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IPC E-06-22

Ms. Jean D. Jewell, Secretary
Idaho Public Utilities Commission
P.O. Box 83720
Boise, ID 83720-0074

RE: 2007 Irrigation Peak Rewards Program Report

Dear Ms. Jewell:

Enclosed please find eight copies of Idaho Power Company's Irrigation Peak Rewards Program Report for 2007 filed in compliance with Order No. 30194. If you have any questions regarding the content of the report, please direct them to Pete Pengilly at 208-388-2281 or feel free to contact me at 208-388-5515.

Sincerely,

Tim Tatum
Pricing Analyst

cc: Ric Gale
Maggie Brilz
Pete Pengilly
P&RS/Legal Files

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UTILITIES COMMISSION

An IDACORP Company

IPC-E-06-22

Irrigation Peak Rewards Program Report

December 1, 2007

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EXECUTIVE SUMMARY

The Irrigation Peak Rewards Program (“the Program”) is a voluntary demand response program available to Idaho Power’s agricultural irrigation customers since 2004. The Program is designed to reduce peak load by turning off participating irrigation pumps during peak demand hours through the irrigation season in return for a financial incentive. Through this Program, the Company has been successful in reducing load during the summer afternoon hours when overall costs to provide energy are typically higher.

On September 18, 2006, Idaho Power (“the Company”) filed with the Idaho Public Utilities Commission (“the Commission”) a request for authorization to implement certain changes to the Program to improve participation. The first proposed change was to increase the demand credits offered to participating customers. Second, the Company proposed to allow more customers to participate by decreasing the pump horsepower (“hp”) limit from 100 hp to 75. On November 30, 2006 the Commission approved the proposed changes through Order No. 30194 and subsequently, the Company implemented the changes during the 2007 irrigation season. The Commission’s Order No. 30194 directed the Company to file a report annually on December 1 for three years. This report is to provide the Commission with the 2007 results of the Irrigation Peak Rewards Program, and is filed in compliance with Order No. 30194.

The Program enrollment for 2007 was 947 service points across five geographic regions of the Company’s Idaho and Oregon service territories. Within these five regions, there were 4,052 eligible metered service points with at least 100 cumulative hp. Another 800 service points were eligible with pumps ranging from 75-99 cumulative hp, with 75 hp being the minimum amount eligible under the Program. Approximately 1,360 customers operated the 4,852 eligible service points.

The 2004 Integrated Resource Plan (“IRP”) set an initial load reduction target for the Program of 30 MW. The 2006 changes to the Program were estimated to achieve an additional 4.5 MW load reduction for a total of 34.5 MW at the generation level, which is adjusted for line losses. At the customer level this equates to an overall load reduction of 30.5 MW, which removes line losses. The peak reduction numbers reported throughout the remainder of this report are presented at the customer level.

The Program utilizes pre-programmed, electronic, time-activated switches to turn off pumps of participating irrigation customers during predetermined intervals in exchange for a financial incentive. Customers can choose to participate one, two, or three weekdays per week during the months of June, July, and August. The following are the interruption options (reported in Mountain Standard Time) available to customers with the corresponding incentive amounts:

- One weekday per week, 4 p.m. to 8 p.m. \$2.01 per kW Demand
- Two weekdays per week, 4 p.m. to 8 p.m. \$3.36 per kW Demand
- Three weekdays per week, 4 p.m. to 8 p.m. \$4.36 per kW Demand

The monthly incentive amount credited to customers was calculated for each metered service point by multiplying the monthly billing demand for the months of June, July, and August by the corresponding incentive amount based on the interruption option selected by the customer.

Throughout 2007, the Company continued to share Program information and progress with the Energy Efficiency Advisory Group ("EEAG") members through program updates. Members of EEAG represent a cross-section of customer interests including residential, industrial, commercial and agricultural. In 2007, EEAG membership also included Company representation, Commission Staff members and a representative from the Idaho Irrigation Pumpers Association.

