CASE NUMBER:

99-414

INDEX FOR CASE: 1999-414
THE UNION LIGHT, HEAT AND POWER COMPANY
Demand-Side Management

IN THE MATTER OF DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY

SEQ NBR	ENTRY DATE	REMARKS
M0001	10/01/1999	JOHN FINNIGAN-EXTENSION OF TIME FOR ANNUAL COST RECOVERY AND CONTINUATION OF DSMR
0001	10/25/1999	Order establishing case to investigate DSM programs & receive public comments.
M0002	12/02/1999	JOHN J. FINNIGAN/CINERGY-JOINT APPLICATION FOR THE ADJUSTMENT OF 2000 DSM
0002	12/20/1999	Order suspending revised DSM tariff riders to 6/2/2000
0003	02/04/2000	Data Request Order; response due 2/21/2000.
M0003	02/22/2000	JOHN FINNIGAN CINERGY-RESPONSES TO FIRST SET OF REQ OF PSC STAFF
M0004	03/21/2000	JOHN FINNIGAN CINERGY-REQUEST FOR AN INTERIM ORDER TO TERMINATE ITS RATE REC
0004	03/31/2000	Interim Order terminating REC rate schedules for both gas & electric service.
M0005	04/11/2000	DONALD ROTTINGHAUS ULH&P-RATE REC
M0006	04/19/2000	JOHN J. FINNIGAN/ULH&P-JOINT FILING OF PROGRAM SUMMARY REPORT
M0007	05/02/2000	JOHN FINNIGAN CINCERGY-REQUEST FOR INFORMAL CONFERENCE FOR FRIDAY MAY 19,00
0005	05/11/2000	Order setting an informal conference 5/19/2000 at 10:00 a.m. in conf. rm. 1.
0006	05/26/2000	Order continuing existing DSM tariff riders until 6/29/2000.
M0008	05/30/2000	JOHN FINNIGAN CINERGY-NOTICE OF FILING
0007	05/31/2000	IC memo sent to applicant; comments, if any, due 6/8.
0008	06/29/2000	Final Order approving continuing and proposed DSM programs on a pilot basis.

COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
211 SOWER BOULEVARD
POST OFFICE BOX 615
FRANKFORT, KY. 40602
(502) 564-3940

CERTIFICATE OF SERVICE

RE: Case No. 1999-414
THE UNION LIGHT, HEAT AND POWER COMPANY

I, Stephanie Bell, Secretary of the Public Service Commission, hereby certify that the enclosed attested copy of the Commission's Order in the above case was served upon the following by U.S. Mail on June 29, 2000.

Parties of Record:

Honorable John J. Finnigan
Senior Counsel
The Union Light Heat & Power Co.
139 E. Fourth Street
Rm 25 AT II
Cincinnati, OH. 45201 0960

Stephanie D. Bell
Secretary of the Commission

SB/hv
Enclosure

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY	))))	CASE NO. 99-414

O R D E R

On December 2, 1999, The Union Light, Heat and Power Company ("ULH&P") filed its petition for Commission approval of the continuation, through 2001, of four existing Demand Side Management ("DSM") programs and revised DSM tariff riders. The programs that ULH&P proposed to continue are: (1) Residential Conservation and Energy Education; (2) Residential Home Energy House Call; (3) Residential Comprehensive Energy Education; and (4) Residential New Construction & Renovation. ULH&P also proposed to implement a DSM research and development program called Program Development Funds. ULH&P also proposed to discontinue the residential decoupling mechanism that had been approved for the initial three-year DSM pilot program.

The Commission initially approved DSM programs and DSM tariff riders for ULH&P on a pilot basis, to run through calendar year 1999, in Case No. 95-312.[1] The instant filing was due on October 1, 1999, for the purpose of reviewing and evaluating

[1] Case No. 95-312, The Cost Recovery Filing for Demand Side Management by The Union Light, Heat and Power Company, Order dated December 1, 1995.

ULH&P's DSM pilot and determining what, if any, DSM programs should be continued beyond the end of calendar year 1999. On October 1, 1999, ULH&P filed a request for an extension of time, until December 1, 1999, in which to make its filing, which request was granted by the Commission.[2]

Through its application, responses to data requests, and an informal conference, ULH&P provided the following information: a review of the overall effectiveness of each program proposed to be continued; an explanation of how that effectiveness was determined; and a discussion of why each program should be continued, modified, or terminated. ULH&P also provided the calculation of the four traditional DSM cost-benefit tests[3] for each program that was in effect at the end of the pilot period unless, due to the nature of the program, there was justification for not performing one or more of the four tests.

ULH&P proposed revisions to the existing rates contained in its gas and electric DSM tariff riders to reflect the budgeted DSM levels for calendar year 2000 as well as the true-up of prior period DSM revenues and costs. ULH&P proposed to discontinue its residential decoupling mechanism stating that the mechanism was not accurate and was not cost-effective in light of the relatively small size of its DSM programs and the resulting lost revenues. By Orders issued December 20, 1999 and May 26, 2000, the

---

[2] Case No. 99-414, Demand Side Management Programs and Cost Recovery Filing for Demand Side Management Programs by The Union Light, Heat and Power Company, Order dated October 25, 1999.

[3] Those tests, also referred to as the "California Tests" are: The Participant Test; The Total Resource Cost Test; The Utility Cost Test; and The Ratepayer Impact Measure Test.

Commission had approved the continuation of the existing programs and tariff riders until the completion of this proceeding, up to and including June 29, 2000.

Status and Evaluation of Programs

ULH&P provided evaluations of each of the four DSM programs it proposed to continue. Those evaluations show that only one of the four programs, The Residential Home Energy House Call, can be judged to be cost-effective based on any of the four traditional DSM cost-benefit tests. The Residential Conservation and Energy Education program did not pass any of the cost-benefit tests and ULH&P indicated that, due to their educational and informational nature, quantitative cost-benefit analyses were not appropriate for either the Residential Comprehensive Energy Education program or the Residential New Construction & Renovation program.

In support of its request to continue the Residential Conservation and Energy Education program, ULH&P provided the results of a third-party evaluation of the program. The evaluation showed that through 1999, the 680 participants in the program were saving approximately 1 million Kwh and 8,000 Mcf annually. ULH&P also indicated that it was working with the Kentucky Cabinet for Families and Children to obtain additional state funding in order to leverage ratepayer funds and increase the cost-effectiveness of the program.

For the Residential Home Energy House Call program, ULH&P emphasized that the program passed the Utility Cost Test. It also pointed to the annual energy savings attributable to the program – nearly 2 million Kwh by the 1,800 customers served by the program through 1999. ULH&P also stated that the program provides information and

education to participants that should persist and influence decisions regarding energy efficiency and energy use well into the future.

ULH&P stated that although the benefits, particularly energy savings, of the Residential Comprehensive Energy Education program were difficult to determine due to its educational nature, the program was very successful in terms of participation, numbers of customers affected and the expected persistence of the program. The program targets school-age children and their teachers by offering workshops on energy conservation and training students and teachers to coach, or train, other students and teachers. By targeting elementary, middle school and high school students, the program offers a potential for a long-term persistence, or duration, of an effective conservation philosophy among many participants and, hopefully, their families and communities.

For the Residential New Construction & Renovation program, ULH&P notes that the program promotes energy efficiency in both new home construction and renovation of existing homes through its direct work with the building community, particularly the Northern Kentucky Homebuilders Association. By targeting construction and renovation activities, the program encourages long-term energy conservation with the impacts of energy efficiency measures installed in the homes often persisting for the life of the home. The program is conducted in five categories based on home size and type, providing an opportunity for participation among a range of homeowners at various income levels.

Discussion of Issues

ULH&P states that with increased state funding for the Residential Conservation and Energy Education program and program modifications, it anticipates realizing improvements in the program's cost-effectiveness. It also notes that because conservation programs reduce billing units, such programs generally do not pass the traditional cost-benefit tests. For the Residential Comprehensive Energy Education program and the Residential New Construction & Renovation program, ULH&P indicates that their educational and informational natures make it difficult to measure savings because of the inability to track the implementation of energy savings measures as a result of the programs.

The Commission has previously expressed concerns about continuing DSM programs either in the absence of any measure of cost-effectiveness or that are not shown to be cost-effective. We strongly encourage ULH&P to seek out ways to improve the cost-effectiveness of the Residential Conservation and Energy Education program including, but not limited to, obtaining increased levels of state funding to complement the ratepayer funding built into the program. We just as strongly encourage ULH&P to make an attempt to measure the cost-effectiveness of the Residential Comprehensive Energy Education program and the Residential New Construction & Renovation program. One means to this end could be to survey customers and builders about changes in energy use or installation of energy efficient equipment as a result of the programs. It could be that an estimate of benefits might need to be performed in a different manner than what is typically done in evaluating DSM programs.

Having expressed these concerns, the Commission will approve the continuation of the four existing programs, as well as the implementation of the Program Development Funds for DSM research and development. The approval is based on the benefits cited by ULH&P for its existing programs and the relatively minimal level of ratepayer funding for ULH&P's DSM budget. This approval is only for a two-year extension, through the end of 2001. For any DSM program to continue beyond 2001, ULH&P must file separate cost-benefit evaluations. These evaluations must reflect the results for the 18-month period ended June 30, 2001, and must be filed with the Commission no later than September 1, 2001. The Commission will then commence a review of each DSM program to determine whether it is eligible to continue, either in its present form or with some modification, based on its cost-effectiveness or other demonstrable benefits to ULH&P and its ratepayers pursuant to KRS 278.285.

Tariff Proposals

ULH&P proposed changes to its existing DSM tariff riders for both gas and electric service. The proposed DSM rates are based on the same methodology ULH&P used in its initial DSM application and in subsequent annual filings. The proposed rates are reasonable and reflect the expected cost levels for 2000 and the true-up of prior period DSM costs and revenues. ULH&P also proposed to discontinue its residential decoupling mechanism that was originally established to capture lost revenues resulting from the implementation of its DSM programs. Considering the problems ULH&P has experienced with its decoupling mechanism and the relatively minimal lost revenues, discontinuing the mechanism is reasonable.

SUMMARY

IT IS THEREFORE ORDERED that:

1. ULH&P's continuing and proposed DSM programs, as identified herein, are approved, on a pilot basis, for an additional two years through the year 2001.

2. ULH&P shall continue to file annual status reports with the Commission in the same manner as was done in the initial pilot phase for its DSM programs.

3. By September 1, 2001, ULH&P shall file separate cost-benefit evaluations for the 18-month period ended June 30, 2001, for each of the DSM programs being continued.

4. ULH&P's proposed revisions to its DSM tariff riders are approved effective for bills rendered on and after June 29, 2000.

5. ULH&P shall discontinue the residential decoupling mechanism as proposed in its application.

6. This docket is closed. Future DSM filings shall be assigned new case numbers at the time they are received by the Commission.

Done at Frankfort, Kentucky, this 29th day of June, 2000.

By the Commission

ATTEST:

Executive Director

Paul E. Patton, Governor

Ronald B. McCloud, Secretary
Public Protection and
Regulation Cabinet

Martin J. Huelsmann
Executive Director
Public Service Commission

COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
211 SOWER BOULEVARD
POST OFFICE BOX 615
FRANKFORT, KENTUCKY 40602-0615
www.psc.state.ky.us
(502) 564-3940
Fax (502) 564-3460

B. J. Helton
Chairman

Edward J. Holmes
Vice Chairman

Gary W. Gillis
Commissioner

May 31, 2000

Mr. John J. Finnegan, Jr.
107 Brent Spence Square
Covington, Kentucky 41011

RE: Case No. 99-414
The Union Light, Heat and Power Company

Dear Mr. Finnegan:

Enclosed please find a memorandum that has been filed in the record of the above referenced case. Any comments regarding the contents of the memorandum should be submitted to the Commission within five days of receipt of this letter.

Sincerely,

Martin J. Huelsmann
Executive Director

Enclosure

Paul E. Patton, Governor

Ronald B. McCloud, Secretary
Public Protection and
Regulation Cabinet

Martin J. Huelsmann
Executive Director
Public Service Commission

COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
211 SOWER BOULEVARD
POST OFFICE BOX 615
FRANKFORT, KENTUCKY 40602-0615
www.psc.state.ky.us
(502) 564-3940
Fax (502) 564-3460

B. J. Helton
Chairman

Edward J. Holmes
Vice Chairman

Gary W. Gillis
Commissioner

May 31, 2000

TO: Case File No. 99-414

FROM: Jeff Shaw

SUBJECT: May 19, 2000 Informal Conference Regarding The Union Light, Heat And Power Company's Demand Side Management Programs and Tariffs

On May 19, 2000, an informal conference was held at the Commission's offices in Frankfort, Kentucky for the purpose of discussing issues related to The Union Light, Heat and Power Company's ("ULH&P") application filed in Case No. 99-414 to continue certain Demand Side Management ("DSM") programs and to implement revised DSM tariffs. The parties represented at the conference were ULH&P and Commission Staff. A list of the attendees is attached to this memorandum.

ULH&P began the discussion by identifying the main points that it believed needed to be covered regarding its DSM filing. Those points were: (1) its pilot-end evaluation report; (2) the omission from its filing of the budget for its proposed DSM Research and Development ("R & D") program; (3) its proposal to true-up its DSM costs for an omission in its 1998 adjustment; and (4) its proposal to discontinue its residential de-coupling mechanism. ULH&P also discussed the filing it had made earlier in the day to continue its existing DSM tariffs for an additional billing cycle, until June 29, 2000.

ULH&P discussed the pilot-end evaluation of its existing DSM programs and the reasons for why those programs were proposed to be continued as part of its filing in this case. ULH&P explained that for the programs that were primarily educational in nature it was of little use to perform traditional cost-benefit evaluations because there was no accurate method of identifying the specific savings, or benefits, that could be attributed to such programs. ULH&P stated that it did not plan on modifying its proposed tariffs to include the projected costs for its proposed DSM R & D program, but that it intended to recover those costs in the future through the true-up mechanism built into the DSM cost recovery mechanism.

ULH&P indicated the omission in its 1998 adjustment was an obvious oversight on its part, but that it believed that it was appropriate to now include that item for recovery through its DSM tariffs. ULH&P explained that it was proposing to discontinue its residential de-coupling mechanism because its experience had been that the mechanism was not accurate and that due to the relatively small size of its DSM programs, it was not cost-effective to continue to perform the de-coupling calculations. ULH&P indicated that due to the length of time it had taken to finalize its pilot-end evaluation report, it had filed a motion to extend its current DSM tariffs for approximately one month, until June 29, 2000, which is the beginning of its July "revenue month" for billing cycle purposes.

Commission Staff raised questions regarding ULH&P's continued efforts to increase state funding for government-sponsored weatherization programs that were offered in conjunction with its DSM programs. ULH&P indicated that it was expecting to find out soon about the specific increases in funding for weatherization programs within its service territory. ULH&P and Commission Staff also discussed various issues related to the "Usage growth study" that had been required to be performed by ULH&P when its DSM pilot plan was originally approved in Case No. 95-312.

ULH&P provided copies and offered comments on the informational packet prepared by one of the middle schools participating in its Residential Comprehensive Energy Education Program. That program is being administered by Kentucky NEED, which was awarded the contract for implementation of the program in the third quarter of 1997. ULH&P discussed the efforts devoted to the program and indicated it would be filing copies of the evaluation report prepared by Kentucky NEED as part of the record in this case.

After the discussion of these matters, the conference was adjourned.

CASE NO. 99-414
ULH&P – DEMAND SIDE MANAGEMENT PLAN
ATTENDEES - INFORMAL CONFERENCE – MAY 19, 2000

NAME	WITH
Carolyn Daigre	Cinergy / ULH&P
John Finnigan	Cinergy / ULH&P
Jeff Shaw	PSC - Financial Analysis
Jack Kaninberg	PSC - Research
Fazal Sharifi	PSC.
Richard Raff	PSC-Legal
Isaac S. Scott	PSC-Financial Analysis
Ralph Dennis	PSC- Staff Asst. to Commissioners

Cinergy Corp.
139 East Fourth Street
Rm 25 AT II
P.O. Box 960
Cincinnati, OH 45201-0960
Tel 513.287.3601
Fax 513.287.3810
jfinnigan@cinergy.com

JOHN J. FINNIGAN, JR.
Senior Counsel

May 25, 2000

Honorable Martin J. Huelsmann
Executive Director
Public Service Commission
211 Sower Boulevard
P. O. Box 615
Frankfort, KY 40602

In Re: The Matter of: Demand Side Management Programs and Cost Recovery Filing for Demand Side Management Programs by The Union Light, Heat and Power Company
Case 99-414

Dear Executive Director Huelsmann:

Enclosed please find the original and 15 copies of Notice of Filing and attachments for docketing in the above captioned case. Please return the extra time stamped copies to me in the enclosed, self addressed envelope.

I appreciate your courtesy and assistance in this regard.

Very truly yours,

John J. Finnigan, Jr.
Senior Counsel

JJF/nlb

Cc: w/encl. Ann Louise Cheuvront
Richard G. Raff
Clint Hamm
Anthony Martin
Carl Melcher

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY	))))	CASE NO. 99-414

NOTICE OF FILING

The Union Light, Heat and Power Company hereby submits the following documents for docketing in the above captioned case:

1. The ULH&P DSM Low Income Weatherization Program presentation by People Working Cooperatively July 19, 1999;
2. Kentucky NEED Project Summary Report titled The ULH&P DSM Energy Education Program, Contract #7397 – KyNEED Project, Summary Report to Date, December 31, 1999.

John J. Finnigan, Jr. 86687
Senior Counsel
James B. Gainer 87288
Associate General Counsel
The Union Light, Heat and Power Company
P.O. Box 960, Atrium II
Cincinnati, Ohio 45201-0960
(513) 287-3601

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing pleading was served on the following on May 25, 2000 via ordinary United States mail, postage prepaid:

John J. Finnigan, Jr.

Richard G. Raff
Public Service Commission
211 Sower Boulevard
Frankfort, Kentucky 40602

Ms. Ann L. Cheuvront
Assistant Attorney General
Kentucky Office of the Attorney General
1024 Capital Center Drive
Frankfort, Kentucky 40602-2000

Mr. Carl Melcher
Northern Kentucky Legal Aid, Inc.
302 Greenup Street
Covington, Kentucky 41011

Mr. Anthony Martin
Office of Kentucky Legal Services Program, Inc.
201 West Short Street, Suite 506
Lexington, Kentucky 40507

Mr. Clint Hamm
Executive Director
Northern Kentucky Community
Action Commission
13 West Seventh Street
Covington, Kentucky 41012-0931

The ULH&P DSM Low Income Weatherization Program

People Working Cooperatively
7/19/99

I would like to express my gratitude to all of you at People Working Cooperatively. Each one explained the service in a professional manner.

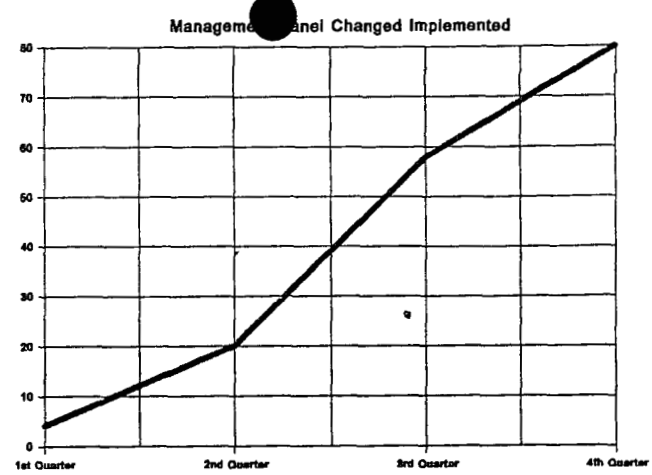
I am grateful to the sponsors of your program which make it possible for me to maintain my home.

Edna Marie Vessing
Independence, KY

Background

In 1994, the ULH&P DSM collaborative began work to design the low income DSM Weatherization Program. The Weatherization Program was designed to save energy for low income ULH&P customers. In addition, the program was to improve the health and safety conditions in these households and offer some assistance and direction for low income customers to control their energy related expenses. People Working Cooperatively (PWC) participated in the program design as part the DSM Collaborative. In 1996 People Working Cooperatively was contracted by Cinergy to provide DSM Weatherization services for the ULH&P low income electric and gas customers. The fit was a good one for PWC whose mission is *to perform essential repairs and services so that low-income homeowners can remain in their homes, living independently in a safe, sound environment.*

The program was designed with two service providers servicing approximately equal numbers of customers over a three year period. PWC and the Northern Kentucky Community Action Agency (NKCAA) were each to perform slightly over 300 weatherization services with NKCAA to provide all program customer intake and certification responsibilities. Low Income Home Energy Assistance Program (LIHEAP) customers were specifically targeted in the program design. Since NKCAA operated LIHEAP it seemed logical to have them "piggyback" the DSM Weatherization Program customer intake and certification elements. "Piggybacking" was also an important production design feature in that NKCAA's state weatherization dollars would be combined with DSM weatherization dollars to provide a more comprehensive and cost effective program to the low income customer. PWC was to "piggyback" the ULH&P weatherization dollars with the DSM dollars and provide similar program efficiencies. Unfortunately, the program languished because NKCAA was unable to provide clients for the program. In May of 1997 the DSM Management Panel proposed an amendment that would allow PWC to handle intake for their portion of the program until NKCAA could deliver a steady stream of customers.



Thank you for doing such a wonderful job on my house. I had all my money in it. I was cheated and went broke. We never had charity before. My mother was 96 when she died. I am very proud of the work PWC did in the past. I wrote to President Clinton and Congressmen. I will continue to write to keep PWC here.

Ms. Wesley Baker
Newport, KY

In addition, because NKCAA was struggling with production issues, PWC was asked to double their production efforts from 300 to 597 homes.

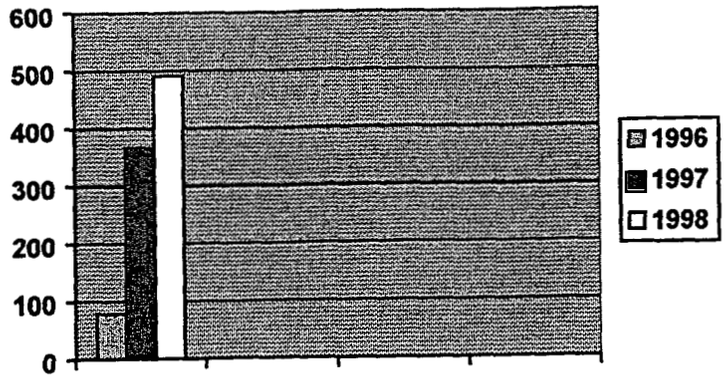
After these critical changes were made PWC could successfully market and perform the necessary number of weatherization services to bring the program back toward the original goals. PWC attributes the program successes to **production** capacity, **marketing** functions, **leveraging,** and **customer satisfaction**. Later, a process evaluation was performed and PWC implemented changes as directed by Cinergy and the DSM Management Panel.

Production

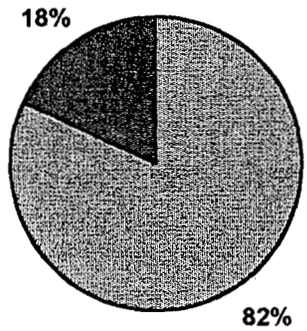
PWC ramped up production to meet program demands and make up for time lost during the initial year of the program. PWC remained flexible and has dedicated as many crews as needed to complete work. As many as five crews worked in Kentucky at the end of 1998 to ensure production goals were met. PWC will add resources as client flow dictates to ensure the DSM program's successful completion.

In mid 1998 Cinergy hired an independent quality control contractor "Working in Neighborhoods" to conduct post installation inspections of work performed by PWC. We are happy to report no problems to date. Quality assurance procedures are built into the systems employed to manage the Weatherization Program.

DSM Homes Weatherized To Date



Total Contact Completion to Date



Thank you for coming to my house and going through it and getting people to take care of those things that will not only help my ULH&P bill but make things a little easier in taking care of my home. My house is rather large and the Insulation people really worked hard and done the job right. Nice people too. Cleaned up the mess.

Marie Shields
Newport, KY

Marketing.

Early on PWC expressed concern about referrals from the partnering agency. In an attempt to gain clients for the program, PWC began marketing the DSM Weatherization Program in early 1997. In May of 1997 PWC was given full responsibility for the intake of their own DSM clients.

PWC stepped up their efforts and implemented a more aggressive marketing plan. Over 36,000 direct mail pieces were sent to LIHEAP and low income ULH&P customers. PWC has also sent 177 information packets to non-profit and community organizations in Northern Kentucky. To increase community awareness, press releases were sent to local news organizations, such as the *Boone, Kenton, and*

Campbell County Recorder. PWC also made presentations at the meeting of organizations such as, the Northern Kentucky Housing and Homeless Coalition, the Erlanger- Elsmere Family Resource Center Organization Fair, the Northern Kentucky Area Development District Senior Expo, and the Northern Kentucky Independent Expo Senior Summit. In August and September of 1998, a television commercial for the Weatherization program was aired on Channel 12, WKRC.

I thank you and the two people you sent here to work on my home. They did a good job weatherizing for me. All the efforts you made on my behalf are greatly appreciated. I'm not good on remembering names but I certainly am on deeds! May god bless all of you, and I'm sure he does!

E. Louise Miller
Ft Thomas

PWC staff also spent time at NKCAA's office during LIHEAP season in order to capture DSM weatherization clients when they enrolled in LIHEAP. Additionally, PWC leases office space from the Brighton Center's Newport office for peak season. Our marketing and outreach efforts have kept production on track. PWC will continue implementing these strategies and expects an ample flow of eligible clients through this fall and beyond.

PWC hopes to be invited back to NKCAC this fall to capture clients during the LIHEAP season.

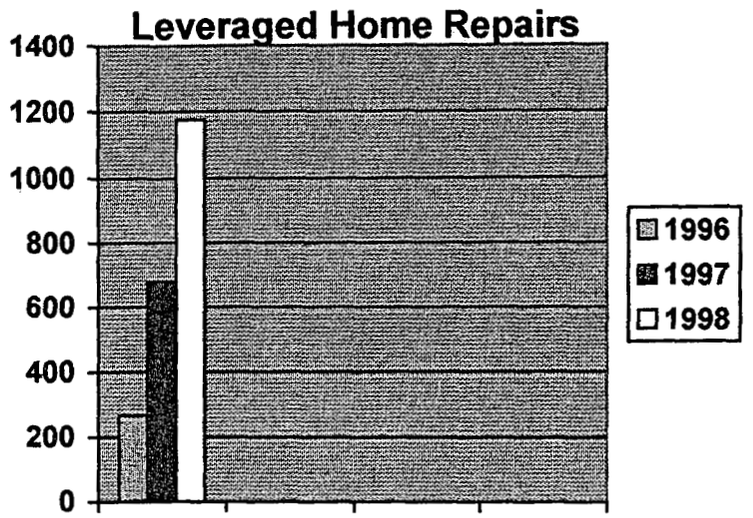
Leveraging

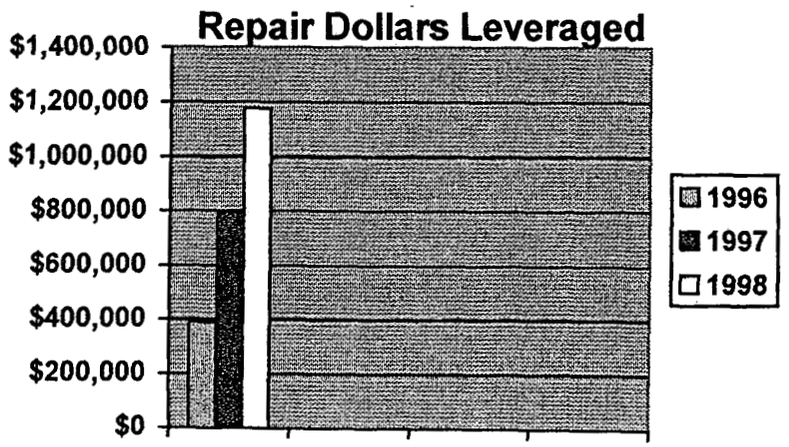
For 24 years PWC has been a regional provider of home repairs and weatherization services. The DSM weatherization program has not only impacted the Northern Kentucky community in terms of energy conservation, but it has given PWC an opportunity to leverage funding sources and thereby provide additional "piggyback" services to the low income residents of Northern Kentucky. In the last three years, PWC has leveraged the DSM weatherization dollars to perform approximately 1200 additional repair services, many directly augmenting the DSM weatherization services, at a value exceeding $1,175, 000! Each year, PWC's ability to leverage (piggyback) the DSM dollars grows. In 1998 alone, PWC performed 757 critical, emergency, weatherization, or volunteer provided services at a cost of $856,000. That is triple the leveraged amount in 1996. For every DSM weatherization dollar spent in 1998, PWC leveraged over two additional dollars and performed services for

the low income customers in Northern Kentucky. PWC has utilized funds from the United Way, Kentucky Housing Corporation, Boone County, Campbell County , Kenton County and ULH&P. PWC not only utilized professional staff, but has organized hundreds of volunteers and obtained thousands of dollars in donated materials all benefiting the DSM Weatherization Program target population. Hopefully, the DSM weatherization program can continue beyond 1999, so that PWC can perform high quality weatherization services and leverage additional services to the low income residents of Northern Kentucky.

Bill did a wonderful job on my furnace. I was in heaven when the heat came on today. Oh boy that felt great! The whole group was wonderful!

Martha Linneman
Newport, KY





The DSM dollars have directly contributed to PWC

We wanted to let you know a little bit about our experience with PWC. Doug Mullins was the first person to come to our home in November of 1998. He represented himself in a professional manner and treated us with respect. The Weatherization service provided us with more than our expectations.
We had several questions and concerns and Doug led us in the right directions for answers. We appreciated all of his time an extra effort in helping us. He explained all the testing equipment he used on our home. After the weatherizing work was complete, Doug returned to explain how the installation of the new furnace and repairs changed our blower door reading. All of the PWC workers were very professional.
My husband has been out of work for over 2 years. He has had 3 surgeries. Our world has felt like everything.was surrounding us. At first, my husband was uncomfortable receiving help. When he learned more about the program we were comfortable with it.
The program was a dream come true. We could not believe there was a program such as this. The program not only gave us warmth, it also gave us hope. We are now feeling comfortable in our home and weatherization has made that possible. Thank You to everyone who had part in coming to our home and making everything possible.

Kim Lovelace
Walton, KY

receiving other funding resources in Kentucky because funders want to see their dollars leveraged by other funders. The low income residents of Northern Kentucky have clearly benefited from both energy conservation measures and PWC's full scope of services. By providing a full scope of services, PWC is ensuring that the low income community in Northern Kentucky can remain in their homes, living in safe decent environments. In addition, our services are an investment in these homes, ensuring their continued viability for future generations.

Customer Satisfaction

Since 1986 PWC has been providing weatherization and energy related services and has consistently completed annual contracts totaling over 10,000 services. Several of PWC's Weatherization staff have 10, 15, or more years in the organization. They have extensive experience working in the homes of the regions very poorest . The condition of the homes our staff repairs range from very clean and tidy homes, to homes that can be unsanitary and sometimes unsafe to work in. Often it is the homeowner's financial and physical limitations that make it difficult for them to keep their homes clean and safe. Despite the conditions of the homes, our staff treat each and every client with respect and professionalism. They work hard making every client's home as safe and energy efficient as funding will allow. Their long tenures at PWC speak to their commitment and dedication to PWC's mission and is reflected in our customer satisfaction data.

