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RECORDS AND REPORTING

July 29, 1998

Mr. Roland Floyd, Chief
Bureau of Conservation/System Planning and Electric Safety
Division of Electric & Gas
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

980000

Re: Florida Power & Light Company's Demand Load Control Trial Project

Dear Mr. Floyd:

On November 27, 1995, Order No. PSC-95-1343A-S-EG, the Commission approved FPL's Demand Load Control Trial Project. As originally filed the Trial Project was scheduled to last "approximately 24 months." On October 16, 1997, FPL notified you and the Commission that the project would not be completed until the end of April 1998.

FPL is submitting its findings on the Project and the results of this research are being included in FPL's integrated resource planning process.

Sincerely,

Dennis Brandt
Manager, Sales and Marketing Product Support

Attachment

cc: Blanca Bayo'

- ACK _____
- AFA _____
- APP _____
- CAF _____
- CMU _____
- CTR _____
- EAG _____
- LEG _____
- LIN _____
- OPC _____
- RCH _____
- SEC 1
- WAS _____
- OTH _____

DOCUMENT NUMBER - DATE

08231 AUG -4 88

FPL-RECORDS/REPORTING

11/16/98
12/16/98
12/19/98



ORIGINAL

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REGULATORY AND REPORTING

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FPL-REGULATORY/REPORTING

12/11/98
11/16/98
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**Evaluation of FPL's Energy On Call Program
Research Findings**

Florida Power & Light

July 1998

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Program Budget	10

RESEARCH FINDINGS



**Evaluation of FPL's Energy On Call Program
Research Findings**

Florida Power & Light

July 1998

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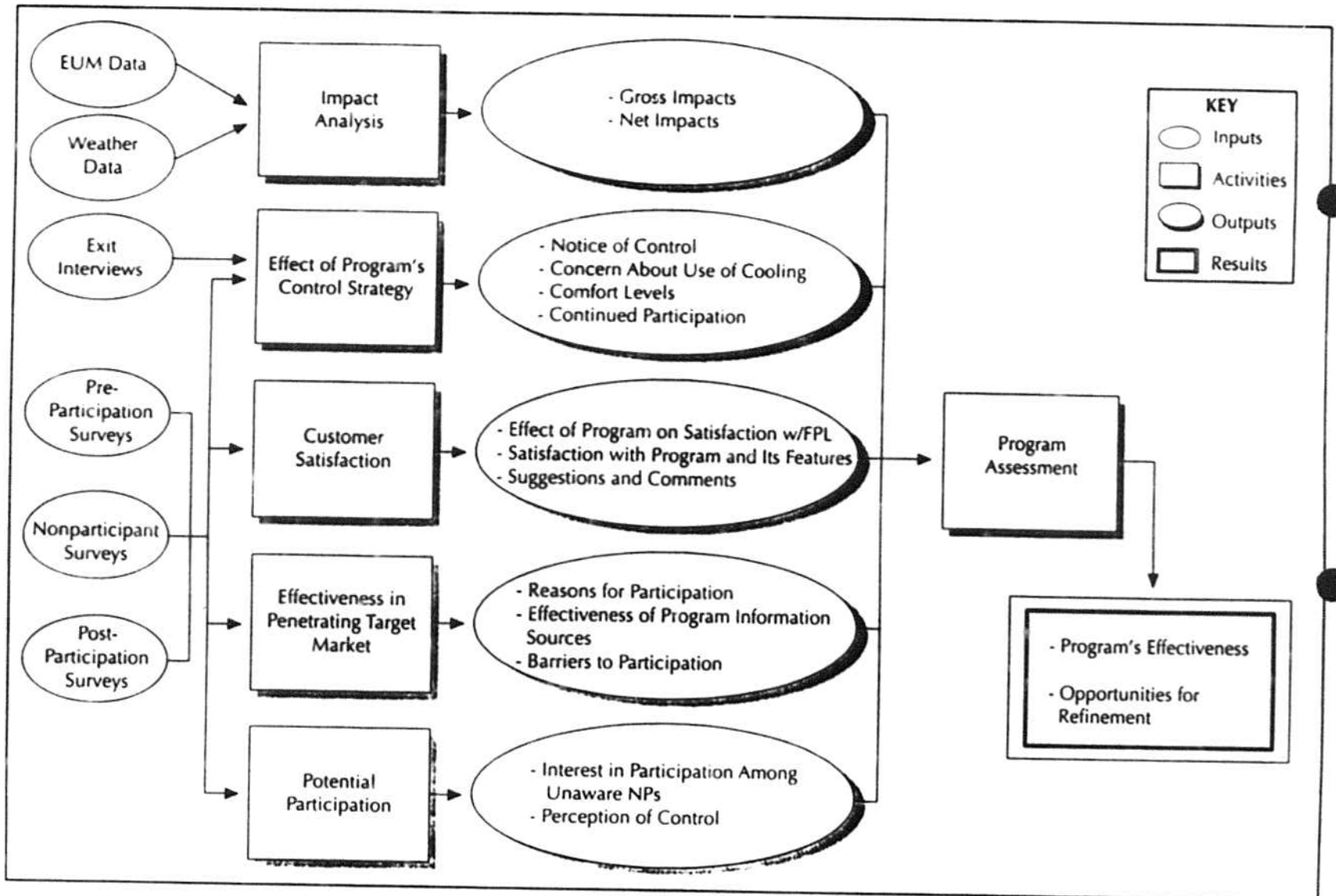
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RESEARCH FINDINGS

