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UTILITIES COMMISSION

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IDAHO POWER
An IDACORP Company

November 3, 2017

VIA HAND DELIVERY

Diane Hanian, Secretary
Idaho Public Utilities Commission
472 West Washington Street
Boise, Idaho 83702

RE: Case No. IPC-E-15-03
2017 Annual Compliance Filing – Flex Peak Program End-of-Season Report

Dear Ms. Hanian:

In Order No. 33292, the Idaho Public Utilities Commission ("Commission") ordered Idaho Power Company to file a Flex Peak Program end-of-season report within 80 days after the end of the season. Therefore, enclosed for filing are an original and seven (7) copies of the Flex Peak Program end-of-season report containing the information requested by the Commission in the order.

If you have any questions regarding this filing, please contact Zach Harris at (208) 388-2305 or zharris@idahopower.com.

Very truly yours,

Lisa D. Nordstrom

Lisa D. Nordstrom

LDN:kkt
Enclosures

P.O. Box 70 (83707)
1221 W. Idaho St.
Boise, ID 83702

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that on the 3rd day of November 2017 I served a true and correct copy the 2017 FLEX PEAK PROGRAM END-OF-SEASON REPORT upon the following named parties by the method indicated below, and addressed to the following:

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Kimberly Towell, Executive Assistant

IDAHO POWER®
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2017 Flex Peak Program
End-of-Season Annual Report

November 3, 2017

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Introduction

The Flex Peak Program ("Program") has been operated by Idaho Power Company ("Idaho Power" or "Company") since 2015. The Program is a voluntary demand response ("DR") program available to large commercial and industrial customers that can reduce their electrical energy loads for short periods during summer peak days. By reducing demand on extreme system load days, the Program reduces the amount of generation and transmission resources required to serve customers. This Program, along with Idaho Power's other DR programs, Irrigation Peak Rewards and the Residential Air Conditioner Cycling Program, have helped delay the need to build supply-side resources.

The results presented in this report are from the 2017 Program season, the Company's third year of operating the Program. In its third year, the Program maintained similar load reduction and realization rates as the prior year (2016). There were five new sites added and overall participation resulted in the highest hourly load reduction for the season of 36 megawatts ("MW"). The average realization rate for the three load reduction events that occurred in the 2017 Program season was 81 percent. Enrollment in the Program increased for the 2017 Program season and 99.3 percent of previously participating sites re-enrolled in the Program. The total Program costs through October 1, 2017, were $635,453. The cost of having this resource available was $17.65 per kilowatt ("kW") based on the maximum demand reduction of 36 MW achieved on June 26, 2017.

Background

In 2015, the Company requested approval to implement the Flex Peak Program as an Idaho Power operated program. The Idaho Public Utilities Commission ("IPUC") approved the Company's request in Order No. 33292, and the Public Utility Commission of Oregon ("OPUC") accepted the proposal from Advice No. 15-03. Prior to 2015, a similar DR program for commercial and industrial customers was operated by a third-party vendor.

As part of Advice No. 15-03, the OPUC adopted Staff's recommendation that the Company file an annual end-of-season report with information regarding the Program. The Company was also directed by the IPUC in Order No. 33292 to file an annual end-of-season report detailing the results of the Program. In compliance with the reporting requirements, the annual end-of-season report includes the following:

- Number of participating customers
- Number of participating sites
- MW of demand response under contract
- MW of demand response realized and incented per dispatch
- Percent of nominated MW achieved in each dispatch event by participant
- Cost analysis of the Program
- Number of events called
- Total load dropped for each event
- Event duration
- Total capacity payments made

- Total energy payments made
- Number of customers who failed to meet their load
- Number of Program applications denied due to Program subscription limit
- Benefits identified with each dispatch of the resource
- Assessment of whether the trigger or dispatch price is properly set to utilize the asset most often
- Participant attrition
- Issues the utility has identified meeting requests to participate in the Program
- Changes in baseline methodology taken or anticipated
- Improvements Idaho Power and the Program might benefit from

Program Details

The Program pays participants a financial incentive for reducing load within their facility and is active June 15 to August 15, between the hours of 2 p.m. and 8 p.m. on non-holiday weekdays.

Customers with the ability to nominate or provide load reduction of at least 20 kW are eligible to enroll in the Program. The 20 kW threshold allows a broad range of customers the ability to participate in the Program. Participants receive notification of a load reduction event ("event") two hours prior to the start of the event, and events last between two to four hours.

The parameters of the Program are in Schedule 76[1] in Oregon and Schedule 82[2] in Idaho, and include the following:

- A minimum of three load reduction events will occur each Program season.
- Events can occur any weekday, excluding July 4, between the hours of 2 p.m. and 8 p.m.
- Events can occur up to four hours per day and up to 15 hours per week, but no more than 60 hours per program season.
- Idaho Power will provide notification to participants two hours prior to the initiation of an event.
- If prior notice of a load reduction event has been sent, Idaho Power can choose to cancel the event and notify participants of cancellation 30 minutes prior to the start of the event.