Preliminary data from the DSM Collaborative Weatherization Programs Independent Process Evaluation states a very high level of program satisfaction. 95% of the participants rated the Program overall, as extremely (satisfaction scale =5) or very satisfactory (satisfaction scale =4) This is consistent with the results PWC receives from our internal customer satisfaction survey with 95% of our customers rating PWC's services as good or excellent. We were also happy to learn that over 70% of the customers had implemented advice from our weatherization staff regarding their home energy usage.

Summary

The Executive Summary of the independently performed DSM Weatherization Process Evaluation states "Many aspects of the Program have been effective. For example, PWC's educational process, assignment of work crews and implementation of the weatherization have successful and efficient. PWC's ability to pick up and take over work started by NKCAA has been critical to the programs continuance."

The residents of Northern Kentucky have clearly benefited from the DSM Low Income Weatherization Program and the additional services PWC has been able to bring to the region as a result of the DSM Program. However, we have only scratched the surface. According to the independent study "Counting the Invisible Poor" based on 1990 census data, there were 12,925 income low -income homeowners in Kenton and Campbell counties alone. Of that number 60% are over the age of 65.

PWC requests the continued support of this collaborative and ULH&P. Our proven ability to meet production goals, market, leverage services, and provide a high level of customer satisfaction has turned this program into a success and should continue. The DSM Low Income Weatherization Program could possibly be modeled in other areas in the state of Kentucky.

Kentucky NEED Project

An affiliate of the National Energy Education Development Project

Karen P. Reagor, Executive Director *P.O. Box 176055, Covington, KY 41017-6055*

Phone: 606-578-0312 *Fax 606-578-0316* *Email KPReagor@aol.com*

The ULH&P DSM Energy Education Program
Contract # 7397 – KyNEED Project
Summary Report to Date
December 31, 1999

Background

The KyNEED Project, a dependent affiliate of the National Energy Education Development Project (NEED) presented its first workshop in December of 1994. Since that date, 47 teacher/student training workshops have been held statewide, attended by 385 teachers and 2959 students. These teacher/student teams returned to their respective schools where the energy information received was shared with other students, reaching over 10,000 Kentucky students.

In March of 1997, Union Light, Heat and Power Company released a Request for Proposals for a Northern Kentucky Energy Education Program. The contract called for unbiased educational information on all energy sources, with an emphasis on the efficient use of energy. The KyNEED Project was awarded the contract during the third quarter of 1997 calling for the program to be implemented in late1997.

Production

Summary Report

On October 14, 1997, a kick-off dinner was held to introduce the program to education and industry guests from across the six counties included in the ULH&P service territory. Since that date, 21 teacher/student workshops have been held, directly reaching 88 teachers and 1739 students in the service territory. These teacher/student teams have impacted an additional 2000 students and their families. Several of our student teams have also made presentations to community groups, sharing their knowledge of energy, promoting energy conservation and how the actions of each person impact energy efficiency.

NEED materials are available for grades K-12. Grades 4-8 have been the focus of the KyNEED workshops for two reasons:

- energy is tested on the standardized tests in grades 4,7 and 11, yet it is

not specified at which grade level energy is to be taught.

- upper elementary/middle school teachers and students are more receptive to the collaborative method of learning.

Students who attend workshops are then encouraged to mentor other students in their schools – further spreading the message of energy conservation. Teams of high schools students serve as facilitators at workshops. In this way – all grade levels are either directly or indirectly presented the energy efficiency and conservation message. It is the desired outcome that these students will then share this information with their families in hopes that behaviors regarding energy use at home will be impacted.

Schools/Teachers DIRECTLY served to date:

Boone County

Ockerman Elementary	Shannon Koenig
	Dawn Schnieders
	Shirley Brown
	Peggy Cain
	Bunning
	Rutherford
	Millay
	Braukman
	Andrew
	Briggs
	Dunavant
	Brickler
	Wilhoite
R. A. Jones M.S.	Sharon Piper
	Sandra Damstrom
	Apryl Duell
	Elaine Head
	Arlene Lupo
	Al Wright
Erpenbeck Elem.	Steve Hankins
Ryle High School	Linda Lutz
	Dana Wenger
Walton-Verona Elementary	Jim Dykes

Campbell County

Silver Grove H.S.	Dave Bezanson
A.D. Owens	Linda Zacharias
	Cathy Gregory
	Dianna Schutte
	Sonja Mercer
	Dawn McGuire
Reiley Elementary	Betty Art

	Pam Rice
Grant's Lick Elem.	Reeda Hart
Campbell County M.S.	Tim Schneider
Lincoln Elementary	Lennea Thomas
Mildred Dean Elementary	Melissa Overbeck
	Garlene Turner
	Becky Ventura
Kenton County	
Scott High School	Linda Pennington
	Sara Lainhart
Lloyd High School	Priscilla Thompson
Tichenor Middle School	Ann Wolfzorn
	Linda Noll
	Kathy Sund
Turkeyfoot M.S.	Russell Armstrong
	Jerry Crabtree
	Karen Baugh
Summit View M.S.	Dwayne Humphrey
	Jeanette Marousek
	Kay Barriger
	Gail Osborne
	Beth Salyers
	Dan Owings
Twenhofel M.S.	Paula Snow
	Harriett Powell
	Sharon Fightmaster
River Ridge	Amy Helsley
	Mary Simpson
	Tracy Adler
	Patti Herrmann
	Beverly Simon
Taylor Mill Elem.	Carol Muzny
White's Tower	Diane Culbertson
Simon Kenton H.S.	Georgina Deaton
Woodland M.S.	Linda May
Gallatin County	
Grant County	
Dry Ridge Elementary	Edna Whaley
	Linda Harrison
	Jamie Ryan
	Jennifer Wright
	Anne Horine
Pendleton County	
Phillip A. Sharp M.S.	Robin Handloser
	Joyce Carson
Southern Elem.	Maxie Thornton Kordes

	Debbie Bowles
	Susan Cordray
	Christine Deel
	Mona Fralix
	Chris Morris
Northern Elem.	Amy Hurst
Covington Diocese	
Holy Spirit Jr. High	Marcia Wendler
St. Agnes	Jana Hagedorn
	Maxine Trouten
St. Cecilia	Donna Hensley
Sts. Peter & Paul	Krista Alessandro
	Annie Reis
St. Terese	Rita Thiel
Blessed Sacrament	Theresa Eggemeyer
St. Joseph	Krista Schulkens
	Patsy Lloyd

Approximately 30% of the schools in the six counties have been served.

Marketing

A variety of resources have been utilized to encourage participation in the energy education program including mailings, personal visits and phone calls. Teachers who attend the workshops are encouraged to share the information with other at their schools. Promotion of the program by participants has been quite successful.

Leveraging

The KyNEED Project has several partners who benefit the Northern Kentucky program. The partners and services provided are listed below.

National Energy Education Development Project	Salary Subsidy Staff Support	$15,192.00
Kentucky Coal Council	Multi-Media Interactive Coal Kit provided to area schools. Scholarship Program for students in grades 5 and 6.	$ 11575.00
Kentucky Division of Energy	Energy Poster Contest for grades 4-5-6. S.W.A.T. Training for high school students (school energy audit training).	$ 6000.00
Kentucky Oil & Gas Assoc.	Subsidizes State Youth Awards Ceremony.	$ 1000.00

Pendleton County 109 Solid Waste Management Board	Sponsored Philip A. Sharp M.S. NEED Team	$ 2500.00
Griffin Industries	Sponsored Philip A. Sharp M.S. NEED Team	$ 1000.00
Harrison RECC	Sponsored Philip A. Sharp M.S. NEED Team	$ 500.00
Kenton County Schools	Substitute Teacher Funds Transportation Funds Facility Usage for Workshops	$ 1000.00
Newport Independent Schools	Substitute Teacher Funds Transportation Funds	$ 250.00
Pendleton County Schools	Substitute Teacher Funds Transportation Funds Facility Usage for Workshops Partial Funding for National Training	$ 1000.00
One Stop Rental	Sponsored Phillip A. Sharp M.S. NEED Team	$ 600.00
Community Ed Department	Sponsored Phillip A. Sharp M.S. NEED Team	$ 100.00
Woodhead Funeral Home	Sponsored Phillip A. Sharp M.S. NEED Team	$ 25.00
Tuemler Propane	Sponsored Phillip A. Sharp M.S. NEED Team	$ 50.00

Future Plans

Future plans include working with a local retailer and/or a manufacturer to provide discounts for the purchase of compact fluorescent bulbs (CFLs) for students and teachers who participate in the *Facts of Light* activity.

We have submitted a joint proposal with the Kentucky Division of Energy to the U.S. Department of Energy for a state energy programs special project to establish and maintain a Rebuild America/Energy Smart Schools program. KyNEED will provide the education component of this project. Schools in the six counties sponsored by the ULH&P Collaborative will serve as the initial target area.

Participant Satisfaction

Evaluations are collected after each workshop. Copies are sent to George Sundrup, Cinergy representative to the ULH&P Collaborative. Copies are on file and available for review.

All NEED materials are correlated to the National Science Standards, helping teachers see how these materials help them successfully meet educational requirements. Teachers have also noted that student scores on the standardized tests have improved after use of the NEED materials.

Quotes:

"My students and teachers came back excited and enthused. Like no other program they've ever attended." Principal, Newport, KY

"I attended the NEED Project National Teacher Training at the request of my principal. I did not know what to expect and to be quite honest did not look forward to going. However, within the first hours of the conference I was aware of my misconception. The NEED Project Conference helped me find a way to put the fun back into science...it also helped me appreciate the importance of energy and energy sources in our every day lives." 4th grade teacher, Boone County

"I attended a teacher conference and am very impressed with this organization. I have used the NEED materials extensively with my NEED Team and my Science classes. The students are excited about being a part of the NEED Team and I already have students that are asking me about making application next year. NEED is a real enthusiasm generator at my school." 7th grade teacher, Pendleton County

"I thought this (a 2-day teacher workshop) workshop was an excellent workshop. I am thrilled with all the resources and materials available. Teacher, Campbell County

COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
211 SOWER BOULEVARD
POST OFFICE BOX 615
FRANKFORT, KY. 40602
(502) 564-3940

May 26, 2000

Honorable John J. Finnigan
Senior Counsel
The Union Light Heat & Power Co.
139 E. Fourth Street
Rm 25 AT II
Cincinnati, OH. 45201 0960

RE: Case No. 1999-414

We enclose one attested copy of the Commission's Order in the above case.

Sincerely,

Stephanie Bell
Secretary of the Commission

SB/sa
Enclosure

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY	))))	CASE NO. 99-414

O R D E R

On May 16, 2000, The Union Light, Heat and Power Company ("ULH&P") filed a motion requesting to continue its existing Demand-Side Management ("DSM") gas and electric tariff riders for an additional billing cycle, until June 29, 2000. ULH&P had previously requested, and been authorized, to continue its existing DSM tariff riders until June 2, 2000, pending a final Order in this proceeding. ULH&P now requests to continue charging its existing DSM rates until billing cycle 1 for the "revenue month" of July 2000 in order to allow it to implement a change in DSM rates in an orderly fashion at the beginning of a new billing cycle.

The Commission, having considered the motion and good cause having been shown, HEREBY ORDERS that ULH&P's existing DSM tariff riders shall be continued until June 29, 2000, pending the issuance of a final Order in this proceeding.

Done at Frankfort, Kentucky, this 26th day of May, 2000.

By the Commission

ATTEST:

Executive Director

COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
211 SOWER BOULEVARD
POST OFFICE BOX 615
FRANKFORT, KY. 40602
(502) 564-3940

May 11, 2000

Honorable John J. Finnigan
Senior Counsel
The Union Light Heat & Power Co.
139 E. Fourth Street
Rm 25 AT II
Cincinnati, OH. 45201 0960

RE: Case No. 1999-414

We enclose one attested copy of the Commission's Order in the above case.

Sincerely,

Stephanie Bell
Secretary of the Commission

SB/sh
Enclosure

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY	))))	CASE NO. 99-414

O R D E R

The Commission, having considered the request of The Union Light, Heat and Power Company for an informal conference and good cause having been shown, HEREBY ORDERS that an informal conference shall be held on Friday, May 19, 2000 at 10:00 a.m. EDT in Conference Room 1 of the Commission offices at 211 Sower Boulevard, Frankfort, Kentucky.

Done at Frankfort, Kentucky, this 11th day of May, 2000.

By the Commission

ATTEST:

Deputy Executive Director

Cinergy Corp.
139 East Fourth Street
Rm 25 AT II
P.O. Box 960
Cincinnati, OH 45201-0960
Tel 513.287.3601
Fax 513.287.3810
jfinnigan@cinergy.com

JOHN J. FINNIGAN, JR.
Senior Counsel

CINERGY.

May 1, 2000

Honorable Martin J. Huelsmann
Executive Director
Public Service Commission
211 Sower Boulevard
P. O. Box 615
Frankfort, KY 40602

In Re: The Matter of: Demand Side Management Programs and Cost Recovery Filing for Demand Side Management Programs by The Union Light, Heat and Power Company
Case 99-414

Dear Executive Director Huelsmann:

I hereby request that an informal conference be scheduled in the above captioned case for Friday, May 19, 2000 at 10:00 A.M. Please call me at 513-287-3601 if you have any questions.

I appreciate your courtesy and assistance in this regard.

Very truly yours,

John J. Finnigan

John J. Finnigan, Jr.
Senior Counsel

JJF/nlb

Cc: Jeff Shaw

Cinergy Corp.
139 East Fourth Street
Rm 25 AT II
P.O. Box 960
Cincinnati, OH 45201-0960
Tel 513.287.3601
Fax 513.287.3810
jfinnigan@cinergy.com

JOHN J. FINNIGAN, JR.
Senior Counsel

CINERGY.

April 18, 2000

VIA OVERNIGHT MAIL

Honorable Martin J. Huelsmann
Executive Director
Public Service Commission
211 Sower Boulevard
P. O. Box 615
Frankfort, KY 40602

In Re: The Matter of: Demand Side Management Programs and Cost Recovery Filing for Demand Side Management Programs by The Union Light, Heat and Power Company
Case 99-414

Dear Executive Director Huelsmann:

Enclosed please find the original and 17 copies of Joint Filing of Program Summary Report in Support of Continuation of Union Light, Heat and Power Company Demand Side Management Programs and Cost Recovery for Demand Side Management Programs. Please return the extra time stamped copies to me in the enclosed, self addressed envelope.

I also hereby request that an informal conference be scheduled in this case for Wednesday, April 26, 2000 at 2:00 P.M. Please call me at 513-287-3601 if you have any questions.

I appreciate your courtesy and assistance in this regard.

Very truly yours,

John J. Finnigan, Jr.
Senior Counsel

JJF/nlb

Cc: w/encl. Ann Louise Cheuvront
Richard G. Raff
Clint Hamm
Anthony Martin
Carl Melcher

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY	) Case No. 99-414

JOINT FILING OF PROGRAM SUMMARY REPORT IN SUPPORT OF CONTINUATION OF UNION LIGHT, HEAT AND POWER COMPANY DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FOR DEMAND SIDE MANAGEMENT PROGRAMS

Pursuant to the Commission's October 25, 1999 Order in the above captioned case, this Joint Report is filed by Union Light, Heat and Power Company ("ULH&P" or "Union Light") on behalf of the Collaborative in support of its Joint Application for Commission approval of demand side management ("DSM") programs and riders, which was filed on December 2, 1999. The Joint Report is intended to supplement the program descriptions included as Exhibit 3 of that Joint Application. It is consistent with Section X, entitled "Post Period Review" of the Principles of Agreement Demand Side Management, which were included as Exhibit 1 to the Joint Application filed in Case No. 95-312 on July 17, 1995. Section X of the Principles of Agreement states in part:

> *During ULH&P's first retail rate case effective on or after January 1, 2000, the Collaborative shall submit to the Commission its joint evaluation of the operation of this Agreement, as well as the achievements of DSM programs implemented pursuant to this Agreement. Individual members of the Collaborative may at the same time file separate comments and recommendations.*

Specifically, this report provides the following information for each of the programs offered during 1999 and proposed for continuation in the joint application filed on December 1, 1999.

1) A review of the overall effectiveness of each program and how that effectiveness was determined;
2) A discussion, based on 1 above, of why the program should be continued, modified, refined, or discontinued;
3) A calculation of the four (4) traditional DSM cost-benefit tests separately for each program that was in effect at the end of the pilot period (December 31, 1999) unless, due to the nature of the program, there is justification for not performing one or more of the tests.

A fourth item of information was requested, the analysis of the energy usage of participants and non-participants in the DSM programs. The third ordering provision of the Commission's December 1, 1995 Order in Case No. 95-312 required the company to conduct a study comparing the energy (gas and electricity) consumption of DSM program participants with the consumption of non-participants. The primary purpose of the study was to make available information to be used in the residential decoupler in the event the Collaborative requested a continuation of the residential revenue decoupler for the post-1999 period. The scope of that study was limited to Program 1 since it was the only residential program providing direct installation of measures. A discussion of this study results is contained in the section entitled, "Program Effectiveness" in the discussion of Program 1: Residential Conservation and Energy Education. A copy of the study is provided as Attachment 1 to this report.

The proposed continuing programs are:

Program 1: Residential Conservation and Energy Education
Program 2: Residential Home Energy House Call
Program 3: Residential Comprehensive Energy Education Program
Program 4: Residential New Construction/Renovation Program

A new fifth program was proposed in the December 1999 filing to provide funding for use in expanding or improving existing or developing new programs.

Program 1: Residential Conservation and Energy Education

This program was designed by the ULH&P DSM Collaborative to help the company's income-qualified customers reduce their energy consumption and lower their energy cost. This program specifically focuses on customers that meet the income qualification levels for LIHEAP funding (150% of federal poverty levels), and it 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 Union Light's income-qualified customers about their energy usage and about opportunities to reduce energy consumption and lower their energy cost. Measures funded and installed by the program include:

- Infiltration and building envelope integrity measures, such as duct sealing, as recommended by results of blower door tests
- Weatherization measures, such as insulation, door sweeps, caulking
- Compact fluorescent lamps
- Low-flow showerheads
- Faucet aerators
- Pipe wrap
- Water heater wraps

This program has served 685 low-income customers in ULH&P's service territory through December 31, 1999.

1997	1998	1999
106	313	266

Program Effectiveness

The third ordering provision of the Commission's December 1, 1995 Order in Case No. 95-312 required the company to conduct a study comparing the energy (gas and electricity) consumption of DSM program participants with the consumption of non-participants. The primary purpose of the study was to make available information to be used in the residential decoupler in the event the Collaborative requested a continuation of the residential revenue decoupler for the post-1999 period. The scope of that study was limited to this program since it was the only residential program providing direct

installation of measures. In October 1999, the third-party evaluation contractor, **quantec**, reported the results, which included its finding that the program was very effective in reducing energy consumption of participants. This finding and the estimated resultant savings for electric and gas customers who received measures are reflected in the following statement from that report.

> *The program has been very successful in reducing both gas and electric consumption. Compared to other low-income programs, the energy savings induced by this program's efforts are impressive. Overall savings for electric customers receiving weatherization or water heating measures were estimated at 1,893 kWh annually, and overall savings for gas customers receiving weatherization or water heating measures were estimated at 165 CCF annually.*

The average participant in the program, including those who did not receive measures, was estimated to save 1,332 kWh and 115 CCF as a result of participation in the program. The energy savings reported in that study were used in the cost-benefit tests discussed in a subsequent section. The report detailing the findings of the evaluation contractor is provided as Attachment 1 to this summary report.

There has been little to no leveraging of state weatherization funding as available to other utility programs in the Commonwealth and as planned at the start of the program. Union Light's representatives have worked with the Commonwealth's weatherization office in the Cabinet for Families and Children in an attempt to obtain additional funding to leverage ratepayer funds and increase the cost-effectiveness of the program. Less than $30,000 was available from the Commonwealth's weatherization program to provide weatherization measures to Northern Kentucky low-income clients in 1999. The Collaborative members and community organizations will participate in a public hearing on April 26, 2000 to request a reallocation of funds to provide additional funding for use with this program.

Why the Program Should Be Continued

Several features of this program justify its continuation as a part of Union Light's portfolio of programs, discussed in the context of the provisions within the Statute describing the Commission's assessments of potential DSM programs (Section 275.285).

Cost recovery for this program is not addressed in this Report since it was previously covered in the December 1, 1999 filing.

First, nearly 1 million kWh and 80,000 ccf are and will continue to be saved annually by the 680 customers served by the program through the end of 1999. Further, more than 600 additional homes will be served by continuation of the program through 2001, nearly doubling the annual savings. These savings reduce the energy bills of Union Light's disadvantaged customers. Moreover, participation in the program will increase awareness of energy consumption and energy saving options and may influence participants' behavior and end-use selections into the future. Additionally, the inspections conducted as part of this program also identify health and safety problems that are then corrected through leveraging of other community resources.

Second, while the program does not pass the traditional cost-benefit tests, additional funding from the Commonwealth and incorporation of program modifications currently being planned could increase the cost-effectiveness of the program over the next couple of years.

Third, assuming no change in the allocation of Commonwealth weatherization funds, less than $30,000 would be available for weatherization and energy efficiency in the homes of the more than 8,000 eligible households in Union Light's territory without this program. More than $1 million in additional community funding obtained by program contractor People Working Cooperatively (PWC) and used to provide primarily critical, emergency, and health and safety services to clients in Northern Kentucky over the past three years might also be in jeopardy. PWC attributes the organizations' continued and growing contributions to the knowledge that those funds would be leveraged with the ULH&P program funds.

Fourth, continuation of this program ensures that the company's disadvantaged customers can participate in Union Light's portfolio of programs.

Finally, ULH&P and the Collaborative are reviewing the results of the Commission's examinations of on-going programs being offered by other Kentucky utilities as well as the

resultant design efforts by those utilities to identify features that may further improve the cost-effectiveness of this program. Some of these features include revision of the expenditure levels, segmentation and tiering of expenditures based upon expected savings, and use of standardized audits. This work has already begun and the actions to be taken will be finalized upon determination of the allocation of 2000-2001 Commonwealth weatherization funds and the availability of those funds to leverage this program.

Benefit-Cost Tests

The projected Benefit/Cost test ratios for the program are presented below.

Participant	Total Resource Cost	Utility Cost Test	Ratepayer Impact Measure
Inf	.72	.28	.18

Note that the participant test score is reflected as infinite because there are no costs to participants in the program. Since conservation measures reduce the billing determinants over which costs are divided, this test will generally yield scores less than 1.0 for conservation programs except in very unique circumstances.

Program 2: Residential Home Energy House Call

The Home Energy House Call consists of three major components:

- Home Energy Survey
- Comprehensive Energy Audit & Review
- Bill Disaggregation
- Measures Installation Opportunity

When a Home Energy House Call is requested by a customer, a qualified home energy specialist visits the home to gather information about the household's energy usage. A questionnaire about the energy usage, including appliance efficiency levels, is also completed. The specialist also checks the home for infiltration, inspects the HVAC filter, and surveys the insulation levels in different areas of the home. A detailed report is then generated that explains how their home uses energy each month. If appropriate, the specialist recommends cost saving measures that may be purchased and installed at the time of the audit as well as do-it-yourself measures that may be installed at a later date to make the home more energy efficient.

If the customer is interested, the specialist may provide information about natural resource protection and pollution prevention actions that might be appropriate to the home's profile. In 2000, Union Light expects approximately 500 customers to participate in this program.

Program Effectiveness

Since the beginning of the program, just under 1,800 customers have participated.

1996	1997	1998	1999
408	389	500	500

Home Energy House Call was designed primarily as an education program, with purchase and installation decisions made by the customer following that education. As such, quantification of savings and assessments of cost-effectiveness are difficult. However, a recent evaluation comparing the consumption of participants and non-participants of the program revealed estimated average electric savings ranging from 995 kWh for gas heated customers to more than 1200 kWh for electrically heated customers.

The economies of scale resulting from leveraging of the program with the program offered to CG&E's customers in Ohio and the fact that participants pay for the measures they decide to implement keep the program cost low and provide for more emphasis on education and information.

Why the Program Should Be Continued

Several features of this program justify its continuation as a part of Union Light's portfolio of programs, discussed in the context of the provisions within the Statute describing the Commission's assessments of potential DSM programs (Section 275.285). Cost recovery for this program is not addressed in this Report since it was previously covered in the December 1, 1999 filing.

First, nearly 2 million kWh will be saved annually by the 1,797 customers served by the program through the end of 1999. Nearly 1,000 additional homes will be served by continuation of the program through 2001, saving nearly 1 million additional kWh annually.

Second, participants in the program are educated about their household energy use as well as the potential savings and costs of energy saving/energy-efficient measures. They are provided an opportunity to purchase measures at the time of the audit or to implement the measures later. This approach provides information and a process for evaluating energy saving investment that should persist and influence decisions regarding energy efficiency well into the future. The adoption rates of measures that are not available at the time of the audit would appear to support that conclusion.

Third, based upon the savings reported in the evaluation report, in addition to other benefits described above, the program passes the utility cost test (See discussion below).

Finally, continuation of this program provides an opportunity for residential ratepayers to participate in Union Light's portfolio of programs

Benefit-Cost Tests

The projected Benefit/Cost test ratios for the program are presented below.

Participant	Total Resource Cost	Utility Cost Test	Ratepayer Impact Measure
Inf	1.23	1.23	.35

Since the cost of the installed measures to customers was not collected, the Participant test and the Total Resource Cost test do not include all appropriate costs and are not valid. Since conservation measures reduce the billing determinants over which costs are divided, the Ratepayer Impact Measures test will generally yield scores less than 1.0 for conservation programs except in very unique circumstances.

Program 3: Residential Comprehensive Energy Education Program

This energy education program was developed by the Collaborative for implementation in late 1997. The contract for implementation of this program was awarded to Kentucky NEED during the third quarter of 1997. The program has provided unbiased educational information on all energy sources, with an emphasis on the efficient use of energy. Energy kits, with materials emphasizing cooperative learning, are provided to teachers. The Leadership Training Workshops are structured to educate teachers and students to return to their schools and communities and families and conduct similar training and implement behavioral changes that reduce energy consumption in the community and home. Educational materials and Leadership Training Workshops are designed to address students of all aptitudes, and have been provided for students and teachers in grades 5 through 12.

Three new components of the program have been introduced in the 1999-2000 school year: *Building Buddies* for grades K-3, *Monitoring & Mentoring* for grades 4-6 and *Learning & Conserving* for grades 7-12. (Copies of these curricula elements are available upon request.) These components explore energy use and encourage conservation in the home and at school. Each curricula component teaches students how to measure energy consumption and identifies actions that can be taken to conserve and therefore reduce energy consumption.

The KyNEED Program provider is working with the Kentucky Division of Energy to bring to the schools in Union Light's territory a program similar to a model school-based energy education program implemented by the Wake County Public Schools in North Carolina. The *Energy Savers* program and the integration of energy education in the curriculum reportedly saved Wake County Public Schools over $1,000,000 in 1999. The Kentucky Division of Energy and KyNEED have submitted a joint proposal to the U.S. Department of Energy as part of the Rebuild America/Energy Smart Schools Program. This proposed Special Project is designed to encourage the energy-efficient retrofit of commercial and institutional buildings, specifically school buildings, through the use of private sector financing offered by guaranteed Energy Savings Performance Contacts (ESPCs). A key feature of the proposal involves the formation of a partnership between

the Kentucky Division of Energy (KDOE) and the KyNEED Project to conduct a six-county pilot program to engage schools in an intensive Energy Smart Schools program. This project is designed to impact all aspects of a school's physical plant, operations, maintenance and occupancy. A response to the proposal from the U.S. DOE is expected by the end of June, 2000.

In 2000, the KyNEED Project will partner with the Kentucky Division of Energy promoting their SWAT, Jr. (Student Weatherization and Audit Training) Program in area high schools. Through this program, students are trained, in September, to perform informal energy audits of their schools. Along with the audit, these students are then encouraged to mentor other students in area schools using the NEED materials and often serve as facilitators at area workshops. As of this writing, two audits are in the final stages of completion, with follow-up efforts planned shortly thereafter.

Finally, we are working with the Phillip A. Sharp Middle School NEED Team in Pendleton County to develop an evaluation tool that will measure energy savings in the home by using Compact Fluorescent Lamps (CFLs). These students, using the NEED *Facts of Light* activity, are reaching into their community to teach energy efficiency and conservation. A manufacturer offered a discounted price for the lamps and the students applied for and received a grant to purchase CFLs for participants in their survey. They are monitoring the use of the bulbs, calculating the energy savings and reporting this to the survey participants. The initial results are being compiled as this testimony is written, and these results are scheduled to be presented in May. Once this initial project is completed, evaluations will be reviewed and applicable revisions made. This tool will then be offered to teachers participating in the program as an additional method for teaching and encouraging energy conservation/efficiency in the home. KyNEED has recently been notified that an additional grant has been offered to help defray the cost of the lamps for the expansion of the CFL program.

Program Effectiveness

While the effectiveness of the program is difficult to measure in quantitative terms, when judged in terms of participation and the numbers of ratepayers impacted, the leveraging

of program educational funding with community, provider, and state funding and the expected persistence of the program, the Collaborative views this program as very successful. Since October 1997, 21 teacher/student workshops have been held, directly training 88 teachers and 1,739 students in Union Light's service territory. These teacher/student teams have impacted 2,000 students and their families. 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 with the energy efficiency and conservation message.

Additionally, 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. In addition to impacts on other students and community groups, these students and their parents report that the information is shared with their families and reduces consumption in their homes. Approximately 30 percent of the schools in the six counties served by ULH&P have participated.

Why the Program Should Be Continued

Several features of this program justify its continuation as a part of Union Light's portfolio of programs, discussed in the context of the provisions within the Statute describing the Commission's assessments of potential DSM programs (Section 275.285). Cost recovery for this program is not addressed in this Report since it was previously covered in the December 1, 1999 filing.

This program attempts to fundamentally alter customers' usage of electricity over the long term by targeting students and their teachers. One of the primary concerns among DSM planners is the persistence of a program – that is, the duration of the effectiveness of a measure or action. By targeting school-age children and their teachers, this program fosters the adoption of a lifelong conservation philosophy among many of the participants. In this case, the impressions made upon the area's young people could persist for years, perhaps decades, extending the energy savings impacts well beyond the

expected lives of most other DSM programs. Furthermore, the effects are enhanced by the innovative approach of having students coach other students, thereby introducing an element of peer pressure that can be put to positive use in the service of their families and community.

Second, this program offers a fair and non-prejudicial approach to implementing energy conservation. Because it is offered through schools, many of the typical barriers to an even distribution of benefits across socio-economic boundaries are eliminated. Students within most schools represent a range of ethnic and economic backgrounds, and a program delivered to this target market would serve to minimize any advantages or disadvantages to specific customer groups. This program has already been provided to 30 percent of the schools in each of the six counties served by Union Light.

Third, this program was developed by and has been improved by on-going community involvement in the form of the Collaborative whose members include the Commonwealth's Attorney General's Office, the Kentucky Division of Energy, community organizations, low-income advocates, and Union Light, Heat, and Power. Some of the suggestions included the emphasis on practical conservation measures and encouraging leveraging of non-ratepayer funding. The program provider has incorporated the new curricula and has aggressively sought community, state, and federal contributions and has been quite successful. As the attached Energy Education Summary Report illustrates, 14 private organizations contributed to the funding of this program. A total of almost $40,000 was contributed by organizations such as the National Energy Education Development Project, the Kentucky Coal Council, and the Kentucky Oil and Gas Association. Previous sections discuss grants for installation of measures and equipment to measure savings as well as efforts to bring an innovative energy savings program to Northern Kentucky schools.