Exhibit 1
Overview of Evaluation

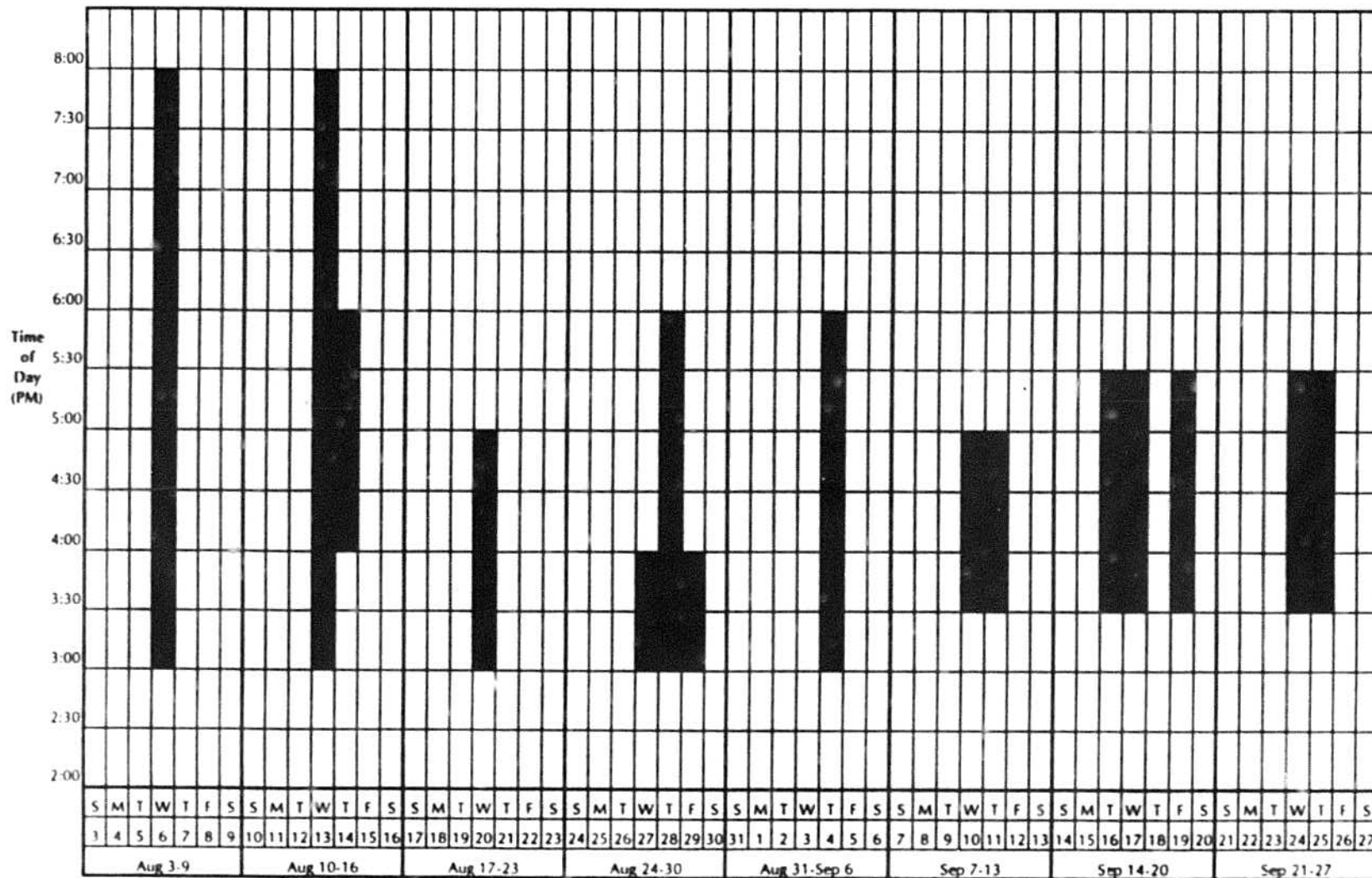


OVERVIEW

THE RESULTS OF THE EVALUATION OF FPL'S ENERGY ON CALL PILOT PROGRAM ARE PRESENTED IN THIS REPORT. THE OVERALL OBJECTIVE OF THE EVALUATION IS TO PROVIDE FPL WITH THE INFORMATION NEEDED TO ASSESS THE DESIRABILITY OF CONTINUING THE PROGRAM.

