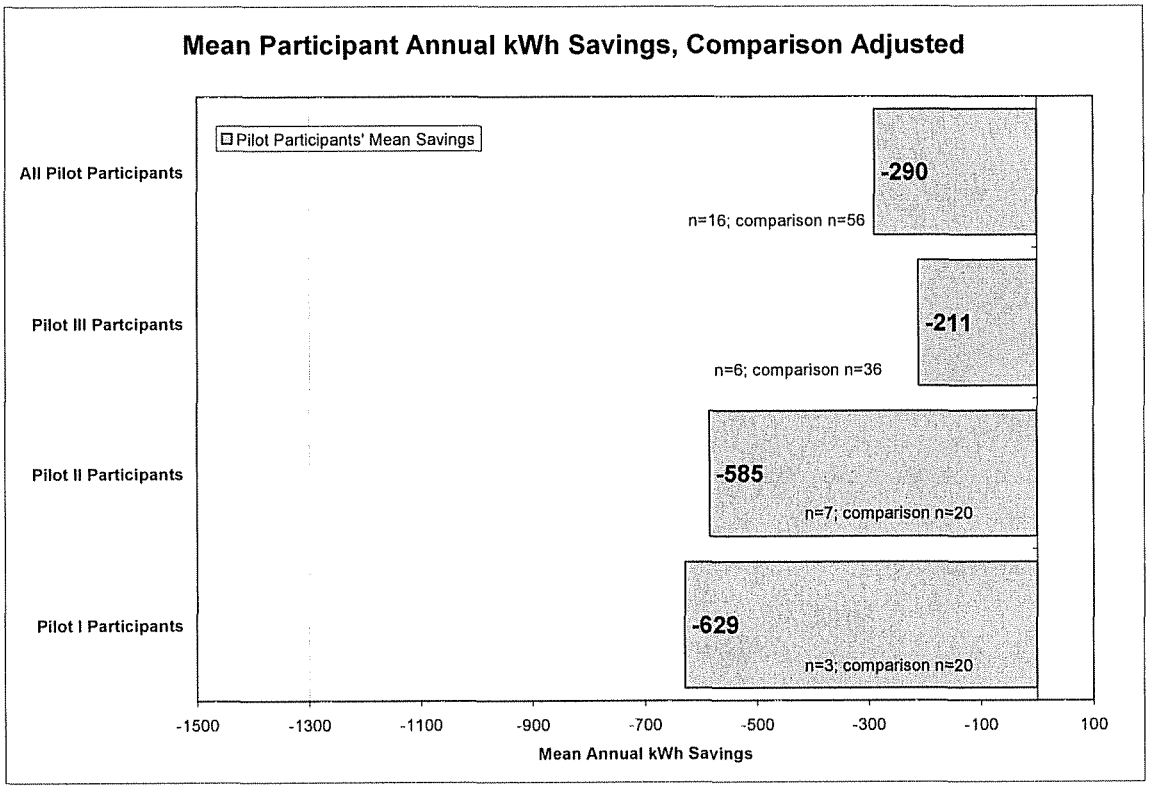

Figure 10 Mean Annual kWh Savings of Pilot Participants, Adjusted for Comparison Group Changes

PRISM™ also calculates the net percent change in electrical consumption, which is presented in Figure 11. The comparison group used for Pilots I and II decreased their electrical consumption by 1.5% (two years ago they increased their consumption by 8.1%). Pilot I participants comparison-adjusted increase of 629 kWhs per year is equal to 8.5%. Pilot II participants increased their consumption since participating in the program, by 5.7%. Pilot III participants, after one year, are saving only 0.3%.

Overall, when the Pilot participants and the comparison groups are combined to analyzed all customer data, the Pilot participants' kWh comparison-adjusted consumption decreases by 3% - or, essentially, it doesn't change in the post-participation period when compared to the pre-participation period.

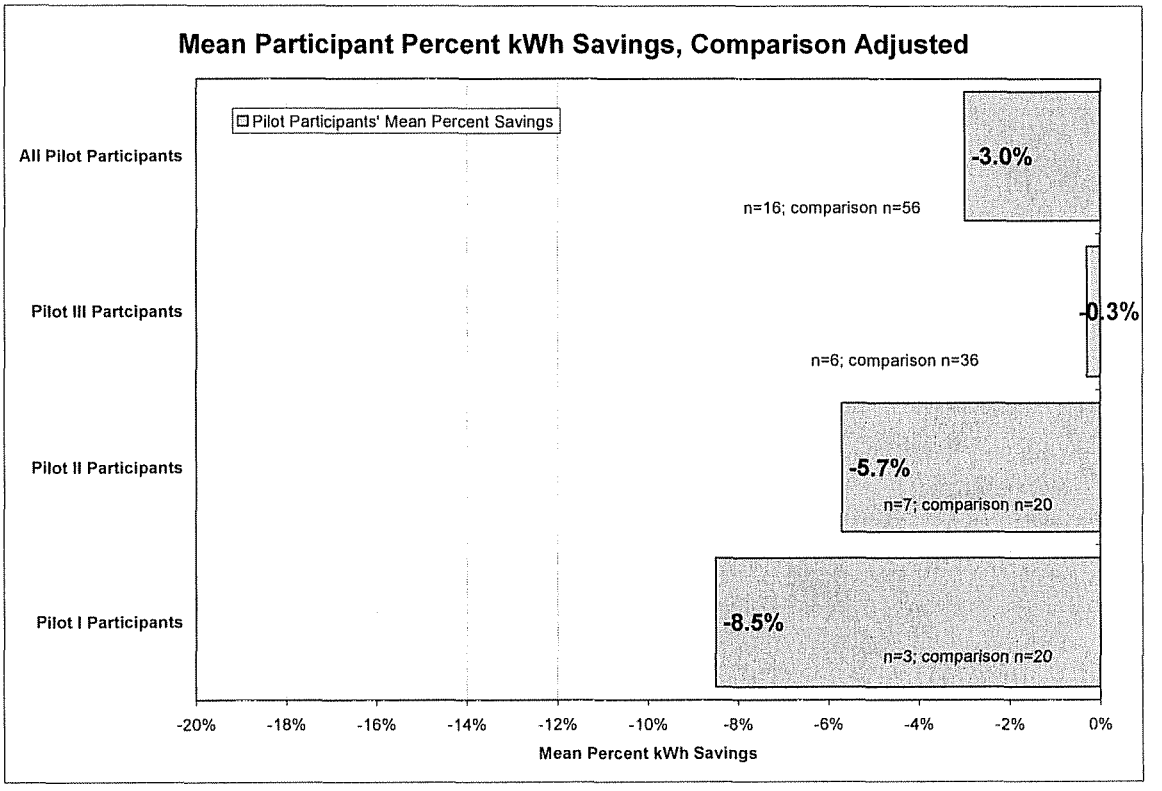

Figure 11 Mean Percent kWh Savings of Pilot Participants, Adjusted for Comparison Group Changes

Figure 10 and Figure 11 examined the mean net program savings. However, an examination of the median savings is also informative. The median kWh savings provides an alternate perspective on the energy savings associated with participation in the Pilot programs. Pilot I participants had a net median increase of 289 kWhs/year (see Figure 12) compared to a mean increase of 629 kWhs/year (see Figure 10), indicating that there is a number of participants who experienced very high increases in electrical consumption that acted to push the mean savings downward for the group as a whole.

Pilot II participants have a similar, but stronger, result, with a median savings of 416 kWhs/year compared to a mean increase of 585 kWhs/year, indicating that over half of them decreased their consumption by about 400 kWh/year or more, while some of them greatly increased their usage, bringing the mean to an average increase across the entire group. This indicates that the program was effective at reducing consumption for about half of the participants, there are some participants that increased their consumption so much that it drives the savings for the group as a whole down by a considerable amount. Pilot III participants have a mean increase of 211 kWhs per year, while the median is an increase of 112 kWhs per year, indicating that over half of the Pilot III participants have in fact increased their energy consumption more than customers decreased their consumption.

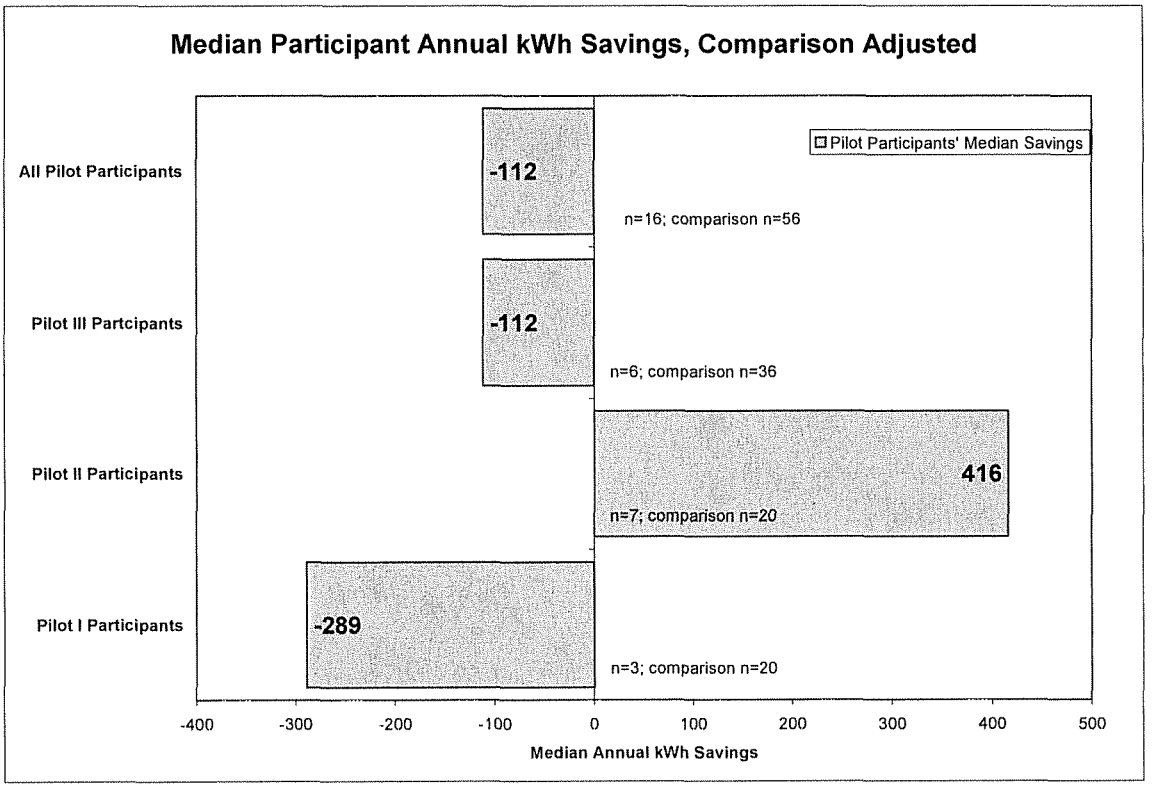

Figure 12 Median Annual kWh Savings of Pilot Participants, Adjusted for Comparison Group Changes

Figure 13 below shows the median percent changes in consumption for the three pilot groups. Overall, half of the Pilot participants have increased their kWh consumption by at least 2.1%.