Finally, this program maximizes its usefulness and affordability to the customers by virtue of the fact that it is information-based, rather than investment based. By concentrating on altering energy use behavior as well as on selection of more efficient appliances or other end-uses, the opportunity for cost-effective energy savings is

maximized. This is particularly important in the case of younger citizens such as students, who may have no means of investing in more efficient lighting, air conditioning, or refrigerators, but who can turn lights off when not in use, or close the refrigerator door after getting a glass of milk. Students can also influence the behavior as well as the investments of their families and friends.

In conclusion, this educational, youth-oriented program should continue as it promotes sustainable, broad-based reduction in energy consumption at a reasonable cost and will result in more thoughtful, responsible energy use in Kentucky.

Cost Benefit Tests

Due to the educational nature of this program, the application of quantitative cost/benefit analysis is not appropriate.

Program 4: Residential New Construction/Renovation Program

The Collaborative established the New Construction Subcommittee in 1997 to develop this program as a low cost approach to build awareness of energy efficiency potential in new construction, and to encourage investment in energy efficiency in the new home and renovation markets in Northern Kentucky. The program, commercially known as the Savings and Value through Energy Efficiency (SAVEE) program, is offered as a partnership between the Collaborative, Union Light, and the Northern Kentucky Homebuilders Association, which joined the New Construction Subcommittee in 1997. The SAVEE program consists of two major elements:

1) *Energy-Efficient Home Contest* - Entries are received in each of five categories: new home single-family (2,000 square feet or less), new home single-family (2,001 to 3,000 square feet), new home single-family (3,001 square feet or more), new home multi-family, and renovation. The most efficient entries in each category are awarded a $3,000 prize, up to a maximum of five prizes at $15,000. In addition to the award, the winners are featured at Homebuilders Association home shows and in magazines and periodicals distributed to the builders and buyers.
2) *Informational Activities* - Informational activities include meetings and educational seminars with area builders and trade allies such as lenders, real estate agents, appraisers, designers, architects, engineers, equipment providers, and code officials.

The SAVEE program provides a low cost vehicle to promote energy efficiency in new home construction and in the renovation of existing homes. The program encourages 'market push' through its direct work with the builder community, and encourages 'market pull' from consumers through its presence at home shows and through advertising and other promotions.

The program is promoted primarily through the relationship with the Homebuilders Association of Northern Kentucky. Builders entered two homes in the contest in 1998, which was the first year of the program. A process evaluation was performed in 1998 to

identify opportunities to increase builder awareness of the program and to better focus the marketing and promotion of the program. The SAVEE subcommittee reviewed the results of the analysis and implemented specific program enhancements and modifications.

Aggressive targeted cooperative advertising promoting the winning builders of the 1998 SAVEE contest increased awareness of and participation in the program in 1999, more than tripling the number of participating homes, and leading to contest participants in all categories except that of renovation.

Program Effectiveness

While the effectiveness of the program is difficult to measure in quantitative terms, when judged in terms of participation, the numbers of ratepayers potentially impacted, and the persistence of the effects of the program, the Collaborative believes it is very successful.

First, the SAVEE contest is beginning to attract the attention and interest of area builders. The growth in the number of interested builders, the number and caliber of contest judges, and the number and quality of the builders and the homes entered are evidence of the increasing interest. Participation in the program, either as a judge or as a contest entrant, is time consuming. The increased participation and the feedback from participants speaks to the value of the education and information being provided. It also indicates that the builder community believes that promotion of the winning builders' affects the home buying community.

Second, the winning homes are significantly more energy-efficient than the minimum requirements of the 1993 Model Energy Code (MEC). Furthermore, although precise information on current practice is not available, winning homes appear to exceed the standard practice for new homes in the area by an even greater margin that they exceed the MEC requirements.

Third, the results of the contest demonstrate that the energy-efficiency improvements found in the award-winning homes are economically viable and could be made even more economically accessible through improvements and integration in new construction

design. A feature of the 1999 program judging was a determination of the incremental cost of the energy efficiency improvements. The simple payback periods for the additional investments made by the award-winning builders in 1999 were in the neighborhood of five to seven years, except for the house using insulated concrete forms (ICFs), which had an estimated payback period of approximately 8.5 years. This information can be used by builders to dispel perceptions that significant savings cannot be achieved without outlandish investment. Discussions with builders revealed that, in general, even the award-winning builders did not routinely consider tradeoffs and did not often integrate design of the homes to take advantage of tradeoffs which can off-set the cost of the investment in energy saving construction techniques. Examples could include considering the reduction in heating and cooling load on the home due to increased insulation and other measures, thereby reducing the size and cost of the heating and cooling systems and off-setting additional cost of the efficiency measures. These concepts were the major focus of the two speakers brought in for educational workshops. These workshops enjoyed solid attendance, bringing in a total of 77 members of the Homebuilders Association of Northern Kentucky.

The relative absence of attention paid by builders to tradeoffs suggests that major energy efficiency improvements could be made at a lower incremental cost and with quicker payback periods than are currently understood by either builders or buyers in the Northern Kentucky New Construction market. SAVEE will continue to help spread the message and present tools and techniques to market participants.

Why the Program Should Be Continued

Several features of this program justify its continuation as a part of Union Light's portfolio of programs, discussed in the context of the provisions within the Statute describing the Commission's assessments of potential DSM programs (Section 275.285). Cost recovery for this program is not addressed in this Report since it was previously covered in the company's December 1, 1999 filing.

This program attempts to fundamentally improve customers' use of electricity over the long term by integrating energy efficiency in new housing stock, targeting new

construction. It also recognizes the opportunity to improve efficiency when renovating homes. By targeting these construction activities, this program encourages and integrates long-term energy conservation. The impacts of measures installed in the homes persist in many cases throughout the life of the home, extending the energy savings impacts well beyond the expected lives of many other DSM programs. Although less obvious, the impact of causing home buyers to consider and request information about energy saving features when purchasing or renovating a home may persist throughout their lives and those of their children.

Second, this program offers a fair and non-prejudicial approach to implementing energy conservation. Because the contest is conducted in five categories based on home size and type, opportunities exist for participation among a range of homeowners at various income levels.

Finally, this program was developed by and has been improved by on-going community involvement in the form of the Collaborative, whose members include the Commonwealth's Attorney General's Office, the Kentucky Division of Energy, community organizations, including those serving the low-income community, and Union Light, Heat, and Power. Some of the suggestions included the development of incremental cost and payback periods for implemented energy saving/energy-efficiency measures. Other modifications being considered by the Collaborative and the New Construction Committee include investigation of low-cost methods to determine the effectiveness of awareness efforts and provision of materials for use by builders in promoting energy saving/energy-efficient measures in construction and renovation to buyers.

In conclusion, this program should be continued, as it promotes sustainable, broad-based reduction in energy consumption at a reasonable cost and will result in more responsible energy use in the State of Kentucky.

Cost Benefit Tests

Due to the informational nature of this program, the application of quantitative cost/benefit analysis is not appropriate.

WHEREFORE, the Joint Applicants ask for a timely review of this Report and for an Order approving the DSM programs and the Riders DSM submitted in Case No. 99-414.

Respectfully Submitted,

THE UNION LIGHT, HEAT AND POWER COMPANY

By: _____

John J. Finnigan, Jr., Trial Attorney (Attorney No. 86657)
James B. Gainer, Trial Attorney (Attorney No. 87288)
The Union Light, Heat and Power Company
139 East Fourth Street, Room 25ATII
Cincinnati, Ohio 45202
(513) 287-3601

Date: 4/18/00

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing filing was served on the following on April 18, 2000 via ordinary United States mail, postage prepaid:

Ann Louise Cheuvront, Assistant Attorney General
The Kentucky Office of the Attorney General
1024 Capital Center Drive
Frankfort, Kentucky 40602-2000

Richard G. Raff
Public Service Commission
211 Sower Blvd.
Frankfort, Kentucky 40602

Clint Hamm
Northern Kentucky Community Action Commission
P.O. Box 193
Covington, Kentucky 41012

Mr. Anthony Martin
Office of Kentucky Legal Services Program, Inc.
201 West Short Street, Suite 506
Lexington, Kentucky 40507

Mr. Carl Melcher
Northern Kentucky Legal Aid, Inc.
302 Greenup
Covington, Kentucky 41011

John J. Finnigan, Jr.

COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
211 SOWER BOULEVARD
POST OFFICE BOX 615
FRANKFORT, KY. 40602
(502) 564-3940

March 31, 2000

Honorable John J. Finnigan
Senior Counsel
The Union Light Heat & Power Co.
139 E. Fourth Street
Rm 25 AT II
Cincinnati, OH. 45201 0960

RE: Case No. 1999-414

We enclose one attested copy of the Commission's Order in the above case.

Sincerely,

Stephanie Bell
Secretary of the Commission

SB/hv
Enclosure

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY	))))	CASE NO. 99-414

INTERIM ORDER

By Order dated December 20, 1999 in this proceeding, the Commission denied the request of The Union Light, Heat and Power Company ("ULH&P") for expedited approval of its application filed December 2, 1999. Therein, we ordered that ULH&P's existing demand side management ("DSM") programs and DSM tariff riders, scheduled to expire at the end of 1999, would remain in effect pending a final Order in this proceeding.

On March 21, 2000, ULH&P filed a request for an Interim Order that would permit it to terminate its Rate REC, Residential Energy Conservation Service, rate schedules ("REC rate schedules") for both its gas and electric service. In support of its request ULH&P explained that in its December 2, 1999 filing it had proposed to discontinue the REC rate schedules at the end of 1999 and that this had been agreed to by its DSM Collaborative. ULH&P provided an independent analysis of the impact of the REC rate schedules performed by TecMRKT Works, which concluded that the program was not affecting customer behavior by leading to reductions in energy usage, which had been the intent of the program when it was implemented in 1996.

ULH&P explained that it was nearing the time period when it would begin to enroll customers in the REC program for the next 12-month cycle and would begin to incur related administrative costs if it began such enrollment. Since it and its DSM Collaborative had agreed to terminate the program at the end of 1999, ULH&P was now requesting an Interim Order from the Commission authorizing the termination of the program and the REC rate schedules before the 2000-2001 enrollment period began.

The Commission recognizes the cost implications and related problems that ULH&P would incur if it were to begin the enrollment phase of the REC program and then have the program terminated in mid-course by issuance of a final Order in this proceeding. We also concur with the findings of ULH&P's outside consultant that the program has not resulted in reduced energy consumption as was intended when the program was implemented. Therefore, we find it reasonable to permit ULH&P to terminate the REC rate schedules effective with the date of this Order.

IT IS THEREFORE ORDERED that:

1. ULH&P's REC rate schedules for both gas and electric service shall be terminated effective with the date of this Order.

2. The remainder of ULH&P's existing DSM programs and DSM tariff riders shall continue in effect pending a final Order in this proceeding.

Done at Frankfort, Kentucky, this 31st day of March, 2000.

By the Commission

ATTEST:

Deputy Executive Director

Cinergy Corp.
139 East Fourth Street
Rm 25 AT II
P.O. Box 960
Cincinnati, OH 45201-0960
Tel 513.287.3601
Fax 513.287.3810
jfinnigan@cinergy.com

JOHN J. FINNIGAN, JR.
Senior Counsel

CINERGY.

March 20, 2000

VIA UPS OVERNIGHT EXPRESS

Honorable Don Mills, Executive Director
Public Service Commission
730 Schenkel Lane
Frankfort, KY 40602

Re: Case No. 99-414
DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT and POWER COMPANY

Dear Executive Director Mills:

Enclosed for filing is an original and 10 copies of the above-titled Demand Side Management Programs and Cost Recovery Filing. Please date stamp and return the extra copies in the enclosed self-addressed envelope.

Please call me at 513-287-3601 if you have any questions.

Very truly yours,

John J. Finnigan, Jr.
Senior Counsel

JJF/mp

Enclosures

cc: Honorable Ann Louise Cheuvront
Honorable Carl Melcher
Mr. Clint Hamm
Honorable Richard Raff
Honorable Anthony Martin

BEFORE THE
KENTUCKY PUBLIC SERVICE COMMISSION

In the Matter of:

Demand Side Management Programs and Cost Recovery Filing for Demand Side Management Programs by The Union Light, Heat and Power Company	)	Case No. 99-414

Now comes The Union Light, Heat and Power Company (ULH&P) to request an interim order in this action permitting it to terminate its Rate REC, Residential Energy Conservation Service for both gas and electric services. ULH&P requests an expedited decision in this matter for the reasons set forth below.

The Commission authorized ULH&P to establish its DSM programs in an Order dated December 1, 1995 in Case No. 95-312 (Exhibit 1). The Order authorized ULH&P to implement and operate certain DSM programs through December, 1999. On October 25, 1999, the Commission issued an Order opening this docket to review ULH&P's DSM programs.

One of the DSM programs that the Commission originally approved in 1995 was Rate REC, Residential Energy Conservation Service. Customers must meet certain qualifications for this program. The main qualification is that the customer must be receiving Low Income Home Energy Assistance Program benefits. ULH&P enrolls customers in this program once every twelve months. The customer must agree to participate in an energy conservation or education program sponsored by

ULH&P. In return, Rate REC provides the customer with a base rate that does not contain any monthly customer charge and provides a reduced energy charge.

ULH&P does not intend to request authority to continue this program in the future because an analysis performed by TecMRKT Works, an independent consultant, concluded that the program was not affecting customers' behavior by leading to reductions in energy usage. A copy of the TecMRKT Works report is attached hereto. Due to the cyclical nature of this program, ULH&P is now entering the time period where it would need to enroll customers into the program for the next 12-month cycle. Further, ULH&P would be required to make plans for conducting the conservation and education programs for these customers as well as implementing the billing adjustments on the customers' bills for Rate REC.

Given the fact that ULH&P does not intend to continue this program, ULH&P requests that the Commission issue an interim order, on an expedited basis, authorizing ULH&P to terminate Rate REC, Residential Energy Conservation Service, effective at the end of the current 12-month program cycle. This will enable ULH&P to avoid unnecessary costs and billing adjustments associated with beginning a new 12-month cycle for the program.

WHEREFORE, ULH&P respectfully requests that the Commission grant it the relief requested herein.

Respectfully Submitted,

THE UNION LIGHT, HEAT AND POWER COMPANY

By: _____

John J. Finnigan, Jr., Trial Attorney
(Attorney No. 86657)
James B. Gainer
(Attorney No. 87288)
The Union Light, Heat and Power Company
139 East Fourth Street, Room 25ATII
Cincinnati, Ohio 45202
(513) 287-3601

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing filing was served on the following on March 20, 2000 via ordinary United States mail, postage prepaid:

Ann Louise Cheuvront, Assistant Attorney General
The Kentucky Office of the Attorney General
1024 Capital Center Drive
Frankfort, Kentucky 40602-2000

Richard G. Raff
Public Service Commission
730 Schenkel Lane
Frankfort, Kentucky 40602

Clint Hamm
Northern Kentucky Community Action Commission
P.O. Box 193
Covington, Kentucky 41012

Mr. Anthony Martin
Office of Kentucky Legal Services Program, Inc.
201 West Short Street, Suite 506
Lexington, Kentucky 40507

Mr. Carl Melcher
Northern Kentucky Legal Aid, Inc.
302 Greenup
Covington, Kentucky 41011

John J. Finnigan, Jr.

Brief Analysis of the Effects of the Residential Energy Conservation Rate Program on Energy Consumption

Prepared for

Cinergy

By

TecMRKT Works
Arlington, VA

Introduction

This study assesses the energy impact of the Residential Energy Conservation (REC) Rate Program by comparing the normalized energy consumption of customers before and after they switched from Standard Residential to REC rates and when customers switched from the REC Rates to Standard Residential Rates.

The Residential Energy Conservation (REC) Rate program provides incentives through rates to customers to reduce their consumption of gas and electricity. Participants in the REC Rate Program do not pay the fixed monthly customer charges levied under the standard residential tariffs. Instead, these customers pay a lower rate for the first block (first 1,000 kWh) of electricity and a substantially higher rate for each additional kWh used. Table 1 illustrates the differences between Standard Rates and the REC Rates. In the case of electricity, REC Rates are 7 – 10 percent lower than Standard Residential Rates for the first 1,000 kWh and then 33 to 74 percent higher for kWh consumed above that level. REC Rate customers pay no customer charge.

Table 1 Comparison of Standard Residential and Residential Energy Conservation Electric Rates

	Standard Residential rate		Residential Conservation rate		Percent change	
	Summer	Winter	Summer	Winter	Summer	Winter
First 1000 kWh	$0.06562	$0.06562	$0.061143	$0.058793	-7	-10
Additional kWh	$0.06873	$0.05059	$0.091715	$0.08819	33	74
Customer Charge	$3.73	$3.73	0	0	-100	-100

Similarly, participating gas customers do not pay the fixed customer charge. Instead, customers are charged a higher rate for each hundred cubic feet (ccf) of natural gas consumed. For the first 100 ccf of gas the customer's bill will be less under the REC Rate than under the Standard Residential Rate. Above 100 ccf, the customer's bill will be higher under the REC Rate than under the Standard Residential Rate.

Table 2 Comparison of Standard Residential and Residential Energy Conservation Gas Rates

	Standard Residential Rate	Residential Conservation Rate	Percent change
100 ccf	$0.5691	$0.6317	11
Customer Charge	$6.29	0	-100

The program is available to customers meeting the following criteria:

1) Must be certified as recipients of Low Income Home Energy Assistance Program (LIHEAP) benefits
2) Must receive natural gas and/or electric service from ULH&P and must agree to participate in energy conservation or education programs
3) Customers annual gas usage must be less than 1,500 ccf during the most recent twelve-month period prior to enrollment, unless the customer has participated in a company-sponsored energy conservation or education program
4) Electricity consumption must be less than 14,000 kWh during the most recent twelve-month period prior to enrollment, unless the customer has participated in a company-sponsored energy conservation or education program

The theory underlying the program is that lower rates at lower levels of usage linked with higher rates at higher levels of usage will act as an incentive to reduce usage. This memorandum describes an analysis that was conducted to determine whether this is the case.

The Data

Cinergy supplied data for 506 households that had been on the REC Rates at some point after the beginning of 1995. These households were of two types, households that went from the Standard Residential Rate to the REC Rate and remained on the REC Rate and households that went from the standard residential rate to the REC Rate and later returned to the standard rate.

Thus, we were able to investigate two conditions:

- a change from the Standard Rate to the REC Rate
- a change from the REC rate to the Standard Rate.

Table 3 shows the number of electric and gas households in each condition after the data were cleaned for analysis. In order to complete the analysis, 12 months of data were needed for each condition. Households that did not meet this condition were dropped from the analysis. We also dropped cases where households received weatherization services and cases where there was inconsistency in the reading cycle. Finally, cases with large numbers of estimated readings were dropped from the analysis.

Table 3 Cases available for analysis

	Electric		Gas	
	Standard Rate to REC Rate	REC Rate to Standard Rate	Standard Rate to REC Rate	REC Rate to Standard Rate
Number of cases of data received from Cinergy	504	504	506	506
Cases remaining after the data were cleaned	482	201	484	481
Cases remaining after eliminating cases that PRISM would not accept	453	186	211	201

Based on the theory underlying the program, we would expect to see a decrease in energy use as a result of the change from the standard rate to the REC rate and an increase in use when the customer moved from the REC rate to the standard rate.

How changes in consumption were analyzed

The analysis of the changes in consumption in this report is based on pre- and post-treatment design where the treatment is the change in rate. All usage is normalized to account for changes in outdoor temperatures. The design involves calculating the difference in weather normalized energy usage for a minimum of 12 months before and after households switched to the REC rate and before and after households switched from the REC rate to the standard residential rate. In each case, the difference in usage represents the gross change in energy usage. If the rates are influencing consumption in the hypothesized way, we would expect to see a reduction in usage in the first instance and an increase in usage in the second.

We label this a "gross" change in energy usage because we do not have a comparison group of households whose rates did not change. Thus, we cannot rule out the possibility that other factors, for instance, an improvement in the economy, may have caused low-income households in general to spend more for energy.

The analytic method is a billing analysis. In a billing analysis, twelve or more months of pre-treatment energy consumption data are normalized and compared to twelve months of post-treatment data to estimate savings. The use of twelve months or more of data helps to minimize the impact of temporary month-to-month fluctuations that are often present in billing data and result in a more accurate estimate of annual savings.

TecMRKT Works used PRISM™ Advanced Version 1.0 software for Windows developed at Princeton University's Center for Energy and Environmental Studies to

estimate program impacts. PRISM™ is a commercially available analysis 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 energy consumption per heating or cooling degree-day for the periods before and after households receive some treatment, such as switching a rate, by combining energy consumption and weather data.

Using a linear fitting mechanism, PRISM™ produces estimates of baseload usage, household reference temperatures, energy usage per heating and/or cooling degree-day, and various measures of reliability such as R^2 which is a measure of how well the estimated data fit the actual data. These values are used to estimate normalized annual consumption before and after the treatment. Gross savings are estimated by subtracting post-treatment consumption from pre-treatment consumption. If there are savings, the resulting value is positive and when consumption increases the value is negative. In this study we examined both gas and electric usage. Generally the estimates for gas usage are much more accurate than for electric usage. This is because the majority of gas usage is for heating that is closely tied to temperature data. Electric usage is less temperature sensitive and more behaviorally sensitive unless the household is using electric heating.

Energy usage under different rates

Table 4 shows the results of the PRISM analysis. Column 1 identifies the fuel type, gas or electric. Columns 2 – 6 show the usage and change in usage for all respondents who switched from the Standard Residential to the REC Rate. Positive numbers represent reductions in usage (savings) and negative numbers represent increases in usage.

Customers who went from standard rates to the REC Rate increased their electric usage by about 8.5 percent and their gas usage decreased by 0.1 percent. The increase in electric usage is statistically significant meaning that the increase is greater than zero. The slight gas savings are not statistically significant meaning that there was no change. These data imply that changing from the Standard Rate to the REC Rate actually resulted in increases in electric consumption and no change in gas consumption. However, there may be other reasons for these changes that are not addressed by the current methodology.

We also examined those customers who changed from the REC Rate to the Standard Rate to see how that change may have influenced consumption. These data are found in columns 7 – 11 of Table 4. These data show that electricity consumption increased slightly (0.7 percent) and that gas use declined slightly (0.3 percent) after the change from the REC rate to the standard rate. Neither of these values is statistically distinguishable from zero meaning that the rate change appears to have had no effect on consumption.

Table 4 Comparison of normalized annual energy usage under standard and REC rates

	Participants who went from the standard residential rate to the REC rate					Participants who went from the REC rate to the standard rate				
	Standard rate usage	REC rate usage	Gross change in usage[1]	Gross percent change[1]	Standard error	REC rate usage	Standard rate usage	Gross Change in usage[1]	Gross percent change[1]	Standard Error
1999 Study										
Gas (CCF)	875	868	7	0.1	21	856	830	26	0.3	17.4
Electric (kwh)	7799	8455	-656	-8.5	96.4	9018	9085	-67	-0.7	254.7

[1] Positive values represent savings and negative values represent increases in usage.

The rate structures might differentially influence households because of household consumption patterns. Households using less than 1,000 kWh per month would see a reduction in their electric bill each month which might encourage these households to use more energy while those using more than 1000 kWh would see their bills increase and thus be encouraged to reduce consumption. Likewise, households using less than 100 ccf of gas would receive smaller bills and therefore might be encouraged to increase their consumption while those using more would have higher bills and might be encouraged to decrease their use. Thus, we might hypothesize that those with lower usage would increase their consumption and those with higher usage might reduce their consumption and that this would account for at least some of the increased usage.

In order to test this hypothesis we divided electric customers into two groups, those households where at least 20 percent of the months had electric usage that exceeded 1,000 kWh and those which did not. We reasoned that electric usage might exceed 1,000 kWh in summer months but remain below 1,000 kWh during the rest of the year and that 2 or three months a year was probably not sufficient to encourage reduced usage based on the new rate. This explains the requirement that consumption should be at least 1,000 kWh in at least 20 percent of months.

Table 5 shows the result. Both size groups had a statistically significant increase in electric usage under the REC Rate. The absolute size of the change was about the same for both groups (698 and 635 respectively). The same was true when households switched from the REC Rate to the Standard Rate although the absolute size of the changes were smaller and not statistically different than zero. In relative terms, households with a pattern of lower electricity usage show a greater relative increase, 11.6 percent versus 5.6 percent, when moving from the Standard rate to the REC Rate. Thus, the change to the REC Rate did not result in decreased consumption for large or small users. However, small users did use more relative to their overall usage when compared to large users. There are no statistically significant differences for the change from the REC Rate to the Standard Rate.

Table 5 Usage of electricity before and after the changes in rate for large and small users

	Change from Standard to REC rate				Change from REC to Standard rate			
	Standard rate usage	REC rate usage	Gross change in usage[1]	Gross percent change	Standard rate usage	REC rate usage	Gross change in usage[1]	Gross percent change
20 percent of months with 1,000 kWh or more	12,436	13,134	-698	-5.6	13,183	13,261	-78	-0.6
Fewer than 20 percent of months with 1,000 kWh or more	5,457	6092	-635	-11.6	6,327	6,387	-60	-0.9

We completed a similar analysis for gas customers who went from the Standard Rate to the REC Rate. Table 6 shows the result of this analysis for gas customers. There were very slight savings for each size group for both types of rate change. The values are not statistically distinguishable from zero. We conclude from these data that gas use did not change in the hypothesized manner.

Table 6 Usage of gas before and after the changes in rate for large and small users

	Change from Standard to REC rate				Change from REC to Standard rate			
	Standard rate usage	REC rate usage	Gross change in usage[1]	Gross percent change	Standard rate usage	REC rate usage	Gross change in usage[1]	Gross percent change
20 percent of months with 100 ccf or more	1018	1013	5	0.5	1069	1035	34	3.1
Fewer than 20 percent of months with 100 ccf or more	414	402	12	2.7	490	478	12	2.6

We did not have an equivalent comparison group for the REC Rate program. However, we recently did an analysis of a comparison group for the Cinergy's PIPP-ED program for roughly the same time period. While the REC Rate customers and the PIPP-ED customers are all low-income customers, there is a significant difference between the two. Households enrolled in the PIPP-ED program have accumulated significant arrearages or have significant problems paying their energy bills. REC Rate customers are not necessarily having payment difficulties and may be better able to handle their energy bills.

When we examine the PIPP-ED comparison group (Table 7), we see that both electric and gas usage for these customers increased over time. The increase in gas use is small (i.e., essentially zero) while the increase in electric usage is somewhat larger. This is essentially the same pattern we are seeing in the REC Rate data. The increase in electric use in the REC Rate data is much greater than for this comparison group. We attribute this to the differences in the nature of the participants in the two programs. However, the consistency of the trend suggests that there are factors at work other than the REC Rate and PIPP-ED programs that are encouraging increased electric consumption among low-income users.

Table 7 Change in consumption for an unmatched comparison group

Pre-treatment usage	Post treatment usage	Gross Change in usage	Gross percent change
1473	1480	-7	-0.5
9123	9234	-111	-1.2

Conclusions

Based on our analysis, we find no support for the hypothesis that changing the rates to the current REC Rate structure leads to a reduction in energy use. Electricity use appears to have increased during the period of the study consistent with changes being made by similar other customers not on the REC Rate and these changes appear to be due to factors other than rates. Changing from the REC Rate to the Standard Residential Rate also appears to have had little effect on usage. The findings from this study are only applicable to this set of rate structures. Other rate structures and their impacts were not evaluated.

Cinergy Corp.
139 East Fourth Street
Rm 25 AT II
P.O. Box 960
Cincinnati, OH 45201-0960
Tel 513.287.3601
Fax 513.287.3810
jfinnigan@cinergy.com

JOHN J. FINNIGAN, JR.
Senior Counsel

CINERGY.

February 21, 2000

VIA OVERNIGHT MAIL

Hon. Helen Helton
Executive Director
Public Service Commission of Kentucky
211 Sower Blvd.
Frankfort, Kentucky 40602

RE: In the Matter of Demand Side Management Programs and Cost Recovery filing for Demand Side Management Programs by The Union Light, Heat and Power Company
Case No. 99-414

Dear Ms. Helton:

Enclosed are eight (8) copies of The Union Light, Heat and Power Company's Responses to the First Set of Data Requests of the Commission Staff in the above captioned case.

Very truly yours,

John J. Finnigan
Senior Counsel

JJF/nlb

Enclosures

CERTIFICATE OF SERVICE

A copy of the foregoing Responses has been served by ordinary United States Mail, postage prepaid, to all parties of record this 21st day of February, 2000.

John J. Finnigan, Jr.
Senior Counsel

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS	)	
AND COST RECOVERY FILING FOR DEMAND	)	CASE NO. 99-414
SIDE MANAGEMENT PROGRAMS BY THE	)	
UNION LIGHT, HEAT AND POWER COMPANY	)	

RESPONSES OF THE UNION LIGHT, HEAT AND POWER COMPANY TO THE FIRST SET OF DATA REQUESTS OF THE STAFF OF THE PUBLIC SERVICE COMMISSION OF KENTUCKY

February 21, 2000

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-001

REQUEST:

1. Refer to Section III of the application, page 6. The Joint Applicants state that the Collaborative is not requesting continuation of residential revenue decoupling.

   a. Explain why the Collaborative is not requesting the continuation of residential revenue decoupling. Include all studies and analyses performed that support this position.

   b. Identify the methodology the Collaborative is proposing to use in place of the residential revenue decoupling. Provide a detailed explanation of how this methodology will work and why this method is a reasonable alternative to decoupling.

   c. If the residential revenue decoupling is not continued, the Collaborative will have to develop a method to determine the energy savings experienced by participants. Identify the method the Collaborative anticipates it will use and explain in detail how the Collaborative plans to perform this type of evaluation.

RESPONSE:

a. The Collaborative is not requesting the continuation of residential revenue decoupling because the mechanism is not serving its intended purpose. The decoupler mechanism was approved by the Commission for recovery of lost revenues from decreased sales to residential customers attributable to DSM programs, removing a potential disincentive to implementation of DSM programs. The calculated decoupler adjustments are presented by year below:

Filing	Electric	Gas
1998 Rider Filing	($2,096,209)	$632,334
1999 Rider Filing	($1,480,985)	($2,189,390)
2000 Rider Filing	$2,586,249	$706,405

Even if an extreme example is used reflecting the estimated energy savings from both the Low Income DSM program and the Home Energy House Call program and estimating not the lost contribution to fixed cost but the entire tariff amount,

the decoupler adjustments do not appear to be related to the estimated energy savings. Multiplying the cumulative participation by the estimated electric savings by the highest block electric tariff rate yields a reduction in electric tariff revenue of less than $200,000. The same calculation performed based upon estimated gas savings for the total participation multiplied by the total variable tariff rate leads to a similar conclusion. The estimated total gas tariff reduction is approximately $44,000.

b. The Collaborative is not proposing an alternative method since the level of revenue reduction does not constitute a disincentive to continued implementation of the demand-side management programs proposed.

c. See b., above.