- A description of the program and its control strategy is presented first.
- The program's participation and market penetration are then presented.
- The results of the impact analysis are then analyzed. Peak demand impacts for the program as a whole, as well as for the major segments metered—retail, restaurant, office and dwelling—are presented.
- Customer reactions to the program are assessed next. The assessment includes the effect of the program's control strategy, the effect of the program on satisfaction with FPL, and barriers to participation.
- Finally, key conclusions and recommendations made as a result of the Energy On Call program evaluation are discussed.

Exhibit 2
Control Strategy Implementation



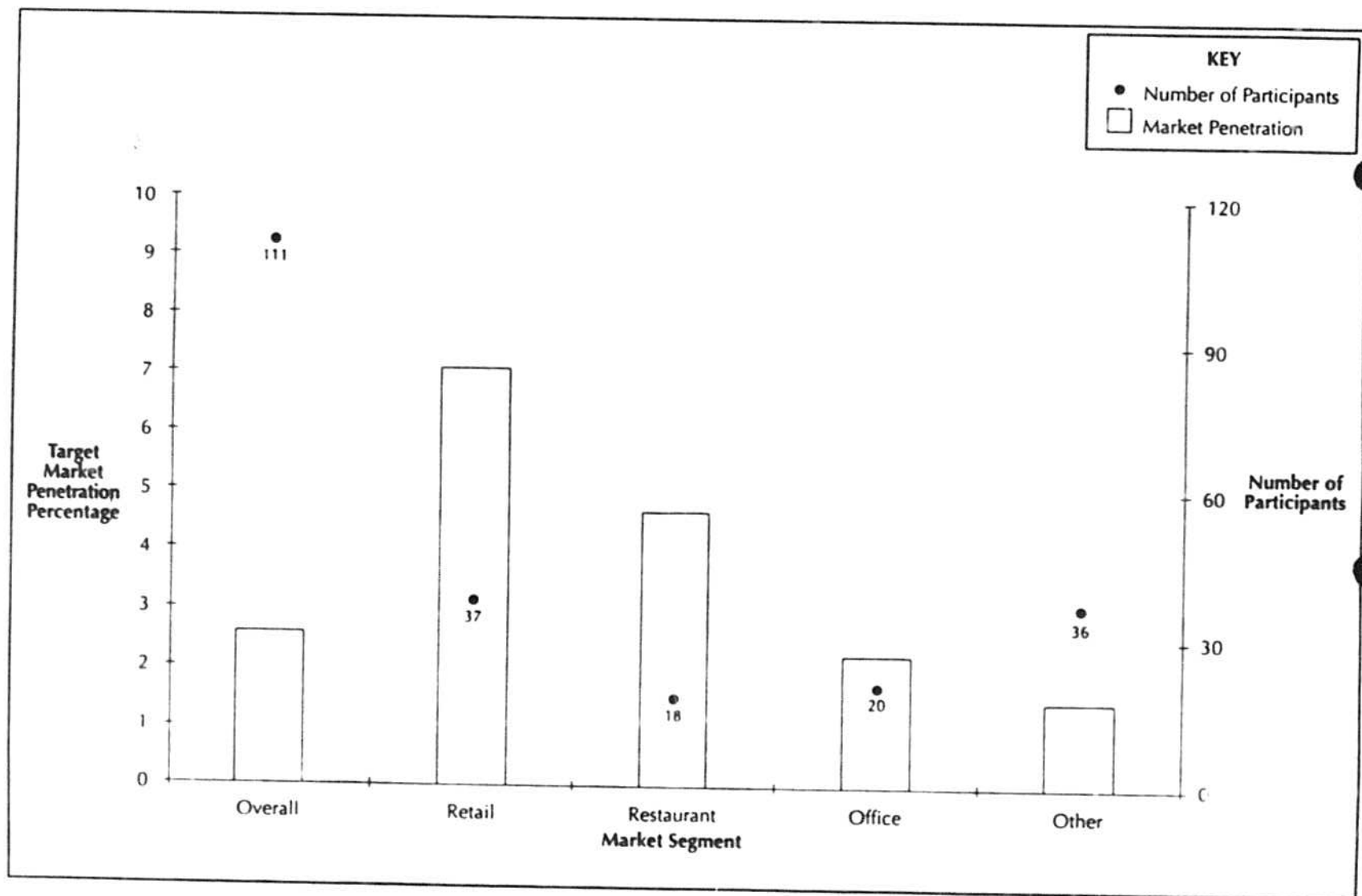
PROGRAM DESCRIPTION

THE ENERGY ON CALL PROGRAM IS A PILOT PROGRAM DESIGNED TO ASSESS THE POTENTIAL FOR COST EFFECTIVELY IMPLEMENTING A DIRECT LOAD CONTROL PROGRAM AMONG CUSTOMERS IN THE GSD RATE CLASS.

The goal of the control strategy was to provide FPL with the best possible information on the effect of alternative control scenarios on dropouts, comfort, and satisfaction. The control strategy was implemented on 15 days, beginning on August 6, 1997 and concluding on September 25, 1997.