Summary of Results

The following items summarize the key results of the Program on a system-wide basis:

- In 2007 the Program achieved a maximum peak load reduction of 37.4 MW.
- Two hundred fifty-seven (257) customers, or 19% of the 1,360 eligible customers, chose to participate in the Program.
- Nine hundred forty-seven (947), or 20%, of the 4,852 eligible metered service points were enrolled in the Program.
- Of the 947 enrolled service points, fifty-five (55) were pumps with 75-99 hp. All other enrolled pumps were 100 hp or greater.
- The Program achieved a total billing demand enrollment of 182,499 kW. The total billing demand is the sum of the maximum billing demand from the previous irrigation season for each service point.
- The Program produces substantial and measurable impacts on peak demand. The total load reduction from 4-8 p.m. associated with the

Program averaged 30.5 MW in June, 32.8 MW in July, and 23.5 MW in August.

- The Program costs as of September 30, 2007 were \$1,591,374.
- The Program results show a 30 year average benefit cost (B/C) ratio of 1.10.

Conclusions

- The Company plans to continue the Program because it is a cost-effective way to reduce customer demand at the optimal time of day.
- Changes to the Program implemented in 2007 increased the number of participants and helped the Company to achieve its 2004 Integrated Resource Plan (IRP) targets for peak load reduction.
- The Program achieved a maximum peak load reduction that occurred during the last two weeks in June of 37.4 MW at the customer level. The average peak reduction in July was 32.8 MW. The Program had a target load reduction of 30.5 MW at the customer level.