WITNESS RESPONSIBLE:

Richard G. Stevie

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-002

REQUEST:

2. In its December 1, 1995 Order in Case No.95-312[1] the Commission stated, "Therefore, ULH&P should perform a study which compares the electricity and gas usage patterns of OSM program participants with those of non-participating customers. The overall results of the study should be presented to the Commission at the end of the current plan in 1999.[2] Exhibit 2 of the application, which is a one- page printout showing an "ordinary least squares" recalculation of the growth factors for electric customers and gas customers, is identified as the study required by the December 1,1995 Order.

a. Provide an interpretation of the information presented in Exhibit 2 which compares the growth factors for electric customers and gas customers with the corresponding factors used in each year the decoupling mechanism has been in use.

b. Explain in detail how Exhibit 2 of the application satisfies the Commission's order that ULH&P perform a study which compares the electricity and gas usage patterns of demand side management ("DSM") program participants with those of non-participants.

c. Provide in conjunction with the review of the first 3 years of the DSM plan a study that complies with the Commission's December 1,1995 Order in Case No.95-312.

FOOTNOTES:

[1] Case No.95-312, The Joint Application Pursuant to 1994 House Bill #501 for the Approval of the Principles of Agreement, Demand Side Management, The Union Light, Heat and Power Company, and for Authority for The Union Light, Heat and Power Company to Implement Various Tariffs to Recover Costs, Lost Revenues and Receive Incentives Associated with Demand Side Management Programs.

[2] Case No.95-312, Order dated December 1,1995 at 6.

RESPONSE:

The study required by ordering provision 2) of the December 1, 1995 order in Case No. 95-312 is provided in Exhibit 1.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-003

REQUEST:

3. Refer to Exhibit I of the application, the "Evaluation of the Low-Income Conservation and Energy Education Program" ("program evaluation") prepared by Quantitative Economic Consulting, LLC ("Quantec").

a. Explain in detail why the program evaluation did not examine the effectiveness of the DSM programs separately.

b. Were the Joint Applicants and Quantec aware that end-of-pilot program evaluations performed for the Louisville Gas and Electric Company ("LG&E") and Kentucky Power Company ("AEP")[3] reviewed the effectiveness of each DSM program separately? If yes, explain why Quantec performed the program evaluation on a combined basis, rather than separately, by program.

c. Indicate which members of the ULH&P Collaborative are also members of the DSM Collaboratives at LG&E or AEP.

d. Provide the results of the following DSM cost/benefit tests for each DSM program for the evaluation period. The test results are needed only for those programs in place as of the end of the pilot period. Include all supporting calculations, assumptions, and workpapers.

(1) Total Resource Cost ("TRC").

(2) Rate Impact Measure ("RIM")

(3) Utility Cost.

(4) Participant.

FOOTNOTE:

[3]Doing business as American Electric Power

RESPONSE:

a. Exhibit 1 was prepared in response to the second ordering provision of the December 1, 1995 order in Case No. 95-312. Since the purpose of the energy savings study was to compare participant and non-participant energy usage for the purpose of examining and possibly adjusting the residential decoupler, only the direct install weatherization program was included.
b. See a. above.
c. A list of Collaborative members (active and inactive) is attached.
d. See response to KyStaff-01-010.

WITNESS RESPONSIBLE:

Victor A. Needham

Keith	Black	Cinergy
Kip	Bowmar	Ky Association for Community Action
Ann Louise	Cheuvront	Attorney Generals Office
Nina	Creech	People Working Cooperatively
Carolyn	Daigre	Cinergy
Martha	Daugherty	Boone Cty League of Women Voters
John	Finnigan	Cinergy
Kay	Guinane	Kentucky Legal Aid Services
Clint	Hamm	Northern Ky Community Action Comm.
Mike	Hemmer	Paul Hemmer Construction Co.
Bob	Johnston	Public Service of Kentucky
David	Kinlock	Soft Energy Associates
Nancy	Lang	NKU - Center of Economic Education
Rick	Lunnemann	City of Florence
Sr. Judith	Martinez	Working In Neighborhoods
Faye	Massey	Covington Community Center
Carl	Melcher	Northern Kentucky Legal Aid
Doug	Mullins	People Working Cooperatively
Tom	Musk	Northern Ky CAA
Van	Needham	Cinergy
Jock	Pitts	People Working Cooperatively
Karen	Reagor	Kentucky NEED Project
Kathy	Schroeder	Cinergy
Wanda	Smith	League of Women Voters
Nathan	Smith	Northern Ky Home Builders Assoc.
George	Sundrup	Cinergy
Jay	Swanson	Working In Neighborhoods
Jennifer	Griola	Brighton Center
Susan	York	EPIC
Geoffrey	Young	Division of Energy

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-004

REQUEST:

4. Explain why traditional DSM cost/benefit tests were not included in the program evaluation prepared by Quantec.

RESPONSE:

Please refer to the response to KyStaff-01-003a.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-005

REQUEST:

5. Explain why the Quantec program evaluation does not review the commercial programs listed in Exhibit 6a of the application.

RESPONSE:

Please refer to the response to KyStaff-01-003a.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-006

REQUEST:

6. Refer to page Ill-I of the Quantec program evaluation, "Program Regulatory Background."

   a. Explain why there is no mention of KRS 278.285 in this discussion.

   b. Explain in detail the basis and source of the following statements:

      "The Public Service Commission (PSC) wanted a low-income program designed and included in the package. Further, the PSC and other stakeholders decided that DSM programs needed to be designed with the assistance of local parties in a collaborative setting."

   c. Was the Commission Staff a member of the initial Collaborative, or an observer of the Collaborative? Explain the response.

RESPONSE:

a. Exhibit 1 was prepared in response to the second ordering provision of the December 1, 1995 order in Case No. 95-312. The referenced section was not intended to address the broader framework of demand-side management but rather to discuss the development of the program.
b. "The Public Service Commission (PSC)" should be replaced with "Northern Kentucky Legal Aid, Citizens Organized to End Poverty in the Commonwealth (CO-EPIC), and other stakeholders".
c. A member of the Commission Staff was an observer during the Settlement Agreement discussions that culminated in the Application and Principles of Agreement approved by the Commission's December 1, 1995 Order in Case No. 95-312. Interviews confirmed some level of involvement by Commission Staff at least at the beginning of the Collaborative.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-007

REQUEST:

7. Refer to page IV-7 of the Quantec program evaluation, Table 7. State the annual energy savings by participant category as percentages of the most recent 12- month level of energy sales.

RESPONSE:

Gas savings is approximately .12 percent of total residential gas sales. Electric savings is approximately .08 percent of total residential electric sales.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-008

REQUEST:

8. Refer to pages V-2 and V-3 of the Quantec program evaluation. Describe in detail the actions the Joint Applicants intend to undertake in response to the recommendations made by Quantec.

RESPONSE:

All of the recommendations referenced in that section have been adopted and implemented.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-009

REQUEST:

9. Explain why the Joint Applicants believe it is appropriate to include an adjustment to correct for the failure to reconcile the decoupler adjustment component of the 1998 Rider in the 1999 filing. Also, explain why this decoupler adjustment was omitted from the appropriate prior filing.

RESPONSE:

The adjustment was necessary since the failure to reconcile the decoupler adjustment to the actual revenues collected and inclusion of revenues from the DSM Riders in the residential revenue used to compute the decoupler adjustment in the previous filings resulted in an under-recovery by ULH&P under the cost recovery mechanism developed by the Collaborative and approved by the Commission. As discussed in footnote 1 in the filing, the adjustment was inadvertently omitted in previous filings.

WITNESS RESPONSIBLE:

Richard G. Stevie

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-010

REQUEST:

10. Refer to Exhibit 3 of the application, the proposed residential DSM programs for 2000 and 2001. Based on the estimated costs and benefits for each program, provide the TRC, RIM, Utility Cost, and Participant test results for each program. Include all supporting calculations, assumptions, and workpapers.

RESPONSE:

The test results (electric-only RIM) for Program 1 and the electric-only RIM and Utility Cost Tests for Program 2 are attached. Exhibit 1 of the filing served as the basis for the energy savings used in the analysis of Program 1. Savings to the utility and to participants due to reductions in gas consumption were modeled as negative administrative costs and negative participant costs respectively.

Program 2 is primarily an audit and education program. However, the program contractor installs measures that are selected and purchased by customers after completion of the audit and a third party evaluation indicated that additional measures were implemented by participants subsequent to participation. The customer investments associated with the savings estimates were not part of the evaluation for Program 2 and are not available at this time. Therefore, only the RIM and Utility Cost Test results are provided. The evaluation report is attached.

WITNESS RESPONSIBLE:

Victor A. Needham

An Evaluation of the Kentucky Home Energy House Call Program

Results of a Process and Impact Evaluation

November 9, 1998

Prepared For:

Cinergy Services, Inc.
139 East Fourth Street
Cincinnati, OH 45202

Prepared By:

TecMRKT Works
827 Shady Oaks Lane
Oregon, WI 53575
608 835-8855
608 835-9490

2308 N. Van Buren Ct.
Arlington Virginia 22205
703 241-3771
703 276-7785

Home Energy House Call Program

Table of Contents

Table of Contents i
Table of Tables ii
Table of Figures iii
Executive summary 1
Introduction and Program Description 4
Evaluation methodology 6
Evaluation Findings 8
How customers found out about the program 8
Why customers participated 9
Quality of contractor service 9
Improvements to the administration of the program? 11
Participant actions following the audit 14
Measures installed following the audit 16
Estimated program impacts 17
Program satisfaction 20
Customer impressions of Cinergy 23
Recommended changes 24
Demographics 28
Summary Conclusion 31
Appendix 32
Measure Specific Data 32
HEHC Open Ended Response Summary Tables 39

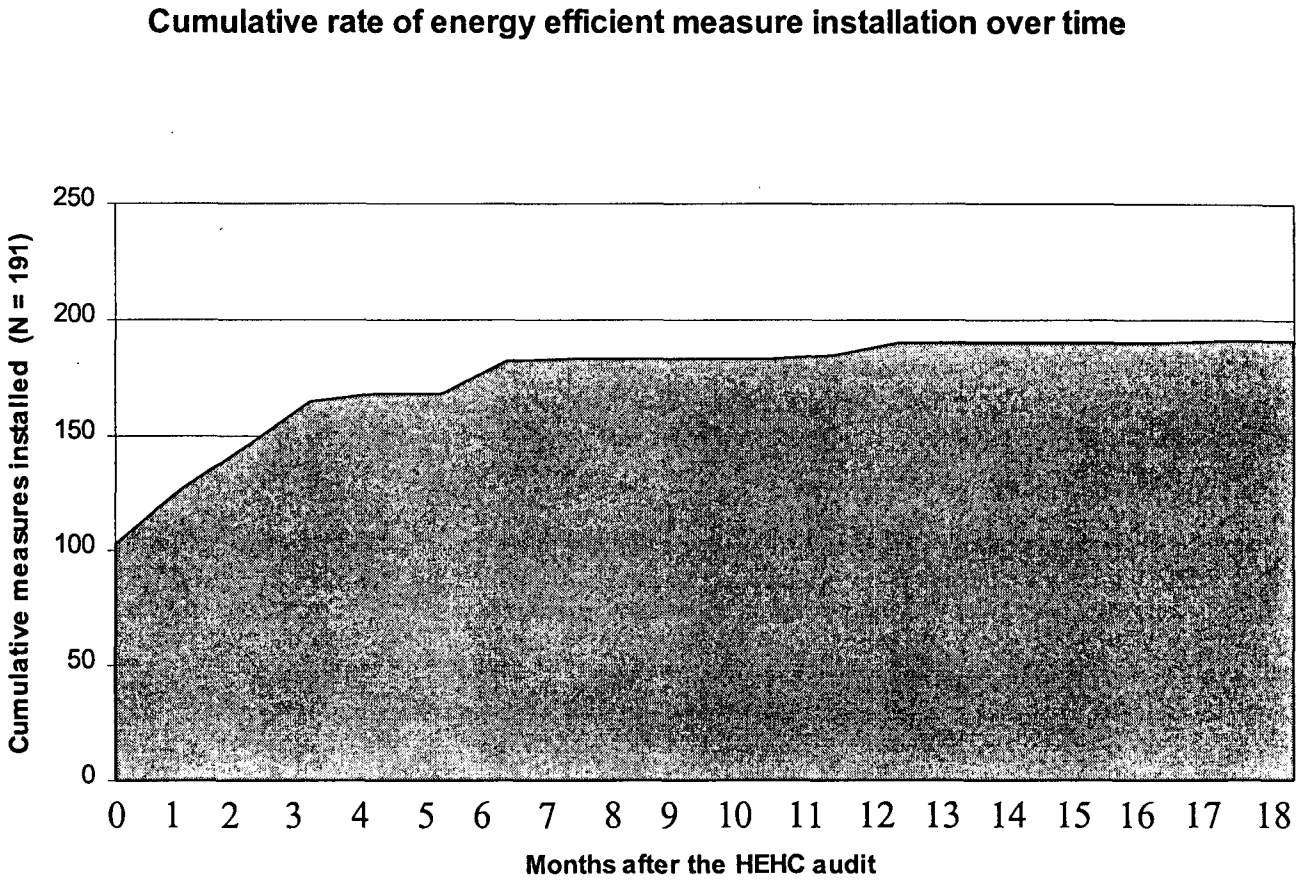


Figure 3. Cumulative rate of energy efficient measure installation.

Measures installed following the audit

As expected, major measures (or items that typically cost over $200 to install and often require the use of a contractor) were installed at a lower rate than the minor measures. Eighteen percent of the major measures were implemented during the period of time between the audit and the evaluation survey (See Table 4). In contrast to the rate of implementation of the major measures is the rate at which minor measures were installed. A sample of the eight most commonly recommended minor measures was analyzed and found to have a 74% implementation rate, about 4 times greater than the implementation rate for the major measures (See Table 4). This is a very significant difference and suggests there are substantial barriers to implementing major measures that do not exist for minor measures. These may include barriers such as; high capital costs, high labor costs and lack of knowledge or skill associated with the recommended measure. Minor measures typically require a small expenditure and the use of standard maintenance and household skills and are often taken by the customers rather than by a contractor. Major measures however, typically must be planned into a household budget and must compete with

other family and household needs and typically customers may not have the skills or the time to install these measures if the budget is available. A complete list of the measure and an account of the number of occasions that each measure is taken or not taken is found in Table 16 in the Appendix.

The average amount of time it took to implement major measures was 3.5 months after the audit. Several examples include; furnace replacement (taking an average 11.7 months after audit), installation of storm windows (3.0 months), and replacement of standard windows with low emissivity ones (2.0) months.

Average customer satisfaction scores with the savings from major and minor measures were similar (8.8 for major and 8.5 for minor) indicating that customers are very satisfied with the energy savings from the actions they have taken.

Table 4. Implementation rate for major and minor measures

Major measure	Times Recom*	Times Taken	Saving Satisf**	Months after***	Minor measure	Times Recom*	Times Taken	Saving Satisf**	Months after***
Increase attic insulation	37	6	8.3	0.7	Bathroom sink flow restrictors	36	10	9.0	1.5
Install storm doors	32	5	7.7	NA	Kitchen sink flow restrictor	40	9	10	0.9
Install storm windows	39	10	8.5	3.0	Insulate hot water pipes	109	42	8.5	3.4
Insulate exterior walls	8	0	NA	NA	Use energy efficient lighting systems	113	51	7.0	1.9
Insulate walls where possible	26	5	8.0	NA	Seal door air leaks	33	63	8.4	2.1
Replace furnace	20	5	10	11.7	Seal window air leaks	31	57	8.9	1.8
Replace hot water heater	10	3	10	0	Set-back heating thermostat	33	49	8.3	0.6
Replace windows with low E windows	29	3	9.0	2.0	Turn down hot water temperature	39	39	7.7	0.8
Total	201	37			Total	434	320		
Average (unweighted)		**18%**	**8.8**	**3.5**	**Average (unweighted)**		**74%**	**8.5**	**1.6**

* See Table 16 for a detailed breakdown of measures taken and recommended.
** See Table 19 for a detailed breakdown of customer satisfaction with the savings from each measure.
*** See Table 18 for a detailed breakdown of how long after the audit each measure was implemented.

Estimated program impacts

At the time of this draft the consumption analysis for the HEHC is incomplete. Following receipt of the energy consumption data for the participant group and a matched group of non-participants TecMRKT Works will complete the impact assessment and report these result in a revised report.

Customers are saving money

About one-third of customers think they are savings energy and money on their utility bills. When customers were asked if they were savings money as a result of the actions they took, 37% said they were saving, 30% did not think they were saving, and 33% were not sure. When customers were asked how much they were saving, responses were as high as $100 per month and averaged $17.11.

Customers are using audit report and educational materials

Another way of measuring program impact is to look at how many times customers have used or referred back to their audit report. If customers do not look at the audit report there is a lower probability that they will implement the actions. If customers look at the audit report and refer

KyStaff-01-010 - workpapers

Calculation for Energy Savings

Category	Gas (CCF)	Electric (kWh)	Proportion with Measures Gas	Electric
Heating measures	139.5	2,315	100.00%	43.90%
Cooling measures		1,080		68.20%
Water heating measures	48.1	658	53.50%	21.20%
Overall model savings	165.2	1,893		
	160.7	1,373	97.30%	72.50%
Adjusted for total participants	115.3	1,331	71.70%	97.00%
HEHC		10,320		
		1,032	10% reduction	
	-	9,288		

Program cost				
1999 LI DSM	$552,029	387	$1,426.43	

Avoided cost - Tariffs used for commodity and demand beyond city gate
Modeled as negative utility administrative cost

Commodity:	$2.84	per dekather	1.028	$2.9172
Demand:	$0.22			$0.2303
Proxy dist:	$0.22			$0.2303
Total	$3.29			$3.3777 per mcf

KY res	59.48	per ccf
gas tariff	5.948	per mcf

Calculated Avoided Cost Proxy (double demand to estimate distribution)

$0.34 per ccf $38.93

Calculated Customer Bill Savings (applied as negative participant cost)

Rate RS	0.59	per ccf
	115.25	ccf
	$68.551	

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent

Program: KY00HEHC - HEHC - KY - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

Summary Parameters Data discounted to 1999	Utility Test	Ratepayer Impact Test
Discount Rates:	7.62	7.62
Units:	$	$
Benefit/Cost Ratio	1.23	0.35
Total Costs	152,370.94	531,557.34
Total Benefits	187,198.92	187,198.92
Net Benefits	34,827.99	(344,358.42)
Levelized Benefits ($/kWh)	31.75	31.75
Levelized Benefits ($/kW)	109,211.95	109,211.95
Levelized Costs ($/kWh)	25.84	90.15
Levelized Costs ($/kW)	88,893.29	310,110.84
Internal Rate of Ret. (%)	0.00	0.00

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent

Program: KY00HEHC - HEHC - KY - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

Benefit Components Data discounted to 1999	Utility Test	Ratepayer Impact Test
Discount Rates:	7.62	7.62
Units:	$	$
Customer Electric Bill Decrease	0.00	0.00
Customer Non-electric Bill Decreas	0.00	0.00
Customer O&M and Other Cost Decrea	0.00	0.00
Customer Income Tax Decrease	0.00	0.00
Customer Investment Decrease	0.00	0.00
Customer Rebates Received	0.00	0.00
Customer Loan/Lease Received	0.00	0.00
Customer Shared Saving Received	0.00	0.00
Utility Revenue Increase	0.00	0.00
Utility Adj. Rev. Increase	0.00	0.00
Contribution to Margin	0.00	0.00
Utility Elec. Production Cost Decr	169,094.09	169,094.09
Utility Nonelec Rev. Increase	0.00	0.00
Utility Nonelec Acq. Cost Decrease	0.00	0.00
Utility Generation Cap. Credit	0.00	0.00
Utility Transmission Cap. Credit	18,104.84	18,104.84
Utility Distribution Cap. Credit	0.00	0.00
Utility Admin. Cost Decrease	0.00	0.00
Utility Cap. Admin. Cost Decrease	0.00	0.00
Utility Fixed Admin. Cost Decrease	0.00	0.00
Utility Part. Charges Received	0.00	0.00
Utility Sales Tax Cost Decrease	0.00	0.00
Utility Loan/Lease Received	0.00	0.00
Utility Shared Saving Received	0.00	0.00
TP Nonelec Acq. Cost Decrease	0.00	0.00
Internal Environmental Benefit	0.00	0.00
External Environmental Benefit	0.00	0.00
Takeback Expenditure	0.00	0.00
Takeback Triangle	0.00	0.00
Change in Quality	0.00	0.00
Elim. Market Barrier Costs Free Ri	0.00	0.00
Long-Term Rate Impact	0.00	0.00

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent

Program: KY00HEHC - HEHC - KY - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

Cost Components Data discounted to 1999	Utility Test	Ratepayer Impact Test
Discount Rates:	7.62	7.62
Units:	$	$
Customer Electric Bill Increase	0.00	0.00
Customer Nonelec Bill Increase	0.00	0.00
Customer O&M and Other Cost Increa	0.00	0.00
Customer Income Tax Increase	0.00	0.00
Customer Investment Increase	0.00	0.00
Customer Participation Charges	0.00	0.00
Customer Loan/Lease Paid	0.00	0.00
Customer Shared Saving Paid	0.00	0.00
Utility Revenue Decrease	0.00	301,174.58
Utility Adj. Rev. Decrease	0.00	78,011.83
Contribution to Margin	0.00	0.00
Utility Elec. Production Cost Incr	0.00	0.00
Utility Nonelec Rev. Decrease	0.00	0.00
Utility Nonelec Acq. Cost Increase	0.00	0.00
Utility Generation Cap. Debit	0.00	0.00
Utility Transmission Cap. Debit	0.00	0.00
Utility Distribution Cap. Debit	0.00	0.00
Utility Rebates Paid	0.00	0.00
Utility Capitalized Rebates Paid	0.00	0.00
Utility Admin. Cost Increase	0.00	0.00
Utility Cap. Admin. Cost Increase	0.00	0.00
Utility Fixed Admin Cost Increase	152,370.94	152,370.94
Utility Sales Tax Cost Increase	0.00	0.00
Utility Loan/Lease Paid	0.00	0.00
Utility Shared Saving Paid	0.00	0.00
Third Party Loan/Lease Paid	0.00	0.00
TP Nonelec. Acq. Cost Increase	0.00	0.00
Internal Environmental Cost	0.00	0.00
External Environmental Cost	0.00	0.00
Takeback Expenditure	0.00	0.00
Takeback Triangle	0.00	0.00
Change in Quality	0.00	0.00
Remaining Mkt Barrier Costs NonFre	0.00	0.00
Long-Term Rate Impact	0.00	0.00

Cinergy - CGEDB - 1999 IRP - PSI incent

Utility Summary Report

Program: KY00HEHC - HEHC - KY - 2000 Rider

Year	Base Revenue Lost $	FCA Revenue Lost $	Production Cost Savings $	Power Sup. Non-Elec. Revenue $	Power Sup. Non-Elec. Aquis. Cost $	Power Sup. Sales Tax Payable $ Thousands	Power Sup. Part. Admin. Costs $	Power Sup. Part. Cap. Admin. Costs $ Thousands	Power Sup. Rebates Paid $
2000	22,868.40	5,923.49	10,520.17	0.00	0.00	0.00	0.00	0.00	0.00
2001	45,736.81	11,846.99	20,176.89	0.00	0.00	0.00	0.00	0.00	0.00
2002	45,736.81	11,846.99	21,590.84	0.00	0.00	0.00	0.00	0.00	0.00
2003	45,736.81	11,846.99	23,334.18	0.00	0.00	0.00	0.00	0.00	0.00
2004	45,736.81	11,846.99	27,026.08	0.00	0.00	0.00	0.00	0.00	0.00
2005	45,736.81	11,846.99	28,439.22	0.00	0.00	0.00	0.00	0.00	0.00
2006	45,736.81	11,846.99	28,948.53	0.00	0.00	0.00	0.00	0.00	0.00
2007	45,736.81	11,846.99	28,206.38	0.00	0.00	0.00	0.00	0.00	0.00
2008	45,736.81	11,846.99	29,967.88	0.00	0.00	0.00	0.00	0.00	0.00
2009	45,736.81	11,846.99	30,469.46	0.00	0.00	0.00	0.00	0.00	0.00
2010	22,868.40	5,923.49	15,867.17	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Cinergy - CGEDB - 1999 IRP - PSI incent

Utility Summary Report

Program: KY00HEHC - HEHC - KY - 2000 Rider

Year	Power Sup. Cap. Rebates Paid $ Thousands	Generation Capacity Savings $	Transmission Capacity Savings $	Distribution Capacity Savings $ Thousands	Utility Net Savings $	RIM Net Savings $	Generation Energy Savings MWh	Peak Load Reduction MW	Power Sup. Non-Part. Admin. Costs $
2000	0.00	0.00	1,194.79	0.00	11,714.96	(17,076.94)	447.708	0.130	85,000
2001	0.00	0.00	2,465.08	0.00	22,641.96	(34,941.83)	895.417	0.260	85,000
2002	0.00	0.00	2,543.17	0.00	24,134.01	(33,449.78)	895.417	0.260	0
2003	0.00	0.00	2,623.86	0.00	25,958.04	(31,625.75)	895.417	0.260	0
2004	0.00	0.00	2,706.52	0.00	29,732.59	(27,851.20)	895.417	0.260	0
2005	0.00	0.00	2,791.77	0.00	31,231.00	(26,352.80)	895.417	0.260	0
2006	0.00	0.00	2,879.71	0.00	31,828.24	(25,755.55)	895.417	0.260	0
2007	0.00	0.00	2,970.42	0.00	31,176.80	(26,406.99)	895.417	0.260	0
2008	0.00	0.00	3,063.99	0.00	33,031.87	(24,551.93)	895.417	0.260	0
2009	0.00	0.00	3,160.51	0.00	33,629.97	(23,953.83)	895.417	0.260	0
2010	0.00	0.00	1,630.03	0.00	17,497.20	(11,294.70)	447.708	0.130	0
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0

Cinergy - CGEDB - 1999 IRP - PSI incent

Utility Summary Report

Program: KY00HEHC - HEHC - KY - 2000 Rider

Year	Base Revenue Lost $	FCA Revenue Lost $	Production Cost Savings $	Power Sup. Non-Elec. Revenue $	Power Sup. Non-Elec. Aquis. Cost $	Power Sup. Sales Tax Payable $ Thousands	Power Sup. Part. Admin. Costs $	Power Sup. Part. Cap. Admin. Costs $ Thousands	Power Sup. Rebates Paid $
2000	22,868.40	5,923.49	10,520.17	0.00	0.00	0.00	0.00	0.00	0.00
2001	45,736.81	11,846.99	20,176.89	0.00	0.00	0.00	0.00	0.00	0.00
2002	45,736.81	11,846.99	21,590.84	0.00	0.00	0.00	0.00	0.00	0.00
2003	45,736.81	11,846.99	23,334.18	0.00	0.00	0.00	0.00	0.00	0.00
2004	45,736.81	11,846.99	27,026.08	0.00	0.00	0.00	0.00	0.00	0.00
2005	45,736.81	11,846.99	28,439.22	0.00	0.00	0.00	0.00	0.00	0.00
2006	45,736.81	11,846.99	28,948.53	0.00	0.00	0.00	0.00	0.00	0.00
2007	45,736.81	11,846.99	28,206.38	0.00	0.00	0.00	0.00	0.00	0.00
2008	45,736.81	11,846.99	29,967.88	0.00	0.00	0.00	0.00	0.00	0.00
2009	45,736.81	11,846.99	30,469.46	0.00	0.00	0.00	0.00	0.00	0.00
2010	22,868.40	5,923.49	15,867.17	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Cinergy - CGEDB - 1999 IRP - PSI incent

Utility Summary Report

Program: KY00HEHC - HEHC - KY - 2000 Rider

Year	Power Sup. Cap. Rebates Paid $ Thousands	Generation Capacity Savings $	Transmission Capacity Savings $	Distribution Capacity Savings $ Thousands	Utility Net Savings $	RIM Net Savings $	Generation Energy Savings MWh	Peak Load Reduction MW	Power Sup. Non-Part. Admin. Costs $
2000	0.00	0.00	1,194.79	0.00	11,714.96	(17,076.94)	447.708	0.130	85,000
2001	0.00	0.00	2,465.08	0.00	22,641.96	(34,941.83)	895.417	0.260	85,000
2002	0.00	0.00	2,543.17	0.00	24,134.01	(33,449.78)	895.417	0.260	0
2003	0.00	0.00	2,623.86	0.00	25,958.04	(31,625.75)	895.417	0.260	0
2004	0.00	0.00	2,706.52	0.00	29,732.59	(27,851.20)	895.417	0.260	0
2005	0.00	0.00	2,791.77	0.00	31,231.00	(26,352.80)	895.417	0.260	0
2006	0.00	0.00	2,879.71	0.00	31,828.24	(25,755.55)	895.417	0.260	0
2007	0.00	0.00	2,970.42	0.00	31,176.80	(26,406.99)	895.417	0.260	0
2008	0.00	0.00	3,063.99	0.00	33,031.87	(24,551.93)	895.417	0.260	0
2009	0.00	0.00	3,160.51	0.00	33,629.97	(23,953.83)	895.417	0.260	0
2010	0.00	0.00	1,630.03	0.00	17,497.20	(11,294.70)	447.708	0.130	0
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY00HEHC - HEHC - KY - 2000 Rider

GENERAL

Program name	KY00HEHC
Evaluation range	2000 to 2019
Reenrolement rate	0.00 %
Need Incentive rate	0.00 %
New Customers?	NO
Generation scenario	NONE
Transmission scenario	99_TD_20
Distribution scenario	NONE

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY00HEHC - HEHC - KY - 2000 Rider

POWER SUPPLIER PROGRAM COSTS ($)

	REBATES					ADMINISTRATIVE COSTS					
	Per Participant		Per kW Reduction		% of Cust.	Annual	Per Participant		Per kW Reduction		% of Cust.
Year	One-Time	Annual	One-Time	Annual	Investment	for Prog	One-time	Annual	One-Time	Annual	Investment
2000	0.00	0.00	0.00	0.00	0.00	85000.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00	85000.00	0.00	0.00	0.00	0.00	0.00
2002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Esc.	MANUAL	MANUAL	MANUAL	MANUAL		MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY00HEHC - HEHC - KY - 2000 Rider

POWER SUPPLIER CAPITALIZED PROGRAM COSTS ($)

	REBATES			ADMINISTRATIVE COSTS			
	Per Participant		% of Cust.	Annual	Per Particpant		% of Cust.
Year	One-Time	Annual	Investment	For Program	One-Time	Annual	Investment
2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Esc.	MANUAL	MANUAL	MANUAL		MANUAL	MANUAL	

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY00HEHC - HEHC - KY - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

GENERAL

Market name	TOTALMKT
Technology lifetime	10 yrs
Cust. discount rate	7.62 %
Dist. Loss Profile	PSI_RES
Sales tax rate	0.00 %
Units	Per household

DEPRECIATION SCHEDULE

Year	Rate

RATE SCHEDULES

Schedule	Before Customer	After Customer
Retail Electric	AVG_RES	AVG_RES
Retail Fuel	RG-1-OH	RG-1-OH

LOAD IMPACTS

Before Customer

Enduse	Description	Fuel	KWh	KW	MMBtu
RT_HV_AE	Res Typ - HVAC - All Elec Home	Electric	10319.66767	3.00	0.00
		Total	10319.67	3.00	0.00

After Customer

Enduse	Description	Fuel	KWh	KW	MMBtu
RT_HV_AE	Res Typ - HVAC - All Elec Home	Electric	9287.70	2.70	0.00
		Total	9287.70	2.70	0.00
		Difference	-1031.97	-0.30	0.00

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY00HEHC - HEHC - KY - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

PARTICIPANT COSTS ($)