- Based upon the *Demand Load Control Program Customer Agreement - Terms and Conditions*, participants' air conditioning systems may be interrupted between the hours of noon and 9:00 p.m. during April through October.
 - The equipment may be interrupted a total of 15 minutes during any 30 minute period with a maximum interruption time of 180 minutes per day.
 - Participants are paid an incentive of \$2 per ton per month during the 7 months (April through October) in which the program can be implemented.
- An important component of the program is to ensure that the participant discomfort level is kept to a minimum during control periods.
 - To facilitate this, a control strategy was developed to prevent all units from being controlled at the same time at sites with multiple units. This strategy involves calling on multiple units at a site in alternate rotations to help ensure that at least one unit is always running.
 - A requirement for participation is that all units at the site have to be available for control, unless a part of the cooling is dedicated to an area containing temperature-sensitive equipment.

Exhibit 3
Target Market Penetration

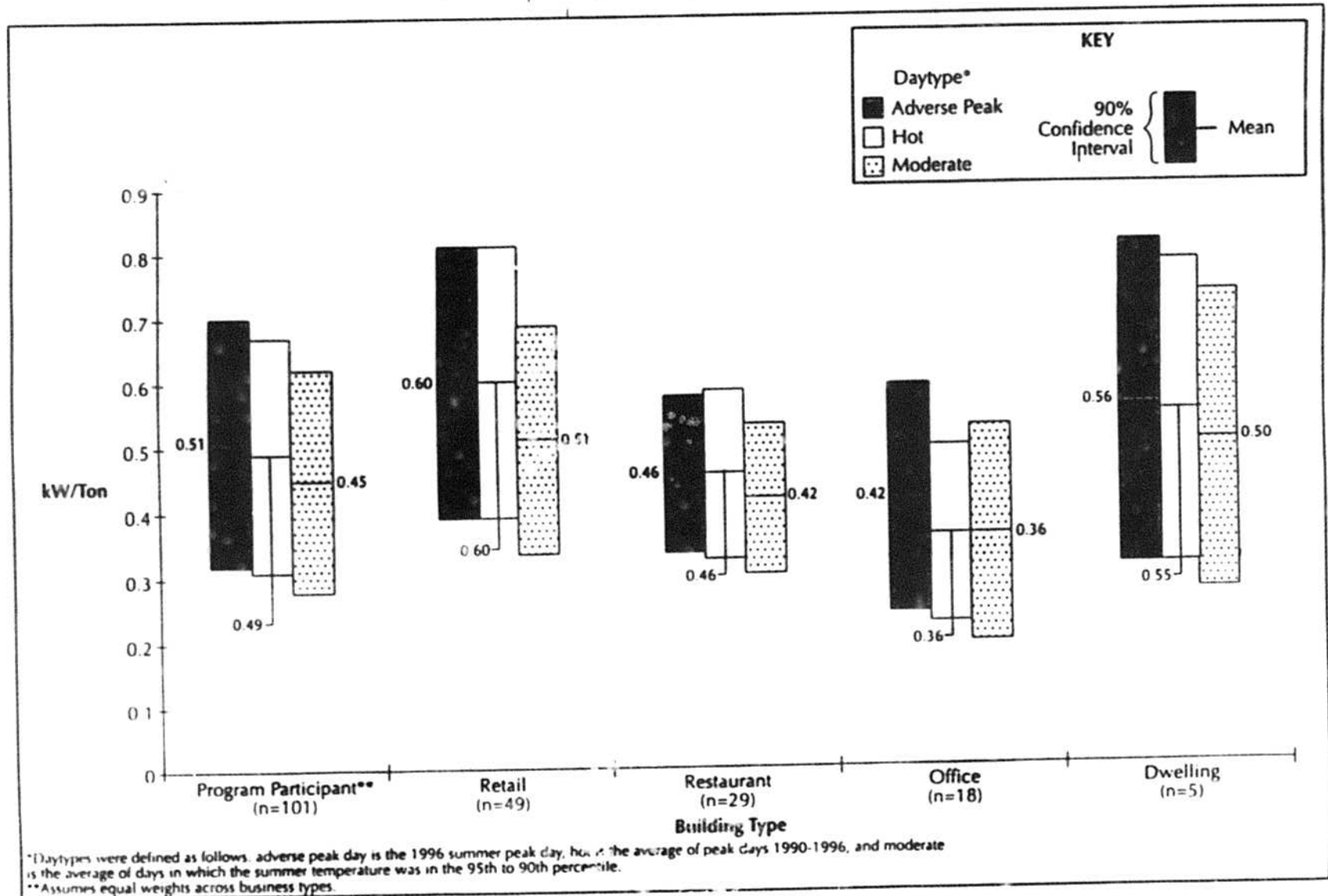


PARTICIPATION AND MARKET PENETRATION

THE MAJORITY OF THE 111 PILOT PROGRAM PARTICIPANTS WERE IN THE RETAIL, RESTAURANT AND OFFICE BUSINESS SEGMENTS. TARGET MARKET PENETRATION WAS HIGHEST IN THE RETAIL SEGMENT.