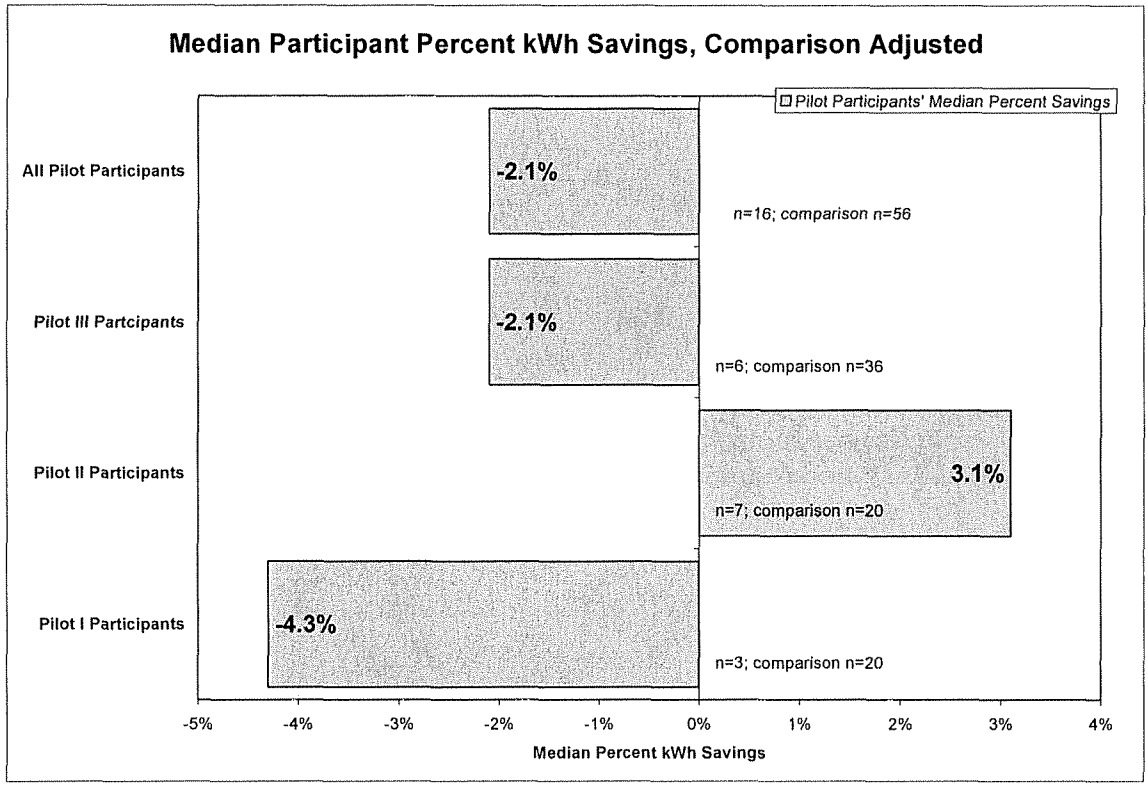

Figure 13 Median Percent kWh Savings of Pilot Participants, Adjusted for Comparison Group Changes

Changes in Natural Gas Consumption Between Participants and Comparison Group

Pilot participants have positive results with the amount of natural gas they consumed after participating in the program. The comparison groups used in this analysis are the same groups that were used in the electrical analysis, and they also have realized reductions in their therm consumption. Pilot I and II comparison reduced their consumption by 9 therms per year, and the Pilot III comparison group reduced their consumption by 13 therm per year, so the Pilot participants' savings are decreased slightly due to this reduction by the comparison group.

Figure 14 shows that weatherized participants generally have an advantage when it comes to reducing natural gas consumption over all Pilot groups. Weatherized Pilot I participants reduced their consumption by 169 therms per year, while non-weatherized Pilot I participants increased their consumption by 75 therms per year. This figure shows that weatherization is the key component of this program in reducing therm consumption. All participants that were weatherized have a mean decrease in consumption. Over all Pilots, this difference is equivalent to about 143 therms per participant per year in savings.

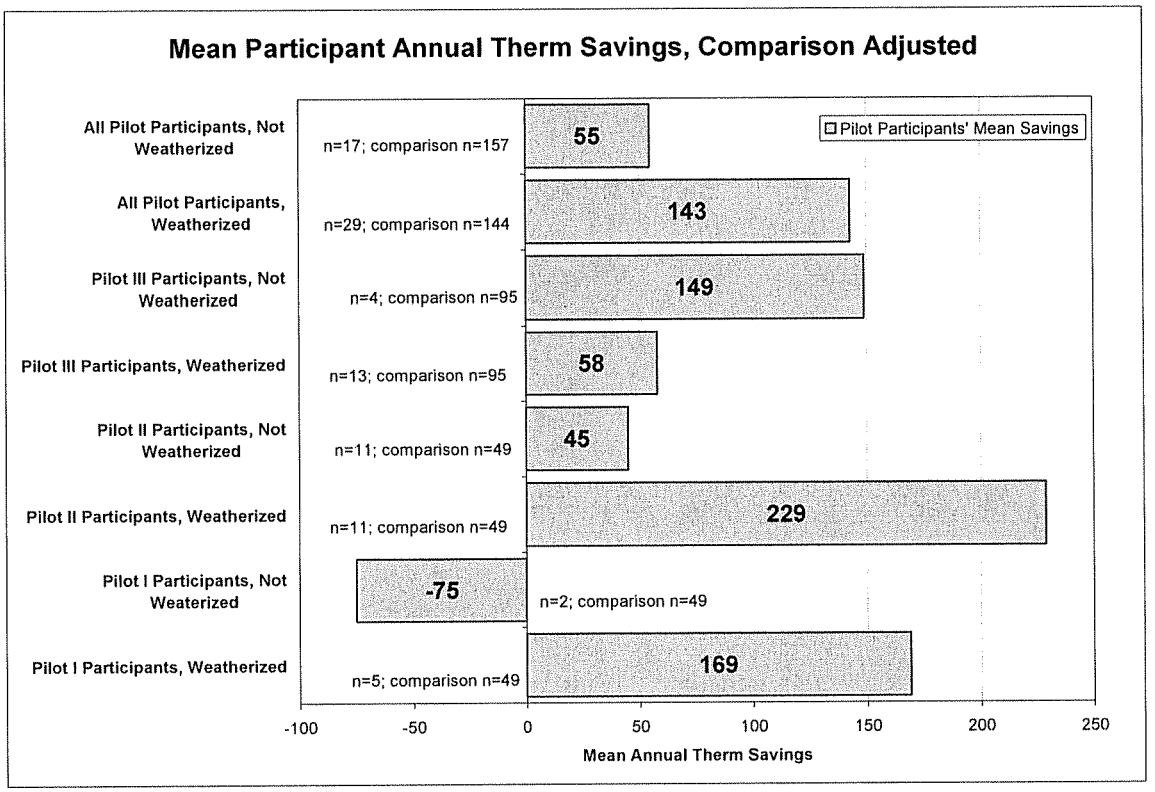

Figure 14 Mean Annual Therm Savings for Pilot Participants, Adjusted for Comparison Group Changes

The average percent change in therm consumption shows a similar result, as seen in Figure 15 below. The Pilot II and III participants who were not weatherized were able to decrease their consumption somewhat, but non-weatherized participants in Pilot I increased their consumption by 5.7%. Weatherization allowed the participants to decrease their consumption by 10.7% over all Pilots.

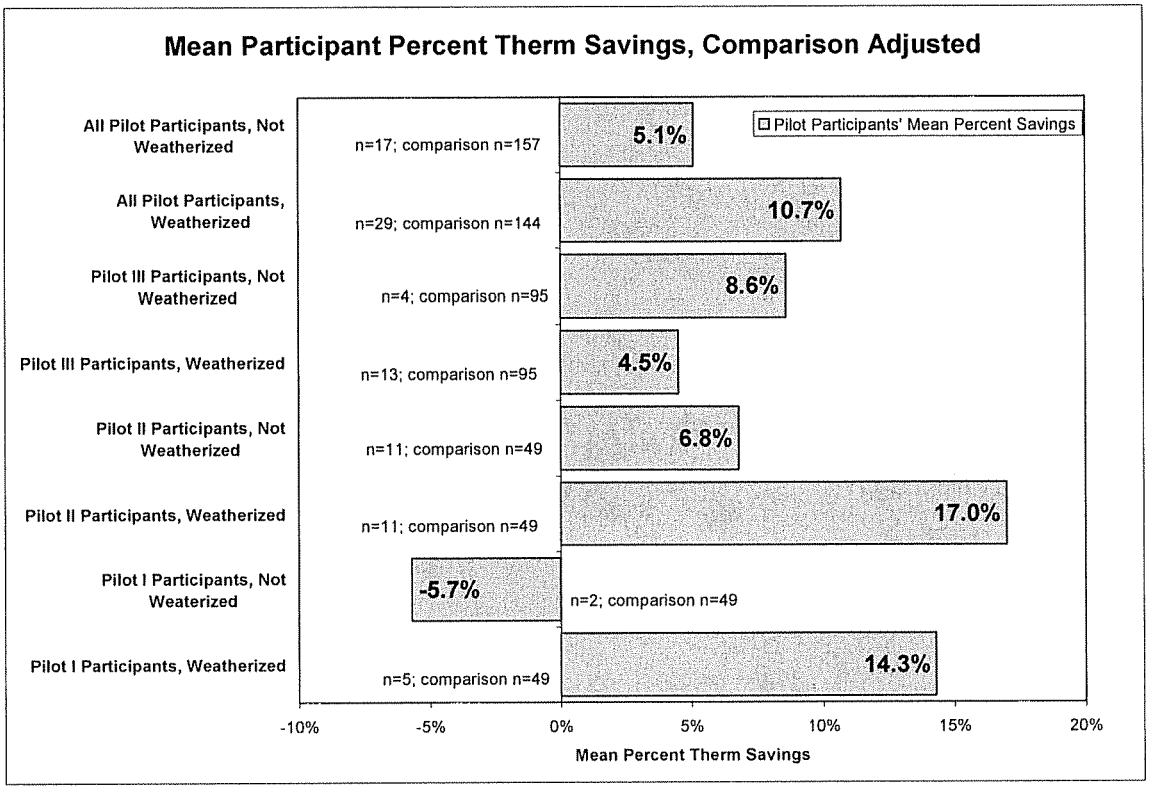

Figure 15 Mean Percent Therm Savings for Pilot Participants, Adjusted for Comparison Group Changes

Median savings again aid the understanding of the results. In Figure 16, the median savings are positive for all groups except Pilot I non-weatherized, indicating that for all but this group, over half of the participants decreased their consumption, regardless of weatherization. This finding, in combination with the mean results presented above, indicate that the Payment Plus Program is helping participants decrease their therm consumption. However, savings are substantially increased when weatherization services are provided.

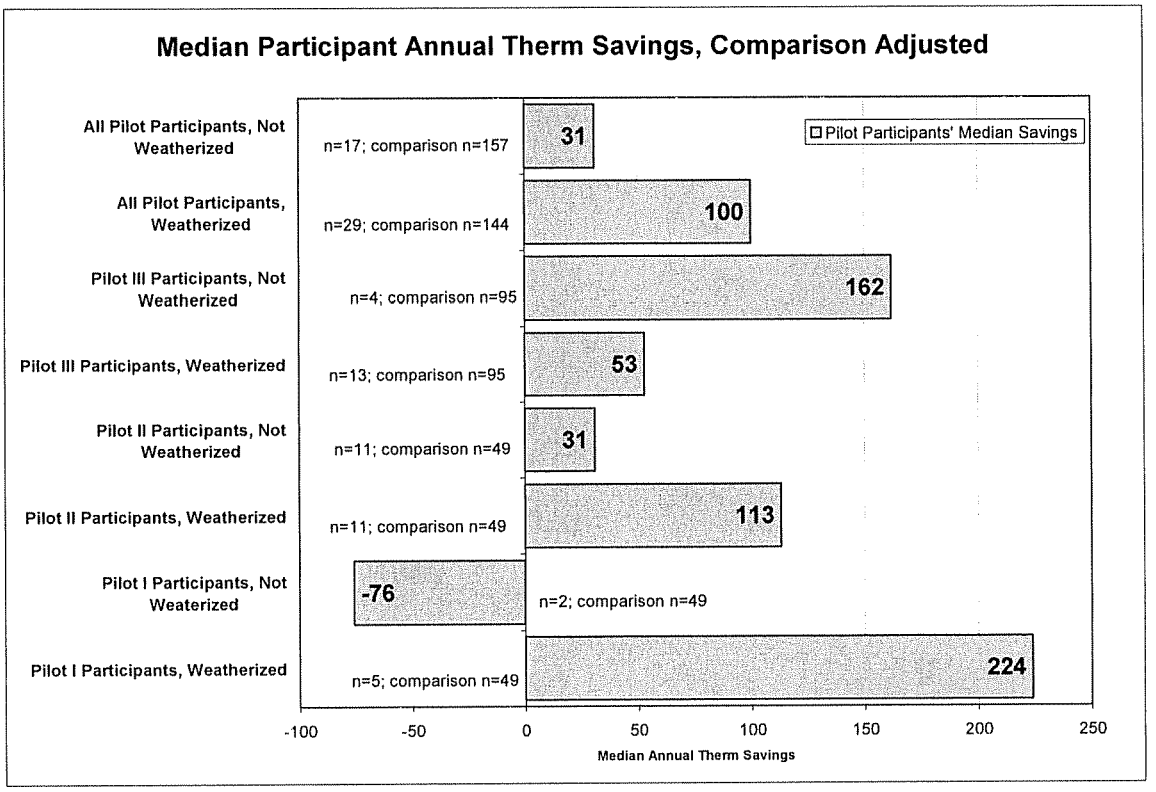

Figure 16 Median Annual Therm Savings for Pilot Participants, Adjusted for Comparison Group Changes

Figure 17 shows the median percent savings, which also indicates that the Pilot I participants that were not weatherized have the greatest amount of increases, with a median 7.8% increase in therm consumption. However, all other participants have median savings. Overall, the Pilot Program is most effective when the weatherization component is included. Over half of the weatherized participants have comparison-adjusted annual savings of 100 therms, or a decrease in therm consumption of 10.4%.