Year	First year Investment	Annual Maintenance Costs	Annual Other Costs
2000	0.00	0.00	0.00
2001	0.00	0.00	0.00
2002	0.00	0.00	0.00
2003	0.00	0.00	0.00
2004	0.00	0.00	0.00
2005	0.00	0.00	0.00
2006	0.00	0.00	0.00
2007	0.00	0.00	0.00
2008	0.00	0.00	0.00
2009	0.00	0.00	0.00
2010	0.00	0.00	0.00
2011	0.00	0.00	0.00
2012	0.00	0.00	0.00
2013	0.00	0.00	0.00
2014	0.00	0.00	0.00
2015	0.00	0.00	0.00
2016	0.00	0.00	0.00
2017	0.00	0.00	0.00
2018	0.00	0.00	0.00
2019	0.00	0.00	0.00
Esc.	MANUAL	MANUAL	MANUAL

MARKET SEGMENT REBATES ($)

Year	Expensed One Time Rebates	Expensed Annual Rebates	Capitalized One Time Rebates	Capitalized Annual Rebates
2000	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00
2002	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00
2006	0.00	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.00
2008	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00
	MANUAL	MANUAL	MANUAL	MANUAL

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY00HEHC - HEHC - KY - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

PENETRATION

Year	New Participants	New Free Riders %	New Free Drivers %	Cumulative Penetration	Cumulative Pen. Net of Free Riders	Cumulative Free Drivers
2000	400.00	0.00	0.00	400.00	400.00	0.00
2001	400.00	0.00	0.00	800.00	800.00	0.00
2002	0.00	-nan	-nan	800.00	800.00	0.00
2003	0.00	-nan	-nan	800.00	800.00	0.00
2004	0.00	-nan	-nan	800.00	800.00	0.00
2005	0.00	-nan	-nan	800.00	800.00	0.00
2006	0.00	-nan	-nan	800.00	800.00	0.00
2007	0.00	-nan	-nan	800.00	800.00	0.00
2008	0.00	-nan	-nan	800.00	800.00	0.00
2009	0.00	-nan	-nan	800.00	800.00	0.00
2010	0.00	-nan	-nan	400.00	400.00	0.00
2011	0.00	-nan	-nan	0.00	0.00	0.00
2012	0.00	-nan	-nan	0.00	0.00	0.00
2013	0.00	-nan	-nan	0.00	0.00	0.00
2014	0.00	-nan	-nan	0.00	0.00	0.00
2015	0.00	-nan	-nan	0.00	0.00	0.00
2016	0.00	-nan	-nan	0.00	0.00	0.00
2017	0.00	-nan	-nan	0.00	0.00	0.00
2018	0.00	-nan	-nan	0.00	0.00	0.00
2019	0.00	-nan	-nan	0.00	0.00	0.00

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Standard Benefit/Cost Tests

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

Summary Parameters Data discounted to 1999	Participant Test	Total Resource Test	Ratepayer Impact Test	Utility Test	Societal Test
Discount Rates:	Mkt.Seg.	7.62	7.62	7.62	7.62
Units:	$ Thousands	$	$ Thousands	$	$ Thousands
Benefit/Cost Ratio	0.in	0.72	0.18	0.28	0.72
Total Costs	0.00	613,062.70	979.97	613,062.70	613.06
Total Benefits	598.20	444,270.24	173.43	173,427.31	444.27
Net Benefits	598.20	(168,792.46)	(806.54)	(439,635.39)	(168.79)
Levelized Benefits ($/kWh)	0.11	78.55	0.03	30.66	0.08
Levelized Benefits ($/kW)	432.39	301,215.96	117.58	117,584.00	301.22
Levelized Costs ($/kWh)	0.00	108.39	0.17	108.39	0.11
Levelized Costs ($/kW)	0.00	415,657.52	664.42	415,657.52	415.66
Internal Rate of Ret. (%)	0.00	0.00	0.00	0.00	0.00

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Standard Benefit/Cost Tests

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

Benefit Components Data discounted to 1999	Participant Test	Total Resource Test	Ratepayer Impact Test	Utility Test	Societal Test
Discount Rates:	Mkt.Seg.	7.62	7.62	7.62	7.62
Units:	$ Thousands	$	$ Thousands	$	$ Thousands
Customer Electric Bill Decrease	344.15	0.00	0.00	0.00	0.00
Customer Non-electric Bill Decreas	0.00	0.00	0.00	0.00	0.00
Customer O&M and Other Cost Decrea	254.05	270,842.94	0.00	0.00	270.84
Customer Income Tax Decrease	0.00	0.00	0.00	0.00	0.00
Customer Investment Decrease	0.00	0.00	0.00	0.00	0.00
Customer Rebates Received	0.00	0.00	0.00	0.00	0.00
Customer Loan/Lease Received	0.00	0.00	0.00	0.00	0.00
Customer Shared Saving Received	0.00	0.00	0.00	0.00	0.00
Utility Revenue Increase	0.00	0.00	0.00	0.00	0.00
Utility Adj. Rev. Increase	0.00	0.00	0.00	0.00	0.00
Contribution to Margin	0.00	0.00	0.00	0.00	0.00
Utility Elec. Production Cost Decr	0.00	157,848.63	157.85	157,848.63	157.85
Utility Nonelec Rev. Increase	0.00	0.00	0.00	0.00	0.00
Utility Nonelec Acq. Cost Decrease	0.00	0.00	0.00	0.00	0.00
Utility Generation Cap. Credit	0.00	0.00	0.00	0.00	0.00
Utility Transmission Cap. Credit	0.00	15,578.68	15.58	15,578.68	15.58
Utility Distribution Cap. Credit	0.00	0.00	0.00	0.00	0.00
Utility Admin. Cost Decrease	0.00	0.00	0.00	0.00	0.00
Utility Cap. Admin. Cost Decrease	0.00	0.00	0.00	0.00	0.00
Utility Fixed Admin. Cost Decrease	0.00	0.00	0.00	0.00	0.00
Utility Part. Charges Received	0.00	0.00	0.00	0.00	0.00
Utility Sales Tax Cost Decrease	0.00	0.00	0.00	0.00	0.00
Utility Loan/Lease Received	0.00	0.00	0.00	0.00	0.00
Utility Shared Saving Received	0.00	0.00	0.00	0.00	0.00
TP Nonelec Acq. Cost Decrease	0.00	0.00	0.00	0.00	0.00
Internal Environmental Benefit	0.00	0.00	0.00	0.00	0.00
External Environmental Benefit	0.00	0.00	0.00	0.00	0.00
Takeback Expenditure	0.00	0.00	0.00	0.00	0.00
Takeback Triangle	0.00	0.00	0.00	0.00	0.00
Change in Quality	0.00	0.00	0.00	0.00	0.00
Elim. Market Barrier Costs Free Ri	0.00	0.00	0.00	0.00	0.00
Long-Term Rate Impact	0.00	0.00	0.00	0.00	0.00

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Standard Benefit/Cost Tests

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

Cost Components Data discounted to 1999	Participant Test	Total Resource Test	Ratepayer Impact Test	Utility Test	Societal Test
Discount Rates:	Mkt.Seg.	7.62	7.62	7.62	7.62
Units:	$ Thousands	$	$ Thousands	$	$ Thousands
Customer Electric Bill Increase	0.00	0.00	0.00	0.00	0.00
Customer Nonelec Bill Increase	0.00	0.00	0.00	0.00	0.00
Customer O&M and Other Cost Increa	0.00	0.00	0.00	0.00	0.00
Customer Income Tax Increase	0.00	0.00	0.00	0.00	0.00
Customer Investment Increase	0.00	0.00	0.00	0.00	0.00
Customer Participation Charges	0.00	0.00	0.00	0.00	0.00
Customer Loan/Lease Paid	0.00	0.00	0.00	0.00	0.00
Customer Shared Saving Paid	0.00	0.00	0.00	0.00	0.00
Utility Revenue Decrease	0.00	0.00	291.42	0.00	0.00
Utility Adj. Rev. Decrease	0.00	0.00	75.49	0.00	0.00
Contribution to Margin	0.00	0.00	0.00	0.00	0.00
Utility Elec. Production Cost Incr	0.00	0.00	0.00	0.00	0.00
Utility Nonelec Rev. Decrease	0.00	0.00	0.00	0.00	0.00
Utility Nonelec Acq. Cost Increase	0.00	0.00	0.00	0.00	0.00
Utility Generation Cap. Debit	0.00	0.00	0.00	0.00	0.00
Utility Transmission Cap. Debit	0.00	0.00	0.00	0.00	0.00
Utility Distribution Cap. Debit	0.00	0.00	0.00	0.00	0.00
Utility Rebates Paid	0.00	0.00	0.00	0.00	0.00
Utility Capitalized Rebates Paid	0.00	0.00	0.00	0.00	0.00
Utility Admin. Cost Increase	0.00	613,062.70	613.06	613,062.70	613.06
Utility Cap. Admin. Cost Increase	0.00	0.00	0.00	0.00	0.00
Utility Fixed Admin Cost Increase	0.00	0.00	0.00	0.00	0.00
Utility Sales Tax Cost Increase	0.00	0.00	0.00	0.00	0.00
Utility Loan/Lease Paid	0.00	0.00	0.00	0.00	0.00
Utility Shared Saving Paid	0.00	0.00	0.00	0.00	0.00
Third Party Loan/Lease Paid	0.00	0.00	0.00	0.00	0.00
TP Nonelec. Acq. Cost Increase	0.00	0.00	0.00	0.00	0.00
Internal Environmental Cost	0.00	0.00	0.00	0.00	0.00
External Environmental Cost	0.00	0.00	0.00	0.00	0.00
Takeback Expenditure	0.00	0.00	0.00	0.00	0.00
Takeback Triangle	0.00	0.00	0.00	0.00	0.00
Change in Quality	0.00	0.00	0.00	0.00	0.00
Remaining Mkt Barrier Costs NonFre	0.00	0.00	0.00	0.00	0.00
Long-Term Rate Impact	0.00	0.00	0.00	0.00	0.00

Cinergy - CGEDB - 1999 IRP - PSI incent

Utility Summary Report

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider

Year	Base Revenue Lost $	FCA Revenue Lost $	Production Cost Savings $	Power Sup. Non-Elec. Revenue $	Power Sup. Non-Elec. Aquis. Cost $	Power Sup. Sales Tax Payable $ Thousands	Power Sup. Part. Admin. Costs $	Power Sup. Part. Cap. Admin. Costs $ Thousands	Power Sup. Rebates Paid $
2000	22,127.70	5,731.63	9,595.79	0.00	0.00	0.00	416,121.00	0.00	0.00
2001	44,255.40	11,463.27	18,661.68	0.00	0.00	0.00	404,442.00	0.00	0.00
2002	44,255.40	11,463.27	19,802.32	0.00	0.00	0.00	(23,358.00)	0.00	0.00
2003	44,255.40	11,463.27	21,184.07	0.00	0.00	0.00	(23,358.00)	0.00	0.00
2004	44,255.40	11,463.27	26,250.72	0.00	0.00	0.00	(23,358.00)	0.00	0.00
2005	44,255.40	11,463.27	27,526.26	0.00	0.00	0.00	(23,358.00)	0.00	0.00
2006	44,255.40	11,463.27	27,850.42	0.00	0.00	0.00	(23,358.00)	0.00	0.00
2007	44,255.40	11,463.27	25,897.64	0.00	0.00	0.00	(23,358.00)	0.00	0.00
2008	44,255.40	11,463.27	27,557.28	0.00	0.00	0.00	(23,358.00)	0.00	0.00
2009	44,255.40	11,463.27	28,036.90	0.00	0.00	0.00	(23,358.00)	0.00	0.00
2010	22,127.70	5,731.63	14,601.67	0.00	0.00	0.00	(11,679.00)	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Cinergy - CGEDB - 1999 IRP - PSI incent

Utility Summary Report

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider

Year	Power Sup. Cap. Rebates Paid $ Thousands	Generation Capacity Savings $	Transmission Capacity Savings $	Distribution Capacity Savings $ Thousands	Utility Net Savings $	RIM Net Savings $	Generation Energy Savings MWh	Peak Load Reduction MW	Power Sup. Non-Part. Admin. Costs $
2000	0.00	0.00	1,028.09	0.00	(405,497.12)	(433,356.46)	429.481	0.112	0
2001	0.00	0.00	2,121.13	0.00	(383,659.19)	(439,377.86)	858.961	0.224	0
2002	0.00	0.00	2,188.32	0.00	45,348.64	(10,370.03)	858.961	0.224	0
2003	0.00	0.00	2,257.76	0.00	46,799.83	(8,918.84)	858.961	0.224	0
2004	0.00	0.00	2,328.88	0.00	51,937.59	(3,781.08)	858.961	0.224	0
2005	0.00	0.00	2,402.24	0.00	53,286.50	(2,432.17)	858.961	0.224	0
2006	0.00	0.00	2,477.91	0.00	53,686.33	(2,032.34)	858.961	0.224	0
2007	0.00	0.00	2,555.96	0.00	51,811.60	(3,907.07)	858.961	0.224	0
2008	0.00	0.00	2,636.47	0.00	53,551.76	(2,166.91)	858.961	0.224	0
2009	0.00	0.00	2,719.52	0.00	54,114.43	(1,604.25)	858.961	0.224	0
2010	0.00	0.00	1,402.59	0.00	27,683.26	(176.08)	429.481	0.112	0
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.000	0

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider

GENERAL

Program name	KY_LI_00
Evaluation range	2000 to 2019
Reenrolement rate	0.00 %
Need Incentive rate	0.00 %
New Customers?	NO
Generation scenario	NONE
Transmission scenario	99_TD_20
Distribution scenario	NONE

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider

POWER SUPPLIER PROGRAM COSTS ($)

	REBATES					ADMINISTRATIVE COSTS					
	Per Participant		Per kW Reduction		% of Cust.	Annual	Per Participant		Per kW Reduction		% of Cust.
Year	One-Time	Annual	One-Time	Annual	Investment	for Prog	One-time	Annual	One-Time	Annual	Investment
2000	0.00	0.00	0.00	0.00	0.00	0.00	1426.00	-38.93	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00	0.00	1426.00	-38.93	0.00	0.00	0.00
2002	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2006	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00	-38.93	0.00	0.00	0.00
Esc.	MANUAL	MANUAL	MANUAL	MANUAL		MANUAL	MANUAL	MANUAL	MANUAL	MANUAL	

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider

POWER SUPPLIER CAPITALIZED PROGRAM COSTS ($)

	REBATES			ADMINISTRATIVE COSTS			
	Per Participant		% of Cust.	Annual	Per Particpant		% of Cust.
Year	One-Time	Annual	Investment	For Program	One-Time	Annual	Investment
2000	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2002	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2006	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2008	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Esc.	MANUAL	MANUAL	MANUAL		MANUAL	MANUAL	

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

GENERAL

Market name	TOTALMKT
Technology lifetime	10 yrs
Cust. discount rate	8.92 %
Dist. Loss Profile	CGE_R
Sales tax rate	0.00 %
Units	Total Lighting Participants

DEPRECIATION SCHEDULE

Year	Rate

RATE SCHEDULES

Schedule	Before Customer	After Customer
Retail Electric	AVG_RES	AVG_RES
Retail Fuel	N_A	N_A

LOAD IMPACTS

Before Customer

Enduse	Description	Fuel	KWh	KW	MMBtu
		Total	0.00	0.00	0.00

After Customer

Enduse	Description	Fuel	KWh	KW	MMBtu
CG_RS_GH	R_WHCGE & HS_AG_GS	Electric	-1331.39	-0.35	0.00
		Total	-1331.39	-0.35	0.00
		Difference	-1331.39	-0.35	0.00

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

PARTICIPANT COSTS ($)

Year	First year Investment	Annual Maintenance Costs	Annual Other Costs
2000	0.00	-68.55	0.00
2001	0.00	-68.55	0.00
2002	0.00	-68.55	0.00
2003	0.00	-68.55	0.00
2004	0.00	-68.55	0.00
2005	0.00	-68.55	0.00
2006	0.00	-68.55	0.00
2007	0.00	-68.55	0.00
2008	0.00	-68.55	0.00
2009	0.00	-68.55	0.00
2010	0.00	-68.55	0.00
2011	0.00	-68.55	0.00
2012	0.00	0.00	0.00
2013	0.00	0.00	0.00
2014	0.00	0.00	0.00
2015	0.00	0.00	0.00
2016	0.00	0.00	0.00
2017	0.00	0.00	0.00
2018	0.00	0.00	0.00
2019	0.00	0.00	0.00
Esc.	MANUAL	MANUAL	MANUAL

MARKET SEGMENT REBATES ($)

Year	Expensed One Time Rebates	Expensed Annual Rebates	Capitalized One Time Rebates	Capitalized Annual Rebates
2000	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00
2002	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00
2005	0.00	0.00	0.00	0.00
2006	0.00	0.00	0.00	0.00
2007	0.00	0.00	0.00	0.00
2008	0.00	0.00	0.00	0.00
2009	0.00	0.00	0.00	0.00
2010	0.00	0.00	0.00	0.00
2011	0.00	0.00	0.00	0.00
2012	0.00	0.00	0.00	0.00
2013	0.00	0.00	0.00	0.00
2014	0.00	0.00	0.00	0.00
2015	0.00	0.00	0.00	0.00
2016	0.00	0.00	0.00	0.00
2017	0.00	0.00	0.00	0.00
2018	0.00	0.00	0.00	0.00
2019	0.00	0.00	0.00	0.00
	MANUAL	MANUAL	MANUAL	MANUAL

EPRI DSManager
Cinergy - CGEDB - 1999 IRP - PSI incent
Program Inputs Summary

Program: KY_LI_00 - KY Low Income Weath - 2000 Rider
Market Segment: TOTALMKT - Total Market Summary

PENETRATION

Year	New Participants	New Free Riders %	New Free Drivers %	Cumulative Penetration	Cumulative Pen. Net of Free Riders	Cumulative Free Drivers
2000	300.00	0.00	0.00	300.00	300.00	0.00
2001	300.00	0.00	0.00	600.00	600.00	0.00
2002	0.00	-nan	-nan	600.00	600.00	0.00
2003	0.00	-nan	-nan	600.00	600.00	0.00
2004	0.00	-nan	-nan	600.00	600.00	0.00
2005	0.00	-nan	-nan	600.00	600.00	0.00
2006	0.00	-nan	-nan	600.00	600.00	0.00
2007	0.00	-nan	-nan	600.00	600.00	0.00
2008	0.00	-nan	-nan	600.00	600.00	0.00
2009	0.00	-nan	-nan	600.00	600.00	0.00
2010	0.00	-nan	-nan	300.00	300.00	0.00
2011	0.00	-nan	-nan	0.00	0.00	0.00
2012	0.00	-nan	-nan	0.00	0.00	0.00
2013	0.00	-nan	-nan	0.00	0.00	0.00
2014	0.00	-nan	-nan	0.00	0.00	0.00
2015	0.00	-nan	-nan	0.00	0.00	0.00
2016	0.00	-nan	-nan	0.00	0.00	0.00
2017	0.00	-nan	-nan	0.00	0.00	0.00
2018	0.00	-nan	-nan	0.00	0.00	0.00
2019	0.00	-nan	-nan	0.00	0.00	0.00

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-011

REQUEST:

11. In the Energy Savings Analysis, explain how C is specified, i.e. - linear, logarithms, etc.

RESPONSE:

The Energy Savings Analysis was prepared at my direction and under my supervision. As defined on page IV-1, (C) is the set of household characteristics, demographics, weather and other non-program factors in the regression equations. The final set of variables used in (C) is shown below. With the exception of the dependent variable, (+) implies that we expect a positive relationship with electric usage, and (-) implies a negative relationship with electric usage. The final gas model is nearly identical, with QGASDAY replacing QELECDAY as the dependent variable and the elimination of the cooling end-use and cooling measure variables. All relationships are *linear* (i.e., no data transformations were conducted).

QELEDAY: This is the dependent variable—average daily electric consumption each month

INCOME: The household's annual income (+)

SFAM: A binary variable set equal to 1 if the home is a detached single-family home, and zero otherwise (+)

HHSIZE: Family size (+)

ELECWH: A binary variable set equal to 1 if the customer has electric water heat, and zero otherwise (+)

ELECHDD: An interactive variable equal to customer-specific heating degree-days if the customer has electric heat, and zero otherwise (+)

ELECCDD: An interactive variable equal to customer-specific cooling degree-days if the customer has electric heat, and zero otherwise (+)

HEATMEAS:A binary variable set equal to 1 in the post period if the customer has electric heat and received weatherization measures, and zero otherwise (-)

COOLMEAS: A binary variable set equal to 1 in the post period if the customer has electric cooling and received weatherization measures, and zero otherwise (-)

WATMEAS: A binary variable set equal to 1 in the post period if the customer has electric water heat and received water heater retrofit measures, and zero otherwise (-)

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-012

REQUEST:

12. Given that the data is of a time-series nature, explain why an estimation method was not employed that would correct for the effects of autocorrelated errors.

RESPONSE:

The Energy Savings Analysis was prepared at my direction and under my supervision. The data actually comprise a pooled cross-sectional/time-series (CSTS), with the cross-sections defined as participants and the time-series the months of energy consumption for each customer. Statistical packages such as the one used here (SAS) generally require what is called a "square matrix" to perform corrections for autocorrelation. That is, the number of time-series observations must be identical for each cross-section unit. The autocorrelation correction would therefore require eliminating some months of consumption for some customers and/or eliminating customers from the regression equation. Neither of these options was utilized because of the relatively small sample size remaining after the data development and cleaning process (See pages IV-2 to IV-3). Moreover, autocorrelation, if it exists, *does not* bias the regression coefficients—it only biases the standard errors.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-013

REQUEST:

13. Given the low coefficients of determination, which are displayed in Tables 4 and 5 (0.4282 and 0.5862), was any consideration given to specifying and estimating other models? If no, explain in detail why such consideration was not given.

RESPONSE:

The Energy Savings Analysis was prepared at my direction and under my supervision. There are only 66 participants in the electric model, and 71 in the gas model. Given these limitations, the R-square estimates are about where we expected them to be, and explain about half of the variance in energy consumption. Furthermore, other models were examined, but the models presented provided the best "fit" to the data. For example, we estimated a very traditional billing analysis model where all of the end-use/measure types defined in Tables 4 and 5 were collapsed into a single dummy variable called "Post," which was set equal to 1 in the period after measure installation. These models provided very similar overall savings results with a slightly lower overall model fit. They also did not provide the richness of savings information across end-uses, and were therefore not selected as the final set of models.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-014

REQUEST:

14. As defined on pages lV-4 and lV-5, HEATMEAS and COOLMEAS are defined in precisely the same manner. Explain whether these variables are, in fact, capturing the same measure. If so, explain why both are included both in the Electric regression equation.

RESPONSE:

The Energy Savings Analysis was prepared at my direction and under my supervision. The measures are not the same (there was a typo in the definition of COOLMEAS). The corrected definitions appear below:

HEATMEAS: A binary variable set equal to 1 in the post period if the customer has *electric heat* and received weatherization measures, and zero otherwise.

COOLMEAS: A binary variable set equal to 1 in the post period if the customer has *electric cooling* and received weatherization measures, and zero otherwise.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-015

REQUEST:

15. Table 8 contains the Electric Savings Estimates for Alternative End Use Combinations. Explain how the various types are defined.

RESPONSE:

The Energy Savings Analysis was prepared at my direction and under my supervision. The eight types in the table include every combination of electric end uses that would result in energy savings: electric cooling, space heating, or water heating. Type 1 homes have electric for all three end uses, and therefore would save the greatest amount of energy from the program. Type 8 homes do not have electric for any of these three end uses, and thus would not save electricity from the program. Types 2-7 have different combinations of electric end uses.

WITNESS RESPONSIBLE:

Victor A. Needham

KY PSC
Staff Data Request Set No. 1
Case No. 99-414
Date Received: Feb. 4, 2000
Response Due Date: Feb. 19, 2000

KyStaff-01-016

REQUEST:

16. Exhibit 2 contains the Recalculation of the Growth Factors for Electric and Gas, presumably in logarithms. Given this, answer the following:

a. For the Electric equation:

(1) Is the predicted equation given by:

Log (Elecactual) = 9.1429 + 0.0081566*log (TIME), equivalent to: Elecactual = 9.1429*TIME$^{0.00816}$?

If not, then explain.

(2) What values are 1988 - 1998 assigned in the predicted equation? Submit the fitted equations for each of these years.

(3) Assuming that? P<SDECS=6>(EXP (O.OO81566)-l), is the probability of an occurrence, what is SDECS?

b. In the Gasactual model,

(1) What is the interpretation of the negatively – signed coefficient estimate on TIME, the independent variable?

(2) Does? P<SDECS=6>(EXP (-O.O21348)-l) = -0.021122 mean there is a negative probability of SDEC=6 occurring? If not, then explain.

RESPONSE:
The recalculation of growth factors was prepared at my direction and under my supervision.
a. For the electric equation:
a.(1) The predicted equation is actually given by:
Log (Elecactual) = 9.1429 + 0.0081566*TIME.

It is equivalent to:

Elecactual = EXP(9.1429 + 0.0081566*TIME).

a.(2) The actual values of Electactual for 1988 – 1998 are as follows:

1988 - 10,781	1993 – 11,136	1998 – 11,183
1989 - 10,537	1994 – 11,086	
1990 - 10,497	1995 – 11,423	
1991 - 11,288	1996 – 11,602	
1992 - 10,266	1997 – 11,080	

See Exhibit 2 for the results of the regression equation fitted to this data.

a.(3) Actually "P<SDECS=6>(EXP(0.0081566)-1)" is the text command used in this particular software to convert the coefficient on TIME into a growth rate. The "SDECS=6" tells the software to print the result out to the sixth decimal place.

b. In the Gasactual model,

b.(1) The negative sign indicates that gas usage is declining over time, i.e., exhibiting a negative growth rate.

b.(2) It means that Gasactual experienced a –2.1122% growth rate over time.

WITNESS RESPONSIBLE:

Richard G. Stevie

COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
211 SOWER BOULEVARD
POST OFFICE BOX 615
FRANKFORT, KY. 40602
(502) 564-3940

February 4, 2000

James B. Gainer
Legal Division
The Union Light Heat & Power Co
139 E. Fourth Street
Cincinnati, OH. 45202

Honorable John J. Finnigan
& James B. Gainer
Attorneys at Law
2500 Atrium II
P. O. Box 960
Cincinnati, OH. 45201 0960

RE: Case No. 1999-414

We enclose one attested copy of the Commission's Order in the above case.

Sincerely,

Stephanie Bell
Secretary of the Commission

SB/hv
Enclosure

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY	))))	CASE NO. 99-414

O R D E R

IT IS ORDERED that The Union Light, Heat and Power Company ("ULH&P") shall file with the Commission the original and 8 copies of the following information, with a copy to all parties of record. The information requested herein is due within 15 days of the date of this Order. Each copy of the data requested should be placed in a bound volume with each item tabbed. When a number of sheets are required for an item, each sheet should be appropriately indexed, for example, Item 1(a), Sheet 2 of 6. Include with each response the name of the person who will be responsible for responding to questions relating to the information provided. Careful attention should be given to copied material to ensure that it is legible. Where information requested herein has been previously provided, in the format requested herein, reference may be made to the specific location of said information in responding to this information request. When applicable, the information requested herein should be provided for total company operations and jurisdictional operations, separately.

1. Refer to Section III of the application, page 6. The Joint Applicants state that the Collaborative is not requesting continuation of residential revenue decoupling.

a. Explain why the Collaborative is not requesting the continuation of residential revenue decoupling. Include all studies and analyses performed that support this position.

b. Identify the methodology the Collaborative is proposing to use in place of the residential revenue decoupling. Provide a detailed explanation of how this methodology will work and why this method is a reasonable alternative to decoupling.

c. If the residential revenue decoupling is not continued, the Collaborative will have to develop a method to determine the energy savings experienced by participants. Identify the method the Collaborative anticipates it will use and explain in detail how the Collaborative plans to perform this type of evaluation.

2. In its December 1, 1995 Order in Case No. 95-312[1] the Commission stated, "Therefore, ULH&P should perform a study which compares the electricity and gas usage patterns of DSM program participants with those of non-participating customers . . . The overall results of the study should be presented to the Commission at the end of the current plan in 1999."[2] Exhibit 2 of the application, which is a one-page printout showing an "ordinary least squares" recalculation of the growth factors for electric customers and gas customers, is identified as the study required by the December 1, 1995 Order.

---

[1] Case No. 95-312, The Joint Application Pursuant to 1994 House Bill No. 501 for the Approval of the Principles of Agreement, Demand Side Management, The Union Light, Heat and Power Company, and for Authority for The Union Light, Heat and Power Company to Implement Various Tariffs to Recover Costs, Lost Revenues and Receive Incentives Associated with Demand Side Management Programs.

[2] Case No. 95-312, Order dated December 1, 1995 at 6.

a. Provide an interpretation of the information presented in Exhibit 2 which compares the growth factors for electric customers and gas customers with the corresponding factors used in each year the decoupling mechanism has been in use.

b. Explain in detail how Exhibit 2 of the application satisfies the Commission's order that ULH&P perform a study which compares the electricity and gas usage patterns of demand side management ("DSM") program participants with those of non-participants.

c. Provide in conjunction with the review of the first 3 years of the DSM plan a study that complies with the Commission's December 1, 1995 Order in Case No. 95-312.

3. Refer to Exhibit 1 of the application, the "Evaluation of the Low-Income Conservation and Energy Education Program" ("program evaluation") prepared by Quantitative Economic Consulting, LLC ("Quantec").

a. Explain in detail why the program evaluation did not examine the effectiveness of the DSM programs separately.

b. Were the Joint Applicants and Quantec aware that end-of-pilot program evaluations performed for the Louisville Gas and Electric Company ("LG&E") and Kentucky Power Company ("AEP")[3] reviewed the effectiveness of each DSM program separately? If yes, explain why Quantec performed the program evaluation on a combined basis, rather than separately, by program.

c. Indicate which members of the ULH&P Collaborative are also members of the DSM Collaboratives at LG&E or AEP.

[3] Doing business as American Electric Power.

d. Provide the results of the following DSM cost/benefit tests for each DSM program for the evaluation period. The test results are needed only for those programs in place as of the end of the pilot period. Include all supporting calculations, assumptions, and workpapers.

(1) Total Resource Cost ("TRC").

(2) Rate Impact Measure ("RIM").

(3) Utility Cost.

(4) Participant.

4. Explain why traditional DSM cost/benefit tests were not included in the program evaluation prepared by Quantec.

5. Explain why the Quantec program evaluation does not review the commercial programs listed in Exhibit 6a of the application.

6. Refer to page III-1 of the Quantec program evaluation, "Program Regulatory Background."

a. Explain why there is no mention of KRS 278.285 in this discussion.

b. Explain in detail the basis and source of the following statements: "The Public Service Commission (PSC) wanted a low-income program designed and included in the package. Further, the PSC and other stakeholders decided that DSM programs needed to be designed with the assistance of local parties in a collaborative setting."

c. Was the Commission Staff a member of the initial Collaborative, or an observer of the Collaborative? Explain the response.

7. Refer to page IV-7 of the Quantec program evaluation, Table 7. State the annual energy savings by participant category as percentages of the most recent 12-month level of energy sales.

8. Refer to pages V-2 and V-3 of the Quantec program evaluation. Describe in detail the actions the Joint Applicants intend to undertake in response to the recommendations made by Quantec.

9. Explain why the Joint Applicants believe it is appropriate to include an adjustment to correct for the failure to reconcile the decoupler adjustment component of the 1998 Rider in the 1999 filing. Also, explain why this decoupler adjustment was omitted from the appropriate prior filing.