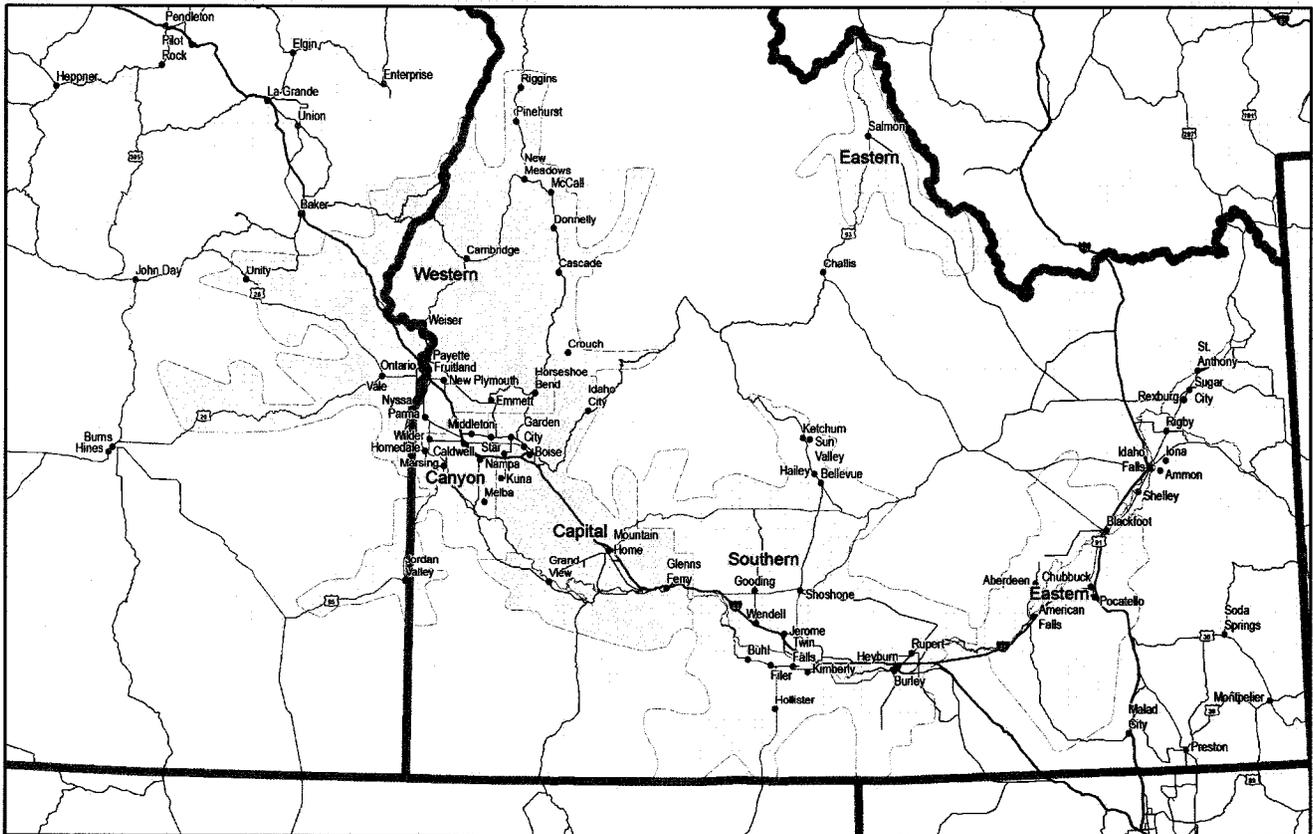
REVIEW OF PARTICIPATION, OPERATIONS, AND LOAD REDUCTION

1. Participation

Informational letters were mailed in February of 2007 to eligible customers. The letters were the primary method of marketing the Program. Each customer letter included a Program explanation, the Program's incentive structure, a listing of the customer's eligible service points, and a Program application. In addition, a follow up telephone call was made in March 2007 to all prior Program participants that had not yet sent in their application. Significant effort, including customer visits, was made to enroll as many customers as possible.

Map 1 portrays Idaho Power's service territory divided into five regional areas ("region"). The regions are titled Western, Canyon, Capital, Southern, and Eastern. These regions will be used throughout this report referring to Program information.

Map 1. Idaho Power service territory and regions.



Graph 1 represents the distribution of Program participants by area.

Graph 1. Distribution of Participants.

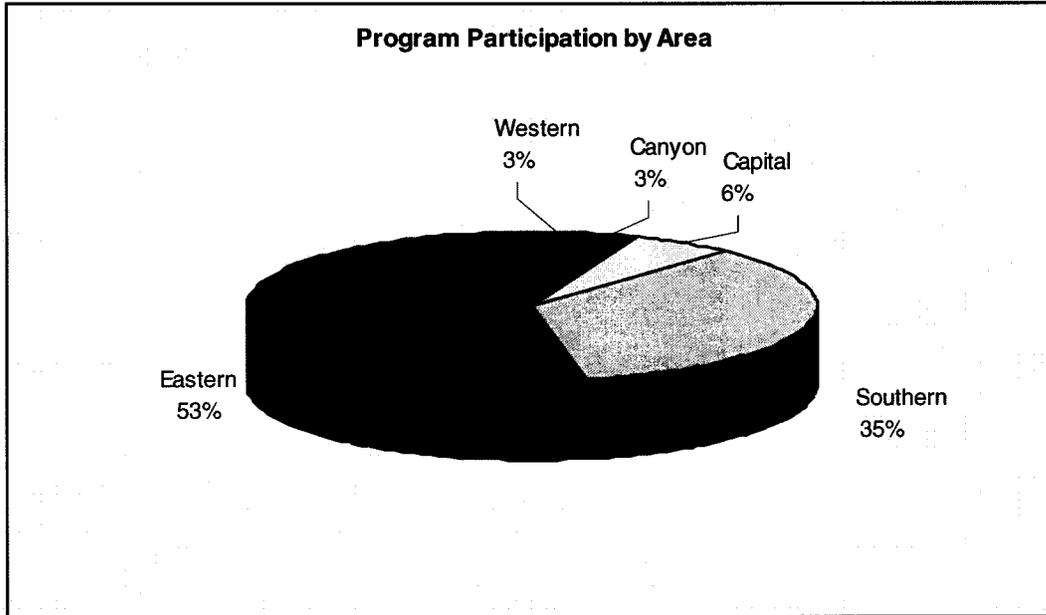


Table 1 lists the total number of eligible service points and the participation levels by area.

Table 1. Service points by area.

IDAHO POWER REGION		ELIGIBLE SERVICE POINTS	SERVICE POINTS ENROLLED	ENROLLED PERCENTAGE BY AREA
Western		215	28	13.0%
Canyon		343	27	7.9%
Capital		500	59	11.8%
Southern	Twin Falls	1197	121	10.1%
	Mini-Cassia	1036	212	20.5%
Eastern		1561	500	32.0%
TOTAL SERVICE POINTS		4,852	947	19.5%

Table 2 compares how the participating service points were distributed across the Company's service territory, along with the interruption options for each area.