[1] Idaho Power Company, P.U.C. ORE. No. E-27, Schedule 76

[2] Idaho Power Company, I.P.U.C. No. 29, Tariff No. 101, Schedule 82

Program Incentives

The Program includes both a fixed and variable incentive payment. The fixed incentive is calculated by multiplying the actual kW reduction by $3.25 for weeks when an event is called or the weekly nominated kW amount by $3.25 for weeks when an event is not called. The variable energy incentive is calculated by multiplying the kW reduction by the event duration hours to achieve the total kilowatt-hour ("kWh") reduction during an event. The variable incentive payment is $0.16 per kWh and is implemented for events that occur after the first three events.

The Program also includes an incentive adjustment of $2.00 when participants do not achieve their nominated amount during load reduction events. This adjustment amount is used for the first three events. After the third event, the adjustment is reduced to $0.25 per kW. Incentives are calculated using Idaho Power's interval metering billing data and participants received the incentive checks within 30 days of the end of the Program season. Participants were mailed their incentive checks or had their Idaho Power account credited by September 15 in 2017. The incentive structure offered for the 2017 season is listed in Table 1.

Table 1.

Fixed-Capacity Payment Rate*	**Variable Energy Payment Rate****
$3.25 per Weekly Effective kW Reduction	$0.16 per kWh (Actual kW x Hours of Event)
Adjustment for first three events $2.00 per kW not achieved up to nomination	**Adjustment after first three events** $0.25 per kW not achieved up to nomination
*To be prorated for partial weeks	**Does not apply to first three Program events

Program Results

The results presented throughout this report are at the generation level and system losses have been considered. Idaho Power called three load reduction events in 2017. The first event occurred on June 26, the second on July 14, and the third on August 2. The maximum realization rate during the season was 98 percent and the average for all three events combined was 81 percent. The realization rate is the percentage of load reduction achieved versus the amount of load reduction committed for an event. The highest hourly load reduction achieved was during the June 26 event at 36 MW.

Participants had a committed load reduction of 35.1 MW in the first week of the Program. This weekly commitment, or "nomination", was comprised of 65 customers participating in the Program totaling 141 sites. Out of the total number of sites, 136 sites participated in the 2016 season, and five sites were newly added in 2017. The committed load reduction at the end of the season was 35.8 MW and was the peak committed load reduction for the season.

The first event was called on Monday, June 26. Participants were notified at 2 p.m. for a four-hour event from 4-8 p.m. The total nomination for this event was 35.1 MW. The average load reduction was 34.4 MW. The highest hourly load reduction was 36 MW during hour three. The realization rate for this event was 98 percent.

The second event was called on Friday, July 14. Participants were notified at 2 p.m. for a four-hour event from 4-8 p.m. The total nomination for this event was 35.4 MW. The average load reduction was 26.4 MW. The highest hourly load reduction was 28.4 MW during hour one. The realization rate for this event was 75 percent. The lower realization rate for this event was primarily due to some larger sites that ran reduced shifts on Fridays as well as a lower participation overall due to the timing with the weekend.

The third event was called on Wednesday, August 2. Participants were notified at 2 p.m. for a four-hour event from 4-8 p.m. The total nomination for this event was 35.8 MW. The average load reduction was 25.1 MW. The highest hourly load reduction was 25.5 MW during hour two. The realization rate for this event was 70 percent. The lower realization rate for this event was primarily due to some larger sites that underperformed or had reduced participation due to operational needs of the sites and one larger customer with seven sites that did not participate at all due to operational constraints for this specific customer.

Participation

The number of sites enrolled in the Program for 2017 was 141 from 65 customers, with five new sites enrolling for the Program season. The average number of sites enrolled per participating customer was 2.2. The Program did not experience significant attrition and re-enrollment in the Program was high as 136 of the 137 sites participating from the prior season re-enrolled. One site did not re-enroll from the 2016 season because the site believed the Program would not fit its business operations for the 2017 season due to major renovation at the site location and an expansion of their business which would greatly affect their summertime operation.