- The pilot program—through direct mailings and phone recruiting—targeted 4,284 customers. Ninety-four percent of the program’s target market was in the GSD rate class, with the vast majority of these smaller (less than 200 kW demand) customers.
- Recruiting activities included two direct mailings, phone contact by FPL recruiters, and in-person contact by FPL representatives.
 - In April 1996, a direct mailing was sent to 1,272 customers.
 - A second direct mailing was sent to an additional 1,637 customer in May 1996.
 - Phone contact by FPL recruiters and in-person contact by FPL representatives were planned for the 1,375 customers not included in the mailings.
- The target market for this evaluation was 4,284 commercial customers, majority of which were in the GSD rate class. The program penetration rate is a ratio of the number of participants to the target market.

Exhibit 4
Net Impacts Per Ton by Building Type, 4:00 PM - 5:00 PM

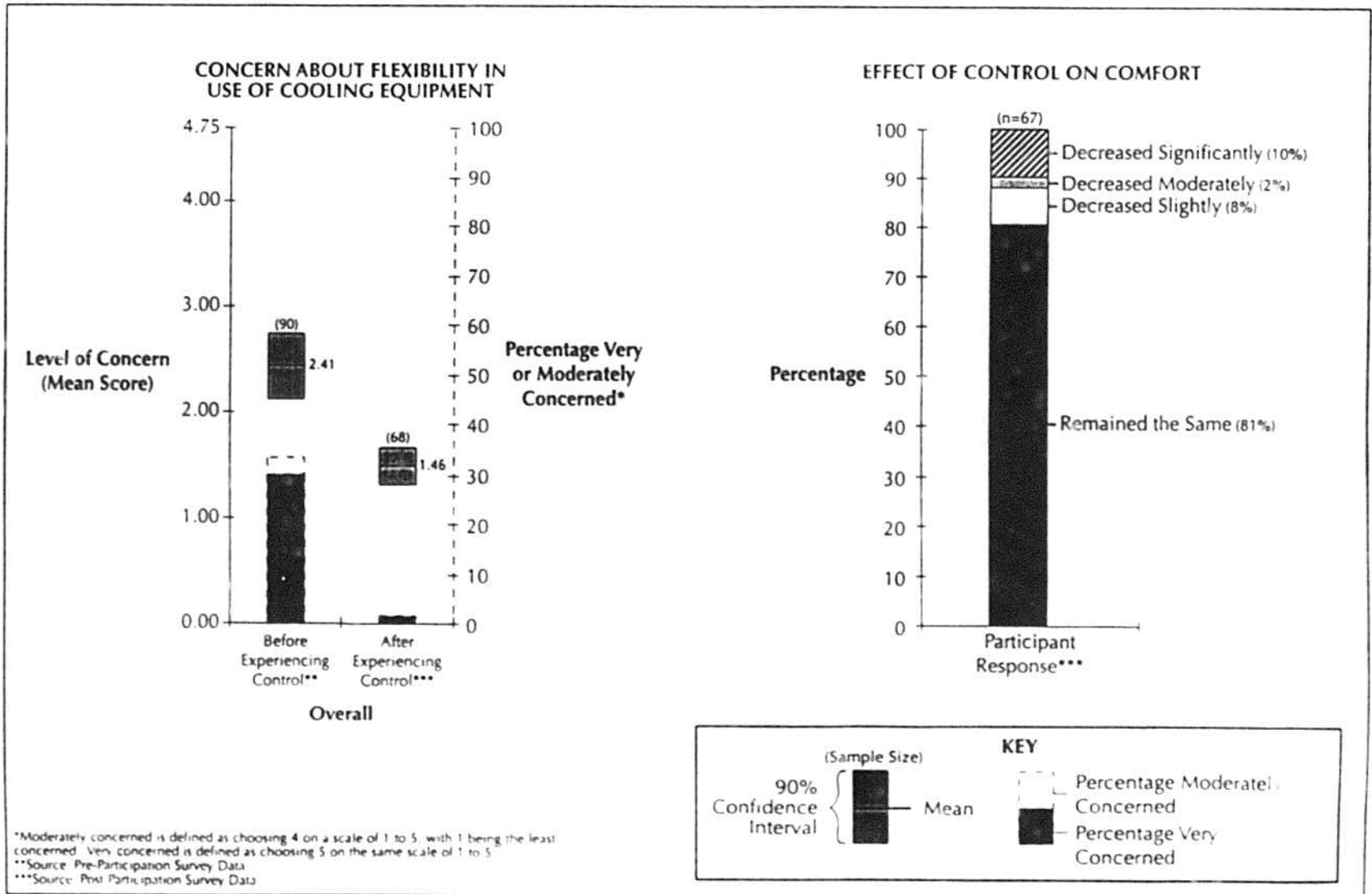


PROGRAM IMPACTS

THE RETAIL AND DWELLING BUILDING TYPES PROVIDE THE HIGHEST NET PER-TON IMPACTS. IN ADDITION, ADVERSE PEAK AND HOT DAYTYPE PEAK HOUR IMPACTS ARE SIMILAR FOR ALL BUILDING TYPES EXCEPT OFFICE.