10. Refer to Exhibit 3 of the application, the proposed residential DSM programs for 2000 and 2001. Based on the estimated costs and benefits for each program, provide the TRC, RIM, Utility Cost, and Participant test results for each program. Include all supporting calculations, assumptions, and workpapers.

11. In the Energy Savings Analysis, explain how C is specified, i.e. - linear, logarithms, etc.

12. Given that the data is of a time-series nature, explain why an estimation method was not employed that would correct for the effects of autocorrelated errors.

13. Given the low coefficients of determination, which are displayed in Tables 4 and 5 (0.4282 and 0.5862), was any consideration given to specifying and estimating other models? If no, explain in detail why such consideration was not given.

14. As defined on pages IV-4 and IV-5, HEATMEAS and COOLMEAS are defined in precisely the same manner. Explain whether these variables are, in fact,

capturing the same measure. If so, explain why both are included both in the Electric regression equation.

15. Table 8 contains the Electric Savings Estimates for Alternative End Use Combinations. Explain how the various types are defined.

16. Exhibit 2 contains the Recalculation of the Growth Factors for Electric and Gas, presumably in logarithms. Given this, answer the following:

a. For the Electric equation:

(1) Is the predicted equation given by:

Log (Elecactual) = 9.1429 + 0.0081566*log(TIME),

equivalent to: Elecactual = $9.1429*TIME^{0.00816}$?

If not, then explain.

(2) What values are 1988 – 1998 assigned in the predicted equation? Submit the fitted equations for each of these years.

(3) Assuming that ?P<SDECS=6>(EXP(0.0081566)-1), is the probability of an occurrence, what is SDECS?

b. In the Gasactual model,

(1) What is the interpretation of the negatively – signed coefficient estimate on TIME, the independent variable?

(2) Does ?P<SDECS=6>(EXP(-0.021348)-1) = -0.021122 mean there is a negative probability of SDEC=6 occurring? If not, then explain.

Done at Frankfort, Kentucky, this 4th day of February, 2000.

By the Commission

ATTEST:

Executive Director

COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
730 SCHENKEL LANE
POST OFFICE BOX 615
FRANKFORT, KY. 40602
(502) 564-3940

December 20, 1999

James B. Gainer
Legal Division
The Union Light Heat & Power Co
139 E. Fourth Street
Cincinnati, OH. 45202

Honorable John J. Finnigan
& James B. Gainer
Attorneys at Law
2500 Atrium II
P. O. Box 960
Cincinnati, OH. 45201 0960

RE: Case No. 1999-414

We enclose one attested copy of the Commission's Order in the above case.

Sincerely,

Stephanie Bell
Secretary of the Commission

SB/sa
Enclosure

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY	))))	CASE NO. 99-414

O R D E R

On December 2, 1999, The Union Light, Heat and Power Company ("ULH&P") filed its petition for Commission approval of Demand Side Management ("DSM") programs and revised DSM tariff riders. ULH&P requests that its petition be processed in an expedited manner so that it can implement the revised tariff riders effective with the first billing cycle of January 2000.

The Commission initially approved DSM programs and DSM tariff riders for ULH&P in Case No. 95-312[1] on a pilot basis to run through calendar year 1999. Since that approval, ULH&P has made filings with the Commission and has updated its DSM tariff riders on an annual basis. ULH&P was due to make the instant filing on October 1, 1999, for the purpose of reviewing and evaluating its DSM pilot and determining what, if any, DSM programs should be continued beyond the end of 1999. On October 1, 1999,

[1] Case No. 95-312, The Cost Recovery Filing for Demand Side Management by The Union Light, Heat and Power Company, Order dated December 1, 1995.

ULH&P filed a request for an extension of time, until December 1, 1999, in which to make its filing, which request was granted by the Commission.[2]

ULH&P now requests that its petition be expedited in order that its revised tariff riders can be implemented effective with the first billing cycle of January 2000. Given the two-month delay in making this filing and the fact that the instant review is for the purpose of evaluating ULH&P's DSM pilot and determining what, if any, DSM programs should be continued beyond the pilot phase, the Commission cannot grant ULH&P's request for expedited treatment. The filing will require considerably more review and analysis than can be conducted in the brief period between the petition's filing date and the January 3, 2000 proposed effective date for the revised DSM tariff riders.

The Commission recognizes, however, that continuity is necessary in the administration of DSM programs. Accordingly, ULH&P's DSM programs and tariff riders presently in effect, but scheduled to terminate at the end of 1999, should be continued until a final Order is issued in this proceeding.

IT IS THEREFORE ORDERED that:

1. ULH&P's requested for expedited approval of its petition is hereby denied.

2. ULH&P's revised DSM tariff riders shall be suspended for five months from their proposed effective date, up to and including June 2, 2000.

3. ULH&P's existing DSM programs and DSM tariff riders shall remain in effect pending the Commission's final Order in this proceeding.

---

[2] Case No. 99-414, Demand Side Management Programs and Cost Recovery Filing for Demand Side Management Programs by The Union Light, Heat and Power Company, Order dated October 25, 1999.

Done at Frankfort, Kentucky, this 20th day of December, 1999.

By the Commission

ATTEST:

Executive Director

Cinergy Corp.
139 East Fourth Street
Rm 25 AT II
P.O. Box 960
Cincinnati, OH 45201-0960
Tel 513.287.3601
Fax 513.287.3810
jfinnigan@cinergy.com

JOHN J. FINNIGAN, JR.
Senior Counsel

November 30, 1999

CINERGY

Hon. Helen Helton
Executive Director
Public Service Commission of Kentucky
730 Schenkel Lane
P.O. Box 615
Frankfort, Kentucky 40602

RE: In the Matter of : The Annual Cost Recovery Filing for Demand Side Management by The Union Light, Heat and Power Company
Case No. ~~95-312~~ 99-414

Dear Ms. Helton:

Enclosed are an original and fifteen (15) true copies of Joint Application for The Adjustment of the 2000 DSM Cost Recovery Mechanism and for Filing the Amended Tariff Sheets for Gas Rider DSM (Original Sheet No.), Electric Rider DSM (Original Sheet No.) for docketing in the above captioned case.

Please date stamp the extra copies of the enclosed application upon filing and return in the enclosed, self-addressed envelope for our files.

Very truly yours,

John J. Finnigan

John J. Finnigan
Senior Counsel

JJF/nlb

Enclosures

BEFORE THE
KENTUCKY PUBLIC SERVICE COMMISSION

In the Matter of:	)	
The Annual Cost Recovery Filing	)	Case No. 99-414
for Demand Side Management by	)	
The Union Light, Heat and Power Company	)	

JOINT APPLICATION FOR THE ADJUSTMENT OF THE 2000 DSM COST RECOVERY MECHANISM AND FOR FILING THE AMENDED TARIFF SHEETS FOR GAS RIDER DSM (ORIGINAL SHEET NO.), ELECTRIC RIDER DSM (ORIGINAL SHEET NO.)

Now, come the Joint Applicants, with the consensus of the Collaborative, pursuant to this Commission's December 1, 1995 Order in Case No. 95-312 approving the Joint Application seeking to establish demand-side management (DSM) for The Union Light, Heat and Power Company's (Union Light or ULH&P) customers, and hereby make the following filing to adjust the cost recovery mechanism for calendar year 2000. (Order at 4.) The Order and the Joint Application are attached to this filing as Appendices A and B, respectively. The Joint Applicants are The Union Light, Heat and Power Company of 107 Brent Spence Square, Covington, Kentucky 41011, the Office of the Kentucky Attorney General (AG), and the Northern Kentucky Community Action Commission (CAC). The Collaborative Members are Darla Griffin (CAC), Ann Louise Cheuvront (AG), Nina Creech (People Working Cooperatively), Carl Melcher (Northern Kentucky Legal Aid), Karen Reagor (Kentucky NEED Project), Martha Daugherty (League of Women Voters), George Sundrup (Cinergy), Jennifer Griola (Brighton Center), Geoffrey Young (Division of Energy), and Shawn Cox (Northern Kentucky Home Builders Association). The Joint Applicants request that this Application be processed in an expeditious manner to permit implementation of the new riders during the first billing cycle of January 2000.

I. INTRODUCTION

A. Background

On December 1, 1995, the Kentucky Public Service Commission (KyPSC or Commission) approved a Joint Application filed in Case No. 95-312 by Union Light, the Office of the Kentucky Attorney General, the Northern Kentucky Community Action Commission, Citizens Organized to End Poverty in the Commonwealth, and two individuals: Susan York and Hazel Buchanan. This application requested approval of a DSM plan and recovery mechanism that were developed through a DSM Collaborative composed of representatives of Union Light and its customers. The Commission approved the DSM plan for the period ending December 31, 1999, and required the submission of annual update filings as well as a final report at the end of the DSM plan in 1999.

This filing presents the Applicants' third annual report. The following information related to the calculation of the Rider is required in this report and is provided herein:

1) Projected program and administrative costs, lost revenues and shareholder incentive for calendar year 2000;
2) Actual program and administrative costs, and shareholder incentives for each program from July 1, 1998 to June 30, 1999;
3) Reconciliation of actual versus projected costs and revenues for the period[1];
4) The decoupler calculation for the residential class; and
5) A proposed adjustment for each class[2].

[1] This reconciliation also reflects an adjustment to correct for the failure to reconcile the decoupler adjustment component of the 1998 Rider in the 1999 filing. (See the Commission's Order in Case No. 95-312, dated December 1, 1995, at page 4, paragraph 3. Reconciliation of the decoupler adjustment was inadvertently omitted from the calculation of the 1999 Rider, filed in the fall of 1998. An adjustment has also been made to remove revenues resulting from the DSM Riders from the net revenues used in calculating the decoupler adjustment.

[2] Application in Case No. 95-312, dated July 15, 1995 (approved by Commission Order dated December 1, 1995), at pages 10-11.

The following activities are to be updated in conjunction with each annual filing and are addressed herein:

1) "ULH&P shall recalculate on an annual basis the electric and gas usage-per-customer growth factors contained in the residential decoupling mechanism using customer usage data from the most recent eleven-year period; and

2) ULH&P shall perform a study which compares the electricity and gas patterns of DSM program participants with those of non-participants, and shall present the findings to the Commission in annual update reports and a final report at the end of the DSM plan in December 1999."[3]

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 Joint Application 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) including the effects of decoupling, and the Shareholder Incentive.

[3] KyPSC Order in Case No. 95-312, dated December 1, 1995 at page 6.

2) **"Collaborative"** shall mean the Union Light 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 (Exhibit 1 to Joint Application) (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.

II. ANNUAL UPDATE USAGE STUDY

On May 28, 1997, Union Light submitted a supplemental filing containing a progress report on a study being performed to compare the electricity and gas usage of DSM program participants with those of non-participants. The work plan for the conduct

of that study was also included in the supplemental filing. The Company approved the work plan, which was prepared by Barakat and Chamberlin Inc. (BCI), in June 1997. The work plan consisted of two major components: a program process evaluation, focusing on the program's operation, administration, and delivery; and an energy savings assessment, comparing the electric and gas consumption of program participants with that of non-participants, measuring the program's effect on the energy consumption of participating customers. The program was judged by the third-party evaluation contractor to have been very effective in reducing energy consumption. This finding and the estimated resultant savings for electric and gas customers who received measures are reflected in the following statement.

> *The program has been very successful in reducing both gas and electric consumption. Compared to other low-income programs, the energy savings induced by this program's efforts are impressive. Overall savings for electric customers receiving weatherization or water heating measures were estimated at 1,893 kWh annually, and overall savings for gas customers receiving weatherization or water heating measures were estimated at 165 CCF annually.*

The average participant in the program was estimated to save 1,332 kWh and 115 CCF as a result of participation in the program. The complete report is attached to this Application as Exhibit 1.

III. RECALCULATION OF THE ELECTRIC AND GAS USAGE-PER-CUSTOMER GROWTH FACTORS

The recalculation of the factors through June 1999 is provided as Exhibit 2 to this filing, as required by the third ordering provision of the Commission's December 1, 1995 Order in Case No. 95-312. As discussed in that Order, this information is available for use in the design of a decoupling mechanism "in the event the Collaborative requests a

continuation of residential revenue decoupling." The Collaborative is not requesting continuation of residential revenue decoupling in this filing.

IV. CALCULATION OF THE 2000 DSM COST RECOVERY MECHANISM

A. Summary of DSM Activity

Union Light proposes to continue to offer the following four demand-side management (DSM) programs in Union Light's service territory in 2000 under the jurisdiction of this Commission:

Program 1: Residential Conservation and Energy Education

Program 2: Residential Home Energy House Call

Program 3: Residential Comprehensive Energy Education Program

Program 4: Residential New Construction/Renovation Program

All of the programs listed above have been approved by this Commission in previous filings and are currently available to Union Light's customers. More detailed descriptions of the programs are provided in Exhibit 3.

In addition to the continuing programs listed above, the Collaborative requests that funds be approved for use for the review and development of additional programs. These funds will be referred to hereafter as Program 5: Program Development Funds. As described in preceding filings, the Collaborative has focused on innovative low-cost approaches for influencing the market, such as educational programs and collaborations with groups such as homebuilders' associations.

B. 2000 DSM Riders

In accordance with the Commission's order in Case No. 95-312, the Joint

Applicants submit the proposed DSM Riders (Exhibits 4 and 5). These riders are intended to recover the 1999 program costs and to reconcile the actual DSM revenue requirement, as previously defined, to the revenue recovered under the DSM Riders beginning with July 1, 1998 through June 30, 1999. Exhibit 6 consists of two spreadsheets. Exhibit 6a tabulates the reconciliation of the DSM Revenue Requirement associated with Union Light's programs between July 1, 1998 and June 30, 1999, and the revenues collected through the DSM Riders over the same period. An adjustment to the residential rider to account for reconciliation of decoupler adjustments for the previous periods is also reflected in Exhibits 6a and 6b, as described in footnote 1. Exhibit 6b tabulates the derivation of the decoupler adjustment, including the previous period adjustments, reflected in Exhibits 6a and 7 of this filing. The true-up adjustment is based upon the difference between the actual DSM revenue requirement and the revenues collected during the period July 1, 1998 through June 30, 1999.

The actual DSM revenue requirement for the period July 1, 1998 through June 30, 1999, consists of program costs, lost revenues (reflected as the decoupler adjustment for residential programs), and shared savings. Shared savings are applicable only to the non-residential programs. The actual program costs incurred are reflected in column (2) labeled "Program Exp 7-98 thru 6-99." The lost revenues or the decoupler adjustment are reflected in column (3) labeled "Lost Revenues 7-98 thru 6-99." The data for every transaction for which a rebate is paid is collected in the appropriate program's database. The calculation of lost revenues for C&I programs is performed using these databases. The impacts are multiplied by the marginal rate of the appropriate tariff to determine the dollar amount of the lost revenues. The data collected and used in the calculation of lost revenues are

program specific. For the commercial lighting program, the impacts are calculated by taking the difference between the demand related to the original lighting fixtures and the demand related to the new energy efficient fixture. The demand is then multiplied by the number of hours of usage for the particular type of building in which the new lighting was installed. The estimates of average hours of usage for various building types were developed as part of an impact evaluation performed on the lighting program offered by The Cincinnati Gas & Electric Company (CG&E) in Ohio. The motors database uses a model sponsored by the U.S. Department of Energy (Motor Master Plus) and updated each year to accurately reflect the impacts resulting from replacement of inefficient motors. The manufacturer and model numbers and estimated hours of usage of the original inefficient motor and the new motor are entered into the model and the resulting impacts are calculated. The impacts resulting from the installation of adjustable speed drives are similarly calculated using a model offered by MagneTek (Energy Savings Predictor). The motor size, voltage, annual operating hours, application, and percentages of time at different operating levels are entered into the program. Energy and demand impacts are then compared to the existing flow control methods (by-pass valves, etc.).

The residential decoupler adjustment for the period July 1, 1998 through June 30, 1999 is attached as Exhibit 8, was calculated in accordance with the provisions of the KyPSC's December 1, 1995 Order in Case No. 95-312.

Exhibit 7, page 1 contains the calculation of the 2000 DSM Riders. The calculation includes the reconciliation adjustments calculated in Exhibit 6a and b and the DSM revenue requirement for 2000. The DSM revenue requirement for 2000 includes the costs associated with the four Residential DSM programs and program development funds

planned for 2000.

The 2000 DSM Riders, Exhibits 4 and 5, replace the 1999 DSM Riders, which were implemented in the first billing cycle in January, 1999. These riders, to be effective with the first billing cycle in January 2000, are applicable to service provided under two sets of electric service tariffs as follows:

Residential Electric Service provided under:

Rate RS, Residential Service, Sheet No. 30

Rate REC, Residential Energy Conservation Rate, Sheet No. 32

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

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

Rate TT, Time-of-Day Rate for Service at Transmission Voltage, Sheet No. 51

These riders would also be applicable to service provided under the following two residential gas service tariffs:

Residential gas service provided under:

Rate RS, Residential Service, Sheet No. 30

Rate REC, Residential Energy Conservation Rate, Sheet No. 32

Calculation of the Residential Charge

The proposed residential charge per kWh for 2000 was calculated by dividing the sum of: 1) the reconciliation amount calculated in Exhibits 6a and 6b; 2) the decoupler adjustment calculated in Exhibit 6a and 6b; and 3) the DSM Revenue Requirement associated with the DSM programs during calendar year 2000, by the projected sales for the same period. DSM Program Costs for 2000 include the total implementation costs plus program rebates. There are no Shareholder Incentives associated with the non-resource programs planned for implementation in 2000. The calculations in support of the residential recovery mechanism are provided in Exhibit 7.

The residential decoupler adjustment for the period July 1, 1998 through June 30, 1999, attached as Exhibit 8, was calculated in accordance with the provisions of the KyPSC's December 1, 1995 Order in Case No. 95-312.

Calculation of the Non-Residential Charge

The proposed non-residential charge per kWh for 2000 was calculated by dividing the sum of: 1) the reconciliation amount calculated in Exhibit 6a and 2) the DSM Revenue Requirement associated with the DSM programs during calendar year 2000 from Exhibit 7, by the projected sales for the same period.

Allocation of the DSM Revenue Requirement

As required by 1994 House Bill 501, the DSM Cost Recovery Mechanism

attributes the costs, lost revenues, and shared savings to the respective class that benefits from the programs. The amounts associated with the reconciliation of the Rider are similarly allocated as demonstrated in Exhibit 7. As required, qualifying industrial customers are permitted to "opt out" of participation in, and payment for, the 1999 DSM programs. In fact, most of Union Light's nine transmission level (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 ask for a timely review of this Application and for an Order approving the 2000 Riders DSM contained in Exhibits 4 and 5 hereto.

Respectfully Submitted,

THE UNION LIGHT, HEAT AND POWER COMPANY

By: _____

John J. Finnigan, Jr., Trial Attorney (Attorney No. 86657)
James B. Gainer (Attorney No. 87288)
The Union Light, Heat and Power Company
139 East Fourth Street, Room 25ATII
Cincinnati, Ohio 45202
(513) 287-3601

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing filing was served on the following on November 30, 1999 via ordinary United States mail, postage prepaid:

Ann Louise Cheuvront, Assistant Attorney General
The Kentucky Office of the Attorney General
1024 Capital Center Drive
Frankfort, Kentucky 40602-2000

Richard G. Raff
Public Service Commission
730 Schenkel Lane
Frankfort, Kentucky 40602

Clint Hamm
Northern Kentucky Community Action Commission
P.O. Box 193
Covington, Kentucky 41012

Mr. Anthony Martin
Office of Kentucky Legal Services Program, Inc.
201 West Short Street, Suite 506
Lexington, Kentucky 40507

Mr. Carl Melcher
Northern Kentucky Legal Aid, Inc.
302 Greenup
Covington, Kentucky 41011

John J. Finnigan, Jr.

EXHIBIT 1

Final Report

Evaluation of the Low-Income Conservation and Energy Education Program

Prepared for:
Kathy Schroder
Cinergy Corporation

Prepared by:
M. Sami Khawaja, Ph.D.
Ken Seiden, Ph.D.
Scott Dimetrosky
quantec

October 27, 1999

quantec
quantitative economic consulting, LLC

PORTLAND, OR
BOULDER,CO

quantec addresses

610 SW Broadway, Suite 505
Portland, OR 97205
Tel. 503 228-2992
Fax 503 228-3696

1717 Bluebell Ave., Suite 100
Boulder, CO 80302
Tel. 303 998-0102
Fax 303 998-1007

Table of Contents

Executive Summary ES-1

Major Findings ES-2
Program-Induced Savings ES-4
Overall ES-4

I. Introduction I-1

Program Summary I-1
Client Eligibility I-1
Intake and Program Promotion I-2

II. Process Evaluation Data Collection II-1

III. Interview Findings III-1

Program Regulatory Background III-1
Program Design III-1
Program Marketing and Delivery III-2

IV. Energy Savings Analysis IV-1

Data Development IV-2
Model Specifications IV-4
Energy Savings IV-5

V. Overall Program Assessment V-1

Regulatory/Collaborative Process V-1
Program Design V-1
Initial Program Delivery V-1
Subsequent Program Management and Delivery Changes ... V-2
Energy Savings V-2
Recommendations V-2

References R-1

Tables & Figures

Figure ES-1 Participation Rates ES-4

Table 1 Data Collection II-1

Figure 1 Participation Rates III-3

Figure 2 Benchmarking: Number of Homes per Month III-4

Table 2 Sample Disposition IV-2

Table 3 Screening Results IV-3

Table 4 Electric OLS Model Results IV-5

Table 5 Gas OLS Model Results IV-6

Table 6 Annual Energy Savings for Customers in OLS Models IV-6

Table 7 Annual Energy Savings by Participant Category IV-7

Table 8 Electric Savings Estimates for Alternative End Use Combinations IV-7

Table 9 Gas Savings Estimates for Alternative End Use Combinations IV-8

Figure 3 Energy Savings Comparison with other Utility Low-Income Programs IV-8

Executive Summary

This report contains the results of quantec's evaluation of the Low-Income Conservation and Energy Education Program (Program) at Union Light Heating & Power (ULH&P). This evaluation assessed the Program's performance in terms of operational efficiency and delivery, as well as Program energy savings.

The Program was designed to provide services, including energy education and a mix of energy conservation measures to just over 600 income-eligible households by the end of 1999. It sought to leverage and combine its funding with the State and Gas weatherization programs, thus providing more comprehensive coverage to low-income customers.

Together, these programs provide assistance to low-income customers by:

1. Installing energy efficiency measures
2. Providing energy education
3. Providing health and safety inspections and repairs

Customers were eligible to participate if they received ULH&P natural gas or electric service in their name, if their household income did not exceed 150% of the federal poverty guidelines, and if they had not participated in the Program at their current address since 1992. Customers who received Program services at their current address in or prior to 1991 were eligible, but not specifically targeted for participation. Participants may live in single-family or multi-family dwellings of not more than eight units.

As originally designed, ULH&P was to develop a program brochure and mailing list for the targeted customer group. This brochure was to describe Program benefits and encourage customers to participate. It was also to remind LIHEAP participants of their obligation to take advantage of any energy conservation services made available to them. The brochure directed customers to respond to the Northern Kentucky Community Action Committee (NKCAC), who was to act as intake coordinators. The actual installation work was to be performed primarily by NKCAC. A second contractor, People Working

Cooperatively (PWC), was to provide assistance on an as-needed basis.

Major Findings

Process evaluation findings were based on interviews conducted with Cinergy staff, contractors, non-utility parties, and other utilities. To assess the level of Program-induced savings, we analyzed customers' pre and post billing data using a statistical regression model. This approach allows for estimation of *net* savings by controlling for all other factors that may have caused observed changes in consumption.

The major findings are as follows:

Regulatory Process

- → The Program was designed through a collaborative process, an approach not unique to this Program. Most low-income programs are designed through similar processes.
- → The collaborative process offered some advantages in the creation of ideas and in ensuring that non-represented parties' interests were considered and accounted for. Though collaborative processes tend to be slow and inefficient, the process for this Program was exceptionally slow. For example, nearly ten months passed from the time the commission approved the Program to the finalization of its design and delivery.
- → An unusual feature of this Program was the main intake and installation contractor being a signatory party to the settlement agreement. This led to an awkward relationship between the subcontractor and utility, and, in our opinion, contributed to delays in the Program's implementation.

Program Design

- → The Program was designed to assist low-income customers manage their energy bills, reduce energy consumption, and reduce costs associated with bill collections. Although achieving energy savings was considered one of the primary objectives, the Program went considerably beyond a simple resource acquisition effort. The overall welfare of the

participants was taken into account in all facets of the Program.

→ The Program was designed to piggyback with two other weatherization programs, thus giving the effort considerable strength. The combined funds of the three programs provided a significant opportunity for achieving energy savings as well as providing health and safety assistance to low-income customers.

Program Delivery

→ The Program proved to be very slow in recruiting customers and installing measures. As of June 30, 1998, it achieved only 33% of its targeted participation rate (slightly over 200 homes completed). According to the original plan, the Program should have had over 300 participants (see Figure ES-1).

→ Early delays were mainly caused by NKCAC's inability to handle the work. The number, size, and quality of NKCAC's crews were insufficient to meet the intake and weatherization demands of the Program.

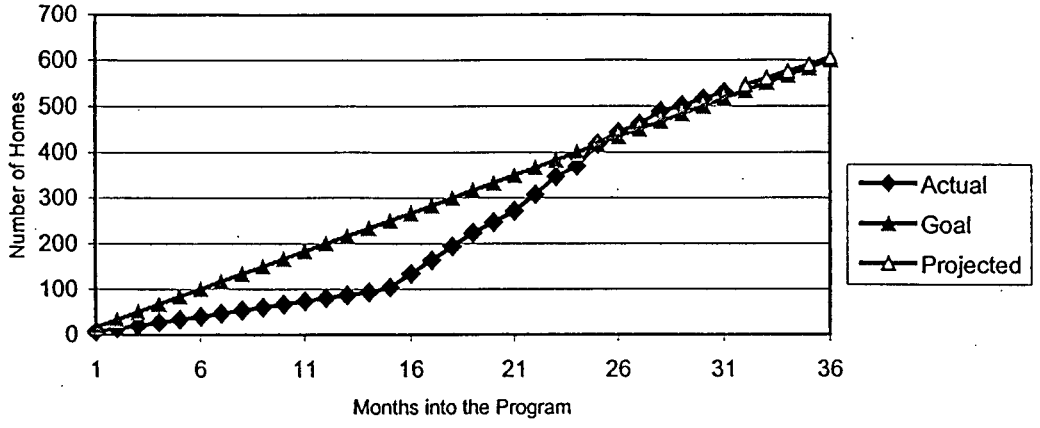
→ A high staff turnover rate at Cinergy until summer of 1997 contributed to delays in meeting targeted Program participation rates. The problems associated with NKCAC's inability to deliver were not quickly corrected by Cinergy staff due to this high turnover and the fact that NKCAC was a signatory party to the joint application and principles of agreement.

→ Changes implemented in the first quarter 1998 have improved delivery markedly. Through July 1999, completions averaged 21 per month, and the Program was back on track to meet its original goals. The overall objective of 600 homes appears to be well within reach.

→ To facilitate increased participation and reduce the amount of required pre-screening analysis, all low-income customers who met the dwelling type requirements were eligible to participate. This effectively eliminated minimum gas and electric bills as criteria for eligibility, allowing Cinergy and its subcontractors to focus on dwelling attributes (e.g., observed weatherization opportunities in both large and small

homes) as an indicator of savings opportunities without prematurely eliminating interested customers.

Figure ES-1
Participation Rates



Program-Induced Savings

The Program has been very successful in reducing both gas and electric consumption. Compared to other utility low-income programs, the energy savings induced by this Program's efforts are impressive. Overall savings for customers with electric heating and water heating who received weatherization or water heating measures were estimated at 1,893 kWh annually, and overall savings for gas customers receiving weatherization or water heating measures were estimated at 165 CCF annually. The average Program participant is estimated to reduce electric and gas consumption by 1,331 kWh and 115 CCF, respectively.

Overall

→ Many aspects of the Program have been very effective. For example, PWC's educational process, assignment of work crews, and implementation of the weatherization measures have been successful and efficient. PWC's ability to pick up and take over work started by NKCAC has been critical to expected achievement of the Program's participation goals.

→ Most of the positive changes began to take place when Cinergy appointed a new project manager. Two of the most

significant issues previously mentioned have been corrected: PWC and NKCAC have switched roles, with NKCAC responsible for four completions each month and for providing services on an as-needed basis, and Cinergy has taken a more active role in managing the Program. Cinergy's new project manager meets regularly with the contractors to review performance, initiates more frequent communications between collaborative members, and monitors more closely the delivery of the Program.

→ Due to the slow rate at which participants were enrolled in the Program, a significant opportunity potentially could have been lost. One of the Program's most powerful components was its expected piggybacking with State programs. Combining funding sources was to provide the Program with significant strength in offering energy savings, as well as in health and safety services. However, funding for the State programs was significantly cut in 1999. Efforts to leverage state funding were intensified in early 1999; the state program weatherization managers now attend the collaborative meetings, and efforts to match ratepayer funding are underway.

→ Communication between the Collaborative, Cinergy, NKCAC, and PWC was insufficient for much of the collaborative process. Communication has improved over time, however, and the Management Panel (a subset of the Collaborative) has been used extensively by Cinergy to resolve issues. As subcontractor performance is a potentially important topic at Management Panel meetings, no subcontractors should be on the Panel. Additionally, Program delivery can potentially be improved by obtaining insights from the entire collaborative through panel member rotations.

→ The saving analyses confirmed Cinergy's expectation that low-income customers can realize substantial savings from the Program. Average energy savings per participant exceed 17% of pre-Program gas usage, and 16% of pre-Program electric usage.

I. Introduction

Program Summary

The Low-Income Conservation and Energy Education Program (Program) is offered by Cinergy through its subsidiary, Union Light Heat & Power (ULH&P or the Company). The Program was designed to target just over 600 households by the end of 1999, offering them energy education and a mix of energy conservation measures.

The Program was designed to leverage its investment with two other weatherization programs, thus providing more comprehensive coverage to low-income customers. The two other programs are:

1. **The State Weatherization Program**, executed by the Northern Kentucky Community Action Commission (NKCAC)
2. **The Gas Weatherization Program**, executed by People Working Cooperatively (PWC) on behalf the Company

Client Eligibility

Customers were eligible to participate if they received ULH&P natural gas or electric service in their name, if their household income did not exceed 150% of the federal poverty guidelines, and if they had not participated in the Program at their current address since 1992. Customers who received Program services at their current address in or prior to 1991 were eligible, but not specifically targeted for participation. Participants may live in single-family or multi-family dwellings of not more than eight units.

The Program only pays for measures that reduce the fuel served by ULH&P. Customers that only purchase gas service from ULH&P could only receive measures to help reduce gas consumption. Likewise, customers purchasing only electric service from ULH&P could only receive measures that reduced electric consumption. State Weatherization programs were not under these constraints and could provide additional services if desired.

The combination of the three programs provides assistance to low-income customers by:

1. Installing energy efficiency measures
2. Providing energy education
3. Proving health and safety inspections and repairs

Program crews first perform a health and safety inspection at various intervals during the measure installation process. Air sealing work is accomplished using blower door diagnostics. Crews continue improving air sealing until the leakage reduction target is achieved. Crews also check appliances and provide informal energy education to occupants. Post-installation inspections are conducted on all participating homes, and measure installation and customer satisfaction is checked.