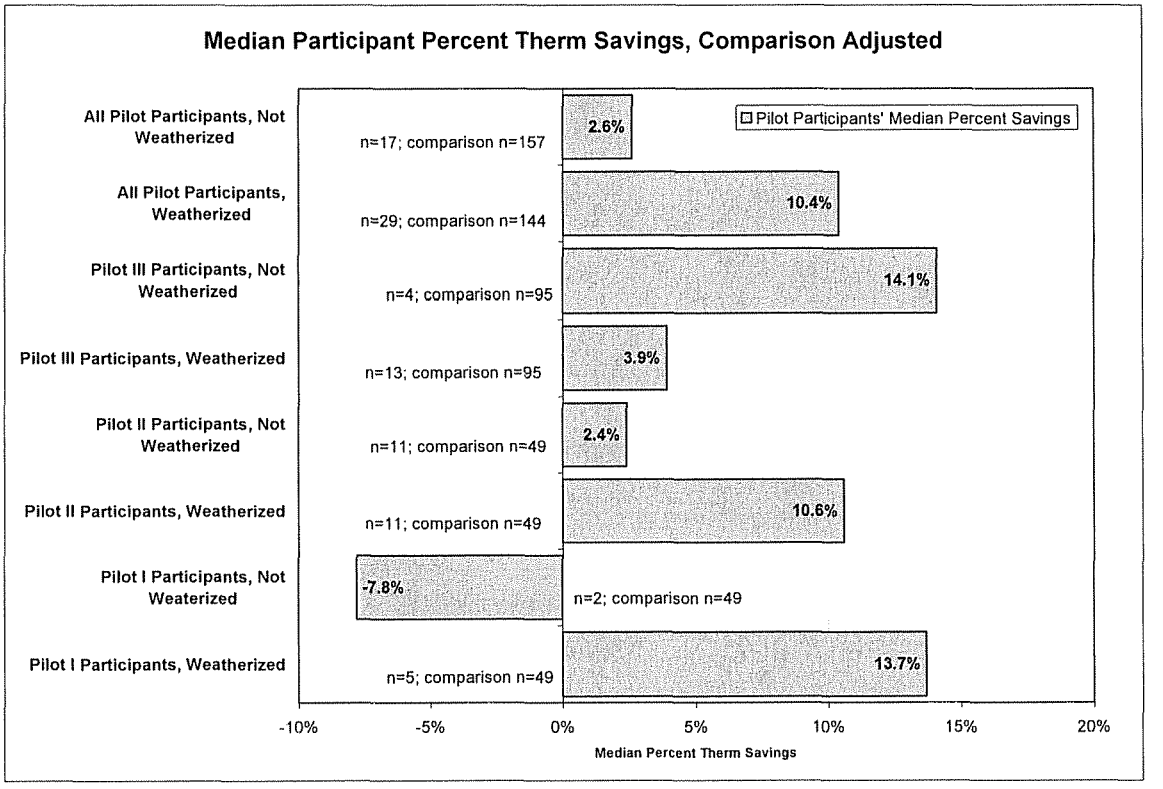

Figure 17 Median Percent Therm Savings for Pilot Participants, Adjusted for Comparison Group Changes

Energy Savings of Pilot I, II, and III Participants Combined

With the weather-normalized results provided by PRISM™ it is possible to combine the Pilot participants together as a single group and assess the energy impacts across both groups. This assessment provides the most reliable indication of program energy impacts because it treats participants from all three Pilots as a single group. While this was done above, here we will look only at overall Pilot Program effects on energy consumption, and compare mean and median results directly to better show the changes in consumption after participating in the program.

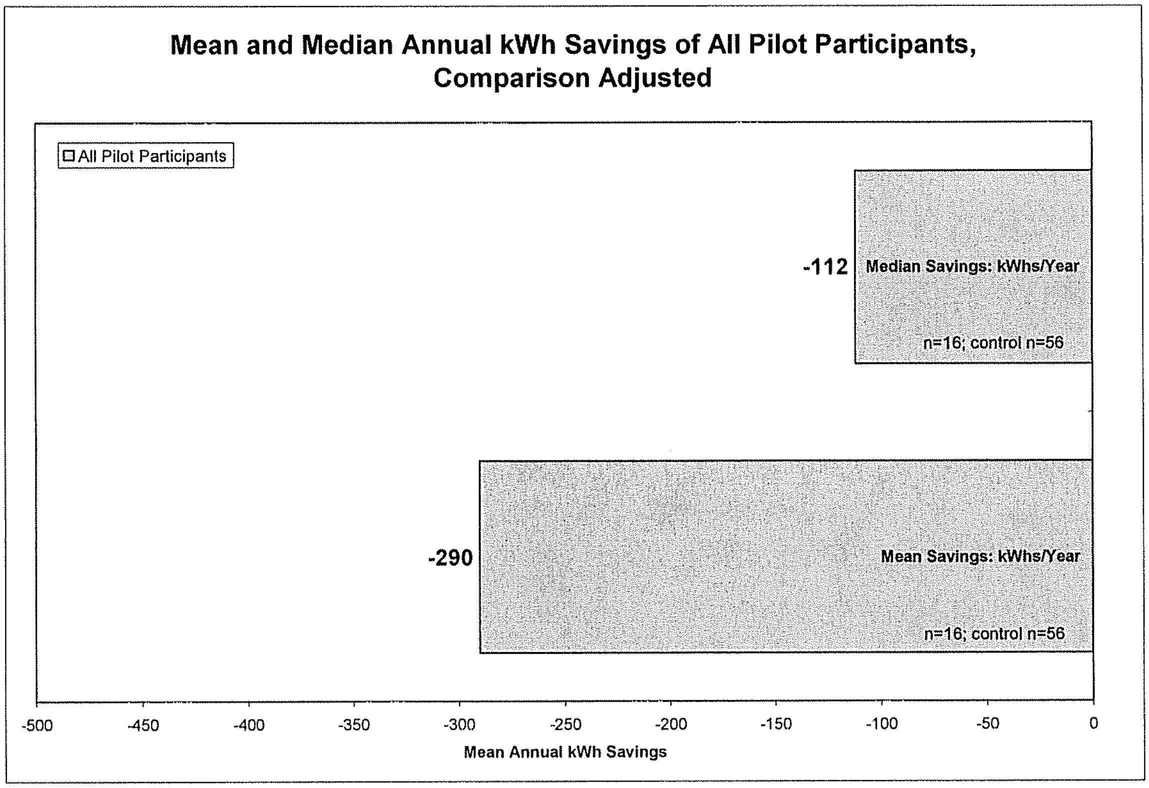

Figure 18 Mean and Median Savings per Year of All Pilot Participants Combined, Adjusted for Comparison Group Changes

Figure 18 above shows that the median kWh savings per year is lower than the mean negative savings. This indicates that over half of the participants are increasing their consumption by 112 kWhs per year or more, and some participants increase their consumption by an amount large enough to drive the overall mean to an increase in consumption.

Figure 19 below shows the mean and median annual therm savings, revealing that half of the Pilot participants that are not weatherized do have decreases in therm consumption, those that decrease their consumption do so at a large enough amount to keep the mean savings in the positive. Weatherized Pilot participants do well overall, saving a mean 143 therms a year, with half of the participants saving over 100 therms annually.

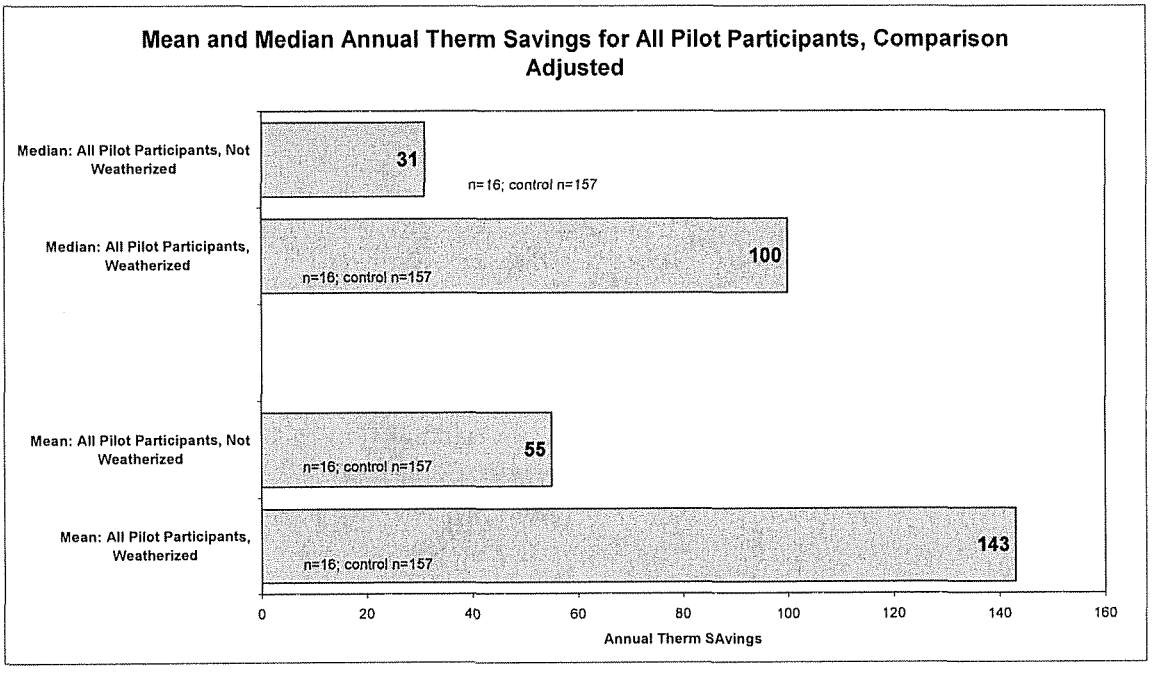

Figure 19 Mean and Median Therm Savings per Year for Pilot I & II Participants Combined, Adjusted for Comparison Group Changes

Summary of Energy Savings

While the kilowatt hour savings are discouraging, the therm savings for the Pilot participants are both strong and positive. The findings in this analysis point to weatherization as a key component of the Payment Pilot Program in reducing energy consumption in the low-income population. The program may want to consider making weatherization mandatory.

In addition, the kilowatt-hour consumption results for Pilots I and II have significantly changed over the past two years, indicating that the lessons learned in the energy class have either been forgotten or there have been changes in some of the households beyond behavioral changes.

Section IV: Arrearage Evaluation Results

Introduction

A key goal of the Payment Plus Program is the reduction of arrearages carried by the area's low-income population. As a result, a detailed analysis of the payment effects of the program were conducted to determine if there were changes as a result of participation in the Program.

Four years have passed since the Pilot Program I participants attended their training session(s) and (possibly) received weatherization. This is enough time to permit a long-term assessment of the effects of the program on arrearage levels. In a previous evaluation report we analyzed the arrearage patterns before, during, and for the short-term post period of Pilot I. In this study we will examine the post-program arrearage data for close to four years following the end of the program and test for changes in arrearage patterns due to participation in the Payment Plus Pilot Program I. Pilots II and III are also studied for medium- and long-term effects of the program.

Analysis Sample Size

The sample size for this analysis varies over each of the 60 months in this analysis (June 2001 through May 2006). The primary weakness of this arrearage and payment patterns analysis is that at times the sample size for the participants for which payment data was available can drop to a very low level, and for some months in the Pilot II analysis there is no data. At most, there are 52 customers in the Pilot III participant group. The overall analysis of the combined participants provide a range of 10 to 113 participants, so this overall analysis is the most rigorous and statistically sound.