Table 2. Service point interruption option distribution.

		INTERRUPT OPTION 1	INTERRUPT OPTION 2	INTERRUPT OPTION 3	
IDAHO POWER REGION		1 Days/Week	2 Days/Week	3 Days/Week	TOTAL
Western		17	2	9	28
Canyon		17	3	7	27
Capital		38	7	14	59
Southern	Twin Falls	39	32	50	121
	Mini-Cassia	152	30	30	212
Eastern		226	147	127	500
TOTAL SERVICE POINTS		489	221	237	947

2. Program Opt-out

During the 2007 irrigation season, ten (10) service points were removed from Program participation after June 1 due to various unforeseen circumstances by customers. Under the Program, if a service point is taken out of the Program after June 1, the participant is assessed a fee of \$100. This resulted in a total of \$1,000 which was credited to the Energy Efficiency Rider funding account to offset the initial Program costs.

3. Interruption Failures

Electronic timers manufactured by Grasslin Controls Corp. (Model GMX-891-0-24) were used to interrupt power to the customers' pumps during the interruption period. The timers were installed in the pump motor control circuit to prevent the pump from running during the interruption period. In order to meet the load reduction targets of the Program, the Company tries to minimize interruption failures. However, there were a small number of interruption failures discovered in 2007. In most cases the failures were corrected quickly with little or no impact to Program performance.

Most of the electronic timers operated without incident with less than three percent of participants requesting a follow-up visit. The timer issues requiring a follow-up visit are detailed in Table 3.

Table 3 lists the types of problems resolved by either Company personnel or the contracted electricians.

Table 3. Known equipment problem resolutions.

ISSUE	QUANTITY
Faulty time clock	11
Electrician troubleshooting calls	36
TOTAL	47

While each of the known timer related problems detailed in Table 3 were resolved in a timely manner, a review of the Company's load research meter data revealed that there were a number of failures that went undetected for the entire irrigation season. Sixty-three (63) load research meters are distributed among the 947 participating service points in order to study the usage patterns of the customers and the load impact of the Program. The data showed that 94% of the load research meters recorded successful interruptions throughout the 2007 Program year with 6% failing to record a single interruption during the Program year. The interruption failures are evident in the load reduction graphs provided in this report. Upon further investigation, it was found that these failures were due to various mechanical problems. The Company continues to address this issue through monitoring of load research data along with an increased number of site visits for electronic timer inspections.

4. Load Reduction Achieved

The Program load reduction impacts were determined by utilizing information and conclusions from the impact evaluation conducted in 2004 by Summit Blue Consulting, LLC. This evaluation utilized load research meter data for both Program participants and non-participants. This information was used in a regression analysis to develop a statistical kW load model. The model considered weather conditions, time of day, day of week, and month in determining realization rates for six 2-week periods during the course of the irrigation season. The Company has utilized these realization rates since the 2005 season.

The realization rate is defined as the likelihood an irrigation service point is operating during the interrupt period, and provides a clear picture of actual program impacts. The realization rate can be characterized as simply the percentage of monthly billing demand that is expected to result in an actual load reduction on the system during a given interruption period. The realization rate is highest at the end of June and the beginning of July when most irrigation pumps are operating nearly 24 hours-a-day, 7 days-a-week. The realization rate is lower later in the irrigation season when irrigation pumps are turned off due to crop maturity.

Table 4 shows the Program evaluation results from the Summit Blue impact analysis for each of the six 2-week time periods. The highest realization rate occurred during the second half of June, with a realization rate of 64%. The lowest realization rate occurred during the second half of August, with a realization rate of 32%. The average total realization rate is 50%. These realization rates were used to calculate the program load reduction for this year.