PWC crews consist of a field coordinator/inspector who conducts the blower door test, an HVAC technician, and three installers. From the interview with NKCAC, the composition of their crews remained unclear. However, five installers were available to conduct the work.

Intake and Program Promotion

Originally, ULH&P developed a Program brochure and mailing list for the targeted customer group. This brochure was intended to describe Program benefits and encourage customers to participate. The brochure also reminded LIHEAP participants of their obligation to take advantage of any energy conservation services made available to them. The brochure directed potential participants to respond to NKCAC for further information.

NKCAC was to provide intake services that resulted from this mailing and to determine customers' eligibility. At that point, NKCAC was to divide the weatherization projects between PWC and themselves.

II. Process Evaluation Data Collection

As process evaluations require data from several primary important sources, data collection for this process evaluation consisted of interviews with Program staff, trade allies, and non-utility parties. An interview was also conducted with the low-income Program manager at American Electric Power (AEP). AEP offers a program similar to ULH&P's and serves as a good process comparison. Table 1 below displays the data collection process.

The following issues were covered in the interviews:

- → Program regulatory background
- → Program design
- → Program marketing and delivery
- → Overall Program assessment

Each of these issues is discussed separately in the following pages.

Table 1
Data Collection

In-Person Interviews		
Name	**Position**	**Agency**
Kathy Schroder	Program Manager	Cinergy
Victor Needham III	DSM Programs Manager	Cinergy
David Mussleman	Senior Counsel	Cinergy
Jock Pitts	Program Director	PWC
Nina Creech	Program Manager	PWC
Carl Melcher	Attorney	NKY Legal Fund
Tom Musk	Program Manager	NKCAC
Phone Interviews		
Name	**Position**	**Agency**
Don Music	Manager	American Electric Power
Ann Louise Cheuvront	Assistant Attorney General	Office of the Attorney General

III. Interview Findings

Program Regulatory Background

In 1994, the Company filed tariffs for implementation of DSM programs in the Northern Kentucky service territory. The initial list of programs did not include a low-income program. The Public Service Commission (PSC) wanted a low-income program designed and included in the package. Further, the PSC and other stakeholders decided that DSM programs needed to be designed with the assistance of local parties in a collaborative setting.

Thus, a collaborative was formed among the following members:

1. Northern Kentucky CAC
2. Northern Kentucky Legal Aid Fund
3. The Attorney General Office
4. Committee for the Elimination of Poverty in the Commonwealth (CoEPIC)
5. PSC Staff
6. Industrial Customers
7. The Company

Upon their request, the industrial customers were later exempt from any rate impacts and from participation in any of the programs, and they withdrew from the collaborative.

On December 1, 1995, the DSM programs were approved by the PSC. NKCAC was a signatory to the agreement *as well as* the contractor for the Program intake and measure installation, a fairly unusual situation compared to similar programs across the country.

Program Design

The Program was based on a similar Program designed by and implemented through the Louisville Gas & Electric (LG&E) Collaborative. Most members of the Program collaborative were also involved in the LG&E collaborative.

Although energy savings were considered a primary objective, this Program went considerably beyond resource acquisition. The Program was designed to be a social service, offering low-income customers assistance in controlling their energy expenses and improving the health and safety conditions of their households. An additional benefit to the utility included potential savings associated with lowered collection costs.

After the commission approved the Program, it took nearly ten months to finalize its design and delivery. This included setting the maximum dollar limit on per home expenditures, deciding the best way to approach potential Program participants, finalizing forms, training vendors, and deciding on an evaluation contractor.

Program Marketing and Delivery

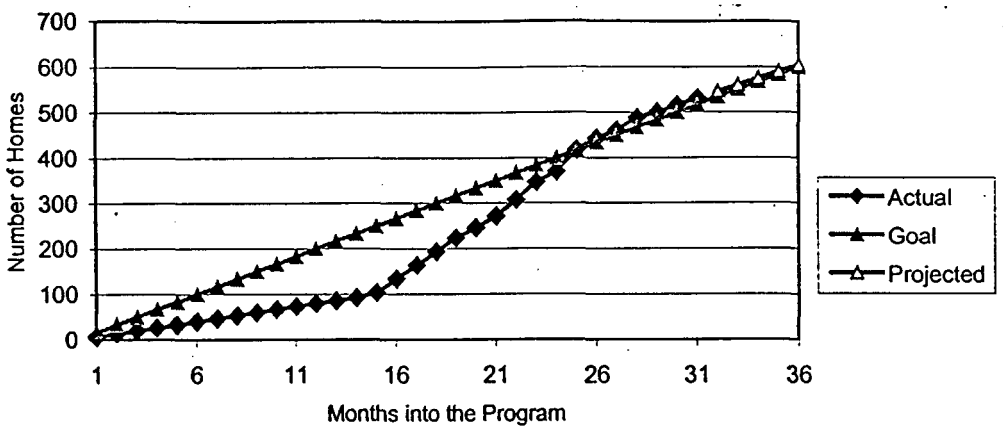
Originally, Program delivery was set up so that NKCAC conducted the intake, screened customers, performed some of the weatherization work, and referred some of the weatherization work to PWC.

The first Program marketing activity took place on October 16, 1996, with the release of 483 direct mail pieces targeting customers that were both LIHEAP recipients and high energy users. This was followed by another direct mailing of 385 letters targeting the same customers on October 18, 1996.

Figure 1 displays actual and projected Program participation rates. Initial projections were rarely met during early Program kick-off periods. Figure 1 displays the Program's actual participation rates for the first 30 months of operation as well as projected participation rates through the end of 1999. The overall combined "level" of the actual and the projected participation rates through mid-1999 is basically as expected. However, there are still some points to consider:

1. Since the first quarter 1998, there has been a dramatic improvement in the average monthly production. The Program is now on track with its original projections, and Cinergy's Program manager expects to meet the participation goal of just over 600 households by the end of 1999.
2. Although slow, early penetration rates are expected for any Program of this sort; this Program's early participation rates fell significantly below the targets.

Figure 1
Participation Rates

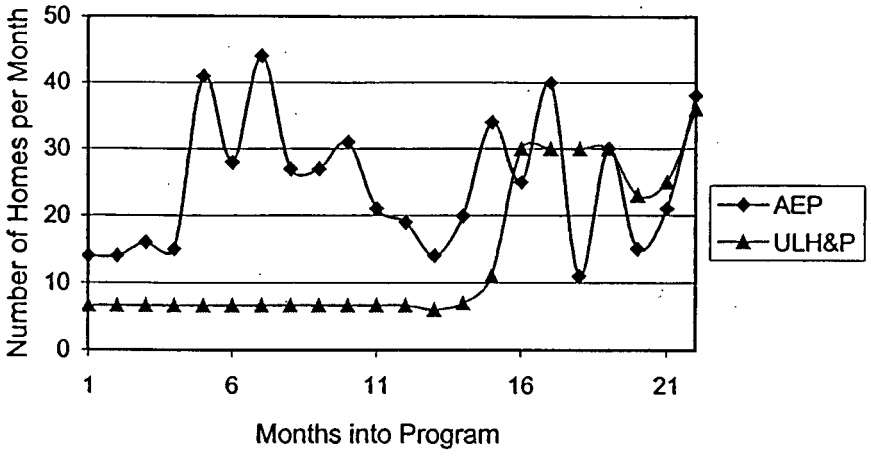


We originally intended to benchmark this Program against two similar programs. Unfortunately, we were only able to get information on one. Mr. Don Music of AEP/Ashland was extremely helpful and provided all of the necessary information, but we were unable to get similar data from the LG&E Program.

Figure 2 displays the number of homes that participated in the AEP Program each month relative to the ULH&P Program. Data for AEP were available for nearly two years after Program inception, which allows comparisons to be made for the periods before and after changes in ULH&P Program delivery and management.

While a direct comparison between the programs is misleading due to differences in their respective service territories, the graph does demonstrate the inability of the ULH&P program to attract customers quickly in its initial stages. More importantly, Figure 2 demonstrates that the subsequent changes in the ULH&P increased monthly participation to levels comparable to AEP's.

Figure 2
Benchmarking: Number of Homes per Month



IV. Energy Savings Analysis

To estimate the Program's savings, quantec applied a billing analysis approach that combines customer billing data, Program participant information, and weather data. The specific technique is known as ordinary least squares (OLS) regression.

This approach isolates and quantifies the factors affecting each household's electric (or gas) energy consumption each month. In this framework, Program participants' energy consumption depends on household and demographic characteristics, weather, and the installation of the Program's measures. In equation form, the general OLS formulation is as follows:

$$E = \alpha + \delta * C + \beta_1 * M_1 + \beta_2 M_2 + \ldots + \beta_n * M_n + \varepsilon, \qquad (1)$$

where:

- E = average daily energy (or gas) usage each month
- α = the intercept term
- C = the set of household characteristics, demographics, weather and other non-Program factors affecting consumption usage
- δ = the vector of coefficients associated with characteristics set C
- M_1-M_n = binary variables set equal to 1 in the post-period if the households received the corresponding measure or group of measures (1, 2, ..., n) provided to participants through the Program
- ε = the regression model error term

Coefficients $\beta_1, \beta_2, \ldots, \beta_n$ represent the *net* savings from each measure or group of measures.

Data Development

The data development effort matched billing, weather, and Program tracking information for each customer. As there were relatively few customers and associated billing periods, our objective in this matching process was to minimize the consequences of "missing data" and to keep as many customers as possible for model estimation.

quantec initially received billing data from Cinergy for 201 Program participants. The billing database contained energy consumption data from May 1997 through June 1999. These data were then merged with measure installation dates from the Program tracking database. As shown in Table 2, 147 of the 201 participants received measures. The remaining customers decided to forego further Program involvement after initial contact with PWC, only received Program educational materials, or lived in dwellings that were in such bad shape that it didn't make sense to invest in efficiency improvements.

Table 2
Sample Disposition

	Number	Share	Adjusted Share
Participants in bill/usage data set	201		
Gas & electric service	136	67.7%	68.7%
Electric only	56	27.9%	28.3%
Gas only	6	3.0%	3.0%
Can't tell - all data missing	3	1.5%	
Number with billing data and install dates	147		
Gas & electric service	101	68.7%	
Electric only	42	28.6%	
Gas only	4	2.7%	

The 147 participants with billing data and install dates are representative of the Program population. As demonstrated in Table 2, their respective shares of gas and electric service, electric service only, and gas service only are nearly identical.

Additional screening of the remaining participants was necessary before the electric and gas OLS models could be finalized. First, in the process of merging data from the billing and Program tracking

databases, some customers were eliminated because the account codes did not match. Second, the OLS models require both pre-participation and post-participation data (at least three months of each), and some customers did not have enough months of pre or post data.[1] Third, preliminary OLS model specifications showed that electric customers would have measurable impacts only if they received weatherization measures for heating or cooling, or electric water heater measures.

Similarly, gas customers only had measurable impacts if they received weatherization or gas water heater measures. For example, an electric/gas combination customer might have gas heat and water heat and not have air conditioning. In this instance the customer would be included in the gas model but would be excluded from the electric model.

The results of this screening process are shown in Table 3. A total of 66 participants were included in the electric model, and a total of 71 participants are included in the gas model.

Table 3
Screening Results

Model/Screening Criteria	Number of Participants
Electric Model	
Gas & electric + electric	143
Have measure data	119
Have measure data and at least 3 months pre/post	91
Have measure data, at least 3 months, and heating, cooling, or water heat measures	66
Gas Model	
Gas & electric + gas	105
Have measure data	89
Have measure data and at least 3 months pre/post	73
Have measure data, at least 3 months, and heating or water heat measures	71

[1] Additionally, each customer who received heating (cooling) measures was required to have at least one month of winter (summer) usage in both the pre and post periods.

The final step in the data development process merged Cincinnati airport weather data into the analysis data set. The weather-matching process created both cooling and heating degree-day variables (CDD, HDD) that were unique for all customers. This is because each account has different beginning and ending meter-read dates for each revenue month.

Model Specifications

The next step in the analysis process was to estimate a series of preliminary OLS models and develop final specifications for electric and gas savings.

The final set of variables in the electric equation is shown below. With the exception of the dependent variable, (+) implies that we expect a positive correlation with electric usage, and (-) implies a negative correlation with electric usage.

QELEDAY: This is the dependent variable — average daily electric consumption each month

INCOME: The household's annual income (+)

SFAM: A binary variable set equal to 1 if the home is a detached single-family home, and zero otherwise (+)

HHSIZE: Family size (+)

ELECWH: A binary variable set equal to 1 if the customer has electric water heat, and zero otherwise (+)

ELECHDD: An interactive variable equal to customer-specific heating degree-days if the customer has electric heat, and zero otherwise (+)

ELECCDD: An interactive variable equal to customer-specific cooling degree-days if the customer has electric heat, and zero otherwise (+)

HEATMEAS: A binary variable set equal to 1 in the post period if the customer has electric heat and received weatherization measures, and zero otherwise (-)

COOLMEAS: A binary variable set equal to 1 in the post period if the customer has electric heat and received weatherization measures, and zero otherwise (-)

WATMEAS: A binary variable set equal to 1 in the post period if the customer has electric water heat and received water heater retrofit measures, and zero otherwise (-)

The final gas model is nearly identical, with QGASDAY replacing QELECDAY as the dependent variable and the elimination of the cooling end-use and cooling measure variables.

Energy Savings

Electric and gas model results are presented in Tables 4 and 5, respectively. All of the demographic and end-use/weather variables have the right signs and are statistically significant. All of the Program measure variables also have the correct negative sign. The weatherization measures are statistically significant, and the water heating measures are nearly so (one-tail test).

Table 4
Electric OLS Model Results

Parameter	Coefficient Estimate	T-Ratio	PROB > |T|
INTERCEPT	-0.8063	-0.453	0.6504
INCOME	0.0004	3.553	0.0004
HHSIZE	4.6087	13.634	0.0001
SFAM	6.3561	5.796	0.0001
ELECWH	15.2610	13.016	0.0001
ELECHDD	0.0249	15.016	0.0001
ELECCDD	0.0644	14.026	0.0001
HEATMEAS	-6.3415	-5.065	0.0001
COOLMEAS	-2.9595	-2.738	0.0063
WATMEAS	-1.8033	-1.120	0.2630
R-Square	0.4282		
Number of Observations	1,391		
Number of Participants	66		

Table 5
Gas OLS Model Results

Parameter	Coefficient Estimate	T-Ratio	PROB > |T|
INTERCEPT	-0.324	-1.504	0.1327
INCOME	0.000	4.036	0.0001
HHSIZE	0.083	2.651	0.0081
SFAM	0.202	1.624	0.1045
GASWH	0.298	1.839	0.0661
GASHDD	0.005	44.580	0.0001
HEATMEAS	-0.382	-3.745	0.0002
WATMEAS	-0.132	-1.168	0.2430
R-SQUARE	0.5862		
Number of Observations	1,469		
Number of Participants	71		

The savings coefficients on HEATMEAS, COOLMEAS, and WATMEAS in Tables 4 and 5 show the daily savings associated with each of these end-use/measure combinations. To obtain annual savings for each combination, each coefficient is multiplied by 365. Average savings per customer in the model are then given by multiplying the annual savings for each end-use/measure combination by the share of customers who received that combination. These results of these calculations are contained in Table 6.

Table 6
Annual Energy Savings for Customers in OLS Models

	Gas	Electric	Proportion with Measures	
Category	(CCF)	(kWh)	Gas	Electric
Heating measures	139.5	2,314.7	100.0%	43.9%
Cooling measures		1,080.2		68.2%
Water heating measures	48.1	658.2	53.5%	21.2%
Overall model savings	***165.2***	***1,893.2***		

The estimates in Table 6 must be discounted to derive savings for the average electric or gas participant, and for the average participant regardless of fuel type. These estimates are contained in Table 7.

Table 7
Annual Energy Savings by Participant Category

Category	Gas (CCF)	Electric (kWh)
Overall - end-use model	165.2	1,893.2
Overall savings - adjusted by % of fuel with measures	160.7	1,373.1
Overall savings - per Program participant	115.3	1,331.5

The first row of Table 7 simply repeats the last row of Table 6 and shows the average annual savings for each modeled participant, assuming all received the measures modeled. The second row shows savings estimates adjusted by the share of customers by fuel type who received the measures in the models. For gas customers, this factor is 97.3% (71 of 73 customers), and for electric customers this factor is 72.5% (66 of 91 customers). The last row shows average energy saved per participant. These estimates are given by multiplying the results (adjusted by % of fuel with measures) by the share of participants with that fuel (71.7% gas, 97% electric).

Tables 8 and 9 use the regression model results to show the savings estimates for various end-use/measure combinations.

Table 8
Electric Savings Estimates for Alternative End Use Combinations

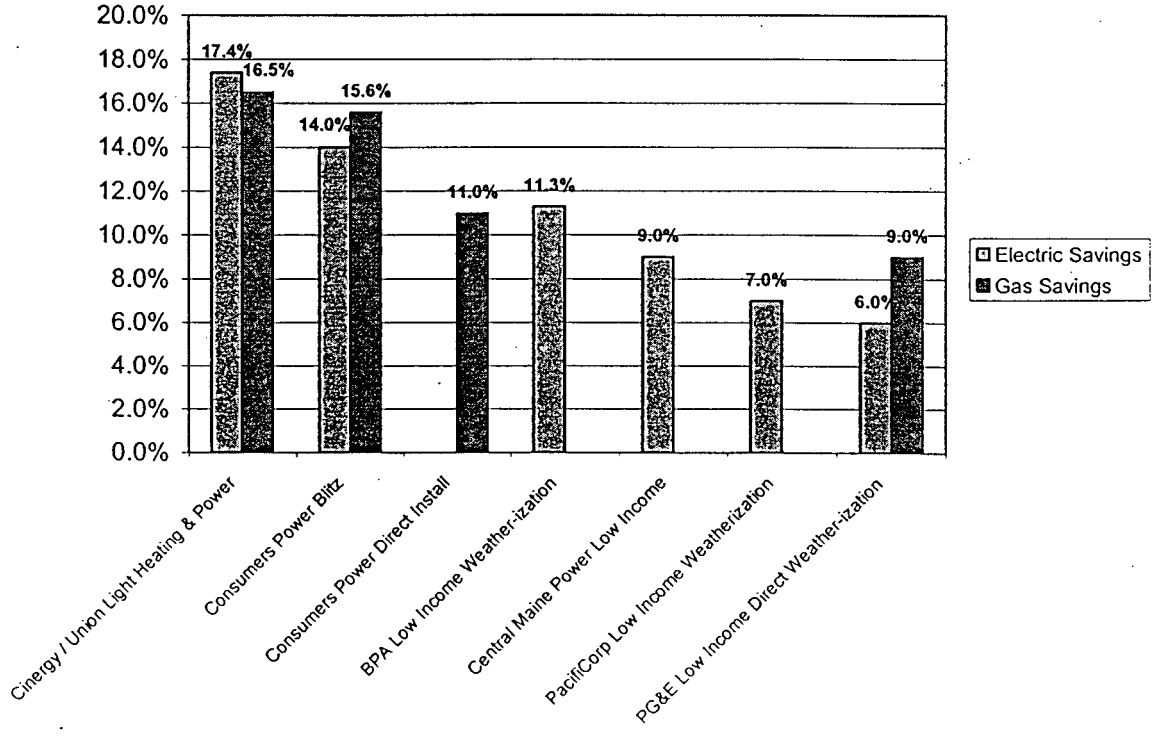
Electric Savings by End Use/Measure Combinations	Cooling Measures	Heating Measures	Water Heating Measures	Annual Electric Savings
Type 1	Yes	Yes	Yes	4,053
Type 2	Yes	Yes	No	3,395
Type 3	Yes	No	Yes	1,738
Type 4	Yes	No	No	1,080
Type 5	No	Yes	Yes	2,973
Type 6	No	Yes	No	2,315
Type 7	No	No	Yes	658
Type 8	No	No	No	0

Table 9
Gas Savings Estimates for Alternative End Use Combinations

Gas Savings by End Use/Measure Combinations	Heating Measures	Water Heating Measures	Annual Gas Savings
Type 1	Yes	Yes	187.6
Type 2	Yes	No	139.5
Type 3	No	Yes	48.1

Figure 3 compares the savings estimates from ULH&P with other utility low-income programs. To enable comparisons across different climate zones, we have only included savings analyses where percentage savings are reported. As the table indicates, the Program has saved more than the other programs.

Figure 3
Energy Savings Comparison with other Utility Low-Income Programs[2]



[2] See the References section for the savings' information sources.

While we can only offer hypotheses as to why ULH&P's low-income Program is generating relatively high savings estimates, the process evaluation and subsequent Program improvements indicate that this performance is likely a combination of the following:

- → After a difficult start, Cinergy put together a superior management team that provides very effective leadership and Program support.
- → PWC's individual staff members have more than five years of experience across most positions in the organization, and there is little staff turnover.
- → PWC's leveraging of other funds.
- → Use of cellulose insulation.
- → Measure "flexibility" and focus on health (e.g., fix broken walls, doors, and windows).
- → Old building stock.
- → Random inspections by a third party.

V. Overall Program Assessment

Regulatory/Collaborative Process

1. Most low-income programs we are familiar with have been designed through a collaborative process. While this process is typically slow and inefficient, it has become the model nationwide. Yet, in this case, the process appears to have been exceptionally slow. For example, it took nearly ten months to finalize the Program's design and delivery.
2. Having the main intake and delivery contractor be a signatory party to the settlement agreement is rare. This may have led to the significant delays in correcting delivery problems that occurred in the Program's first year of implementation.

Program Design

The design of this Program is similar to that of many other low-income programs. Further, taking advantage of other funding supplied by state programs provides a great asset. To date, the opportunity to leverage those funds has been foregone. The potential to leverage state funding for the Program after 1999 appears promising.

Initial Program Delivery

1. Involving community action agencies early in the design is typical for programs of this type. Yet, in this case, NKCAC was not prepared to handle the additional work load. This caused some significant delays in the delivery of the Program.
2. Corrective actions were significantly delayed. This was mainly due to:
   a. Lack of cooperation form the NKCAC
   b. Significant staff turnover at Cinergy
   c. The political realities of NKCAC being a participating party to the settlement agreement.
3. High staff turnover at Cinergy, compounded by assigning the DSM programs' manager to another position in the company,

did not allow the continuity required for the successful implementation of the Program.

4. Having NKCAC be both the intake coordinator and prime contractor was the main reason why the Program did not achieve the desired penetration rates.

Subsequent Program Management and Delivery Changes

The Program was well conceived, especially piggybacking it with other state programs. Subsequent changes in Program Management at Cinergy and the reversal of the roles of NKCAC and PWC have made dramatic improvements in the Program, exemplified by large increases in participation and superior energy savings relative to other utility low-income programs.

Cinergy has already taken a very active role in the Program. Although this role has come a bit late, it made a significant difference in the Program's execution. The current Program manager implemented many changes that have revived the Program. In the first quarter 1998, contracts and budgets were modified and the contractor roles were reversed. PWC became the prime intake and delivery contractor, and NKCAC was held responsible for only four completions per month. This was consistent with their production since the Program's inception. PWC began aggressive intake, including co-locating intake stations with NKCAC and other community LIHEAP facilitators, such as Brighton Center.

Energy Savings

The saving analyses confirmed Cinergy's expectation that low-income customers can realize substantial savings from the Program. Average energy savings per participant exceed 17% of pre-Program gas usage, and 16% of pre-Program electric usage.

Recommendations

While significant changes in Program delivery have already taken place, further adjustments are necessary. Currently, PWC has taken a more active role in Program intake and measure installation. PWC conducts all marketing activities, including direct mailings and

telephone solicitation, and should continue to do so. More aggressive solicitation approaches should also be considered, such as leaving literature in neighborhoods where weatherization jobs are being conducted. We also recommend that PWC become the primary intake contractor and that cases only be referred to NKCAC when faced with overflow or where health and safety related repairs are required.

Communication between the Collaborative, Cinergy, NKCAC, and PWC was insufficient for much of the collaborative process. Communication has improved over time, however, and the Management Panel (a subset of the Collaborative) has been used extensively by Cinergy to resolve issues. As performance of the providers is a potentially important topic at Management Panel meetings, no providers should be on the Panel. Additionally, Program delivery can potentially be improved by obtaining insights from the entire collaborative through a rotation on the Management Panel.

References

Consumers Power – Carlson, L. et al, "Survivors: Effective Low-Income Programs," 1997 Energy Evaluation Conference Proceedings, pp. 417-424.

BPA – Haeri, M. H., et al, "Evaluation of the Bonneville Power Administration Low Income Weatherization Program, ERC International, July 1988.

Central Maine Power – Khawaja, M. S., et al, "Impact Evaluation of the Low-Income Segment of the Weather Shield and Attic Attack Program," H. Gil Peach & Associates, June 1990.

PacifiCorp – Khawaja, M.S., et al, "PacifiCorp Low Income Program Impact Evaluation," Barakat & Chamberlin, Inc., September 1995.

PG&E – "Impact Evaluation of the Low Income Direct Weatherization Program," Cambridge Systematics, Inc., August 1988.

EXHIBIT 2
RECALCULATION OF GROWTH FACTOR

ORDINARY LEAST SQUARES

FREQUENCY: A
INTERVAL: 88 TO 98 (11 OBS.)
DEPENDENT VARIABLE: LOG(ELECACTUAL)

	COEFFICIENT	STD.ERROR	T-STAT	INDEPENDENT VARIABLE
0)	9.1429	0.059701	153.15	CONSTANT
1)	0.0081566	0.0029484	2.7664	TIME

R-BAR SQUARED:0.39951
DURBIN-WATSON:2.95
STANDARD ERROR:0.030923 NORMALIZED:0.0033229

?SN PLOT

DATE	ACTUAL	FITTED	PLOT :*=ACTUAL:+=FITTED
1988	9.2855	9.2652	-----*
1989	9.2626	9.2734	*++
1990	9.2588	9.2816	*++++++
1991	9.3315	9.2897	----------*
1992	9.2366	9.2979	*++++++++++++++
1993	9.3179	9.306	---*
1994	9.3134	9.3142	*
1995	9.3434	9.3223	-----*
1996	9.3589	9.3305	--------*
1997	9.3129	9.3387	*+++++++
1998	9.3446	9.3468	*

?P<SDECS=6>(EXP(0.0081566)-1)

(EXP(0.0081566)-1)=0.008190

ORDINARY LEAST SQUARES

FREQUENCY: A
INTERVAL: 88 TO 98 (11 OBS.)
DEPENDENT VARIABLE: LOG(GASACTUAL)

	COEFFICIENT	STD.ERROR	T-STAT	INDEPENDENT VARIABLE
0)	5.0958	0.13163	38.713	CONSTANT
1)	-0.021348	0.0065008	-3.2839	TIME

R-BAR SQUARED:0.49454
DURBIN-WATSON:1.38
STANDARD ERROR:0.068181 NORMALIZED:0.014603

?P<SDECS=6>(EXP(-0.021348)-1)

(EXP(-0.021348)-1)=-0.021122

EXHIBIT 3

DSM PROGRAMS

The Kentucky Collaborative has taken an active role in developing and considering DSM programs to be implemented in Union Light's service territory. Some of the functions performed by these groups are: 1) review of cost-benefit analyses, as appropriate; 2) approval of programs and modifications to programs; 3) selection of program contractors; and 4) collection of data to support program development.

Union Light will offer the following programs in 2000, the costs of which shall be recoverable through the DSM Cost Recovery Mechanism established in section II of the Agreement.

Program 1: Residential Conservation and Energy Education
Program 2: Residential Home Energy House Call
Program 3: Residential Comprehensive Energy Education Program
Program 4: Residential New Construction/Renovation Program
Program 5: Program Development Costs

Except as provided in the Agreement, these programs will be terminated on January 1, 2002. If the Collaborative recommends that programs continue, a new application may be filed with the Commission.

Program 1: Residential Conservation and Energy Education

The Collaborative proposes to continue the Residential Conservation and Energy Education program funded at a level of no more than $1,000,000, to be expended between the date of Commission approval and January 1, 2002. This program is directed at weatherizing housing stock and educating customers on energy use. Approximately 300 customers are expected to participate in 2000.

This program has served more than 550 low-income customers in ULH&P's service territory since 1997. The program was judged by a third-party evaluation contractor to have been very effective in reducing energy consumption. This finding and the estimated

resultant savings for electric and gas customers who received measures are reflected in the following statement.

> *The program has been very successful in reducing both gas and electric consumption. Compared to other low-income programs, the energy savings induced by this program's efforts are impressive. Overall savings for electric customers receiving weatherization or water heating measures were estimated at 1,893 kWh annually, and overall savings for gas customers receiving weatherization or water heating measures were estimated at 165 CCF annually.*

The average participant in the program was estimated to save 1,332 kWh and 115 CCF as a result of participation in the program. The complete report is attached to this Application as Exhibit 1.

While People Working Cooperatively, one of the contractors that deliver the program, has worked to leverage community funding to enhance the efficiency of the program, there has been little leveraging of state funding as contemplated at the start of the program. ULH&P is currently working with the state of Kentucky's weatherization program to facilitate better leveraging with state funding. Additionally, ULH&P and the Collaborative will review the results of the Commission's examination of on-going programs being offered by other Kentucky utilities as well as the resultant design efforts by those utilities to identify features that may further improve the effectiveness of this program.

Program 2: Residential Home Energy House Call

The Home Energy House Call consists of three major components:

1) Home Energy Survey
2) Comprehensive Energy Audit & Review
3) Measures Installation Opportunity

When a Home Energy House Call is requested by a customer, a qualified home energy specialist visits the site to gather information about the home. A questionnaire about the energy usage is also completed.

The energy specialist gives the customer a detailed report that explains how their home uses energy each month. The specialist will also check the home for air leaks, inspect the furnace filter, and look at the insulation levels in different areas. If needed, the specialist will recommend cost saving do-it-yourself measures to make the home more energy efficient.

In addition to helping the customer with energy efficiency, the Home Energy House Call assists the customer with 'Earth Perks' also. This part of the program looks at the natural resources and pollution prevention needs of the customer's home and community and offers a list of action items. This list of action items is prioritized by the home's environmental profile. In 2000, Union Light expects approximately 500 customers to participate in this program.

Since the beginning of the program, nearly 1,700 customers have participated. Home Energy House Call was designed as primarily an education program. As such, quantification of savings and assessments of cost-effectiveness are difficult. However, a recent evaluation comparing the consumption of participants and non-participants of the program revealed estimated average electric savings ranging from 995 kWh for gas heated customers to more than 1200 kWh for electrically heated customers. The economies of scale resulting from leveraging of the program with the program offered to CG&E's customers in Ohio and the fact that participants pay for the measures they decide to implement keep the program cost low. Utility cost test results using these assumptions yield cost-effectivess ratios of just over 1.0.

Program 3: Residential Comprehensive Energy Education Program

This energy education program was developed by the Collaborative for implementation in late 1997. The contract for implementation of this program was awarded to Kentucky NEED during the third quarter of 1997. The program has provided unbiased educational information on all energy sources, with an emphasis on the efficient use of energy. Energy kits, with materials emphasizing cooperative learning, are provided to teachers. The Leadership Training Workshops are structured to educate teachers and students to

return to their schools and communities and families and conduct similar training and implement behavioral changes that reduce energy consumption in the community and home. Educational materials and Leadership Training Workshops are designed to address students of all aptitudes, and have been provided for students and teachers in grades 5 through 12.