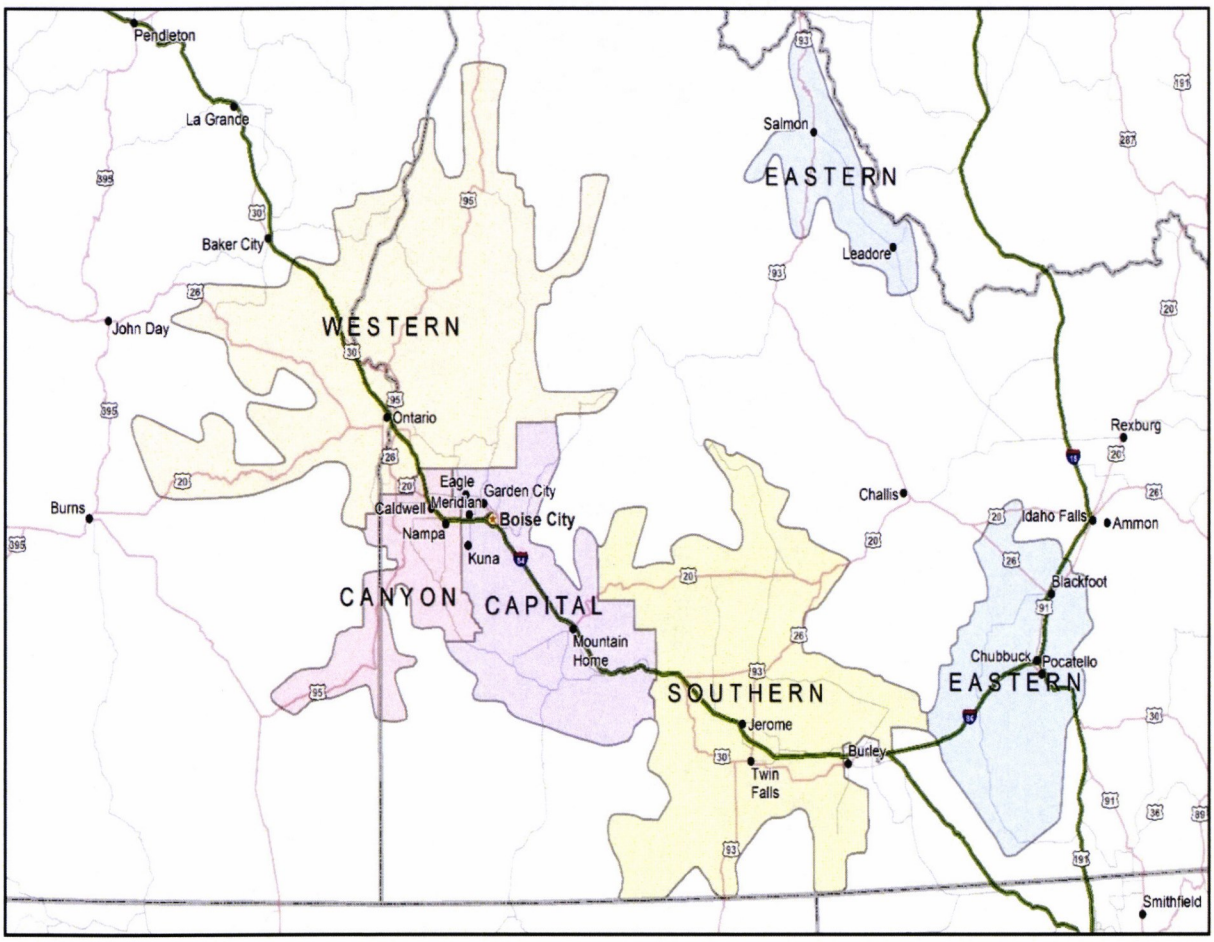
In response to Program participant requests, Idaho Power utilized a new auto-enrollment option for the 2017 season. Existing participants were re-enrolled in the Program automatically and mailed a confirmation packet based on the prior year's enrollment information. Participants notified the Company in writing if they no longer wanted to participate. This new auto-enrollment implementation was successful and many customers voiced positive feedback regarding the change.

While Idaho Power did not actively market the Program, the Company has continued to strive to increase the number and size diversity (in terms of nominated load reduction) of sites enrolled. Since the effort was placed on recruiting more diversity in the Program, the number of sites ranging from 50-200 kW has grown substantially the last two seasons from 32 in 2015 to 69 in 2017.

Pursuant to the Settlement Agreement approved in IPUC Case No. IPC-E-13-14[3] and OPUC UM 1653[4] ("Settlement"), Idaho Power did not actively market the Program prior to the 2017 season as enrolled capacity was maintained at approximately 35 MW, which was the amount agreed upon in the 2013 Settlement. The Company did not deny any Program applications in 2017.

Figure 1 represents Idaho Power's service area divided into five regional areas: Western, Canyon, Capital, Southern, and Eastern.

Figure 1.



[3] In the Matter of the Continuation of Idaho Power Company's A/C Cool Credit, Irrigation Peak Rewards, and FlexPeak Demand Response Programs for 2014 and Beyond, Case No. IPC-E-13-14, Order No. 32923.

[4] In the Matter of Idaho Power Company, Staff Evaluation of the Demand Response Programs, UM 1653, Order No. 13-482.

Figure 2 represents the enrolled capacity (total nominations) that were enrolled in 2017 and the distribution by Idaho Power's regional service areas.

Figure 2.