Many of the customers in both the participant and comparison groups have moved or dropped their service, causing accounts to be eliminated from this analysis. The results presented in this section are based on participants that have enough data to examine trends in usage. The comparison group also changes over the 60 months, and two different groups are used through the analysis. One comparison group is compared to Pilot I and II participants, and another is compared to the Pilot III participants. The overall analysis combines the two comparison groups. In retrospect, we realize it would have been better to forecast the need for longer-term analysis for the Pilot program four years ago and select a comparison group at that time that was large enough to carry the analysis forward for at least four years. Future comparison groups should be informed by the potential need to reevaluate participants over extended periods of time.

Arrearage Levels

Pilot I

Arrearage levels for the Pilot I participants who had enough data to analyze have decreased from a mean monthly arrearage of $719 in the six months before participation to $438 in the last six months of the analysis, 43 to 48 months after participation. The

comparison group's monthly average arrearage for these same periods of time increased from $338 to $449.

The arrearage levels presented in Figure 20 represent the average monthly arrearage for the participant group and the comparison group over the six months before the program compared to the six months after the program (1-6 months), after which the analysis block is months (7-12 months), and so on until the latest billing month pulled for this analysis (May 2006). The 6-month block before the program ends immediately before the classes, and runs back 6 months (August 2001 through January 2002). The period after the program starts immediately following the program, and runs for 6 months (June 2002 through November 2002), and the last period reflects mean monthly arrearage data for the period December 2005 through May 2006. This analysis allows us to examine the data for four full years after the program compared to six months prior to the program, taking into account the effects of high winter and summer energy costs across all three periods of time.

Essentially this graphic shows that Pilot I arrearages have decreased by 39% in the four years since and the Payment Plus Program. The comparison group's arrearage has increased 33%, indicating that the Pilot I participants are doing well in managing their arrearages, keeping them down while the comparison group's arrearages have increased.

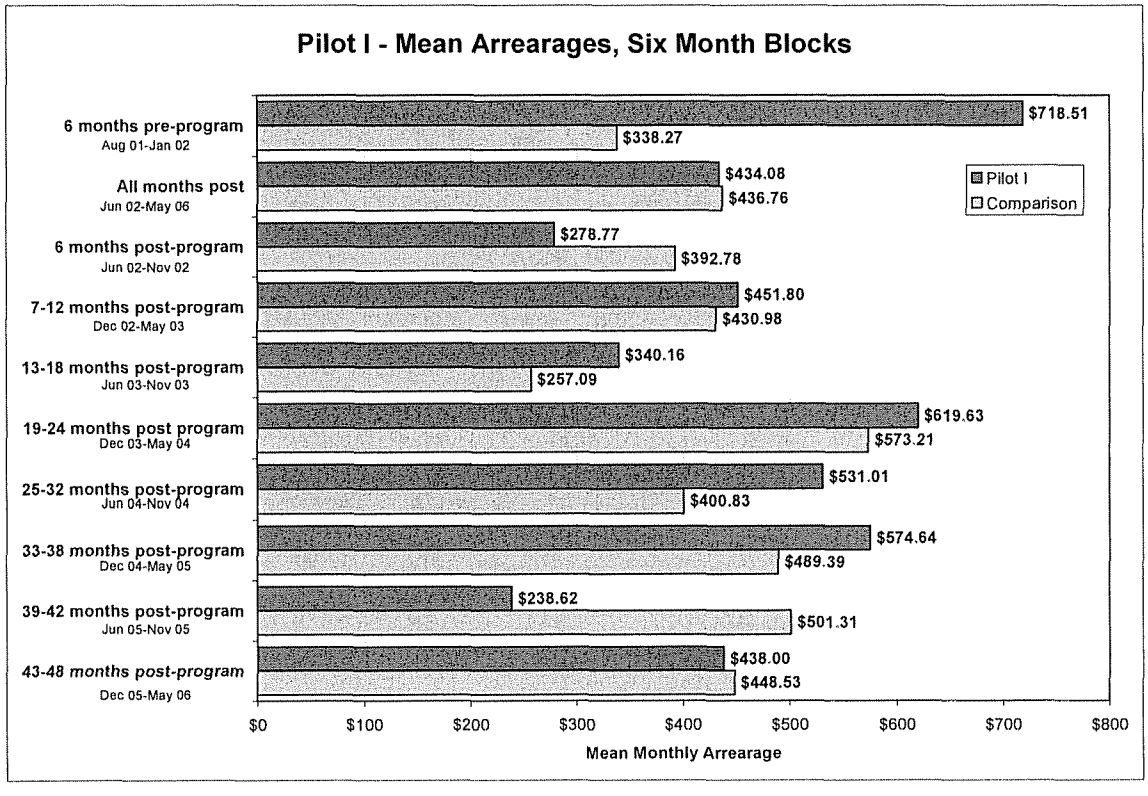

Figure 20 Mean Monthly Arrearage Levels for Pilot I Participants

Figure 21 below show the mean arrearages of Pilot I participants for each month of the study. Before the program period, it is easy to see the right participants were chosen by

the fast accumulation of arrearages that averaged over $1,000 before they participated in the program. The program, through credits and encouraging behavioral changes, reduced that average arrearage to just over $200.

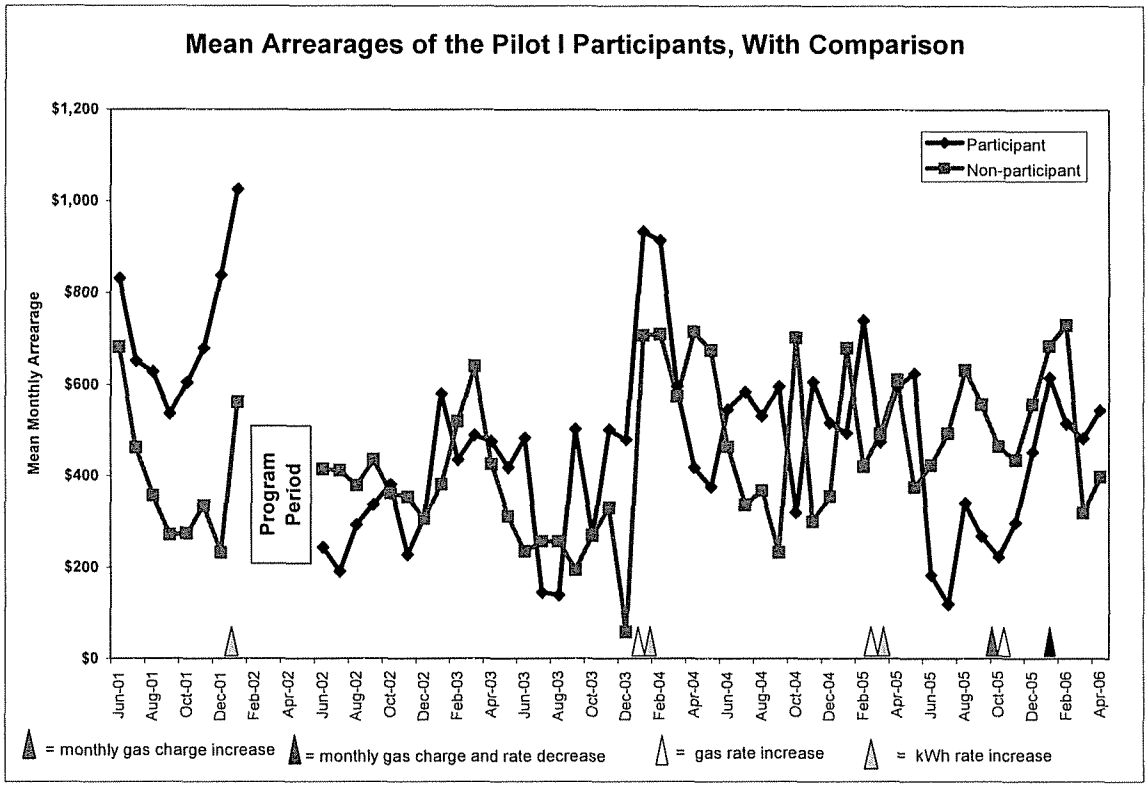

Figure 21 Mean Arrearages of the Pilot I Participants by Month, With Comparison

Pilot II

The analysis of the Pilot II participants is based on the billing and arrearage data of 55 customers that had data to analyze and who did not move during the study period.

Pilot II participants increased their arrearage over the study period by only 5%. The comparison group increased their arrearage by 51%. The rate of increase is much lower for the participants, and the arrearage for the participant group is still lower (in dollars) than the mean arrearage of the comparison group.

For Pilot II, six months of pre-program data was used (December 2002 through May 2003), and thirty-five months of post data (July 2003 through May 2006).

Figure 22 below shows that Pilot II participants maintained a fairly steady level of arrearage throughout the post-program period. The comparison group's arrearage was more erratic, and also increased over the time period studied.

