

DESCRIPTION, INITIAL RESULTS, AND EVALUATION PLAN FOR
NORTHERN STATES POWER COMPANY'S APPLIANCE REBATE PROGRAM

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ABSTRACT

This paper presents a detailed description of the operation, initial results and evaluation plan of Northern States Power Company's (NSP's) Appliance Rebate Program. NSP started the program to offer rebates to its Minnesota residential electric customers for purchasing energy efficient electric appliances March 1, 1982. Appliances covered under the program are room and central air conditioners, room and central heat pumps, electric water heaters, refrigerators, refrigerator-freezers and freezers.

The goal of the program is to shift the appliance market in Minnesota toward more efficient appliances by making consumers more aware of their life-cycle-cost benefits and by providing the appliance dealers and distributors with an added sales tool to help them market these appliances. Evaluating the impact of this conserved energy on all aspects of the Company's system and determining its value to NSP and society are also major goals.

1. BACKGROUND

Northern States Power Company (Minnesota) and its subsidiary Northern States Power Company (Wisconsin), together known as NSP, serve a 40,800 square mile area in parts of Minnesota, Wisconsin, North and South Dakota. The Company generates, transmits and distributes electric power to more than one million customers and distributes natural gas to more than 275,000 customers in 81 communities within its service area. Figure 1 shows the location of NSP's service territory within the four-state area.

The Company's total system capacity is 6500 MW in the winter and 6000 MW in the summer and is composed of the type of plants shown in Table I. NSP, the reader may be surprised to learn, is a summer-peaking utility. The summer and winter maximum demands, as well as the maximum output during a summer and winter month, are listed in Table I for 1980 and 1981.

Although 19 percent of NSP's installed capacity is comprised of oil and natural gas-fired plants, the Company presently uses them very little. In 1981, they provided only 0.1 percent of the Company's generation mix. So NSP is not in the situation where conservation could immediately reduce a large amount of very expensive oil and natural gas-fired generation, although it may have a role to play in keeping it as small as it presently is. It most likely has a role to play in deferring or eliminating altogether the need for a future generation facility and/or reducing production, transmission, and distribution costs.

NSP does recognize society's need to promote the conservation of energy and has pledged to rely upon conservation, renewable energy, and energy efficiency programs to accommodate a substantial portion of its future growth in the energy needs of its service area to the extent technically and economically attractive and feasible. As part of the Company's continuing commitment to promoting the conservation of energy, NSP supported the adoption of the 1980 Minnesota Energy Omnibus Act, which ultimately mandated several of the State's investor-owned utilities to propose conservation investment programs to the Minnesota Public Utilities Commission. The programs were to investigate the cost-effectiveness and feasibility of conservation as an investment alternative to new generation. NSP proposed four year-long demonstration pilot programs, of which three were approved. The Appliance Rebate Program is to investigate the conservation of electricity, while the other two programs are to investigate the conservation of natural gas.

2. APPLIANCE REBATE PROGRAM

The missions of the Appliance Rebate Program are to shift the electric appliance market in Minnesota toward more efficient models, and to evaluate the effect that this has on all aspects of the Company's operation, especially what it does to reduce production costs and need for new generation facili-

ties. The shift is to be accomplished by offering NSP's Minnesota residential electric customers, landlords, and builders rebates for purchasing energy efficient appliances. The Company feels that customers are acutely unaware that appliances which perform the same end use have a wide range of energy efficiencies. Consumer purchase decisions generally are made more on the basis of an appliance's first cost than on its life-cycle cost. Thus, most consumers are not taking advantage of cost-effective investments in energy-efficient appliances. At the same time, in northern climates the increased cost of an energy-efficient air conditioner is generally not justified by the savings in operating costs that the efficient unit will cause. Thus, without some intervention by a third party, such as a utility, consumers are acting in their best interests by purchasing the cheapest air conditioner they can find. These two barriers to the purchase of efficient appliances are primarily what this program is trying to overcome.

The products covered under the program are high-efficiency room and central air conditioners, room and central heat pumps, electric water heaters, refrigerators, freezers and refrigerator-freezers. These products, along with dishwashers, washing machines, clothes dryers, and dehumidifiers are the major users of electricity in a non-electrically-heated residence.

Dishwashers and washing machines are not included in the program because most of the energy they use is for heating water. Since more than 80 percent of NSP's customers in Minnesota heat their water with natural gas, including these products in the program would result in more conservation of natural gas than electricity, and this program is strictly designated for electric conservation. Electric clothes dryers and dehumidifiers are not in the program because very little difference in energy efficiency exists between the various makes and models.

The rebate amounts are based upon the kilowatt summer system coincident peak demand reduction caused by a high-efficiency appliance compared to the average efficiency appliance of the same size and type presently being sold in Minnesota. The value of a conserved peak kilowatt was priced at the difference between NSP's marginal and embedded cost of installed generation, which is approximately \$500/kW.

This is only an approximate and simplified formulation of the value of the conserved energy to NSP. It may be that conservation caused by increased appliance efficiencies would be most useful to NSP in reducing its total amount of energy production, as opposed to only reducing its summer peak demand. The effects of the program on reve-

nues and rates must also be determined. In evaluating this program, a more sophisticated assessment of the impact of this type of conservation on these and perhaps other areas will be made. Production cost models, the corporate screening model, and other appropriate tools will be used in making these assessments. Conservation's impact upon the Company's transmission and distribution systems will also be evaluated.

3. APPLIANCE MARKET DESCRIPTION

In order to determine the average efficiency of each size and type of covered product presently being sold, interviews with each of the distributors or manufacturer's representatives wholesaling these products in Minnesota were conducted. They supplied sales data indicating the number of units sold of each of the models they distribute, and what each model's size or capacity, average annual energy cost or (S)EER, and average retail price is.