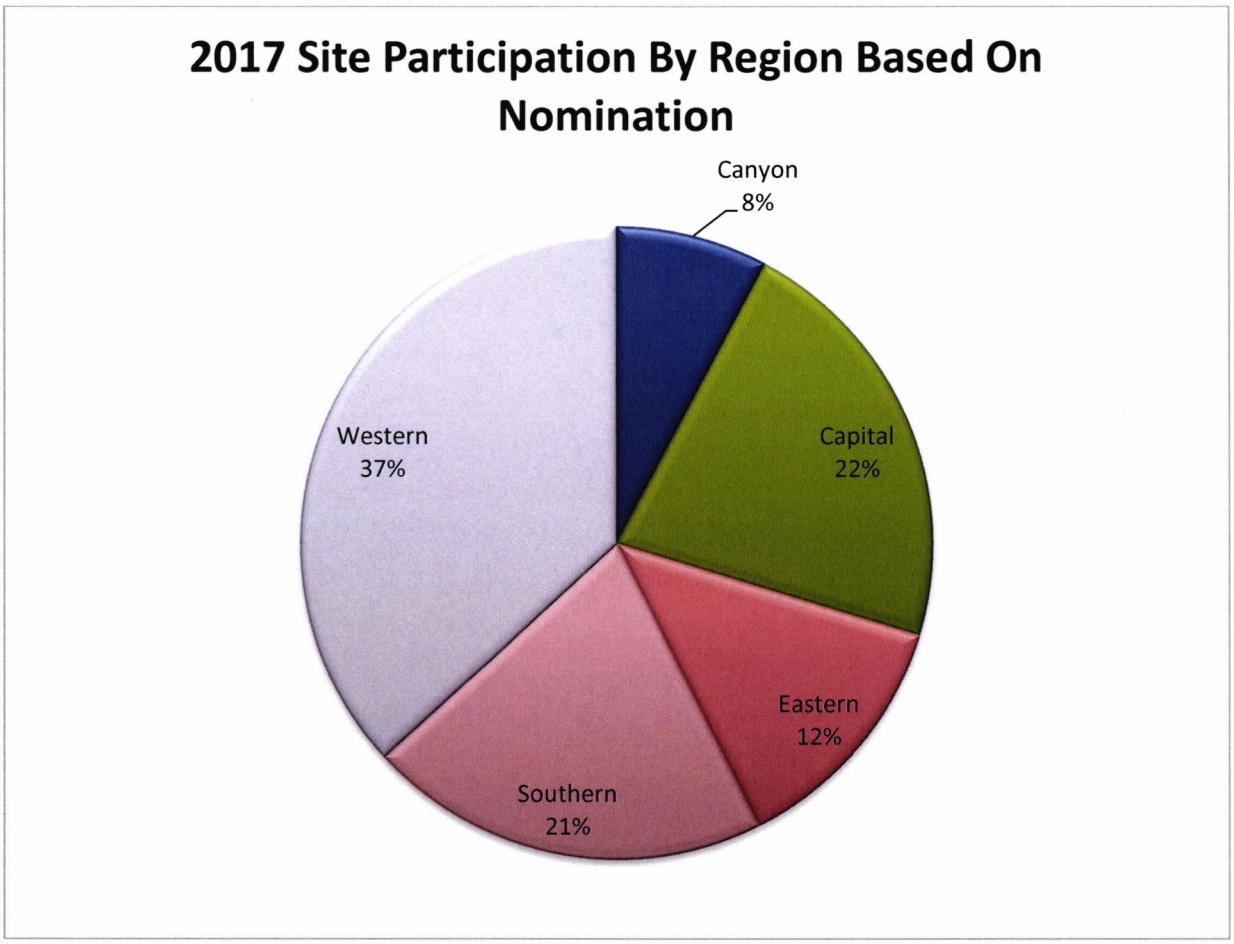
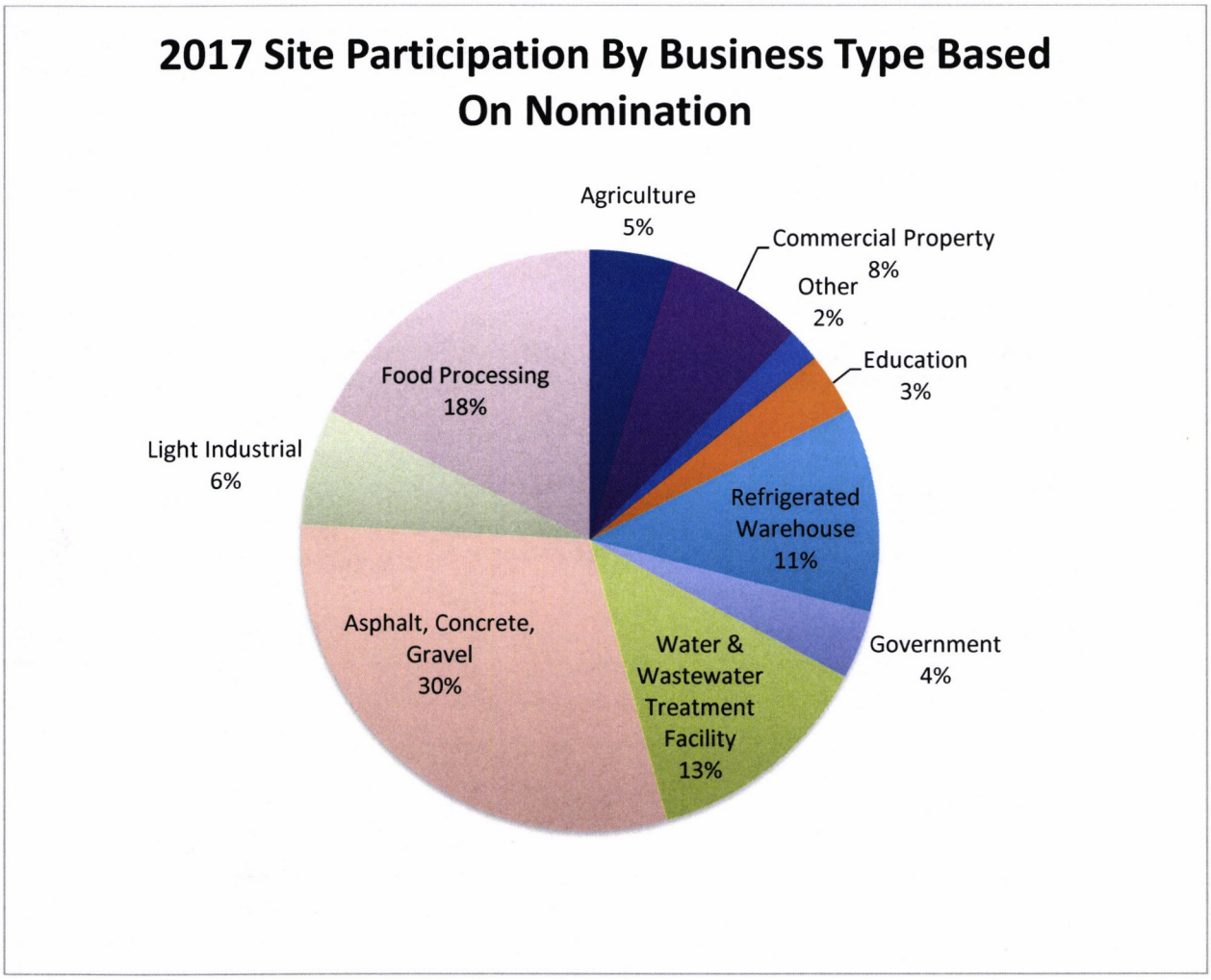