The Company verified the realization rates prepared by Summit Blue for this report using 2007 load research data. Based on past and current analysis of load research data, the Company was able to reproduce an overall realization rate within approximately 2% of the Summit Blue analysis results. Therefore, the Company believes the realization rates from the Summit Blue analysis continue to be a reliable and accurate means to estimate the Program's load reduction. Idaho Power does not propose any changes to the realization rates at this time, but will continue to review the realization rates in the future.

Table 4. Realization rates by period.

PERIOD	Idaho Power Realization Rate
1st half of June	41%
2nd half of June	64%
1st half of July	60%
2nd half of July	53%
1st half of August	49%
2nd half of August	32%
AVERAGE	50%

The Company attempts to distribute the enrolled kW evenly throughout each weekday. However, due to service point size variability, enrollment requests by customers, and enrollment opt-outs, etc., the load cannot be exactly balanced.

The peak billing demand data for the months of June, July, and August 2007 were used to estimate the amount of load enrolled in the Program. The total billing demand enrolled in the Program was 182,499 kW. **Table 5** shows how the enrolled load was distributed by region.

Table 5. Enrolled load by area.

		ENROLLED BILLING DEMAND KW* BY REGION			
IDAHO POWER REGION		1 Days/Week	2 Days/Week	3 Days/Week	TOTAL
Western		8,739	194	684	9,617
Canyon		2,276	327	497	3,100
Capital		14,749	805	1,985	17,539
Southern	Twin Falls	9,748	4,757	7,958	22,463
	Mini-Cassia	34,121	7,019	6,213	47,353
Eastern		41,169	22,762	18,496	82,427
TOTAL SERVICE POINTS		110,802	35,864	35,833	182,499

**It is important to note that this billing demand level would be achieved only if 100% of the pumps enrolled in the Program were all running at the scheduled interruption time.*

Table 6 shows the average MW reduction by day for each two week period achieved utilizing the realization rates multiplied by enrolled peak kW.

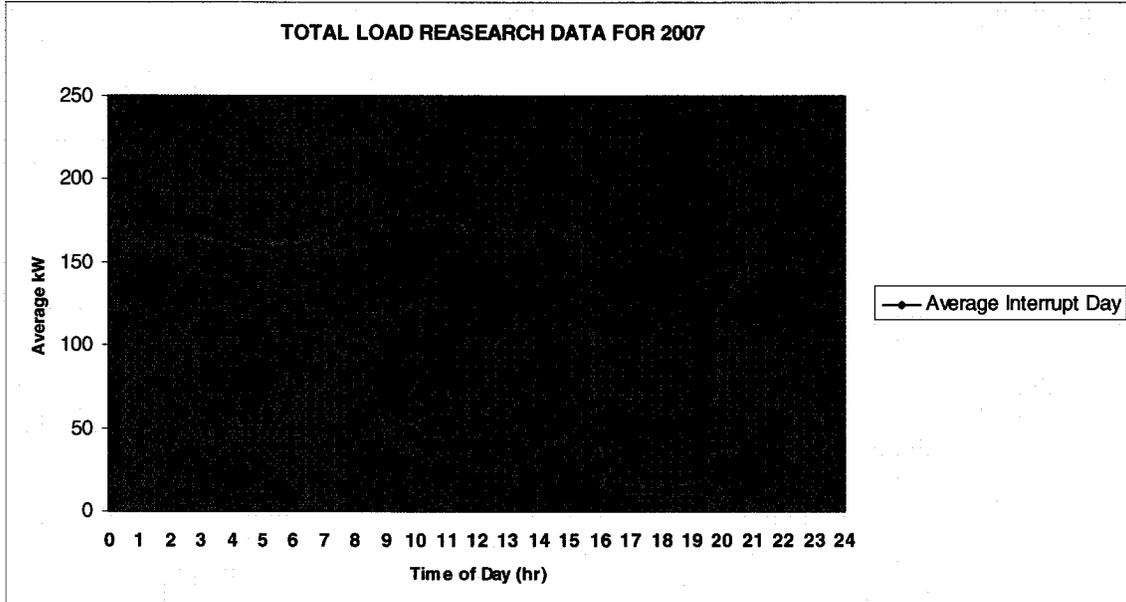
Table 6. Average MW reduction utilizing realization rates by period.