The average annual energy costs and EER ratings are taken directly from the FTC's Energy Guide labels, while the SEER ratings are taken from the current Air Conditioning and Refrigeration Institute directory. This sales data was used to calculate the average efficiency of each size and type of appliance, as well as the percent of the market held by appliances of a certain energy efficiency or greater. The sales-weighted average efficiency of each size and type of appliance sold in Minnesota in 1981 is shown in Tables II-IV. From this information, the qualifying efficiency levels were selected. In selecting these levels, three guidelines were followed: 1) That the rebates be large enough for consumers to pay attention to them, which is a minimum rebate of \$20 for refrigeration appliances, electric water heaters and room air conditioners and \$50 for central air conditioners and heat pumps. This advice was supplied by appliance distributors who regularly conduct rebate programs. What this means is that the qualifying levels that were selected had to be at a point where the dollar value of kilowatt peak demand reduction was \$20 (or \$50 for central A/C) or more. This proved to be impossible given the methodology used for determining the value of the conserved energy for one-door refrigerators and freezers, as is explained later. 2) That a reasonable number of appliances designated high-efficiency models be available in the marketplace. After examining the markets, having 20-30% of the 1981 appliance sales qualify for rebates appeared to ensure that a reasonable number of qualifying high-efficiency models would be available. 3) That the qualification levels occur at points where breaks in the continuum of efficiencies occurred, so that as few appliances as possible would barely miss qualify-

ing (i.e., by \$1/yr. of annual operating cost or .1 (S)EER).

These criteria often conflicted with one another and had to be resolved on a case-by-case basis. (Tables indicating the 1981 market share of each size and type of qualifying appliance, the average costs of all the units sold in each size category and the average costs of the qualifying high-efficiency products in each size category are available to any interested parties from my office.) Tables V-VII show the rebate tables developed for the program.

The rebates for refrigeration appliances are quite small compared to the air conditioner, water heater and heat pump rebates. This is simply because high efficiency refrigeration appliances do not reduce NSP's summer peak demand much compared to the same type average efficiency appliances. Individual refrigeration appliances do not contribute a great deal to the Company's peak demand in the first place, and the differences between the average efficiency products now being sold in Minnesota and the highest efficiency models on the market are often not large, as is shown in Tables II-IV.

4. PROGRAM ADMINISTRATION

Administratively, the program is operated through the existing appliance distribution network. Participating dealers and distributors have stocks of application forms, shown in Figure 2, and return envelopes. When one of their customers has purchased a qualifying appliance, they help him or her fill out the form and then have the customer send it in along with a copy of their sales invoice. The dealers and distributors are supplied with a manual that contains the rebate tables, the rules and procedures of the program, a summary of the FTC Energy Guide Labeling Program (including an explanation of what information is on the labels), and a section describing which features make an appliance energy efficient. Additionally, they are given wall banners announcing their participation in the program, stickers for them to put on qualifying models, and ad slicks for use in their print advertising. All rebate applicants are checked to verify that they are in fact NSP electric customers in Minnesota and that the appliance they purchased qualifies for the rebate amount indicated. Additionally, random inspections of applicants' installations are conducted to further verify the purchase. All information contained on the application form is entered into a computer file for record keeping and reporting purposes.

5. PROGRAM PROMOTION

In planning the program, perhaps the biggest area of uncertainty was in how to effectively market it. There was some thought that the appliance dealers and distributors would advertise it a great deal, making it unnecessary and even wasteful for NSP to aggressively advertise it. So it was decided to start with a fairly low profile campaign initially, using press releases and bill inserts while waiting for the initial reaction to the program. It was decided that if 3,000 rebate applications were not received in the first three months, NSP would start to aggressively promote it.

The first two weeks' reaction to the program made it seem likely that this minimum would not be obtained, so the advertising planning was started in earnest. The initial awareness campaign was started June 27th, 1982 with newspaper and radio advertisements, and will continue until September 19th. The ad schedule for the Minneapolis-St. Paul metropolitan area is shown in Table VIII to give the reader a feel for the type of campaign being conducted.

6. INITIAL RESULTS

In the first five months of the program's operation, NSP received approximately 5,000 applications for rebates. In Figure 3, these rebates are broken down by appliance type, customer type, and dwelling type. The answers to three of the marketing questions customers are asked on the rebate form, both aggregated and broken down by appliance type are shown in Figures IV-VI.

At this point in the program, we do not have enough information to be able to make any definitive statements as to how successful it has been in shifting the appliance markets in NSP's service territory toward more efficient models. However, since it was recognized that this aspect of the program would be of interest, two sources of information were tapped in order to try to provide a preliminary indication of the program's initial success. The results to a question contained in an informal survey of 50 of the approximately 1500 participating appliance dealers, asking what had happened to the percentage of their sales which were high-efficiency units, is shown in Table IX. The rebate applicants' responses to the fourth marketing question on the application form, asking whether they would have purchased the high-efficiency appliance without the rebate, is shown in Table X.

Taken together, these results seem to indicate that the program has had significant success in shifting the central air conditioner, room air conditioner, and electric water heater markets towards more efficient

models. They also indicate that it has had a less significant success with the refrigerator-freezer market, and little or no success in the freezer and one-door refrigerator markets. The program's success in the air conditioner and water heater markets is certainly enhanced by the large rebates being offered on those products, while its lack of success in the freezer and one-door refrigerator markets is not likely helped by the small rebates being offered on them. Appliance dealer support or possible lack of it also certainly affected the program's success in each of the markets. The surveying and evaluation activities outlined below should allow more definitive judgements as to the program's success in each market, and the reasons for that success or lack of it.

7. EVALUATION PLAN

With any experimental program, it is imperative to conduct a thorough analysis of the results it caused in order to determine its cost-effectiveness and success in achieving its goals. When programs are being conducted with rate payers' money, it becomes all the more necessary to make sure they are getting their money's worth. In this evaluation, the issues surrounding the program's cost-effectiveness will be carefully evaluated, due to the simplified nature with which they were dealt in planning the program.