Figure 3 represents the enrolled capacity in 2017 and the diversity based on business type.

Figure 3.



Operations

Interval metering data provides Idaho Power the ability to view all participants' load after events. This metering data was used to calculate the reduction achieved per site during load reduction events. Using this data, Idaho Power provided participants post-event usage reports that showed hourly baseline, actual usage, and reduction during an event. The data assisted participants in refining their nomination for future events. This data also provides information useful in determining which participating sites may have opportunity to provide more reduction or change their reduction strategy if nomination amounts were not achieved.

Load Reduction Analysis

An evaluation of the potential load reduction impacts in 2017 were conducted internally by Idaho Power. The goal of the review performed by Idaho Power was to calculate the load reduction in MW for the Program. The analysis also verified load reduction per site and per event.

The baseline methodology used in 2017 is the same methodology utilized in prior seasons. The baseline that load reductions are measured against during load reduction events is calculated using a 10-day period. The baseline is the average kW of the highest energy usage days during the event availability time (2-8 p.m.) from the highest three days out of the last 10 non-event weekdays. Individual baselines are calculated for each facility site. Once the original baseline is calculated, there is an adjustment included in the methodology called the Day-of-Adjustment ("DOA") that is used to arrive at the adjusted baseline.

Adjustments address situations where load is lower or higher than it has historically been and the baseline does not accurately reflect the load behavior immediately prior to the event. The DOA is applied to each site's original baseline by accounting for the difference between the average baseline kW and the average curtailment day kW during hours 2-3 prior to the start of the event. The DOA is calculated as a flat kW and is applied to all baseline hours and capped at +/- 20 percent of the original baseline kW. The DOA is symmetrical, having either an upward or downward adjustment to the baseline, and is applied to the original baseline kW for each facility site for each hour during the Program event. The Company does not expect or anticipate any changes to the baseline methodology for the upcoming season.

As Figure 4 below depicts, the most commonly nominated load reduction was in the 0-50 kW range, accounting for approximately 40 percent of the sites.

Figure 4.

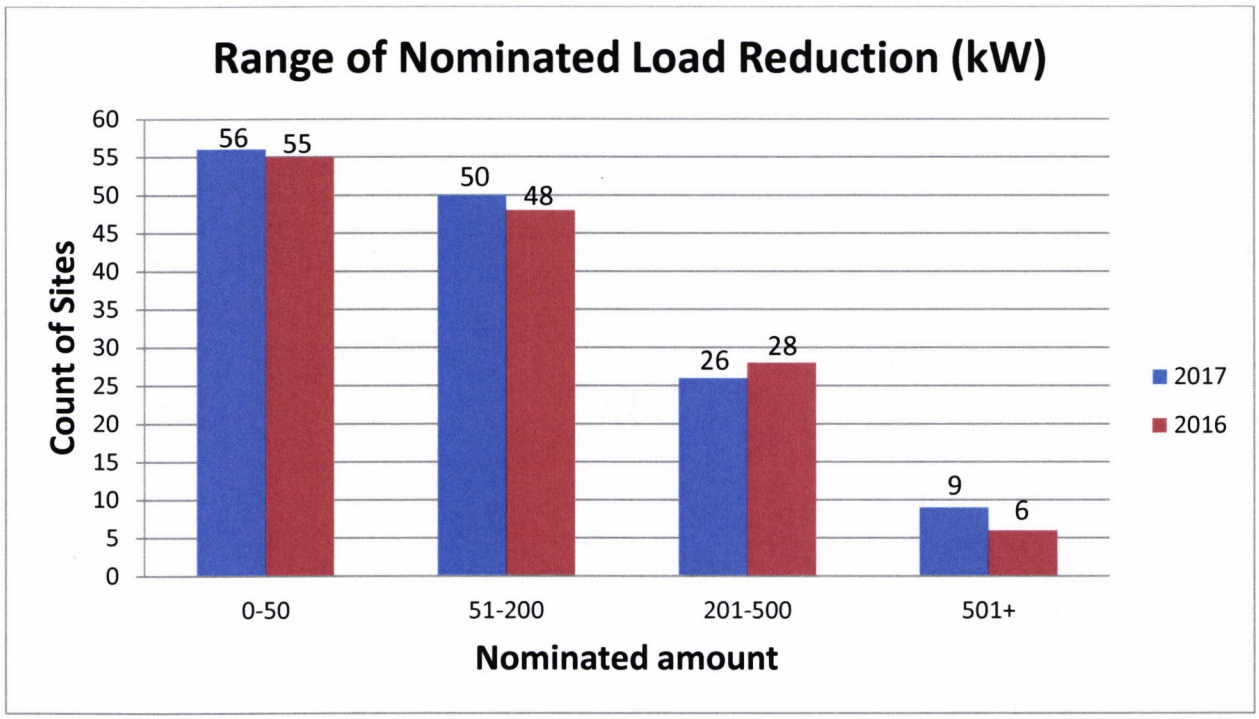


Table 2 shows the Program realization rates for 2017 based on average load reduction per event.