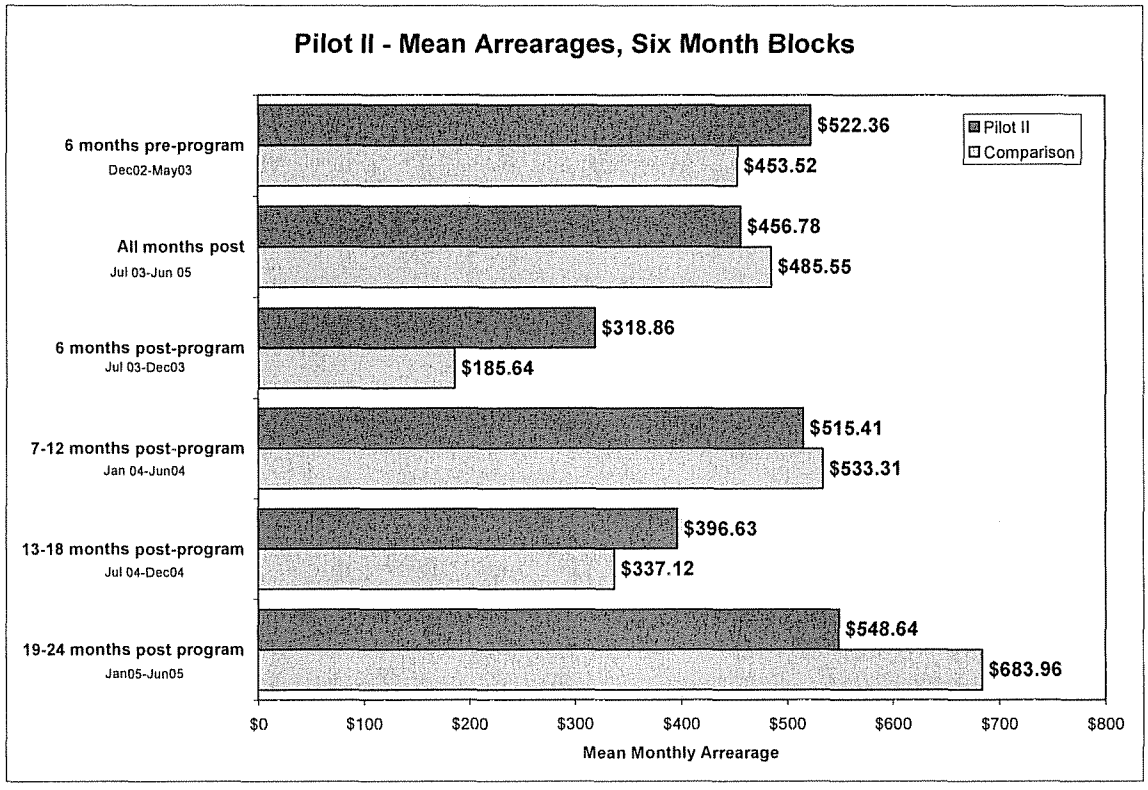

Figure 22 Mean Monthly Arrearage for Pilot II Participants

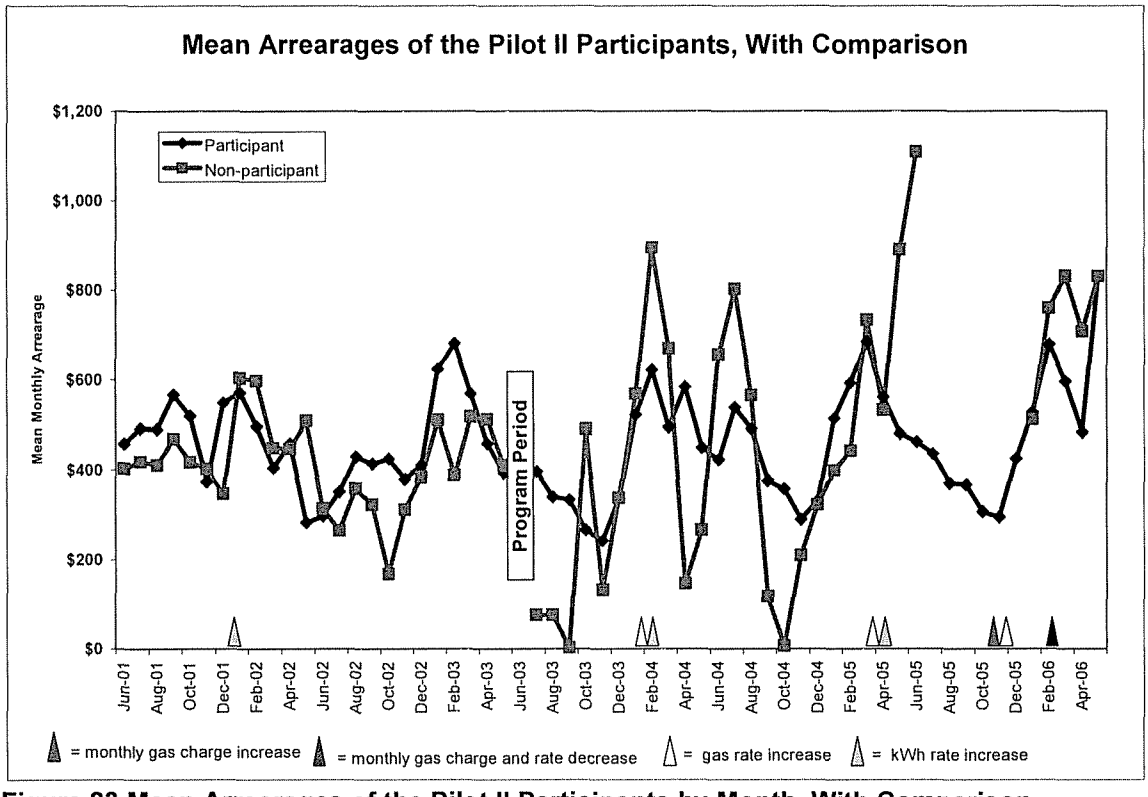

Figure 23 Mean Arrearages of the Pilot II Participants by Month, With Comparison

Pilot III

Pilot III participants, like the Pilot II participants, have slightly increased their arrearage in the months since the Pilot III program. In the six months before the program (June 2003 through November 2003), the participants carried an average arrearage of $421, while the comparison group's arrearage was $452. Both the participant's and comparison group's arrearage hold steadily in the six-month blocks following the program months. The Participant's average arrearage increased by 18% to $496, while the comparison group average arrearage increased by 10% to $496. While the participants are carrying the same level of arrearage, those arrearages are growing at a slightly faster rate than those of the comparison group.

Figure 25 below shows the Pilot III participants and comparison group mean monthly arrearages for the time period studied. Arrearages for the participants actually increased the month after participation in the program, but then in later months their arrearages were about the same as those in the comparison group.

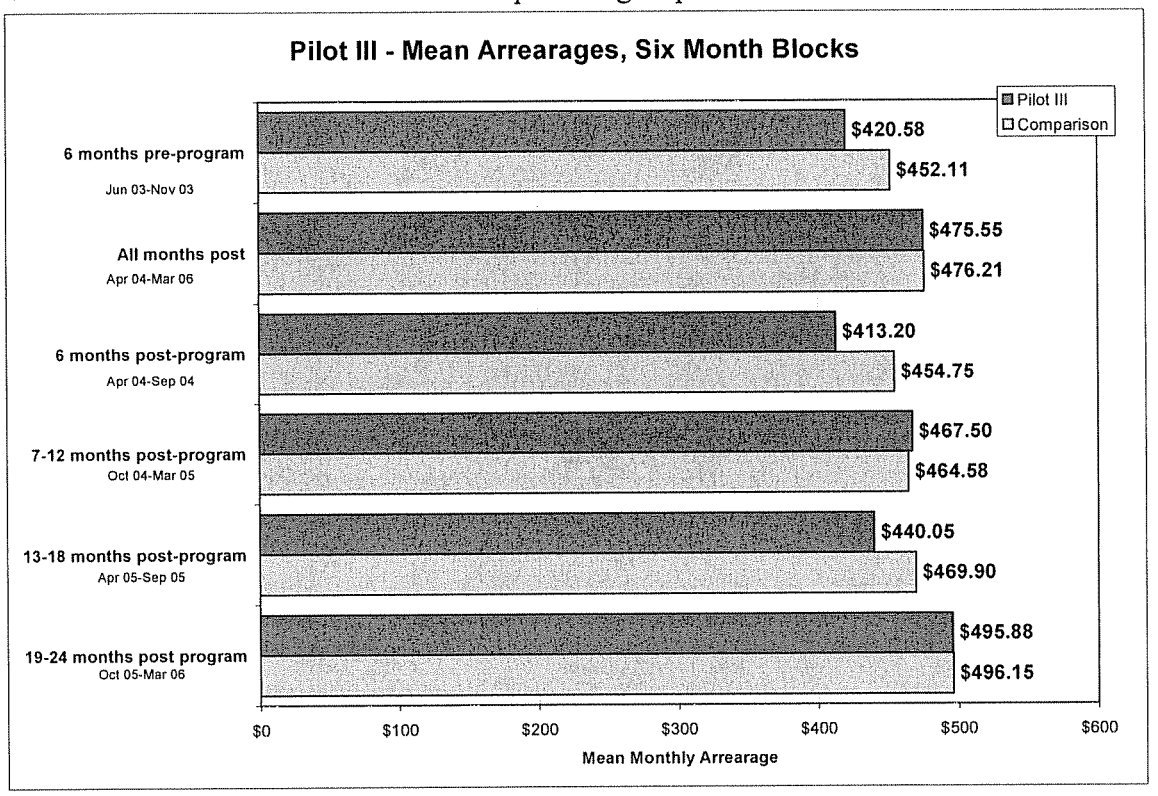

Figure 24 Mean Monthly Arrearage for Pilot III Participants

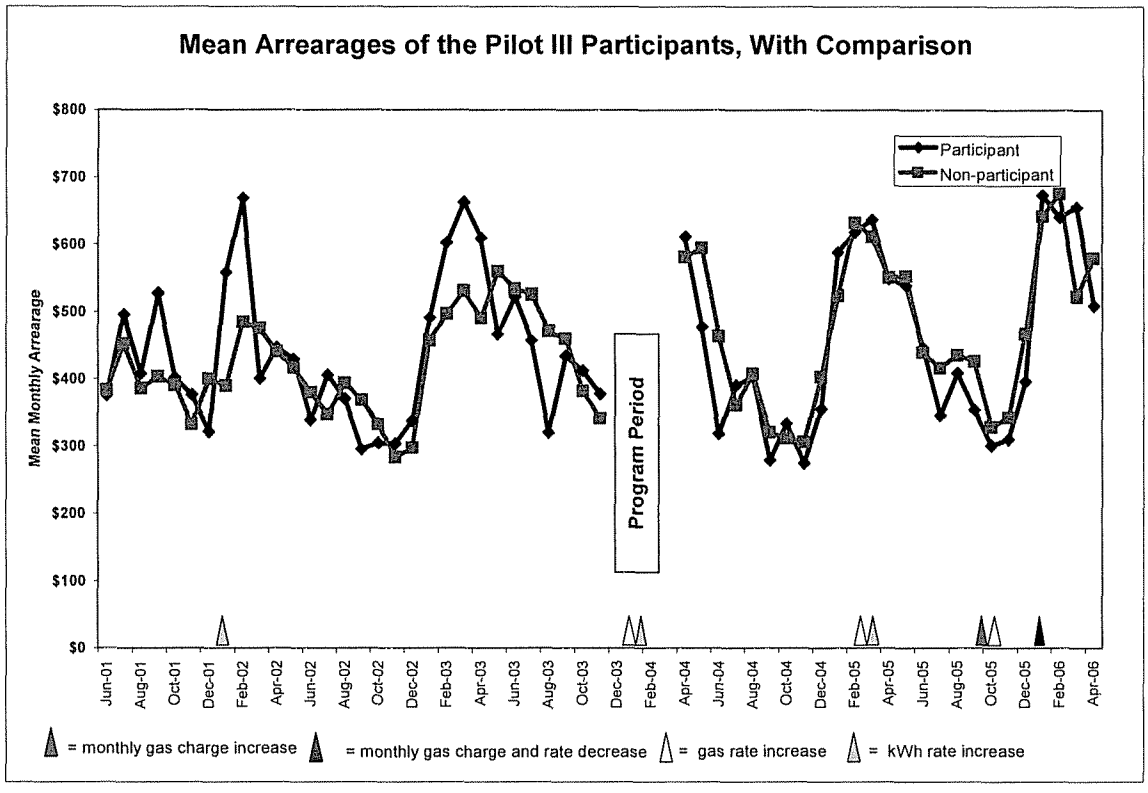

Figure 25 Mean Arrearages of the Pilot III Participants by Month, With Comparison

All Pilots

The three Pilot participant groups were combined to gauge the overall effect on arrearage of the Payment Plus Program. Figure 26 below shows the mean monthly arrearage in the six months before the pilot programs for the participants and the comparison group, and the mean monthly arrearage for all months since program participation for all participants and comparison group customers.

Pilot I participants carried the highest mean arrearage before entering the program, which is a result of the enrollment efforts for that Pilot, which focused on customers in crisis-mode. Their arrearages were significantly reduced since program participation, and they, as a group, have maintained much lower mean arrearages since the program which was four years ago. The comparison group used for Pilot I has had the opposite condition, their arrearage has increased from $397 to $437.

Pilot III is the only participant group that has increased their mean arrearage since participation, but the increase is slight ($437 to $476). However, the comparison group also slightly increased their arrearage from $420 to $476.

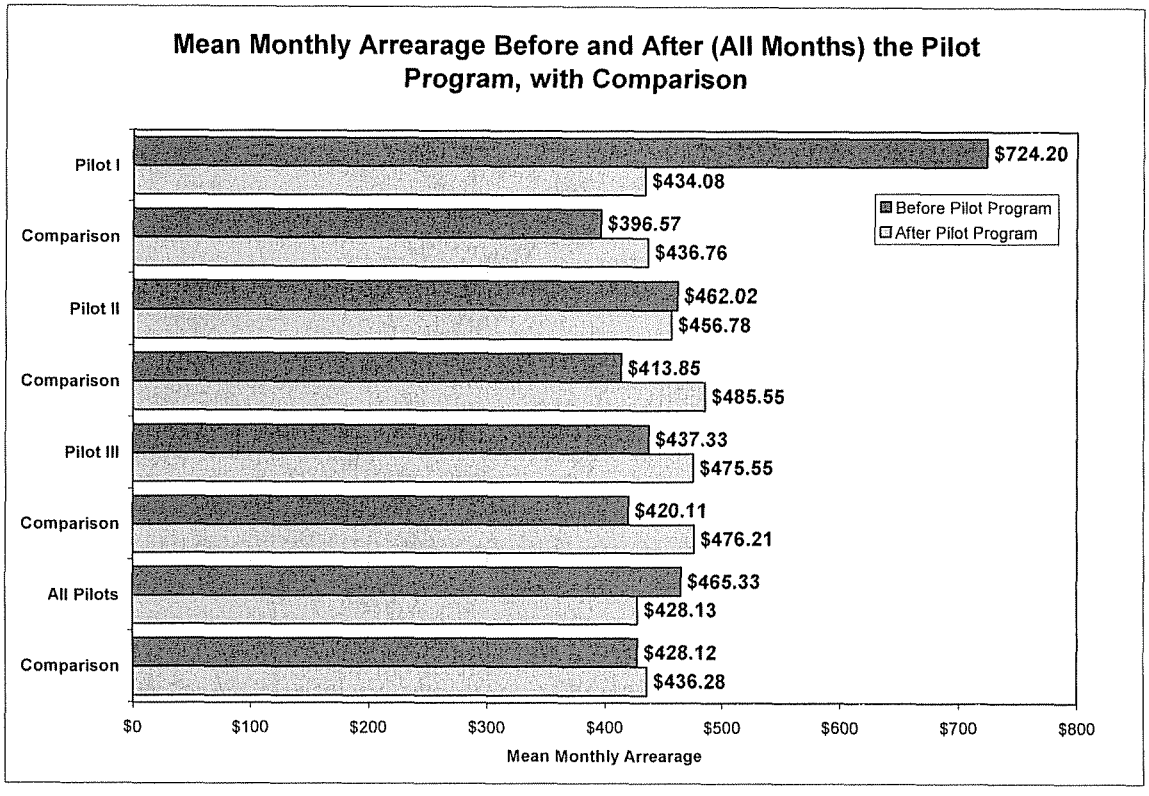

Figure 26 Mean Monthly Arrearage for All Pilot Participants

When the data from all three Pilots are combined, it's clear that the Payment Plus Program has a positive effect on the arrearages of the participants. The average monthly arrearage in the six months before participation is $465.33, and this drops to an average arrearage of $428.12, a decrease of 8%, while the arrearage of the comparison groups all increase.