The evaluation will be conducted in two phases; the first an internal management decision study, due in mid October, and the second an external program report, expected to be completed in June 1983. The first study will contain the extensive cost-benefit analysis on the impact of high efficiency appliances on NSP's system that has been referenced several times in this paper. This analysis is intended to determine if there is any merit to this rebate program or any of its possible variations. The second report would be an empirical analysis of the demonstration. It would include the data from the internal study and the results of the demonstration, including the results of the surveys and the other data to be collected that are detailed in the rest of this paper.

8. EVALUATION TASKS AND TIMETABLE

<u>Task</u>	<u>Weeks to Complete From Start of Project</u>
1. Define evaluation objectives	1
2. Decide upon groups to be surveyed and survey strategy	3
o program participants, non-participants, a general population, appliances dealers and distributors	
o decide upon subjects of investigation	
o use mail survey	
o decide upon sample sizes, response rate	
3. Collect and analyze sales data from distributors	11
o compute average efficiencies, % sales high-efficiency	
o correct for other efficiency-increasing forces in market	
o determine success of program in shifting appliance market towards more efficient models	
4. Conduct "generic" economic analysis	11
o determine the value of energy conservation caused by more efficient appliances to NSP, society, program participants, and nonparticipants	
o based on these results, how much can NSP pay for a given efficient appliance, and should some appliances be dropped from the program and/or others added	
5. Analyze the administrative/operational aspects of program	8
o determine whether there are more efficient methods of receiving rebates, recording customer information, and working with appliance dealers and distributors	
o determine whether the program is being operated from the proper area of the company, and if not where it should be operated from	
6. Conduct surveys	20
o select questions to include	
o pretest survey	
o send out mail survey, reminder	

<u>Task</u>	<u>Weeks to Complete From Start of Project</u>	<u>Task</u>	<u>Weeks to Complete From Start of Project</u>
7. Complete internal management economic decision study	14	o determine dealers attitudes toward the consumers benefits of energy efficient appliances, and why they have the attitudes they do	
o will be used to decide whether there is any merit to this rebate program or any possible variations of it		o determine what % of appliances are sold to third parties, such as landlords and builders	
o its prime element will be the results of the "generic" economic analysis described in task 4		o determine what % of the appliances sold are used ones	
8. Analyze survey results relative to evaluation issues	24	o analyze promotional campaign used to determine whether it contained the right elements to address the needs of consumers, dealers, and distributors in the marketplace. Assess whether campaign could be improved in the future.	
o determine consumers attitude towards, and awareness of the benefits of energy efficient appliances		o determine how the rebate tables should be structured to achieve maximum market impact at the lowest cost. Incorporate results of economic analysis outlines in task 4	
o determine why participants responded to the rebate offer and how instrumental it was in influencing their purchase decision		o determine the feasibility and desirability of supplemental or replacement alternative efficiency-increasing programs	
o determine why non-participants did not respond to the rebate offer			
o compare demographic characteristics of participants to non-participants			
o determine if dealers are supporting the program and why or why not			
o determine factors influencing dealers' and distributors' purchasing decisions and their relative importance		9. Prepare Final Report	26
		o include results of all analysis conducted along with decisions made about future of program	

TABLE 1. CHARACTERISTICS OF NSP'S GENERATION SYSTEM

Plant Type	% of Installed Generation Capacity 1981	% of Energy Production 1981
Steam-Fossil (coal)	46	48.4
Steam-Nuclear	23	38.4
Other Thermal (oil & natural gas)	19	0.1
Hydro	12	13.1
Total	100	100

Year	Yearly Output Megawatt-Hours	Integrated Hour Net kW Maximum Demand	Date of Peak	Time of Peak
1981	23,938,471	4,681,000	We July 8	1600
		4,018,000	Tu Feb 10	1900
1980	23,708,084	4,873,000	Mo July 14	1600
		3,908,000	We Jan 9	1800

TABLE 2. CENTRAL AIR CONDITIONERS - AVERAGE EFFICIENCIES

Capacity (BTUs/hr)	Quantity Sold	SEER Rating		
		Low	Ave	High
10,000-15,999	50	6.8	7.4	8.0
16,000-21,499	916	6.8	7.87	11.0
21,500-27,999	6,743	6.8	8.07	12.65
28,000-33,999	4,010	6.8	7.92	12.0
34,000-39,999	1,952	6.8	8.2	13.0
40,000-44,999	264	6.8	7.72	10.25
45,000-55,999	597	6.8	8.66	10.45
56,000 and over	483	6.8	8.30	10.0
All capacities	15,015		8.06	

ROOM AIR CONDITIONERS - AVERAGE EFFICIENCIES

Capacity (BTUs/hr)	Quantity Sold	EER Rating		
		Low	Ave	High
less than 4000	0	-	-	-
4,000-4,799	2,130	7.0	7.50	7.5
4,800-5,799	2,593	7.0	7.52	9.0
5,800-6,799	1,330	7.0	7.62	8.8
6,800-7,799	660	7.0	8.22	10.2
7,800-8,799	1,735	7.0	8.46	9.4
8,800-9,799	430	7.0	8.19	10.5
9,800-10,799	1,739	7.0	7.72	10.7
10,800-11,799	725	7.0	7.88	8.8
11,800-12,799	2,208	7.0	8.03	9.1
12,800-13,799	539	7.0	8.98	9.2
13,800-14,799	613	7.0	8.39	9.6
14,800-15,799	100	7.0	8.20	9.1
15,800-16,499	0	7.0	-	8.3
16,500-17,499	0	7.0	-	8.1
17,500-18,499	302	7.0	7.87	8.7
18,500-19,499	408	7.0	8.01	8.5
19,500-20,499	120	7.0	7.5	7.5
20,500-21,499	79	7.0	7.26	7.5
21,500-22,499	0	7.0	-	8.6
22,500-24,499	173	7.0	7.95	9.0
24,500-26,499	82	7.0	7.69	8.2
26,500-28,499	4	7.0	7.0	8.2
28,500-32,499	52	7.0	7.8	8.2
32,500-36,000	15	7.0	7.2	7.2
All capacities	16,037		7.9	

TABLE 3.