Table 2.

Curtailment Event	Event Timeframe	Nominated Demand Reduction	Average Demand Reduction (MW)	Max Demand Reduction (MW)	Realization Rate*
June 26	4-8 pm	35.1	34.4	36	98%
July 14	4-8 pm	35.4	26.4	28.4	75%
August 2	4-8 pm	35.8	25.1	25.5	70%
Average		35.4	28.6	30	81%

** Based on average reduction*

Figure 5 below shows both the average and peak demand reduction achieved during each of the three curtailment events. The maximum demand reduction achieved ranged from a low of 25.5 MW for the August 2 event to a high of 36 MW for the June 26 event. The August 2 event's 25.5 MW reduction achieved a realization rate of 70 percent, while the June 26 event's 36 MW reduction achieved a realization rate of 98 percent. Combined, the three events had an average realization rate of 81 percent.

The realization rate analysis shows that maximum load reduction was achieved in the first third of the Program season during the first event, which correlates with Idaho Power's overall summer system peak of late June/early July.

Figure 5.

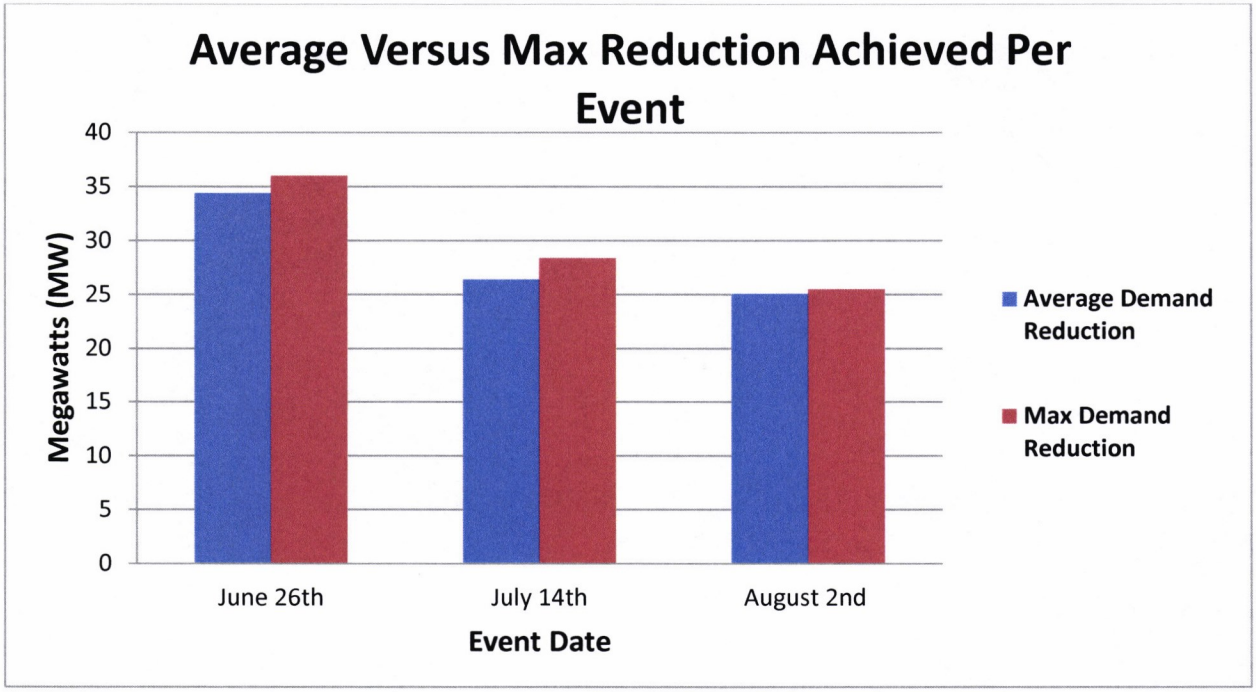


Table 3 shows the realization rate for each participant in the Program for 2017.

Table 3.

Participant Number	June 26 Event Realization	July 14 Event Realization	August 2 Event Realization	Season Realization
1	106%	34%	71%	71%
2	66%	76%	80%	74%
3	113%	26%	29%	56%
4	56%	90%	101%	82%
5	70%	39%	24%	45%
6	46%	88%	77%	70%
7	141%	143%	118%	134%
8	215%	126%	147%	163%
9	2%	84%	139%	75%
10	1%	4%	20%	9%
11	46%	48%	54%	50%
12	64%	51%	53%	56%
13	97%	63%	2%	54%
14	44%	97%	117%	86%
15	27%	3%	30%	20%
16	0%	49%	35%	28%
17	131%	41%	42%	71%
18	26%	79%	113%	73%
19	179%	143%	154%	159%
20	179%	121%	148%	149%
21	61%	113%	40%	71%
22	154%	104%	15%	91%