The median arrearage over the same periods of time mimic the mean, but the overall drop in arrearage is much larger for the Pilot Program participants, with the median arrearage being $377 after the program, where the mean above was $428. This indicates that over half of the Pilot Participants were able to reduce their arrearage but there are some customers whose arrearage is high enough to bring the mean up to $428.

The low-income customers that participate in the Payment Plus Pilot Program lower their arrearage when compared to the comparison group. Overall, Pilot participants reduce their arrearage by 8%, while the comparison group increased their arrearage by 2%, resulting in a 10% decrease in arrearages for the Pilot participants over the long-term.

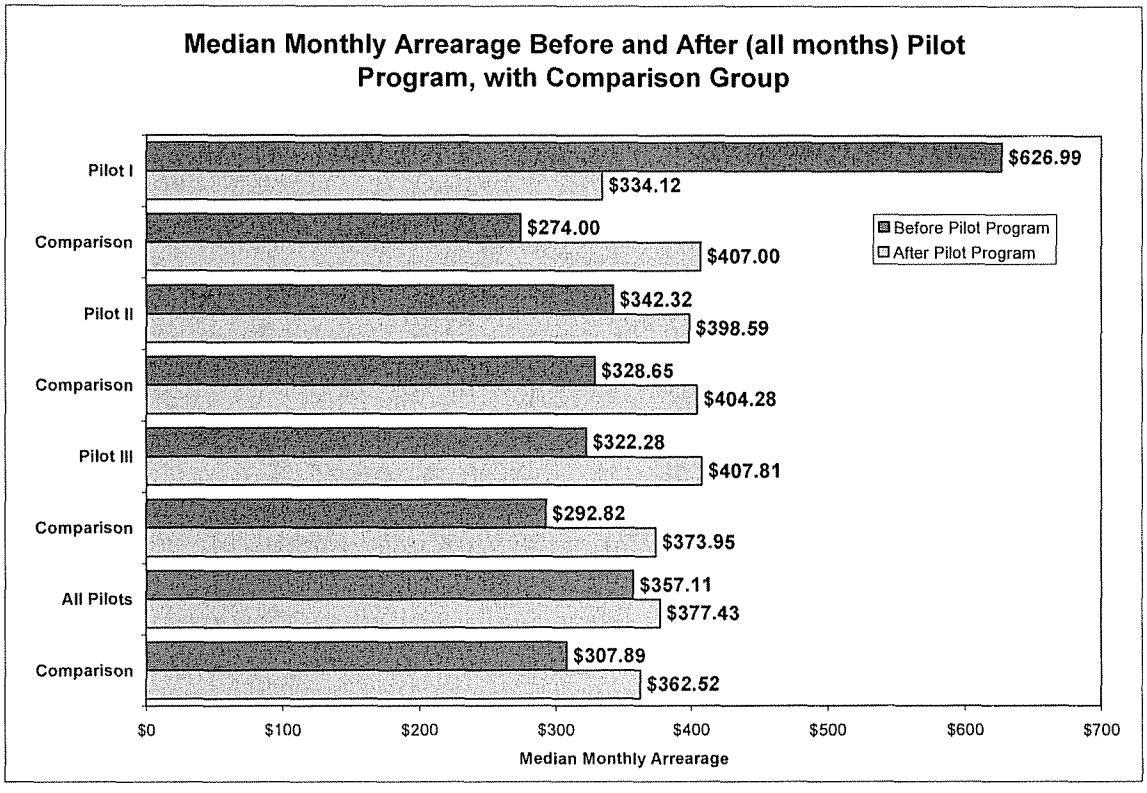

Figure 27 Median Monthly Arrearage for All Pilot Participants

Section IV: Payment Effects

Percent of the Bill Paid - Pilot I

This section looks at the payments made each month by the Pilot participants and the comparison group in comparison to the amount due on their bill. (Please see the introduction of the previous section on Pilot I arrearage for information on sample sizes of both the participant and comparison groups.)

During the examination of the payment data we noticed that in many cases multiple payments were made during a single month as people struggled to make weekly or bi-monthly payments. When these instances occurred we summed the payments made by the customer and then compared the sum to the amount due on the bill for that month. If there was no payment made in a month, they were excluded from the analysis for that month (no data to evaluate). Therefore, Figure 28 shows the percent of the bill paid of those that made a payment on their bill.

Figure 28 below shows how the percent of the total bill paid (by those making a payment) has changed. Pilot I has the highest increase – paying an average of 56% of the amount due since they participated four years ago, compared to only an average of 47% of the bill in the six months before participation. More of an improvement has been made when the comparison group is factored in, as they have decreased the percent of the bill paid during the same time period, from 54% of the bill to only 30%.

Pilot II has decreased the amount paid on their bills, but is doing better than the comparison group. Pilot III has maintained their level of payment, which is an improvement over their comparison group, which has decreased their percent of the bill paid from 54% to 47% during the same time period.

Over all the Pilot groups, the percent of the bill paid has stayed the same. Before participation, they paid 49.5% of their bill, and since participation, they pay 49.8% of the bill. However, the comparison groups have decreased the percent of the bill paid from 52% to 45% of the bill. Together, the program has improved the payment ability of the participants relative to the comparison group.

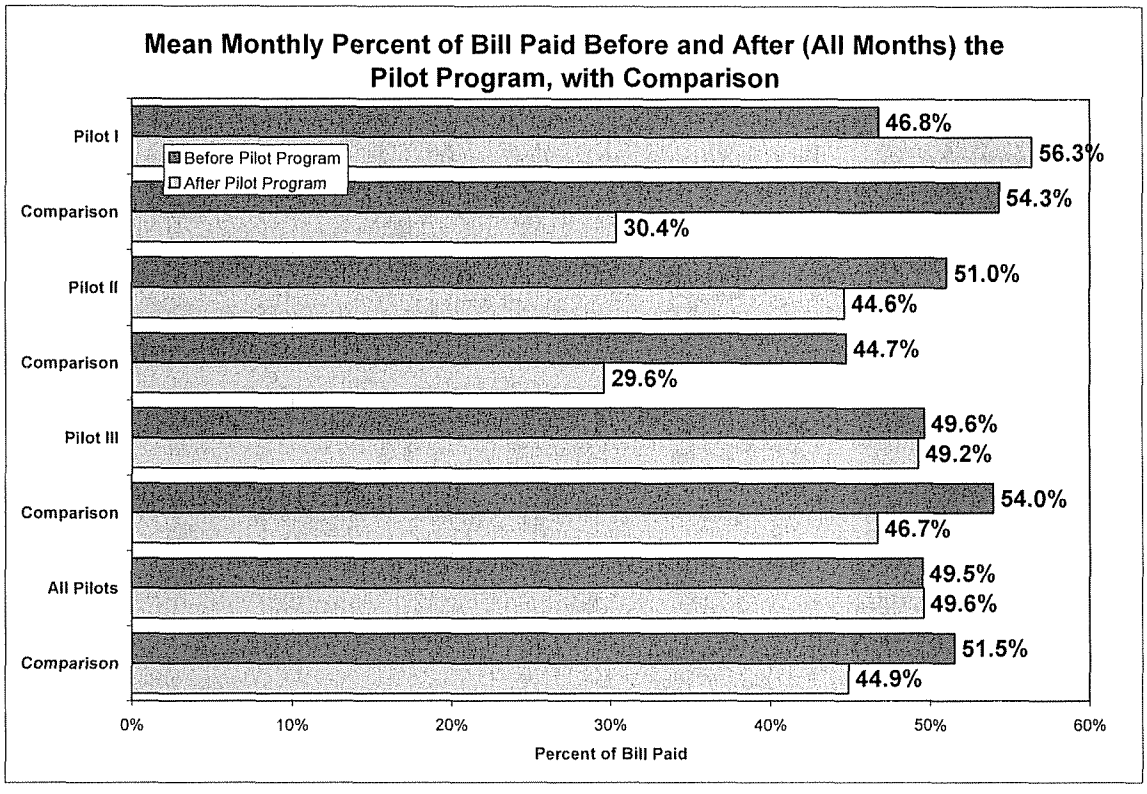

Figure 28 Mean Percent of the Bill Paid by Pilot Participants

When the Pilot groups and comparison groups are combined, the participants have not changed their payment behavior very much (from 41% paid to 42% paid). However, the comparison group has dropped their percentage of the bill paid drastically, from 89% to 51%. That is, while non-participants are becoming less able to pay their bills, participants have been able to maintain their payment patterns.

Disconnections

Another indication of changes in payment behavior is the frequency of disconnected service in the studied groups. Figure 29 below shows the percent of customers that were disconnected in each of the studied groups. The graph covers all months studied (June 2001 through May 2006). Pilot I participants were disconnected at a rate of 1.54% for each month in the months leading up to their participation in the Pilot Program. In the months since their participation, an average of 2.23% of the customers in any given month will be disconnected, an increase of 45%. However, the comparison group studied in conjunction with Pilot I participants have fared worse. In the months before the program was offered, disconnection was a reality for 2.29% of the customers in any given month, whereas since the program, it occurs to 5.97% of the customers in the comparison group, and increase of 260% - a rate of increase almost 6 times that of the Pilot I participants.

Pilot II has a similar story. The participant's rate of disconnection increases from 1.48% to 4.33% (by 292%), while the comparison group increases from 4% to over 7%, an increase of 78%. The rate of increase is higher for the Pilot II participants, but the real disconnection rate is still around half of what the comparison group has been experiencing in the same timeframe.

Pilot III participants are the only Pilot participants that have experienced a decrease in their disconnection rate, which fell from 3.05% to 2.44%, a decrease of 20%, while the comparison group's rate has increased by 10%.

Combining the Pilot participants, it is clear that the participants have a lesser chance of being disconnected than the comparison group. Overall, the Pilot participants have a 2.85% disconnection rate, while the comparison group's disconnection rate has moved to almost 6%.

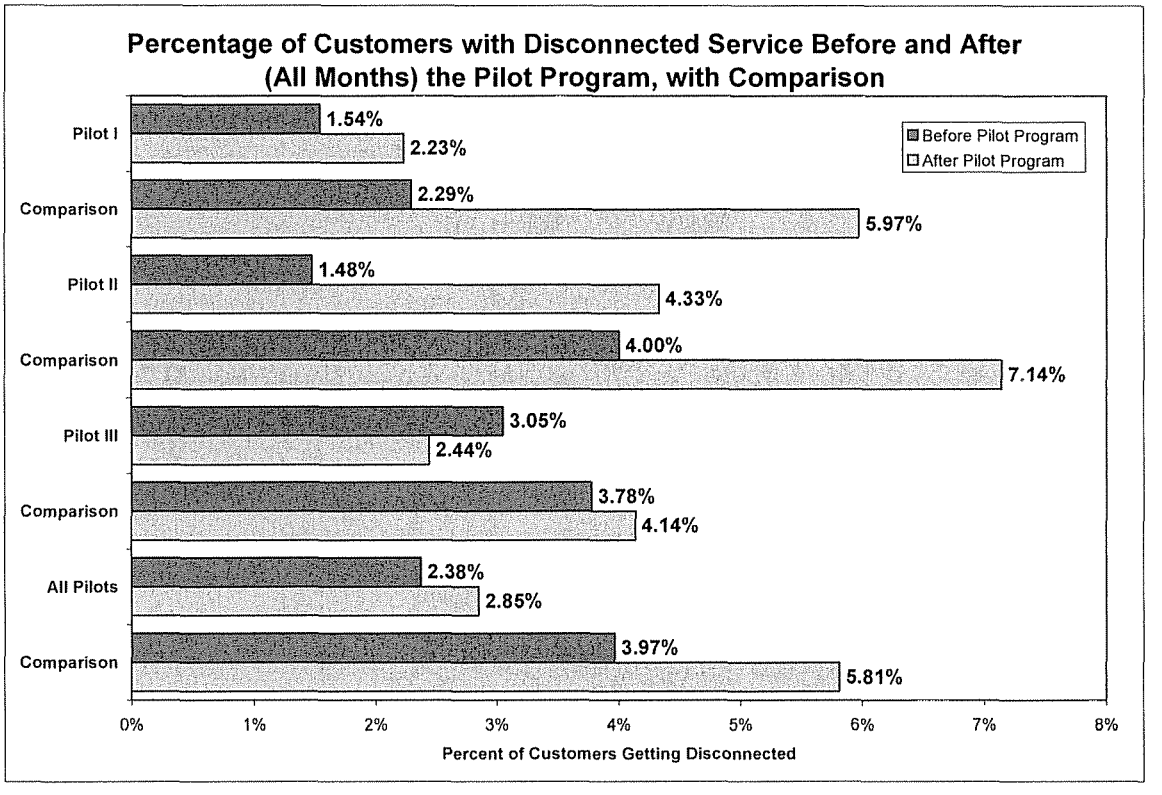

Figure 29 Percent of Customers with Disconnections

Days to Pay Bill

Another potential indicator of program effects is the change in the number of days it takes for participants to pay their bill relative to the comparison group.