Refrigerator-Freezers - Average Efficiencies

Size (cu ft)	Quantity Sold	Average Annual Energy Cost			Energy Factor
		Low	Avg	High	Ave
Less than 10.5	100	22	27.6	70	4.23
10.5-12.4	2,114	31	48.1	60	5.08
12.5-14.4	9,115	31	54.1	89	5.56
14.5-16.4	3,820	33	59.0	92	5.65
16.5-18.4	21,826	37	56.6	88	6.57
18.5-20.4	12,083	51	64.7	91	6.50
20.5-22.4	5,365	60	77.7	89	6.05
22.5-24.4	848	77	83.0	94	6.37
24.5-26.4	424	73	89.0	109	6.47
26.5-28.4	0	94	-	94	-
28.5 and over	65	116	116	116	5.93
All sizes	55,760		60.5		6.21

Water Heaters - Average Efficiencies

First-Hour Rating	Quantity Sold	Average Annual Energy Cost		
		Low	Ave	High
Less than 21	0	254	-	327
21-24	0	257	-	311
25-29	2	254	286	350
30-34	24	257	-	353
35-42	1,590	259	318.5	345
43-47	58	261	303.3	345
48-53	3,389	261	323.0	341
54-64	35,825	261	320.9	392
65-74	151	261	327.8	414
75-86	3,917	264	348.8	474
87-99	0	273	-	423
100-114	466	278	350.2	514
115-131	0	280	-	412
131 and over	0	322	-	372
All sizes	45,422		323.7	

TABLE 4.

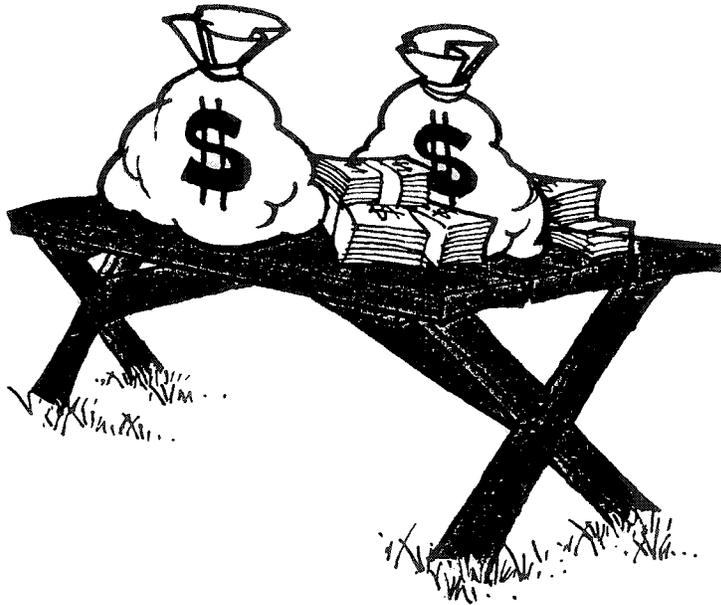
Refrigerators - Average Efficiencies

Size (cu ft)	Quantity Sold	Average Annual Energy Cost			Energy Factor
		Low	Avg	High	Ave
less than 2.5	698	18	21.2	25	1.52
2.5-4.4	170	20	24.8	31	3.30
4.5-6.4	221	22	29.3	31	3.16
6.5-8.4	65	22	23	23	8.67
8.5-10.4	120	19	36	38	5.30
10.5-12.4	1,145	19	24.4	37	9.06
12.5-14.4	1,022	28	29.8	41	8.83
14.5-16.4	0	-	-	-	-
16.5 and over	740	52	53.7	80	6.11
All sizes	4,181		32.1		6.57

Freezers - Average Efficiencies

Size (cu ft)	Quantity Sold	Average Annual Energy Cost			Energy Factor
		Low	Avg	High	Ave
less than 5.5	1,333	18	24.7	40	6.67
5.5-7.4	604	17	25.5	30	7.58
7.5-9.4	2,067	25	28.8	37	9.59
9.5-11.4	2,577	25	31.7	41	10.44
11.5-13.4	1,835	26	39.6	50	10.28
13.5-15.4	2,211	35	35.9	70	13.30
15.5-17.4	6,955	32	43.0	76	11.64
17.5-19.4	1,192	42	46.3	76	12.63
19.5-21.4	2,289	42	49.5	84	13.22
21.5-23.4	787	49	53.0	109	13.84
23.5-25.4	15	53	53.0	58	14.98
25.5-27.4	246	53	56.0	65	14.78
27.5-29.4	24	64	64.0	64	13.73
29.5 and over	128	84	84.0	134	11.58
All sizes	22,263		39.4		11.28

Rebate Tables



Central Air Conditioners & Heat Pumps – Rebate Schedule

CAPACITY BTUs/HR	SEER RATING			
	8.50- 8.99	9.00- 9.49	9.50- 9.99	10.00- AND OVER
10,000-15,999	\$ 25	\$ 50	\$ 75	\$100
16,000-21,499	50	75	125	150
21,500-27,999	50	125	150	175
28,000-33,999	75	125	175	200
34,000-39,999	75	150	200	225
40,000-44,999	100	175	225	250
45,000-55,999	125	200	225	250
56,000 and over	150	225	250	275

Rebate Amounts in blue

TABLE 6.