	Realization Rate	MON	TUE	WED	THUR	FRI	kW
	%	(MW)	(MW)	(MW)	(MW)	(MW)	Average
1st half of June	41	23.59	23.92	23.95	23.68	23.99	23.83
2nd half of June	64	36.82	37.34	37.39	36.97	37.44	37.19
1st half of July	60	34.52	35.01	35.05	34.66	35.10	34.87
2nd half of July	63	30.50	30.92	30.96	30.62	31.01	30.80
1st half of August	49	28.59	28.59	28.62	28.30	28.67	28.48
2nd half of August	32	18.41	18.67	18.69	18.48	18.72	18.60

As reported earlier, the Company has a sample of 63 load research meters installed on participating service points. These meters are distributed similar to participation rates for each area. This data was collected and analyzed and is shown in the following graphs.

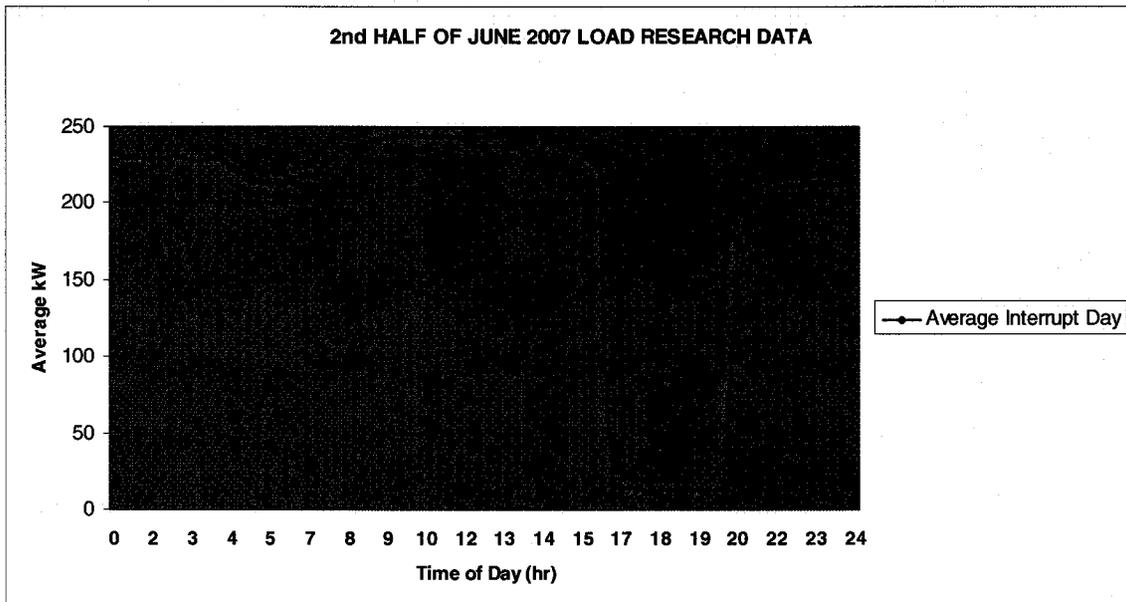
Graph 2 displays the average hourly kW for all days in June, July, and August and shows the average load reduction per participating metered service point within the load research sample. The graphed data represents all interrupt days in 2007.

Graph 2. Average metered demand (kW).



Graph 3 displays the average hourly kW for all days in the second half of June and shows the average load reduction per participating metered service point within the load research sample. The graphed data represents all interrupt days in the second half of June 2007.