- These impact estimates, when combined with the pilot program incentive level of \$14/Ton/year and fixed costs of \$86/Ton, result in capitalized program cost/kW of summer peak demand impact figures of: \$316/kW for the retail segment, \$412/kW for restaurants, \$452/kW for offices and \$339/kW for dwellings. These figures compare favorably with those for the residential On Call program.
- Note that adverse peak and hot daytype impacts are similar for all building types except offices. As explained in more detail below, Energy On Call participant impacts are much more stable across hours and daytypes than are those of residential On Call participants.
- The average net energy reduction for the Energy On Call program was 0.45 kWh per ton controlled. Payback and snapback were not distinguishable from zero. The net energy impact for the program is therefore 0.45 kWh.
- The average participant demand impact was 15.25 kW, while the net energy reduction was 13.46 kWh. These values are based on the average number of participant units and capacity, 2.6 units and 11.5 tons respectively.

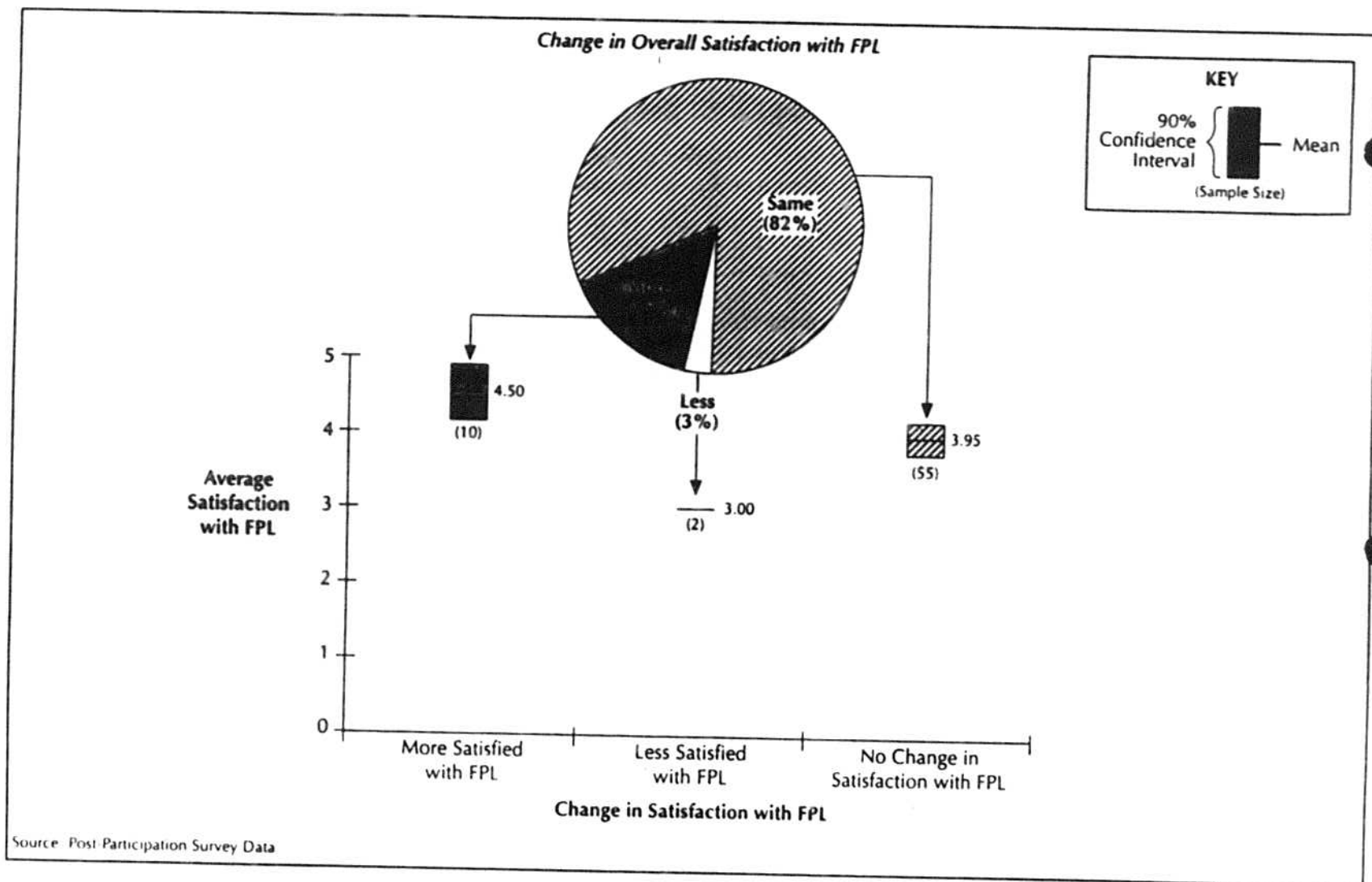
Exhibit 5
Overview of Participant Reactions to Control



RESULTS INDICATE THAT FPL'S SUMMER 1997 CONTROL STRATEGY WAS WELL RECEIVED BY MOST OF THE PARTICIPANTS INTERVIEWED.