Room Air Conditioners & Heat Pumps – Rebate Schedule

CAPACITY BTUs/HR	SEER RATING			
	8.50- 8.99	9.00- 9.49	9.50- 9.99	10.00- AND OVER
less than 4000	\$ 20	\$ 20	\$ 30	\$ 40
4000-4,799	20	20	30	40
4,800-5,799	20	30	40	50
5,800-6,799	20	30	50	60
6,800-7,799	20	40	60	70
7,800-8,799	30	50	70	80
8,800-9,799	30	50	70	90
9,800-10,799	30	60	80	100
10,800-11,799	40	60	90	110
11,800-12,799	40	70	100	120
12,800-13,799	40	70	100	130
13,800-14,799	50	80	110	130
14,800-15,799	50	80	110	140
15,800-16,499	50	80	110	140
16,500-17,499	50	80	120	140
17,500-18,499	60	80	120	140
18,500-19,499	60	90	120	150
19,500-20,499	60	90	120	150
20,500-21,499	60	90	120	150
21,500-22,499	60	90	130	150
22,500-24,499	70	90	130	150
24,500-26,499	70	100	130	160
26,500-28,499	70	100	130	160
28,500-32,499	70	100	130	160
32,500-36,000	70	100	130	160

Rebate Amounts in blue

Water Heaters – Rebate Schedule

APPROXIMATE GALLONS CAPACITY	FIRST-HOUR RATING	AVERAGE ANNUAL ENERGY COST									
		\$250 and under	\$251- 260	\$261- 270	\$271- 280	\$281- 290	\$291- 300	\$301- 310	\$311- 320	\$321- 330	\$331- 335
30	35-42	\$ 70	\$ 60	\$ 50	\$ 40	\$ 30	\$ 20				
40	43-47	80	70	60	50	40	30	\$ 20			
40	48-53	80	70	60	50	40	30	20			
52	54-64	80	70	60	50	40	30	20			
66	65-74	80	70	60	50	40	30	20			
80	75-86	100	90	80	70	60	50	40	\$ 30		
120	87-99	100	90	80	70	60	50	40	30		
	100-114	100	100	90	80	70	60	50	40	\$ 30	\$ 20
	115-131	100	100	90	80	70	60	50	40	30	20
	131 and over	100	100	90	80	70	60	50	40	30	20

Rebate Amounts in blue

TABLE 7.



Refrigerator-Freezers – Rebate Schedule

SIZE (CU/FT)	AVERAGE ANNUAL ENERGY COST	REBATE AMOUNT
10.5-12.4	41 and under	\$20.00
12.5-14.4	46 and under	20.00
14.5-16.4	53 and under	20.00
16.5-18.4	49 and under	20.00
18.5-20.4	59 and under	20.00
20.5-22.4	68 and under	20.00
22.5-24.4	79 and under	20.00
24.5-26.4	80 and under	20.00

Rebate Amounts in blue

Freezers – Rebate Schedule

SIZE (CU/FT)	AVERAGE ANNUAL ENERGY COST	REBATE AMOUNT
Less than 5.5	21 and under	\$5.00
5.5-7.4	22 and under	5.00
7.5-9.4	25 and under	5.00
9.5-11.4	28 and under	5.00
11.5-13.4	36 and under	5.00
13.5-15.4	—	—
15.5-17.4	40 and under	5.00
17.5-19.4	42 and under	5.00
19.5-21.4	46 and under	5.00
21.5-23.4	49 and under	5.00
23.5-25.4	—	—
25.5-27.4	53 and under	5.00
27.5-29.4	—	—
29.5 and over	—	—

Rebate Amounts in blue

Refrigerator – Rebate Schedule

SIZE (CU/FT)	AVERAGE ANNUAL ENERGY COST	REBATE AMOUNT
less than 2.5	20 and under	\$5.00
2.5-4.4	22 and under	5.00
4.5-6.4	26 and under	5.00
6.5-8.4	—	—
8.5-10.4	19 and under	5.00
10.5-12.4	25 and under	5.00
12.5-14.4	—	—
14.5-16.4	—	—
16.5 and over	—	—

Rebate Amounts in blue

TABLE 8. MEDIA ADVERTISING CAMPAIGN FOR PROGRAM

<u>Date</u>	<u>Newspaper or Radio Station</u>	<u>Theme of Ad</u>
6/27, 7/11 (2 pages each)	Minneapolis Star and Tribune St. Paul Pioneer Press	Don't buy a new A/C without looking at both price tags
7/16, 7/23 (1 page each)	Minneapolis Star and Tribune St. Paul Pioneer Press St. Paul Dispatch	Why NSP is plugging energy efficient appliances
8/13, 9/3 (1 page each)	Minneapolis Star and Tribune St. Paul Pioneer Press St. Paul Dispatch	NSP lowers the cost buying smart, the NSP rebate
6/28-8/1 (average of 12 per station per week)	WCCO AM/FM, KSTP FM WDGY, KKSS/WAYL WWTC, KEEY	Efficient A/C; Advice on A/C from NSP
8/2-9/19 (average of 12 per station per week)	WCCO AM, KSTP FM WDGY, KKSS/WAYL KEEY	You shouldn't buy a new appliance without looking at both price tags; How much will it cost me to use a new appliance

TABLE 9. RESULTS OF INFORMAL DEALER SURVEY

<u>Appliance</u>	<u>High Efficiency Sales Greatly Increased, %</u>	<u>High Efficiency Sales Moderately Increased, %</u>	<u>No Change In High Efficiency Sales, %</u>
Central Air Conditioners	42	50	8
Room Air Conditioners	60	40	0
Water Heaters*	38	25	37
Refrigerator-Freezers	38	38	24
Freezers*	0	60	40

*Small sample sizes

TABLE 10. RESPONSE TO FOURTH MARKETING QUESTION

<u>Appliance</u>	<u>Would Not Buy Without Rebate, %</u>
5. Refrigerators	14.5
6. Freezers	15
4. Refrigerator-Freezers	12
3. Water Heaters	30
2. Room Air Conditioners	39
1. Central Air Conditioners	42