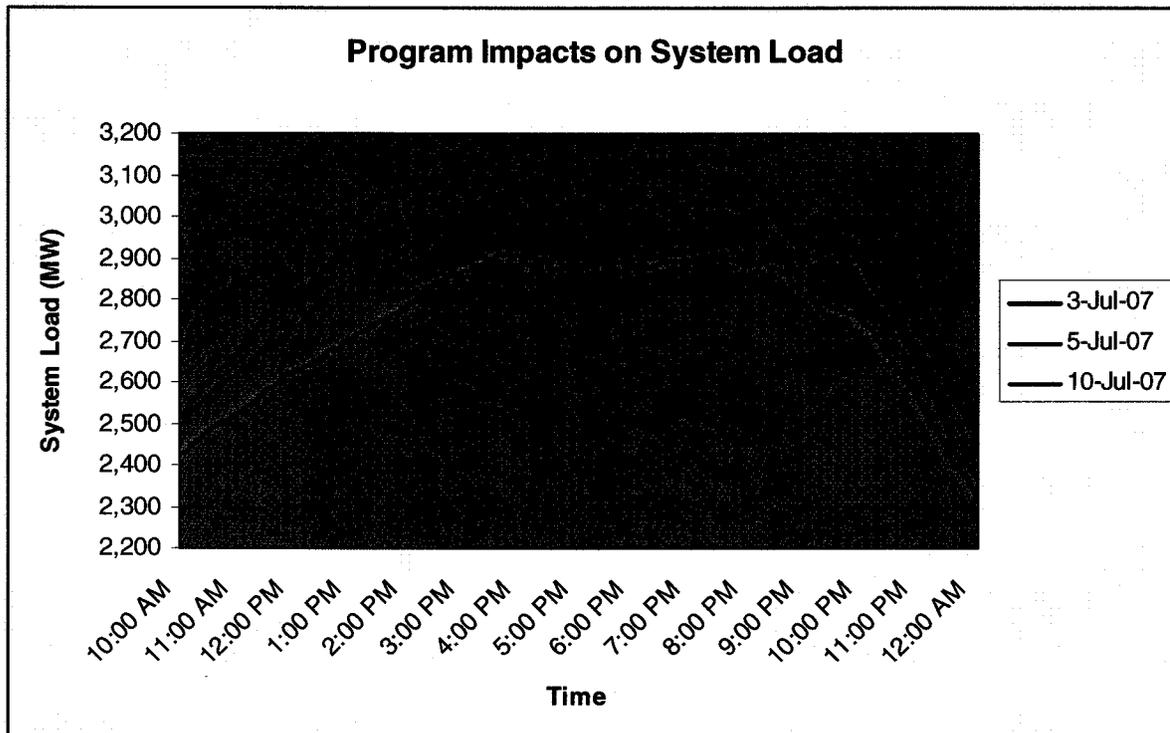
Graph 3. Average metered demand (kW) 2nd half of June.



Another way to view program impact is to look at total system firm load data. The system firm load during the summer months has the greatest electrical demand of the year. The highest peak load historically occurs in late June or July between 4-8 PM.

Graph 4 represents the demand response impact to the entire company system firm load on various days in July 2007. The reduction in system firm load occurs at 4 PM for the corresponding days and is approximately 30-40 MW for each day.

Graph 4. Demand response impact on Company system firm load.



COST EFFECTIVENESS

1. Program Costs

Table 7 displays the annual Program costs as of September 30, 2007. Program costs remain consistent on a year to year basis, except that in 2007 increased customer participation and a higher number of service points enrolled in the Program under Option 2 and Option 3 resulted in a higher number of incentives paid to customers.

Table 7. Program costs.

ITEM	PROGRAM COSTS
Electronic timers	\$63,350.23
Contracted electricians	\$85,521.87
Incentive payments	\$1,376,025.98
Marketing and Administration	\$66,476.31
TOTAL	\$1,591,374.39

2. Benefit-Cost Analysis

The 2007 Peak Rewards Program results were applied to the cost-effectiveness model that was used when the Program was developed. **Table 8** summarizes the inputs that were used in the cost effectiveness model. The Program results yielded a 30-year average benefit-cost ratio of 1.10.

Table 8. Benefit-cost model inputs

DESCRIPTION	INPUT
Number of metered service points	947
Overall program realization rate	50%
Average service point, billing kW (peak month)	193
Enrolled peak, kW	182,499
Average July peak reduction (MW)	32.8
Participant distribution by area	
Western	3%
Canyon	3%
Capital	6%
Southern	35%
Eastern	53%
Service point interruption option	
1 day per week	52%
2 days per week	23%
3 days per week	25%
Actual Program Cost (as of Sep. 30, 2007)	\$1,591,700