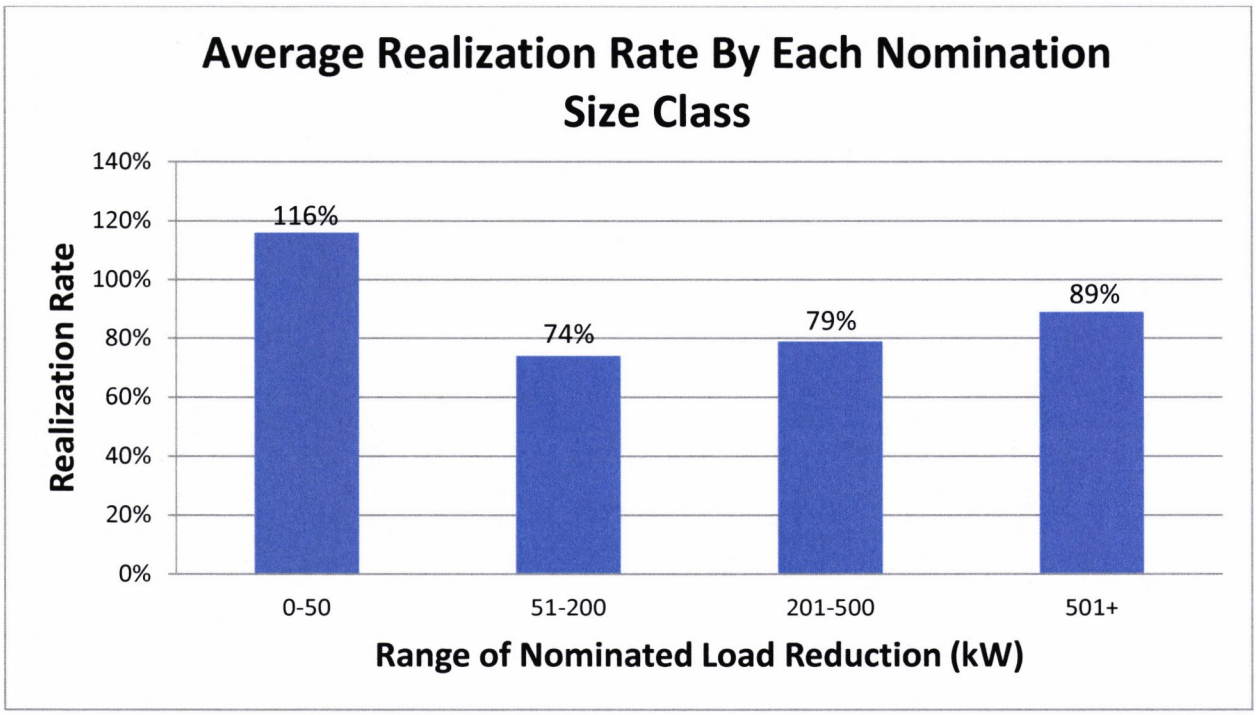
23	15%	63%	0%	26%
24	2%	4%	10%	5%
25	17%	40%	192%	83%
26	195%	0%	89%	95%
27	24%	43%	114%	60%
28	109%	40%	28%	59%
29	140%	113%	135%	129%
30	187%	98%	41%	109%
31	56%	5%	16%	25%
32	147%	140%	123%	137%
33	209%	7%	193%	136%
34	154%	122%	123%	133%
35	76%	112%	115%	101%
36	489%	0%	0%	163%
37	1%	92%	11%	35%
38	97%	67%	82%	82%
39	172%	186%	61%	140%
40	152%	71%	90%	104%
41	2%	0%	15%	6%
42	154%	0%	0%	51%
43	113%	71%	22%	69%
44	58%	7%	88%	51%
45	167%	173%	186%	175%
46	11%	26%	44%	27%
47	273%	125%	131%	176%

48	770%	0%	0%	257%
49	65%	53%	9%	42%
50	24%	20%	29%	24%
51	65%	0%	25%	30%
52	76%	79%	30%	62%
53	102%	82%	89%	91%
54	4%	199%	67%	90%
55	82%	126%	97%	101%
56	163%	14%	0%	59%
57	137%	29%	129%	98%
58	77%	67%	15%	53%
59	94%	91%	101%	96%
60	66%	82%	79%	76%
61	247%	83%	116%	148%
62	76%	19%	0%	32%
63	80%	44%	18%	47%
64	69%	94%	83%	82%
65	72%	70%	2%	48%

Broken out across four size classes, the sites with the smallest nominated load reduction, 0–50 kW, achieved the highest average realization rate across the three events at 116 percent. The 0-50 kW group had the largest portion of sites enrolled in the Program, totaling 56 sites that accounted for 40 percent of total enrolled sites. The second smallest size class, 51–200 kW, had 50 sites enrolled and achieved the lowest average realization rate at 74 percent. The 201-500 kW group had 26 sites enrolled and achieved a realization rate of 79 percent. The largest size class, 501+ kW, had nine sites enrolled and achieved a realization rate of 89 percent. Idaho Power will continue to work with all customer segments to help refine nominations to align closer with realistic reduction opportunities which will increase the overall program realization rate.

Figure 6 below represents the realization rate achieved by each nomination group, averaged across all three events. To calculate the results, each site's average load reduction (across three events) was divided by its average nomination across the three events and then grouped by size.