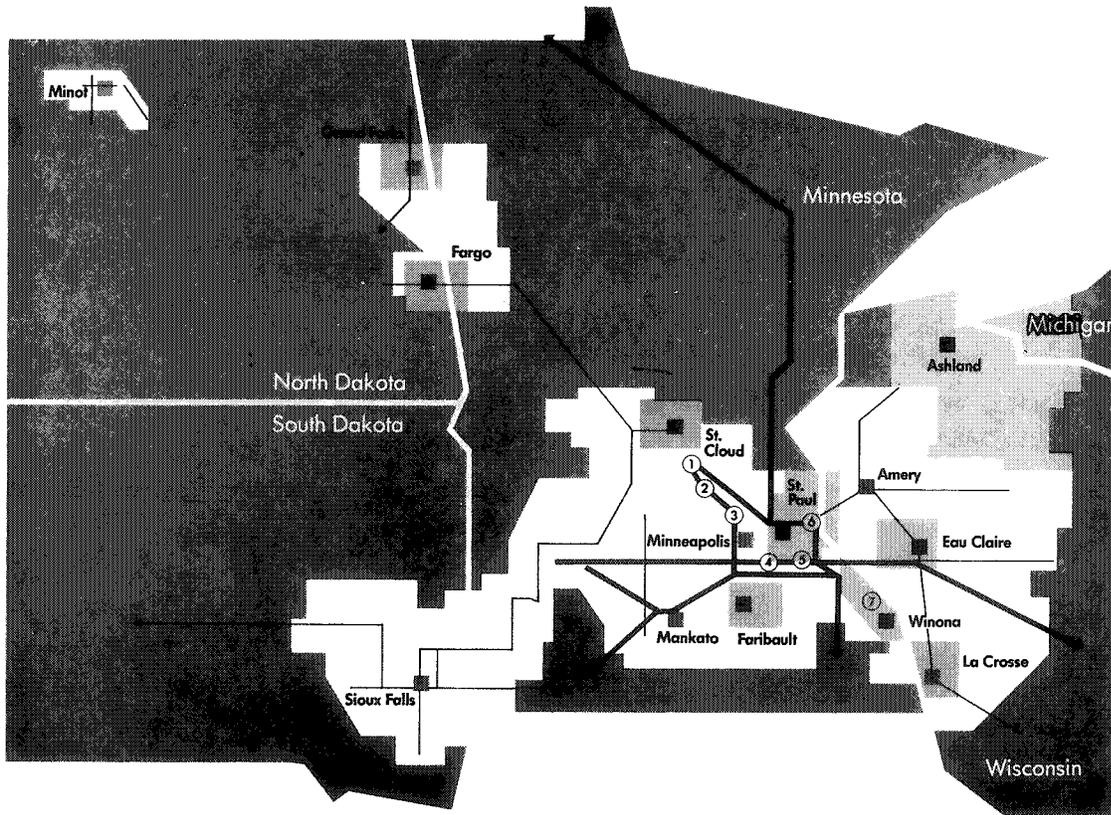


Figure 1: Location of NSP's Service Territory



REBATE FORM

CUSTOMER: Be sure this form is complete and mailed to NSP to qualify for your rebate.

Please fill out the information below with the assistance of your appliance dealer. Copies titled NSP should be mailed to NSP in the accompanying envelope along with a copy of the sales invoice from your appliance dealer. If you have any questions about completing this form, please call ASK NSP at 330-6000, weekdays, 8 am to 5 pm. If you live outside the Twin Cities area, call 0-612-330-6000, collect. **NOTE: THIS APPLIANCE MUST BE INSTALLED IN A RESIDENCE WITH ELECTRICITY PROVIDED DIRECTLY FROM NSP.**

12345

CUSTOMER INFORMATION

CUSTOMER NAME _____ HOME TELEPHONE _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____ WORK TELEPHONE _____

TYPE OF DWELLING: APARTMENT SINGLE-FAMILY DWELLING MOBILE HOME

CUSTOMER TYPE: RESIDENT LANDLORD BUILDER

IF YOU ARE A BUILDER OR LANDLORD, PLEASE FURNISH YOUR TAX NUMBER _____

LIST NAME AND ADDRESS WHERE APPLIANCE WILL BE USED IF DIFFERENT FROM ABOVE

NAME _____ ADDRESS _____ CITY _____ STATE _____ ZIP _____

SHOULD REBATE BE PAID TO CUSTOMER OR TO USER IF DIFFERENT?

DEALER INFORMATION

DEALER _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____ TELEPHONE _____

SALESPERSON _____ STORE OFFICER'S SIGNATURE _____

APPLIANCE INFORMATION

APPLIANCE TYPE _____ QUANTITY PURCHASED _____

MAKE _____ MODEL NUMBER _____ COIL NUMBER _____ SIZE, CAPACITY OR FIRST HOUR RATING _____

SERIAL NUMBER _____ EFFICIENCY RATING _____ REBATE AMOUNT _____

NOTE: Random inspections of appliances will be conducted to verify installation at the address indicated above. In the event the appliance is to be inspected, the rebate application will not be processed until the inspection has been satisfactorily completed.

How did you first hear about the NSP Rebate Program? NSP bill stuffer Appliance dealer Newspaper Radio T.V. Other (please specify) _____

Is this a replacement appliance? Yes No.

Did this NSP Rebate Program influence your purchase of a high efficiency appliance? Yes No.

Would you have purchased a high efficiency appliance without this rebate? Yes No.