- Despite the program's aggressive control strategy, concern about decreased flexibility and freedom in cooling equipment use lessened substantially after experiencing control.
 - The level of concern decreased significantly among participants in all market segments except restaurants, where concern increased—although not significantly—after experiencing control.
 - Only 1 of the 68 participants surveyed indicated a high level of concern about the loss of cooling system control that results from program implementation.
- Over 80 percent of the participants did not notice a change in the comfort level of their business during control periods. Participants in the restaurant segment were most likely to report a significant decrease in the level of comfort during periods in which control was implemented.
- Although control was implemented on 15 days during summer 1997, most participants reported noticing control on substantially fewer days.
 - This result provides supporting evidence to the claim in the brochure that "your customers and employees probably won't notice a thing."
 - The average self-reported days of control was less than the actual number of control days (15) for all market segments. The difference was statistically significantly less than 15 in all segments except restaurants where the effects of control were most noticeable.
- Only 6 of 111 (5 percent) participants dropped out of the program. The dropout rate was highest among restaurants due to concerns regarding the comfort level of their patrons.

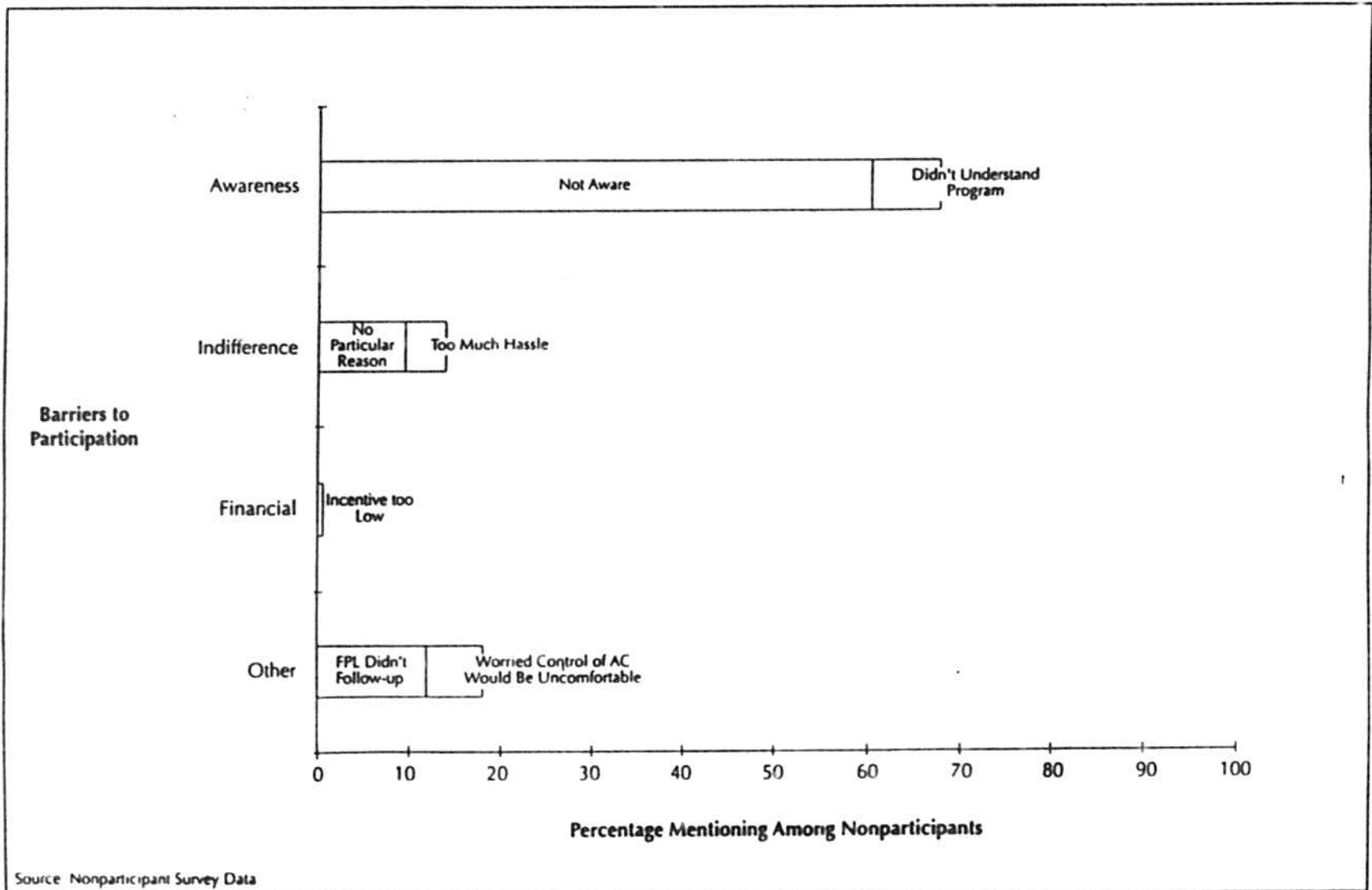
Exhibit 6
Change in Participant Satisfaction with FPL
as a Result of Participation in the Program



THE PROGRAM PARTICIPATION EXPERIENCE HAS A SLIGHTLY POSITIVE INFLUENCE ON OVERALL SATISFACTION WITH FPL.