Figure 6.



Program Costs

Program costs totaled $635,453 through October 1, 2017. Incentive payments were the largest expenditure comprising approximately 89 percent of total costs. The incentive payments were fixed-capacity payments resulting from the three events called during the 2017 Program season. The fixed capacity payments total was $564,954 and the variable energy payments total was $0. Variable energy payments were not made during the season because the variable energy payment is implemented starting with the fourth event. Preliminarily, the total Program costs for 2017 are estimated to be $17.65 per kW based on the maximum demand reduction of 36 MW, or $22.22 per kW, based on average load reduction for the season of 28.6 MW.

Table 4 below displays the 2017 year-to-date ("YTD") Program costs by expense category.

Table 4.

Expense Category	2017 YTD Program Costs
Materials & Equipment	$785
Contract Services	$11,018
Marketing & Administration	$58,696
Incentive payments	$564,954
Total	**$635,453**

Benefit-Cost Analysis

The Benefit-Cost analysis for the Program is based on a 20-year model that uses financial and demand-side management alternate cost assumptions from the *2015 Integrated Resource Plan* ("IRP"). The Settlement, as approved in IPUC Order No. 32923 and OPUC Order No.13-482, established a new method for valuing DR and defined the annual cost of operating Idaho Power's three DR programs for the maximum allowable 60 hours as no more than $16.7 million. This amount was reevaluated in the 2015 IRP, as agreed upon in the Settlement, to be $18.5 million.

In 2017, the preliminary cost estimate of operating all three of Idaho Power's DR programs was $8.5 million through October 1, 2017. It is estimated that if the three programs were dispatched for the full 60 hours, the total costs would have been approximately $12.4 million, which is below the total annual costs agreed upon in the Settlement as revised in the 2015 IRP.

Idaho Power's cost-effectiveness evaluation for DR programs is updated annually. A more comprehensive cost-benefit analysis will be included in the Company's Demand-Side Management 2017 Annual Report when all the data will be available.

Idaho Power believes the purpose of demand response is to minimize or delay the need to build new supply-side peaking generation resources and to reduce load during extreme system peaks. The benefits of having the Program available, and with each load reduction event, provide Idaho Power a supply side resource to mitigate any system peak deficits. DR helps fulfill the current system capacity need and prolongs the need to build new generation resources.

The Company believes by calling at least three events per season the Program will be more effective in providing consistent and reliable reduction. Having a minimum of three events allows the Company to test processes and software and helps customers fine tune their curtailment plan. The Company did not call more than three load reduction events

during the 2017 Program season because Idaho Power's generation resources were sufficient to satisfy system load. However, in all three events the Program provided a resource to assist in balancing the wind forecast when that forecast did not always align with Idaho Power's peak load, as well as potentially avoiding additional market purchases. Based on market prices for each of the days in 2017 the Program was dispatched, Idaho Power estimates the Program saved a total of $27,000 worth of energy purchases.

The variable energy price for utilizing the Program after the third event is $0.16/kWh and could be considered the dispatch price for calling load reduction events beginning with the fourth event. The price of $0.16/kWh is typically higher than the energy market price. The Company believes the variable energy price is appropriate because having a dispatch price below $0.16/kWh could cause the Company to call events more frequently resulting in reduced participant performance and event fatigue. The Company also believes that a lower dispatch price to trigger more load reduction events could send the wrong signal regarding the purpose of the Program and DR.

Customer Satisfaction Results

Idaho Power did not conduct a post-season survey this year as there were not significant changes made to the Program from the last two seasons. The prior two year's surveys were favorable and the Company believes conducting a survey every 2-3 years will reduce survey fatigue considering this customer segment also participates in the quarterly *Customer Satisfaction Research Survey* conducted by Burke, Inc.

Program Activities for 2018

The primary improvement Idaho Power and the Program could benefit from is a more consistent and firm load reduction when events are called. The Company will continue to communicate the value proposition with enrolled customers and the importance of active participation when events are called. Recruitment efforts for the 2018 season will begin the first quarter of 2018 to encourage participation. Idaho Power will meet with existing participants during the off-season to discuss past-season performance and upcoming season details.

The Program will be jointly marketed along with Idaho Power's applicable energy efficiency programs as needed. The Company will utilize its Customer Representatives to retain the currently enrolled sites and encourage new sites to participate.

For the upcoming season, Idaho Power plans to focus on retaining currently enrolled customers. While Idaho Power does not plan to actively market the Program, it will enroll new customers that show interest and are a good fit for the Program.

Conclusion

The Program currently contributes approximately 10 percent of the Company's overall DR portfolio and can be relied on to provide dispatchable load reduction to the electrical grid. When analyzing the Program at the generation level, industrial and commercial customers have made noteworthy contributions to Idaho Power's DR programs. The Program had a total of 141 sites reducing peak demand by 36 MW. The Program retained 99.3 percent of past enrolled sites (136 of 137) from the prior season and added five additional sites in 2017. Load reduction event results showed maximum reductions of 36, 28.4, and 25.5 MW, respectively, for the three events, with an average of 30 MW. The events achieved realization rates of 98 percent, 75 percent, and 70 percent, respectively, averaging 81 percent for the season. The total Program costs for 2017 through October 1st were $635,453. The cost of having this resource available was $22.22 per kW based on average reduction (28.6 MW) for the season.