During the pre-program period, Pilot I participants on average made a payment to Duke Energy (then Cinergy) 18 days after the billed date, and since participating their consumption has not changed (18.35 to 18.31). The Pilot I comparison group has shortened the number of days to payment from 17.64 to 13.19 during this same time period.

Every group in this analysis has shortened the number of days to pay their bill, but in every Pilot study, the comparison group did so by a larger degree.

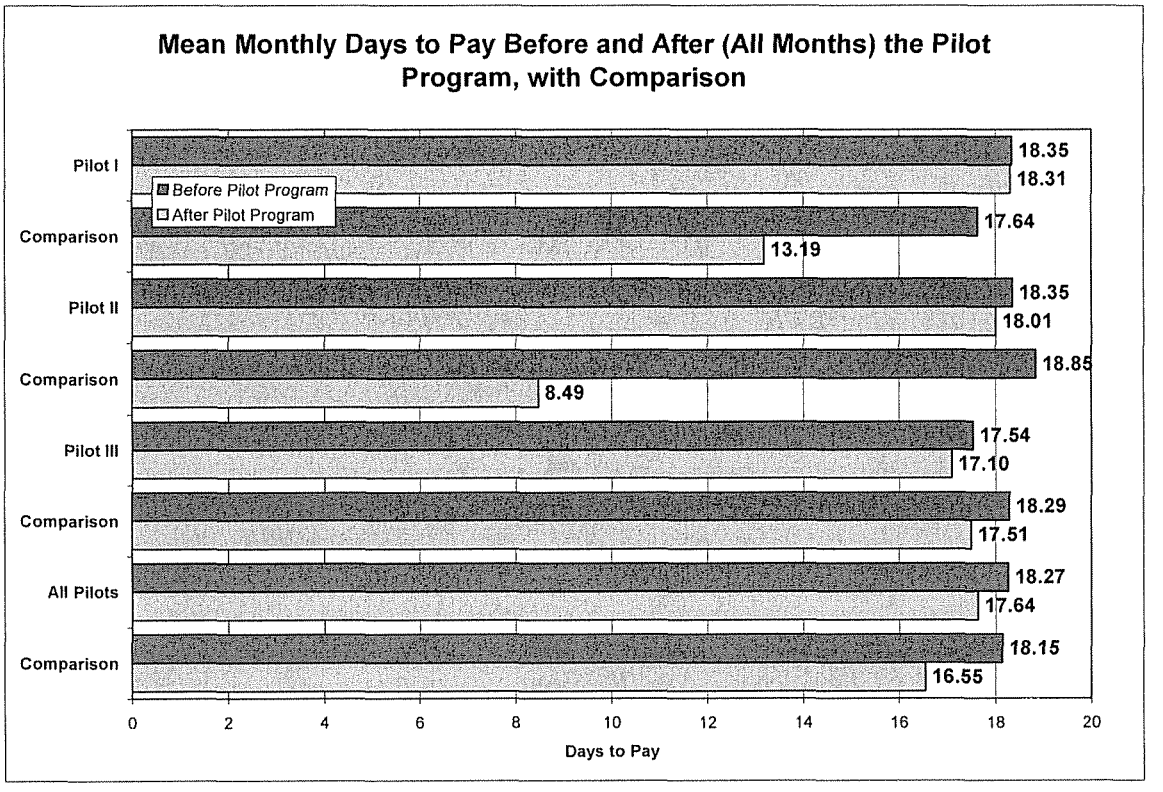

Figure 30 Mean Days from Billing to Payment for Pilot II Participants

Percent of Customers Making a Payment

Another potential indicator of program effectiveness is the percent change in the customers who are sending in a payment each month. The figures below show the percentage of customers in each of the Pilot groups that are paying any amount on their bill.

Pilot I participants, in the few months of data available from before the program, were making a payment of at least some amount an average of 60% of the time, while the comparison paid at least some of their bill 68% of the time. After the Payment Plus Program, the participants made a payment about 55% of the time, a drop of 8% compared to a 37% drop in the amount customers making at least some payment in the comparison group. This data indicates that the Pilot I participants are making a payment more frequently than the comparison group during the post-program period.

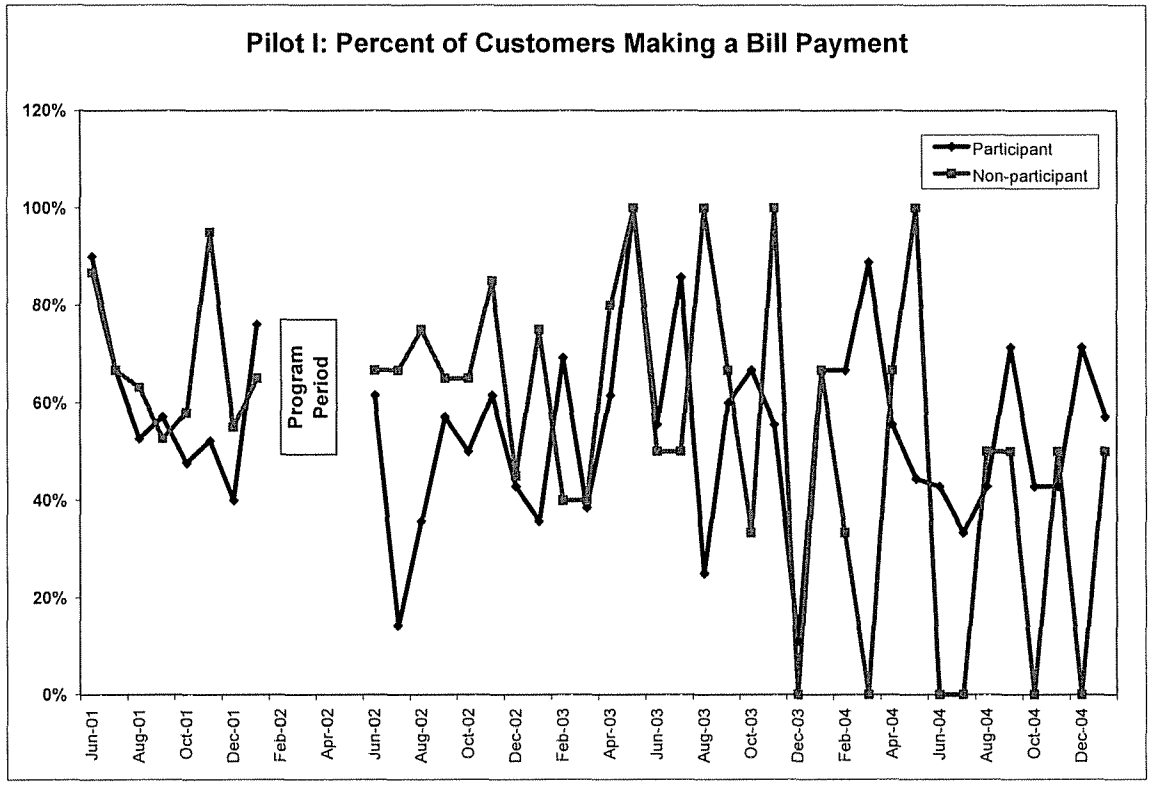

Figure 31 Mean Percent of Pilot I Customers Making a Payment Each Month

Pilot II participants made a payment 68% on their bills before the program, but only 43% of the bills in the twenty-two months after the program. The comparison group made a payment on 55% of their bills in the pre-program period, and 68% of their bills in the post-program period, making an improvement that in turn reflects poorly on the payment behaviors of the Pilot II participants.

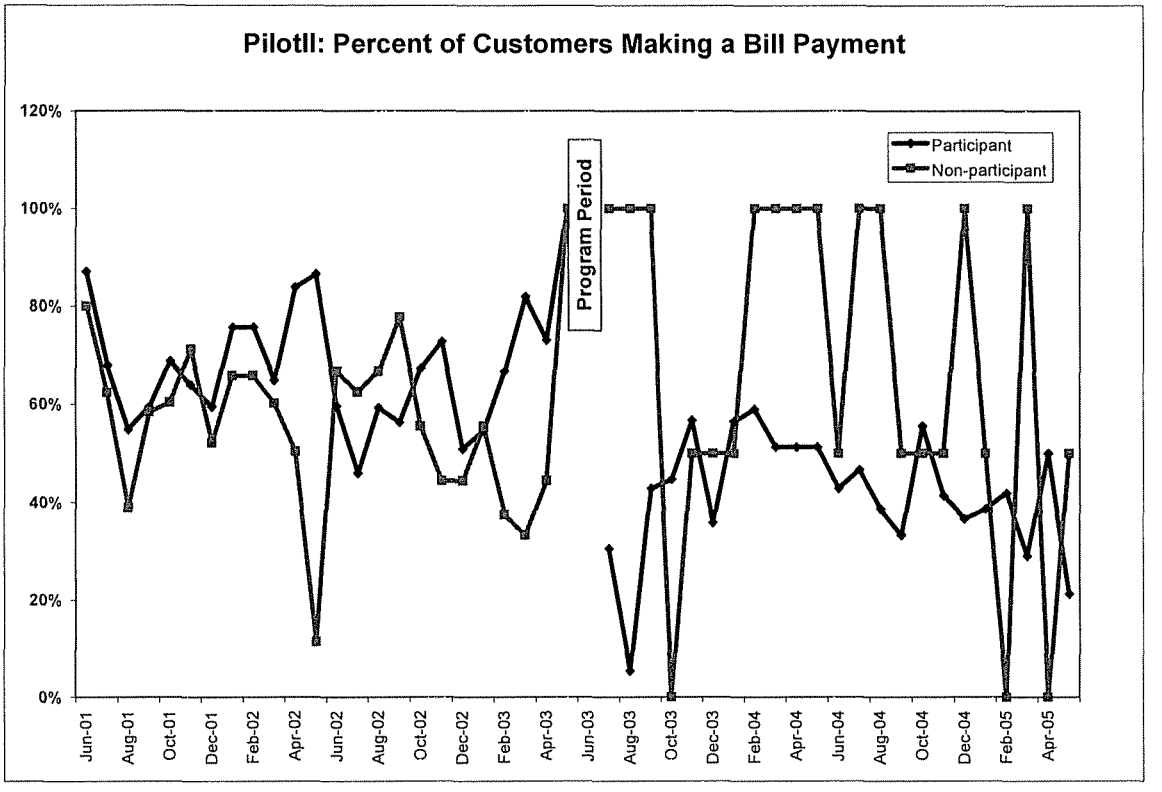

Figure 32 Mean Percent of Pilot II Customers Making a Payment Each Month

Pilot III has the most rigorous data, with higher numbers of customers. The Pilot III participants made a bill payment 62% of the time before their participation in the program, while the comparison group did only 43% of the time. In the post program period, Pilot III participants dropped from 62% of bills being paid in part or in full to 49%, a drop of 21%. The comparison group dropped to 31% making a payment on a bill, a drop of 28%.

Overall, all of the participants in the Pilot program studied made payments towards their bill less frequently in the post-program months. However, the comparison groups did as well in two out of three studies.