INSPECTION

APPLIANCE INSPECTOR _____ DATE _____

FOR OFFICE USE ONLY - DO NOT WRITE IN THIS AREA

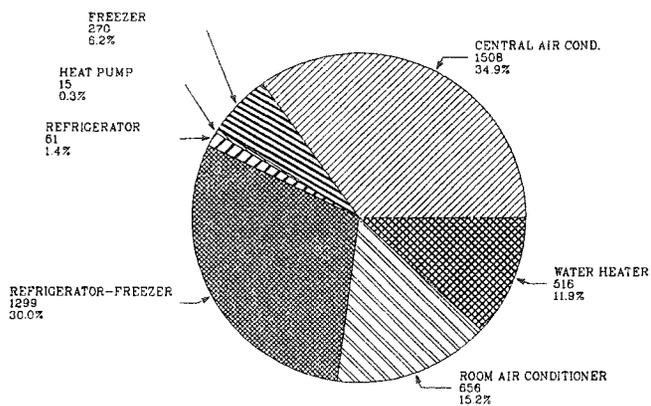
APPROVED BY _____ DIVISION _____ AMOUNT _____

ACCT. DEPT. _____ DATE _____ NSP ACCOUNT NUMBER _____

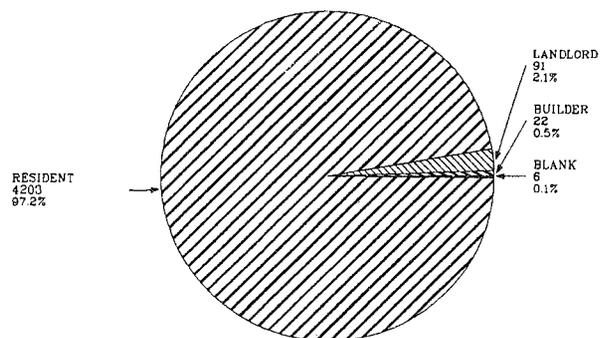
KILOWATT PEAK DEMAND REDUCTION _____

Figure 2

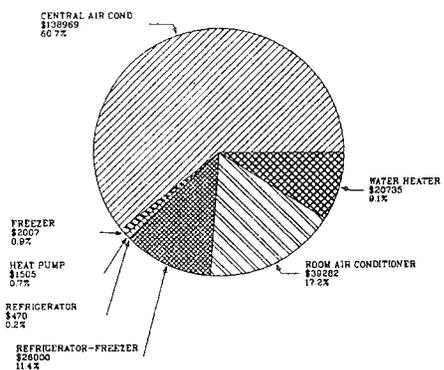
APPLIANCE REBATE PROGRAM
 Number of Rebates by Appliance Type
 Total = 4325



APPLIANCE REBATE PROGRAM
 Number of Rebates by Customer Type
 Total = 4325



APPLIANCE REBATE PROGRAM
 Rebate Amount by Appliance Type
 Total = \$ 228968



APPLIANCE REBATE PROGRAM
 Number of Rebates by Dwelling Type
 Total = 4325

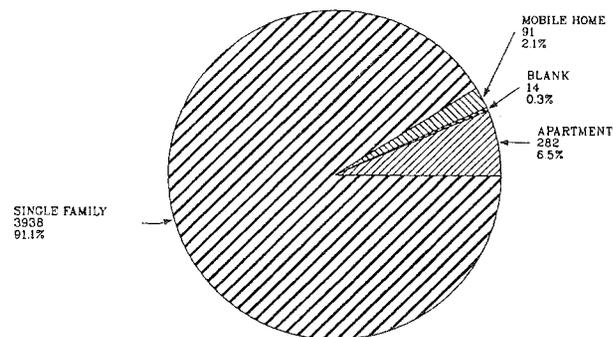
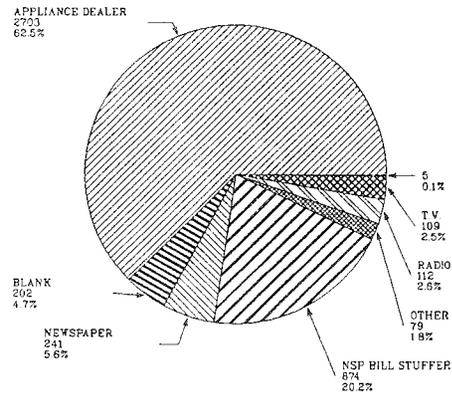
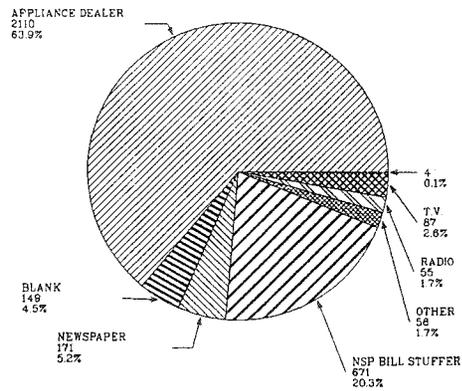


Figure 3: Breakdown of Rebates

APPLIANCE REBATE PROGRAM
Marketing Question- How Heard
Total = 4325



APPLIANCE REBATE PROGRAM
Marketing Question- How Heard
Total = 3303
Before 6/27



APPLIANCE REBATE PROGRAM
Marketing Question- How Heard
Total = 701
After 6/27

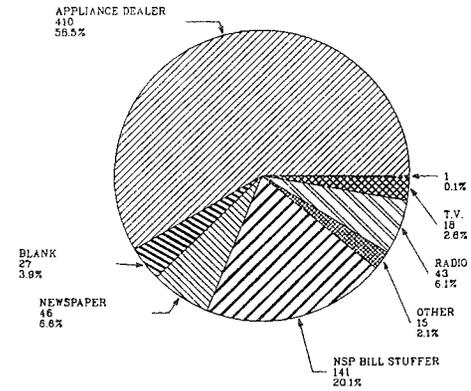
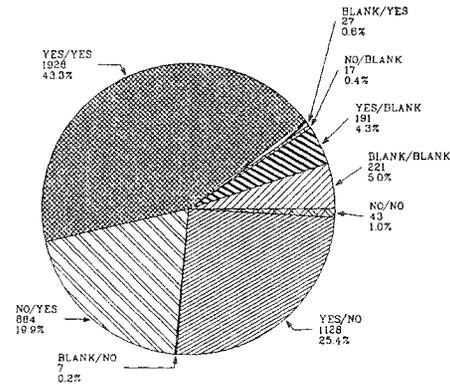
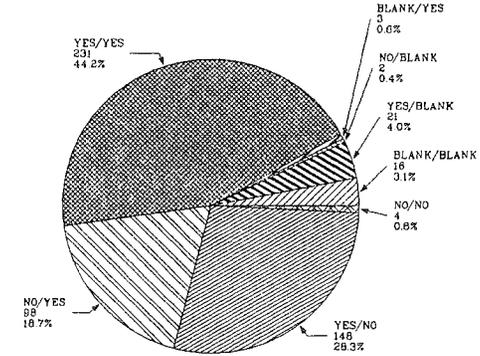