Since October 1997, 21 teacher/student workshops have been held, directly training 88 teachers and 1,739 students in the service territory. These teacher/student teams have impacted 2,000 students and their families. Students who attend workshops are encouraged to mentor other students in their schools – further spreading the message of energy conservation. Teams of high schools 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 an demonstrating that the actions of each person impact energy efficiency. In addition to impacts on other students and community groups, it is intended that these students will share this information with their families and reduce consumption in their homes. Approximately 30 percent of the schools in the six counties served by ULH&P have participated.

Three new components of the program will be introduced in the 1999-2000 NEED materials: *Building Buddies* for grades K-3, *Monitoring & Mentoring* for grades 4-6 and *Learning & Conserving* for grades 7-12. (Copies of these curricula elements are available upon request.) These components explore energy use and encourage conservation in the home and at school. Each component teaches students how to measure energy consumption and identifies actions that can be taken to conserve and therefore reduce energy consumption. The KyNEED Project provider will explore a model school-based energy education program with the director of a program implemented by the Wake County Public Schools, Wake County North Carolina. The *Energy Savers* program and the integration of energy education in the curriculum reportedly saved Wake County Public Schools over $1,000,000 in 1999. This

information will be shared with the appropriate school officials in Northern Kentucky.

The KyNEED Project will partner with the Kentucky Division of Energy promoting their SWAT, Jr. (Student Weatherization and Audit Training) Program in area high schools. Through this program, students are trained, in September, to perform informal energy audits of their schools. Along with the audit, these students are then encouraged to mentor students in area schools using the NEED materials and are often facilitators at area workshops.

The members of the Residential Work Team have requested that some of this funding be used to subsidize training for Work Team members. Allocation of these funds for this purpose will require consensus of the entire Collaborative. Any member of the Collaborative using these funds will be required to file a written report and to share the knowledge gained through the training with the Collaborative.

Program 4: Residential New Construction/Renovation Program

The Construction Subcommittee of the Residential Work Team developed this program during 1997 as a low cost approach to build awareness of and encourage investment in energy efficiency in the new home and the renovation markets in Northern Kentucky. The program will be offered as a partnership between the Collaborative, Union Light, and the Northern Kentucky Homebuilders Association, which joined the Residential Work Team and the Construction Subcommittee in 1997. It consists of two major elements:

1) Energy-Efficient Home Contest

   The most efficient entries in each category (e.g., new single-family, new multi-family, renovation - single-family, and renovation – multi-family) will be awarded a $3,000 prize, up to a maximum of five prizes at 15,000. They will also be featured at Homebuilders Association home shows and in appropriate magazines and/or periodicals.

2) Informational Activities

Informational activities will include meetings and educational seminars with area builders and trade allies such as lenders, real estate agents, appraisers, designers, architects, engineers, equipment providers, and code officials.

The SAVEE program provides a low cost vehicle to enhance promotion of energy efficiency in new home construction and in the renovation of existing homes. The program encourages market push through its work directly with the builder community and encourages market pull from consumers through its presence at home shows and through advertising and other promotion.

The program is promoted primarily through the Homebuilders Association of Northern Kentucky. Builders entered two homes in the contest in 1998, which was the first year of the program. A process evaluation was performed in 1998 to identify opportunities to increase builder awareness of the program and to better focus the marketing and promotion of the program. The SAVEE subcommittee reviewed the results of the analysis and implemented specific program enhancements and modifications.

The deadline for contest submissions for 1999 is November 1, 1999. Aggressive targeted cooperative advertising promoting the winning builders of the 1998 SAVEE contest is expected to increase awareness of and participation in the program in 1999.

EXHIBIT 4

The Union Light, Heat and Power Company
107 Brent Spence Square
Covington, Kentucky 41011

RIDER DSMR

DEMAND SIDE MANAGEMENT RATE

The Demand Side Management Rate (DSMR) shall be determined in accordance with the provisions of Rider DSM, Demand Side Management Cost Recovery Rider, Sheet No. 75 of this Tariff.

The DSMR to be applied to residential customer bills beginning with the January 2000 revenue month is 0.0146 cents per kilowatt-hour. (D)

The DSMR to be applied to non-residential service customer bills beginning with the January 2000 revenue month for distribution service is 0.0583 cents per kilowatt-hour, and 0.00000 cents per kilowatt-hour for transmission service. (I)

Issued by authority of an Order by the Kentucky Public Service Commission, dated in Case No. 95-312.

Issued: Effective: January 3, 2000

Issued by J. L. Turner, President

The Union Light, Heat and Power Company
107 Brent Spence Square
Covington, Kentucky 41011

RIDER DSMR

DEMAND SIDE MANAGEMENT RATE

The Demand Side Management Rate (DSMR) shall be determined in accordance with the provisions of Rider DSM, Demand Side Management Cost Recovery Rider, Sheet No. 61 of this Tariff.

The DSMR to be applied to residential customer bills beginning with the January 2000 revenue month is 4.11430 cents per hundred cubic feet. (I)

The DSMR to be applied to non-residential service customer bills beginning with the January 2000 revenue month is 0.00 cents per hundred cubic feet.

Issued by authority of an Order by the Kentucky Public Service Commission, dated in Case No. 95-312.

Issued: Effective: January 3, 2000

Issued by J. L. Turner, President

Exhibit 6a
Kentucky DSM Rider
Comparison of Revenue Requirement to Rider Recovery

Residential	(1) Projected Costs 1999 Rider (2)	(2) Program Exp thru 6-99 (3)	(3) Decoupler Adjustment Gas	(4) Decoupler Adjustment Elec	(5) Total Program Expend. Gas	(6) Electric	(7) Rider Collection (4) Gas	(8) Electric	(9) Over/(Under) Recovery (5) Gas	(10) Electric
Peak Conservation Plan (1)	$0	$11,393	$0	$0	$0	$11,393	NA	NA	NA	NA
Home Energy House Call	$84,000	$69,609	$0	$0	$45,246	$24,363	NA	NA	NA	NA
Income Qualified Programs	$500,000	$900,231	$0	$0	$585,150	$315,081	NA	NA	NA	NA
Comp. Residential Education	$75,000	$42,592	$0	$0	$27,685	$14,907	NA	NA	NA	NA
Collaborative & Support	$32,000	$37,029	$0	$0	$24,069	$12,960	NA	NA	NA	NA
Renovation/New Construction	$40,000	$17,594	$0	$0	$11,436	$6,158	NA	NA	NA	NA
RS Total	$731,000	$1,078,448	$1,911,429	($420,194)	$693,586	$384,863	$100,436	$1,478,405	($2,605,015)	$35,331

Commercial	(1) Projected Costs 1999 Rider (2)	(2) Program Exp thru 6-99 (3)	(3) Lost Revenues through 6-99	(4) Shared Savings through 6-99	(5) Total Expenditures Distribution	(6) Transmission	(7) Rider Collection (4) Distribution	(8) Transmission	(9) Over/(Under) Recovery (5) Distribution	(10) Transmission
Lighting Rebate	$400,000	$527,532	$313,371	$29,469	$870,372	$0	NA	NA	NA	NA
Thermal Energy Storage	$0	$0	$0	$0	$0	$0	NA	NA	NA	NA
High Efficiency Motors	$2,200	$2,265	$3,322	$358	$5,946	$0	NA	NA	NA	NA
Adjustable Speed Drives	$3,000	$23,512	$51,102	$61,396	$136,010	$0	NA	NA	NA	NA
Small C&I Audits	$0	$42,427	$0	$0	$42,427	$0	NA	NA	NA	NA
Customized Efficiency Audits	$0	$16,314	$0	$0	$16,314	$0	NA	NA	NA	NA
C&I Total	$405,200	$612,050	$367,795	$91,223	$1,071,068	$0	(1,109,845)	$0	(1,099,177)	$0
Total	$1,136,200	$1,690,498	$2,279,224	($328,971)	$1,764,654	$384,863	($1,009,409)	$1,478,405	($3,704,192)	$35,331

(1) Recovers costs associated with shutdown of program.
(2) Amounts included in Rider filed on October 1, 1998.
(3) & (4) - residential - Reconciliation of adjustment for July 1, 1997 through June 30, 1998 with actual recovery (Column (7) Fall 1998 filing section of Exhibit 6b - Column (7) (gas) or Column (8) (electric)) + decoupler adjustment from Exhibit 7 of this filing. This effectively adjusts the allowed recovery used to compare revenues to account for allowed recovery of previous period adjustments and the current
(3) & (4) - C&I - calculated lost revenues and shared savings.
(5) & (6) Estimated expenditures from July 1, 1998 through June 30, 1999.
(7) & (8) Revenues collected through Rider between July 1, 1998 through June 30, 1999.

Calculations:
Total expenditures residential gas = column (1) x .65
Total expenditures residential electric = column (1) x .35
Over/(under) recovery gas = col (3) + col (7) + (col (5) - col (7)) in residential section. Used in Exhibit 8 - Total recovery without carrying charges applied to true-up amount (col (5)-col (7)).
Over/(under) recovery electric = col (4) + col (8) + (col (6) - col (8)) in residential section. Used in Exhibit 8 - Total recovery without carrying charges applied to true-up amount (col (6)-col (8)).
Total expenditures commercial = col (2) + col (3) + col (4)
Over/(under) recovery distribution = col (7) - col (5) in commercial section.
Over/(under) recovery transmission = col (8) - col (6) in commercial section.

Exhibit 6b
Review and Reconciliation of Residential Revenue and Cost Statements

Fall 1997 filing covering true-up for period May 1996 through June 1997 and recovery of 1998 program cost

	(1) Decoupler Adjustment Exhibit 5	(2) DSM Rider Collection Exhibit 4	(3) Net Decoupler Adjustment (1)+(2)	(4) Program True-Up Amount Exhibit (4)	(5) Recovery of 1998 DSM Program Costs Exhibit (6)	(6) Total for Rider Collection Sum (3 to 5)
Electric	$ 2,096,209	$ 814,158	$ 2,758,380	$ (300,375)	$ 330,013	$ 2,788,018
Gas	$ (632,334)	$ 200,221	$ (409,547)	$ (90,775)	$ 399,750	$ (100,572)

(1) From Exhibit 5 of Joint Application of the 1998 DSM Cost Recovery Mechanism filed in November 1997.
(2) From Exhibit 4, Columns (7) and (8) of the *1998 DSM Cost Recovery* Mechanism filed in November 1997.
(3) Column (1) + Column (2) - adjusts for the fact that the decoupler adjustment in Column 1 included revenues collected through the DSM Rider. This adjustment effectively reduces the actual revenues net of fuel that were compared to expected revenues net of fuel.
(4) From Column (7)-Column (9) (gas) and Column (8) - Column (10) (electric), Exhibit 4 of Joint Application of the 1998 DSM Cost Recovery Mechanism filed in November 1997, multiplied by allowed carrying charge of 1.0551.
(5) DSM 1998 Program Cost Summary from Exhibit 6 of Joint Application of the 1998 DSM Cost Recovery Mechanism filed in November 1997.
(6) Amount that should have been recovered through 1998 Rider including true-up of residential decoupler.

Fall 1998 filing covering true-up for period July 1997 through June 1998 and recovery of 1999 program cost

	(1) Decoupler Adjustment Exhibit 5	(2) DSM Rider Collection Exhibit 4	(3) Total for Recovery Set Last Period Minus Actual Recovery Period (Col 6 above)	(4) Net Decoupler Adjustment (1)+(2)+(3)	(5) Program True-Up Amount Exhibit (6)	(6) Recovery of DSM Program Costs Exhibit (6)	(7) Total for Rider Collection Sum (4 to 6)
Electric	$ 1,403,777	$ 1,054,771	$ 1,733,248	$ 4,191,795	$ (927,043)	$ 255,850	$ 3,520,602
Gas	$ 2,075,251	$ 32,823	$ (133,395)	$ 1,974,679	$ 234,611	$ 475,150	$ 2,684,440

(1) From Exhibit 5 of Joint Application of the 1999 DSM Cost Recovery Mechanism filed in October 1998.
(2) From Exhibit 4, Columns (7) and (8) of the residential section of the 1999 DSM Cost Recovery Mechanism filed in October 1998.
(3) Column (6) from Fall 1997 filing - Column (3) reflects the reconciliation of amounts set for recovery and the actual amounts recovered. This amount is used in Column (4) to adjust allowed residential revenues for the amount allowed to be recovered in the previous reconciliation.
(4) Column (1) + Column (2) + Column (3). a.) Column (1) + Column (2) adjusts for the fact that the decoupler adjustment in Column 1 included revenues collected through the DSM Rider. This adjustment effectively reduces the actual revenues net of fuel that were compared to allowed revenues net of fuel. b.) Addition of Column (3) reflects the allowance in allowed revenues net of fuel to account for previous year's reconciliation.
(5) From Column (9) (gas) and (10) (electric), Exhibit 4 of Joint Application of the 1999 DSM Cost Recovery Mechanism filed in October 1998, multiplied by allowed carrying charge of 1.055.
(6) DSM 1999 Program Cost Summary from the residential section of Exhibit 6 of Joint Application of the 1999 DSM Cost Recovery Mechanism filed in October 1998.
(7) Amount that should have been recovered through 1999 Rider including true-up of residential decoupler.

Fall 1999 filing covering true-up for period July 1998 through June 1999 and recovery of 2000 program cost

	(1) Decoupler Adjustment Exhibit 7	(2) DSM Rider Collection Exhibit 6	(3) Total for Recovery Set Last Period Minus Actual Recovery Period (Col 7 above)	(4) Net Decoupler Adjustment (1)+(2)+(3)	(5) True-Up Amount Exhibit (6)	(6) Recovery of DSM Program Costs Exhibit (6)	(7) Total for Rider Collection Sum (4 to 6)
Electric	$ (2,462,391)	$ 1,478,405	$ 2,042,197	$ 1,058,211	$ (1,148,548)	$ 274,750	$ 184,413
Gas	$ (672,575)	$ 100,436	$ 2,584,004	$ 2,011,865	$ 622,985	$ 510,250	$ 3,145,100

(1) From Exhibit 7 of Joint Application of this filing.
(2) Columns (7) (gas) and (8) (electric) of the residential section of Exhibit 6 of this filing.
(3) Column (6) from Fall 1998 filing section above - Column (3) reflects the reconciliation of amounts set for recovery and the actual amounts recovered. This amount is used in Column (4) to adjust allowed residential revenues for the amount allowed to be recovered in the previous reconciliation.
(4) Column (1) + Column (2) + Column (3)- Column (1) + Column (2) adjusts for the fact that the decoupler adjustment in Column 1 included revenues collected throught the DSM Rider. This adjustment effectively reduces the actual revenues net of fuel that were compared to allowed revenues net of fuel. Addition of Column (3) reflects the allowance in allowed revenues net of fuel to account for previous year's reconciliation.
(5) From Column (5) - Column (7) (gas) and Column (6) - Column (8) (electric), Exhibit 6a of Joint Application of this filing, multiplied by allowed carrying charge of
(6) DSM 2000 Program Cost Summary from the residential section of Exhibit 6 of this filing.
(7) Amount that to be recovered through 2000 Rider including true-up of residential decoupler.

EXHIBIT 7

THE UNION LIGHT, HEAT AND POWER COMPANY
DEMAND SIDE MANAGEMENT COST RECOVERY RIDER (DCRR)
SUMMARY OF CALCULATIONS

JANUARY, 2000 THROUGH DECEMBER, 2000

RATE SCHEDULE	DECOUPLER ADJUSTMENT (1)	TRUE-UP AMOUNT (2)	DSM COST RECOVERY TOTAL (3)	ESTIMATED BILLING DETERMINANTS (4)		DSM COST RECOVERY RIDER (DCRR)	
ELECTRIC RIDER DSM							
RESIDENTIAL RATE RS	$1,058,211	($1,148,548)	$274,750	1,259,892	MWh	$0.000146	$/kWh
DISTRIBUTION LEVEL RATES DS, DP, DT, GS-FL, & SP	NA	$1,099,177	$0	1,884,473	MWh	$0.000583	$/kWh
TRANSMISSION LEVEL RATE TT	NA	$0	$0	427,981	MWh	$0.000000	$/kWh
TOTAL ELECTRIC DCRR RECOVER	$1,058,211	($49,371)	$274,750	3,572,346	MWh		
GAS RIDER DSM							
RESIDENTIAL RATE RS	$2,011,865	$593,150	$510,250	7,571,797	MCF	$0.411430	$/MCF
NON-RESIDENTIAL RATES GS & F	NA	$0	$0	0	MCF	$0.000000	$/MCF
TOTAL GAS DCRR RECOVERY	$2,011,865	$593,150	$510,250	7,571,797	MCF		

(1) *Net decoupler adjustment:* Column 4 of Exhibit 6b. Electric - Column (4) + Column (8) and Gas - Column (3) + Column (7) from Residential section of Exhibit
(2) Residential: Column 5 of Exhibit 6b. Electric - Column (6) - Column (8) and Gas - Column (5) - Column (7) from Exhibit 6a multiplied by 1.0503 (average three-month commercial paper rate) to include interest on over or under-recovery.) Distribution Level: Column (9) of Exhibit 6a multiplied by 1.0503.
(3) From Page 2 OF 4.
(4) From Page 3 OF 4.

EXHIBIT 7

THE UNION LIGHT, HEAT AND POWER COMPANY
DEMAND SIDE MANAGEMENT COST RECOVERY RIDER (DCRR)
SUMMARY OF CALCULATIONS FOR 2000 PROGRAMS

JANUARY, 2000 THROUGH DECEMBER, 2000

RATE SCHEDULE	1999 PROGRAM DSM COST RECOVERY TOTAL AMOUNT	DSM PROGRAM COSTS	DSM SHARED SAVINGS	DSM LOST REVENUES
ELECTRIC RIDER DSM				
RESIDENTIAL RATE RS	$274,750	$274,750	NA	NA
DISTRIBUTION LEVEL RATES DS, DP, DT, GS-FL, & SP	$0	$0	$0	$0
TRANSMISSION LEVEL RATE TT	$0	$0	$0	$0
TOTAL ELECTRIC DCRR RECOVERY	$274,750	$274,750	$0	$0
GAS RIDER DSM				
RESIDENTIAL RATE RS	$510,250	$510,250	$0	$0
NON-RESIDENTIAL RATES GS & FT	$0	$0	$0	$0
TOTAL GAS DCRR RECOVERY	$510,250	$510,250	$0	$0

THE UNION LIGHT, HEAT AND POWER COMPANY
DEMAND SIDE MANAGEMENT COST RECOVERY RIDER (DCRR)
SUMMARY OF BILLING DETERMINANTS
JANUARY, 2000 THROUGH DECEMBER, 2000

		ELECTRIC (MWH)			GAS (MCF)
YEAR	MONTH	RATE RS	RATE DS, DP, DT GS-FL, EH, & SP	RATE TT	RATE RS
1999	JANUARY	133,115	160,906	28,753	1,515,405
	FEBRUARY	125,915	163,842	29,613	1,512,734
	MARCH	111,431	155,294	29,739	1,188,143
	APRIL	88,268	161,283	30,836	663,597
	MAY	77,649	143,317	27,840	349,387
	JUNE	93,073	152,142	38,048	193,527
	JULY	122,509	159,708	38,276	138,435
	AUGUST	122,662	165,131	51,974	123,769
	SEPTEMBER	109,512	168,680	44,144	136,202
	OCTOBER	80,277	142,630	41,564	200,503
	NOVEMBER	84,418	149,049	37,365	509,202
	DECEMBER	111,063	162,491	29,829	1,040,893
	TOTAL(1)	1,259,892	1,884,473	427,981	7,571,797

(1) TOTALS ARE USED ON PAGE 1 OF 4.

EXHIBIT 7

THE UNION LIGHT, HEAT AND POWER COMPANY
DEMAND SIDE MANAGEMENT COST RECOVERY RIDER (DCRR)
PROGRAM COST - 2000 PROGRAMS

JANUARY, 2000 THROUGH DECEMBER, 2000

		ALLOCATIONS		BUDGETS	
RESIDENTIAL PROGRAMS	BUDGET	ELECTRIC	GAS	ELECTRIC	GAS
HOME ENERGY HOUSE CALL	$85,000	35.00%	65.00%	$29,750	$55,250
RES. CONSERVATION AND ENERGY EDUCATION	$500,000	35.00%	65.00%	$175,000	$325,000
COMP. RESIDENTIAL EDUCATION	$75,000	35.00%	65.00%	$26,250	$48,750
PROGRAM ADMINISTRATION (COLLABORATIVE)	$35,000	35.00%	65.00%	$12,250	$22,750
RENOVATION/NEW CONSTRUCTION	$40,000	35.00%	65.00%	$14,000	$26,000
PROGRAM DEVELOPMENT	$50,000	35.00%	65.00%	$17,500	$32,500
TOTAL RESIDENTIAL	$785,000			$274,750	$510,250

Exhibit 8
ULH&P
Residential Decoupler Calculation
Electric

	January 1994 thru December 1994		July 1998 thru June 1999
Net Revenue	$52,754,518		$62,097,997
Average Number of Customers	98,765		107,400
Net Revenue per Customer	$534		$578
Customer Factor		= 107,400 / 98,765	1.0874
Growth Factor (Fg)		g= 0.00819, n= 54	1.0374
Adjusted Level Net Revenue		= 62,089,973 X 1.0874 X 1.0374	$59,511,748
Net Revenue Difference Actual vs. Adjusted			$2,586,249

Exhibit 8
ULH&P
Residential Decoupler Calculation
Gas

	January 1994 thru December 1994		July 1998 thru June 1999
Net Revenue	$20,016,031		$21,439,950
Average Number of Customers	64,202		73,209
Net Revenue per Customer	$312		$292.86
Customer Factor		= 73,209 / 64,202	1.1403
Growth Factor (Fg)		g= -0.021122, n= 54	0.9084
Adjusted Level Net Revenue		= $21,438,573 X 1.1403 X 0.9192	$20,733,545
Net Revenue Difference Actual vs. Adjusted			$706,405

COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
730 SCHENKEL LANE
POST OFFICE BOX 615
FRANKFORT, KY. 40602
(502) 564-3940

October 25, 1999

James B. Gainer
Legal Division
The Union Light Heat & Power Co
139 E. Fourth Street
Cincinnati, OH. 45202

Honorable John J. Finnigan
& James B. Gainer
Attorneys at Law
2500 Atrium II
P. O. Box 960
Cincinnati, OH. 45201 0960

RE: Case No. 99-414

We enclose one attested copy of the Commission's Order in the above case.

Sincerely,

Stephanie Bell
Secretary of the Commission

SB/hv
Enclosure

COMMONWEALTH OF KENTUCKY

BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

DEMAND SIDE MANAGEMENT PROGRAMS AND COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT PROGRAMS BY THE UNION LIGHT, HEAT AND POWER COMPANY	)))))	CASE NO. 99-414

O R D E R

On October 1, 1999, The Union Light, Heat and Power Company ("ULH&P") filed in Case No. 95-312[1] a motion for an extension of time, from October 1, 1999 to December 1, 1999, to file its annual Demand Side Management ("DSM") program report. Second, ULH&P requested authority to continue billing its current Gas Rider DSMR Demand Side Management Rate and its current Electric Rider DSMR Demand Side Management Rate beyond their scheduled expiration date of December 31, 1999, until the Commission has issued an Order approving new rates for the forthcoming period, based on the DSM program report. Third, ULH&P requested that the Commission open a docket to review and receive comments on ULH&P's DSM programs.

ULH&P premises its request for additional time to file its DSM program report on two factors. The first is that it has just recently received the results of outside,

[1] Case No. 95-312, The Annual Cost Recovery Filing for Demand Side Management by The Union Light, Heat and Power Company.

independent evaluations of two of its programs and needs to review and analyze those results before submitting its report to the Commission. The second factor is that ULH&P is awaiting notification as to whether it may be awarded a state grant to help fund its DSM programs in the future. Should it receive the grant, this will impact the future budgets and cost-effectiveness determinations of ULH&P's programs. Without knowing whether the grant will be awarded, ULH&P is not able to prepare a meaningful budget for certain of the individual programs.

ULH&P's current DSM cost recovery rates are scheduled to expire December 31, 1999. With the request for an extension until December 1, 1999 to file its annual DSM program report, ULH&P recognizes that the Commission would not have adequate time to review the report and issue an Order on future programs and cost recovery rates prior to the December 31, 1999 expiration date.

The request to open a docket to receive comments from the interested parties on ULH&P's DSM programs is consistent with the Principles of Agreement for Demand Side Management ("Agreement") entered into by ULH&P and the members of its DSM collaborative. The signatories to the Agreement committed to recommend to the Commission by January 1, 2000 to open a docket for review and comment on the DSM programs if ULH&P had not filed a general rate case on or before July 1, 1999.

Having considered the motion and being otherwise sufficiently, the Commission HEREBY ORDERS that:

1. This case is established to investigate and review ULH&P's DSM programs and to receive public comments on those programs.

2. ULH&P is granted an extension of time until December 1, 1999 to file its annual DSM program report.

3. ULH&P shall continue to bill its currently effective DSM cost recovery rates until such time as the Commission issues an Order prescribing new rates.

4. Case No. 95-312 is hereby closed. The record in Case No. 95-312 shall be incorporated by reference into the record in this proceeding.

5. Any comments on ULH&P's DSM programs shall be filed no later than January 5, 2000.

Done at Frankfort, Kentucky, this 25th day of October, 1999.

By the Commission

ATTEST:

Executive Director

Cinergy Corp.
139 East Fourth Street
Rm 25 AT II
P.O. Box 960
Cincinnati, OH 45201-0960
Tel 513.287.3601
Fax 513.287.3810

JOHN J. FINNIGAN, JR.
Senior Counsel

CINERGY.

September 30, 1999

VIA OVERNIGHT MAIL

Hon. Helen Helton
Executive Director
Public Service Commission of Kentucky
730 Schenkel Lane
P.O. Box 615
Frankfort, Kentucky 40602

RE: In the Matter of The Annual Cost Recovery Filing for Demand Side Management by the Union Light, Heat and Power Company
Case No. ~~95-312~~ 99-414

Dear Ms. Helton:

Enclosed are an original and thirteen (13) true copies The Union Light, Heat and Power Company's Motion for Extension of Time for Filing Annual Cost Recovery Filing, Motion for Continuation of Gas Rider DSMR Demand Side Management Rate (Sheet No. 62.2) and Electric Rider DSMR Demand Side Management Rate (Sheet 78.2), and Motion to Open Docket to Receive Comments.

Please date stamp the extra copy of the enclosed Motion upon filing and return in the enclosed, self-addressed envelope for our files.

Very truly yours,

John J. Finnigan
Senior Counsel

JJF/nlb

Enclosures

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

THE THE ANNUAL COST RECOVERY FILING FOR DEMAND SIDE MANAGEMENT BY THE UNION LIGHT, HEAT AND POWER COMPANY	))))))	CASE NO. ~~95-512~~ 99-414

MOTION FOR EXTENSION OF TIME
FOR FILING ANNUAL COST RECOVERY FILING,
MOTION FOR CONTINUATION OF GAS
RIDER DSMR DEMAND SIDE MANAGEMENT RATE
(SHEET NO. 62.2) AND ELECTRIC RIDER DSMR
DEMAND SIDE MANAGEMENT RATE (SHEET 78.2), AND
MOTION TO OPEN DOCKET TO RECEIVE COMMENTS

Now comes The Union Light, Heat and Power Company ("ULH&P") to move the Commission for an extension of time for filing of its annual Demand Side Management ("DSM") program report from October 1, 1999 to December 1, 1999. ULH&P also moves the Commission for an order permitting ULH&P to continue applying the current gas Rider DSMR Demand Side Management Rate (Sheet No. 62.2) and the electric Rider DSMR Demand Side Management Rate (Sheet No. 78.2) beyond December 31, 1999, until the Commission issues its order approving new rates for the forthcoming period. Finally, ULH&P moves the Commission to open a docket to receive comments from all interested parties on ULH&P's DSM programs.

This case was originally filed on July 19, 1995. At that time, ULH&P filed a joint application with the Office of the Kentucky Attorney General, the Northern Kentucky Citizens Action Commission, Citizens Organized to End Poverty in the Commonwealth

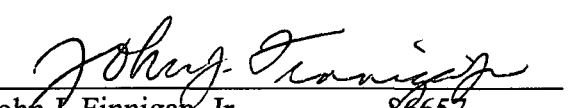
and two individuals. The plan called for the implementation of several DSM programs as well as tariffs to allow ULH&P to recover its DSM program costs and other associated costs. The joint filing was made pursuant to Kentucky Revised Statutes § 278.285, which grants authority to the Commission to review and approve such programs. The Commission previously entered an order in this case on December 1, 1995. In the order, the Commission generally approved ULH&P's DSM plan, which included annual reconciliation and adjustment of the DSM cost recovery mechanism.

ULH&P's next annual report is due on October 1, 1999. In this report, ULH&P and the ULH&P Collaborative intend request approval for continuation of some of the current programs. ULH&P requests additional time to file its report, however, for two reasons. First, ULH&P just received the results of outside, independent evaluations of two of its programs, which are responsive to the Commission's order to perform a study to compare gas and electric usage patterns of DSM program participants with non-participants. ULH&P requests additional time to review and analyze the report before submitting its filing to the Commission. Second, ULH&P is reviewing whether it may be feasible to adjust the budget for certain of the individual programs for the upcoming period. In particular, a state grant to help fund the programs has been requested. ULH&P expects to receive notification soon as to whether the grant will be awarded but ULH&P has not yet received such notice. If the grant is awarded, this will affect the efficacy of ULH&P's DSM programs and ULH&P is not able to form a meaningful budget for certain of the individual programs without knowing whether the state funding will be available.

Finally, ULH&P requests that the Commission open a docket to receive comments from all interested parties on ULH&P's DSM programs. Such a docket was contemplated in the original Principles of Agreement for Demand Side Management by The Union Light, Heat and Power Company ("Principles of Agreement"). In Article X of the Principles of Agreement, the signatories agreed to recommend to the Commission by January 1, 2000 that the Commission open a docket for review and comment on ULH&P's DSM programs and on the Principles of Agreement themselves, if ULH&P did not file a retail rate case by July 1, 1999.

Based on the foregoing reasons, ULH&P respectfully requests that the Commission extend the time for ULH&P to file its annual DSM report to December 1, 1999; that the Commission order that ULH&P be permitted to apply the DSM rates specified herein until such time after January 1, 2000 that the Commission may issue its order approving new rates, and that the Commission open a docket as described herein.

Respectfully submitted,



John J. Finnigan, Jr. 86657
James B. Gainer
The Union Light, Heat and Power Company
2500 Atrium II
P. O. Box 960
Cincinnati, Ohio 45201-0960
(513) 287-3601
Attorney for The Union Light, Heat
and Power Company

CERTIFICATE OF SERVICE

I certify that a copy of the foregoing filing was served by ordinary United States mail, postage prepaid, this 30th day of September, 1999 on:

Richard G. Raff
Public Service Commission
730 Schenkel Lane
Frankfort, Kentucky 40602

Ms. Ann L. Cheuvront
Assistant Attorney General
Kentucky Office of the Attorney General
1024 Capital Center Drive
Frankfort, Kentucky 40602-2000

Mr. Carl Melcher
Northern Kentucky Legal Aid, Inc.
302 Greenup Street
Covington, Kentucky 41011

Mr. Richard Stoeckle
Office of Kentucky Legal Services
Program, Inc.
201 West Short Street, Suite 506
Lexington, Kentucky 40507

Mr. Clint Hamm
Executive Director
Northern Kentucky Community
Action Commission
13 West Seventh Street
Covington, Kentucky 41012-0931

John J. Finnigan, Jr. 86657

Doc. No. 49793