- As illustrated in the facing exhibit, the 10 participants surveyed who indicated increased satisfaction with FPL as a result of the program experience have a higher level of satisfaction with FPL than those unaffected by the program experience. The two customers who reported a decrease in satisfaction with FPL had the lowest level of satisfaction with FPL.
- Although a few participants reported dissatisfaction with program features, no participants reported that they were dissatisfied with the program as a whole. Some of the comments regarding overall program satisfaction included:
 - "I like this program. I will be adding more stores next year."
 - "Everyone is very comfortable with the program."
 - "I really like the program and hope FPL continues it."

Exhibit 7
Nonparticipant Barriers to Participation
(n=187)



OPPORTUNITIES EXIST—OVERCOMING INDIFFERENCE TO THE PROGRAM, LACK OF PROGRAM UNDERSTANDING AND, OF COURSE, LACK OF PROGRAM AWARENESS—TO INCREASE PARTICIPATION.

- Some aware customers said that they were interested in participating, but did not because FPL did not follow-up on the initial contact. Further, other aware customers did not participate because they did not thoroughly understand the program.
 - These results offer FPL opportunities to increase participation through more extensive FPL representative contact with customers. This contact would enable more effective follow through in signing-up customers and would offer opportunities to explain any aspects of the program that the customer did not initially understand.
 - The benefits of increased participation that will result from these efforts must, of course, be weighed against the additional cost to FPL.
- Worries about comfort were also a barrier to participation among some aware nonparticipants.
 - Results presented earlier indicated that the majority of participants reported no decrease in comfort as a result of participation, despite the pilot program's aggressive control strategy.
 - This result offers FPL the opportunity to mollify the initial concerns about comfort by incorporating testimonials from these participants in program marketing materials.

Exhibit 8
Energy On Call Impact Estimates

	Summer Demand per Ton	Winter Demand per Ton	Energy Reduction per Ton	Payback per Ton	Net Energy per Ton
Retail	0.60	NA	0.53	0.00	0.53
Restaurant	0.45	NA	0.40	0.00	0.40
Office	0.42	NA	0.37	0.00	0.37
Dwelling	0.56	NA	0.49	0.00	0.49
Overall	0.51	NA	0.45	0.00	0.45

COST EFFECTIVENESS INPUTS

THE PAYBACK FOR THE ENERGY ON CALL PROGRAM IS ZERO, IMPLYING THAT NONE OF THE ENERGY LOST DURING CONTROL WILL BE RECOVERED.

- Review of the individual load shapes revealed that most air conditioning units ran at their connected load during the program hours. The implication is that by running at their connected load for most parts of the day, these appliances could not add any energy back.

CONCLUSIONS AND RECOMMENDATIONS

PARTICIPANTS, WITH SOME EXCEPTIONS (NOTABLY AMONG SOME RESTAURANTS) ARE GENERALLY PLEASED WITH THE VALUE THEY RECEIVED FROM THE ENERGY ON CALL PROGRAM. FURTHERMORE, OPPORTUNITIES FOR REFINEMENT EXIST.

- The program was well received by most participants. Specifically:
 - Although control was implemented on 15 days during summer 1997, most participants reported noticing control on substantially fewer days. Furthermore, participant concerns about their ability to control their cooling equipment lessened substantially after experiencing control.
 - Despite implementation of an aggressive control strategy, the majority of participants reported no decrease in comfort and only 6 of 111 (5 percent) participants dropped out of the program.
 - The program participation experience has a slightly positive influence on overall satisfaction with FPL.
 - FPL representatives, the program brochure, and bill inserts were successful in inducing participation.
- Areas for program refinement include:
 - Incorporating comments in marketing materials from participants who experienced no decrease in comfort during control to mollify the initial concerns about comfort among prospective participants.
 - Enhancing marketing materials by highlighting some of the global benefits of participation, such as keeping rates low.
 - Implementing more effective follow-through in signing-up customers.
 - Careful screening of potential participants in the restaurant segment.

Exhibit 9
Estimated and Actual Expenditures

Category	Estimated Project Costs		Actual Project Costs
Payments to Participants	\$ 40,000		\$ 53,507
Equipment Installation & Removal	\$ 292,000		\$ 244,771
Data Analysis	\$ 80,000		\$ 85,355
Project Management and Operation	\$ 150,000		\$ 145,098
Total	\$ 562,000		\$ 528,731