Figure 4: Responses to First Marketing Question

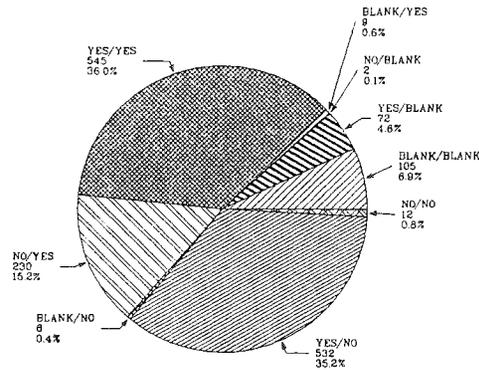
Answer to Marketing Questions
 Rebate Influence Decision?
 Purchase This Appliance Without Rebate?



Answer to Marketing Questions
 Rebate Influence Decision?
 Purchase This Appliance Without Rebate?
 For Appliance WATER HEATER



Answer to Marketing Questions
 Rebate Influence Decision?
 Purchase This Appliance Without Rebate?
 For Appliance CENTRAL AIR COND.



Answer to Marketing Questions
 Rebate Influence Decision?
 Purchase This Appliance Without Rebate?
 For Appliance ROOM AIR CONDITIONER

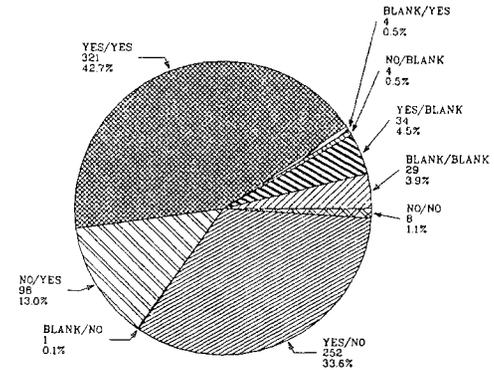
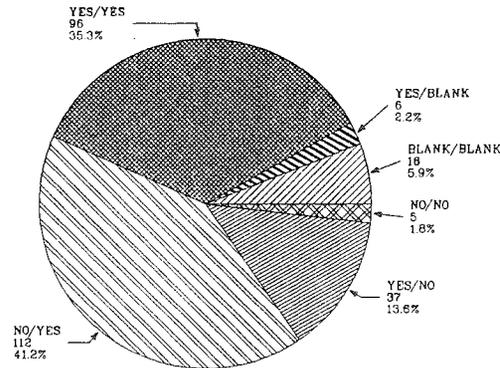
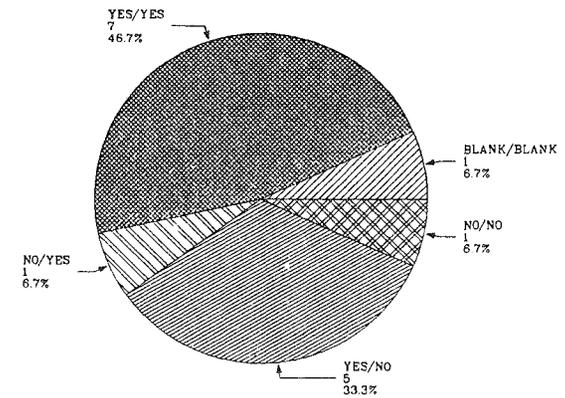


Figure 5: Responses to Third and Fourth Marketing Questions (continued)

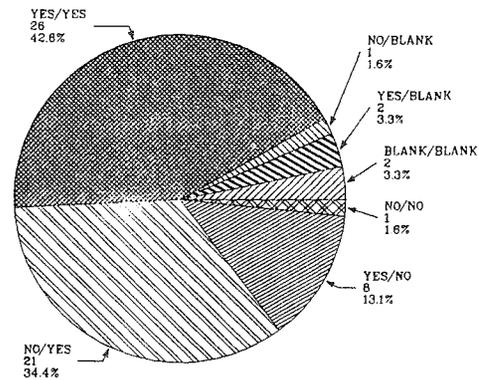
Answer to Marketing Questions
 Rebate Influence Decision?
 Purchase This Appliance Without Rebate?
 For Appliance FREEZER



Answer to Marketing Questions
 Rebate Influence Decision?
 Purchase This Appliance Without Rebate?
 For Appliance HEAT PUMP



Answer to Marketing Questions
 Rebate Influence Decision?
 Purchase This Appliance Without Rebate?
 For Appliance REFRIGERATOR



Answer to Marketing Questions
 Rebate Influence Decision?
 Purchase This Appliance Without Rebate?
 For Appliance REFRIGERATOR-FREEZER

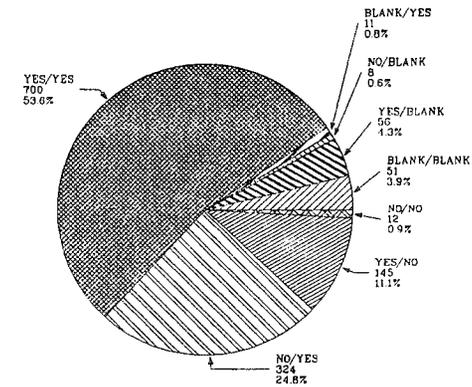


Figure 6: Responses to Third and Fourth Marketing Questions