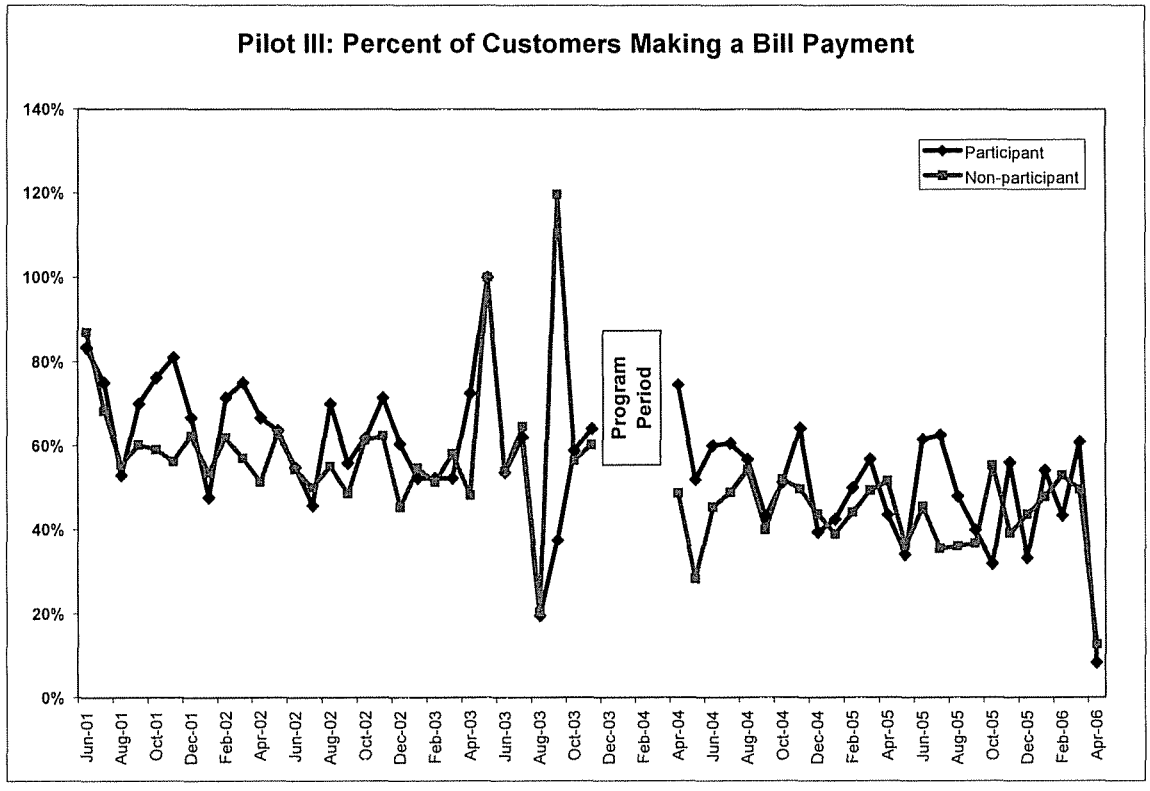

Figure 33 Mean Percent of Pilot II Customers Making a Payment Each Month

CONCLUSIONS

This evaluation involved four independent coordinated studies. The first study consisted of a process evaluation. The second focused on the energy use changes as a result of the Payment Plus Program, the third study focused on evaluating the arrearage and payment effects of the Pilot program. And finally, we performed a short interview with a sample of the Pilot IV participants to gauge customer satisfaction with the program.

The process evaluation examined the operations of Pilot Program IV, implemented from August through September of 2006. This study involved an examination of the management and operations of the Pilot Program as it is operating currently. The process evaluation included on-site interviews with key program designers, managers and implementers. The second study was an effects evaluation focusing on identifying how the program influenced participant energy consumption using weather-normalizing software, and the third examined arrearage levels and payment effects. The effects evaluations used a comparison group of low-income customers who were not weatherized to serve as the baseline from which changes to the participant group could be measured. The arrearage and payment effects evaluation examined the billing and payment histories of Pilot I, II and III participants.

From these studies we conclude the following overarching findings:

> This program has been evaluated over a number of years in its "pilot" status. These evaluations show that the program has evolved to point where the implementation efforts are efficient and effective, and customer satisfaction is high. In addition, the evaluations show strong and long-term natural gas energy savings, short-term electric savings and to some degree, impacts on arrearage and payment levels. TecMarket Works recommends that the Payment Plus move beyond the pilot status into a standard program component of Duke's low-income service portfolio. Process Evaluation Findings

Pilot IV

1. The process used to enroll Crisis participants has improved to the level at which the Northern Kentucky Community Action Commission (NKCAC) has to turn down applicants. The latest Pilot Program was at full capacity. All potential enrollees should continue to be pre-screened before the program is offered to make sure that the program is only offered to eligible customers.

2. The communications and working relationships between People Working Cooperatively (PWC) and NKCAC have significantly improved. There is better and more consistent coordination of services, with times and dates of Pilot training sessions rapidly communicated between the organizations, PWC has been available to attend training sessions and answer questions about the weatherization. This has increased enrollments into the weatherization program.

In addition, Duke managers have been given advanced notice of meetings, allowing their participation.

3. PWC has made an effort to contact landlords to help Pilot participants obtain the needed permission for weatherization. While contact is difficult, when accomplished, the landlords have been positive about the program and allowed weatherization to go forward. However, this issue remains a participation barrier for renters.

4. The interviewed managers at NKCAC and PWC report that they would like to see the following program changes:

    a) Continue to try and reach the more rural areas of the targeted counties. If these customers can be cost effectively served, recruit and provide training sessions throughout the counties into more rural areas of the service territory to allow more rural low-income customers an opportunity to participate without having to travel great distances.

    b) Let the service providers know that they are free to piggy-back or coordinate the program with other social services provided by the implementation agencies to expand services and increase demand and enrollment success.

Significant Participant Interview Findings

Pilot IV

1. The driving force for participation was to receive the bill credits. Eighty percent cited the credits as the primary reason they chose to enroll. Thirty-six percent said that they participated in order to learn how to save energy.

2. Program participants understood the program and the procedure for applying their credits better than in the past. This was an area of confusion for past participants that appears to have been eliminated.

3. Reported problems with getting the credits applied to their bills has dropped significantly. Very few of these issues are now being raised by participants. The process involved in applying credits was streamlined after the previous evaluation, with the intent of reducing or eliminating these types of complaints. This goal appears to have been achieved.

4. Participants are still very satisfied with the Training Sessions. On a scale of 1-10, average scores for all aspects of the training sessions were high across most response categories for both sessions (energy & budgeting). Satisfaction was particularly high when rating the instructor's knowledge (9.4 & 9.6),

comprehensiveness of subject matter (9.2 & 9.3), and presentation skills of instructor (9.2 & 9.4). The convenience of attending the session was the only response group that received satisfaction scores below 9 (8.6 & 8.8) indicating that there was less satisfaction with the convenience of attending the sessions, but these satisfaction scores are very good scores when using a 10-point scale.

Significant Energy Consumption Analysis Findings

Pilots I, II and III Combined

1. Over the longer period of this study the pilot participants have not been able to reduce their electrical consumption. This is different from the previous evaluation in which the participants experienced reduced electric consumption.

2. Pilot participants who were not weatherized are still able to decrease their consumption of natural gas in all Pilots but Pilot I. The weatherized participants over the successive pilots are saving even more natural gas.

Weatherization is a key component of the Payment Plus Pilot Program for savings natural gas over the long-term. While kilowatt-hour savings are no longer present, participants have experienced electric savings for a significant period of time in past evaluations. These savings have eroded as the months and years have passed. It may be possible to recoup some of these savings by re-communicating tips on how to save electricity with past participants, or by allowing past participants to re-enroll in the energy training session (with or without program credits).

Significant Billing Analysis Evaluation Findings

Pilot I

Each of the Pilots are discussed separately in this section.

1. Arrearage levels for participants have substantially decreased in the years following participation (from $719 to $434), and non-participant arrearage levels increased slightly.

2. Likewise, there is also a trend suggesting that participants are beginning to pay a higher portion of their bill following participation. Participants paid, on average, about 47% of their utility bill during any given month before the program. Since participation, they have increased the percent of the bill paid to just over 56%. Participants appear to be increasing this amount while non-participants appear to be decreasing this amount.

3. Pilot I participants have been successful at decreasing their disconnection rates relative to the comparison group. In the post-program years, the comparison

group has had a disconnection rate of 5.97%, while the participants have kept their disconnection rate quite low at 2.24%.

Pilot II

TecMarket Works examined customer billing and payment records for a period of two years prior to the program and for three years following the Pilot II program (although some months are excluded due to poor sample size). The results of this analysis are presented below and in Sections Three and Four of this report. Significant findings include:

1. Pilot II participants have experienced a decrease in their arrearage levels in the months after participation. In the two years of post-program months, arrearages decreased by an average of 13%, whereas the comparison group arrearages increased by 7%. However, the participants' arrearage levels in dollars are lower than those of the comparison group. That is, participants have been able to hold their level of arrearage below the level of non-participants, even though participant arrearage levels have increased.

2. Participants were able to limit the level of erosion of the amount of the payments they made each month relative to the total amount due on their bills. Participants were paying about 51% of the amount due before the program, after participation, they paid about 45% of the total bill. Likewise, the comparison group also decreased the amount they paid relative to what they owed during the same time, dropping from 45% to 30% of the bill paid.

Pilot III

Pilot III has the strongest sample size for this analysis. There were typically data from at least 30 participants in each of the months analyzed, and a very strong comparison group of about 100-500 customers.

1. The mean arrearages of the Pilot III participants have increased slightly since participating in the program, at about the same level as the comparison group. There has been little change in this area.

2. Disconnections have decreased since participation. Before the program, the disconnection rate was 3.1%, and since then it has dropped to 2.4%. The comparison group's disconnection rate has increased from 3.8% to 4.4% in this same time period.

3. The percent of the bill paid by Pilot III participants has remained steady, while the comparison group has been paying less of their bill during the same time period.

Appendix A: Process Evaluation Interview Protocol

Title: _____

Responsibilities associated with the Pilot Program: _____

_____

_____

Note: check the box next to each question that needs to be addressed in each face-to-face

Program Accomplishments and Objectives

- ❍ Using your experience and knowledge about the Pilot Program, please finish the rest of the following statement. I think this program can be viewed as a success if it accomplished the following things….
  1.
  2.
  3.

- ❍ How well do you think the Pilot Program accomplished each of these things?

Customer recruitment and retention

- ❍ I understand that there were a couple different ways in which participants were identified, contacted and offered the program. Please describe each of the ways customers were identified, contacted and enrolled in the program.

- ❍ What aspects of this process worked well? Which worked least well? Why?

- ❍ Please describe how the targeted mailings used to inform customers worked and how successful you think this effort was as stimulating customer's interest and involvement in the program. How could this be improved?

- ❍ What system for identification, notification and enrollment do you think should be used in order to obtain participants and accomplish Duke Energy's program goals? Discuss how these might work.

- ❍ What screening tests were used to make sure the right customers were enrolled in Pilot IV? Please explain how the screening process worked. Walk through some different examples of how this worked. In your opinion, how well did this work? Why? Are any changes needed to the screening process?

- To be eligible for Pilot IV, LIHEAP participants needed to have been a Duke Energy customer for a while (12 months – then 6 to 9 months). What portion of the LIHEAP customers that were contacted or approached were actually eligible for Pilot IV because of the requirement for 6 to 12 months of account history?

- What percent of those contacted or approach were eligible because of the need to have $500 or more in current utility debt?

- What percent of the non-crisis-mode customer that you presented the program to were interested in participating?

- What are the main reasons customers have for not wanting to participate?

- What percent actually enroll once they apply and are screened?

Drop-outs and No-shows

- Why did some of the Pilot IV participants offered the program not take advantage of it?

- Why do you think customers enroll in the program, but then do not take part?

- What can be done no decrease the program drop-out rate and keep them involved?

- What can be done to increase the interest in receiving the weatherization service?

Program process

- The current contract with Duke Energy requires the workshops to be out in the market so that participants can more easily attend the workshops allowing the program to experience higher workshop participation rates. How well is this working for NKCAC. Is the change to off-site workshops having the intended effect?

- What complaints or customer issues did you experience in Pilot IV? How were these handled?

- What can be done to help solve (complaint 1 / complaint 2 / complaint 3 / etc.)?

- I would like you to tell me about the customer's experiences with the program. What kinds of things did they like, what kinds of things did they dislike, and how do you think they feel about the program overall.