

DEPARTMENT OF COMMERCE
Committee of Consumer Services

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UTAH PUBLIC
SERVICE COMMISSION

January 24, 1995

TO: Public Service Commission

FROM: Committee of Consumer Services
Sandy Mooy, Administrative Secretary
Mary Cleveland, Utility Analyst

RE: In the Matter of the Application of Utah Power & Light Company for an
Accounting Order Pursuant to the Joint Recommendation Approved in
Docket No. 92-2035-04, Docket No. 94-035-17.

ISSUE:

In Docket No. 92-2035-04, the Commission approved the Joint Recommendation, which established an interim accounting treatment for PacifiCorp's demand-side resource ("DSR") activities in Utah during calendar year 1994 and set minimum energy and capacity targets for 1994 DSM activity in Utah on an annualized basis. On December 30, 1994, PacifiCorp, dba Utah Power & Light Company ("Utah Power" or "Company") applied for an Order of the Public Service Commission of Utah ("Commission") approving the accounting treatment for certain demand-side resource ("DSR") activities in Utah consistent with the Joint Recommendation approved in Docket No. 92-2035-04.

The DSR activities for which the Company is seeking accounting treatment are:

- 1) **Engineering assistance** for the identification and evaluation of potential energy savings measures and their cost effectiveness provided to a large industrial customer.
- 2) **Participation in the Super Energy Efficient Refrigerator Program ("SERP").**

- 3) The provision of "Water Smart" kits to Schedule 5 customers in Utah who returned a Company survey regarding energy use patterns.

RECOMMENDATION:

- 1) Approve accounting treatment consistent with the Joint Recommendation for the engineering assistance provided to a large industrial customer.
- 2) Approve accounting treatment consistent with the Joint Recommendation for the SERP program expenditures. But, do not allow the Company to accrue lost revenues for SERP refrigerator sold to customers outside of the Company's service territory.
- 3) Approve accounting treatment consistent with the Joint Recommendation for only the cost of providing the "Water Smart" kits to Schedule 5 customers. Do allow the Company to include the costs of developing, administering and tabulating the Schedule 5 survey.

DISCUSSION:

The Joint Recommendation established an interim accounting policy as well as minimum target levels for the Company's DSR activities in 1994. Under the Joint Recommendation's accounting procedures; program evaluation, monitoring and reporting costs were to be expensed as incurred. Non-program specific advertising costs were also to be expensed as incurred. All other DSR program costs, including lost revenues, were to be capitalized with amortization beginning

January 1, 1995, and continuing over the life of the DSR program measure.

The minimum energy and capacity target for 1994 DSM activity was set at 40,000 Mwh and 5.9 MW on an annualized basis. In addition to achieving the minimum energy and capacity target, PacifiCorp was also to acquire at least 20% of each customer class's near term action goals as stated in its Resource and Market Planning Program, RAMPP-3. The RAMPP-3, 1994 goals for Utah were:

PROGRAM	UNITS	# UNITS	MWH SAVINGS	aMW
Existing Residential	Homes	13,000	12,864	1.5
Low Income	Homes	150	225	0
Residential Total			13,089	1.5
New Commercial	Sq. Ft.	2,597,885	12,906	1.5
Existing Commercial	Sq. Ft.		5,300	.6
Commercial Total			18,206	2.1
Industrial	n/a		29,213	3.3

Source: RAMPP-3, Demand-Side Appendix, Page I-7.

Therefore, in order to satisfy its commitment under the Joint Recommendation, the Company was to achieve at least 2,618 Mwh savings in the residential sector, 3,614 Mwh savings in the commercial

sector and 5,843 Mwh savings in the industrial sector; as well as the overall minimum target level savings of 40,000 Mwh and 5.9 MW respectively.

Thus, for each of the three activities listed above two questions need to be resolved. First, do the expenditures qualify for deferral and amortization under the Joint Recommendation as advocated by the Company? Secondly, should the savings achieved be counted towards the achievement of the Company's commitment under the Joint Recommendation?

1) **ENGINEERING ASSISTANCE PROVIDED TO A LARGE INDUSTRIAL CUSTOMER:**

The Company retained an engineer with training and experience in industrial process energy efficient applications to work with a large industrial customer to identify potential energy saving measures. The engineer identified, and subsequently the large industrial implimented, improvements in maintance and operation of various equipment. The Company is now seeking to defer the cost of the engineering and design assistance provided to the large industrial customer, as well as the resulting lost revenues, in accordance with the Joint Recommendation.

This particular effort appears to be highly cost-effective based on the analysis provided. One factor which contributes to the cost-effectiveness of the effort is the customer's discounted retail energy prices, which are less than the RAMPP-3 discounted avoided energy costs. Thus, instead of losing a margin on the energy savings, the Company actually realizes a benefit. The project results in negative lost revenues. Thus, other ratepayers need only bear the cost of the engineering and

design assistance and administrative costs, which are in part off set by the negative lost revenues. This results in a Ratepayer Impact Measure (RIM) of .92. The Total Resource Cost Test (TRC) and Utility Cost Test are also very high, 15.26 and 10.71 respectfully, due to the relatively large savings achieved for the dollars spent.

The Committee recommends that the Commission approve this project in the context of a demand-side program. And that, as such, the terms and conditions contained in the Joint Recommendation would apply.

2) PARTICIPATION IN SERP:

In 1992, PacifiCorp along with 23 other utilities formed a non-profit public benefit corporation the purpose of which was to contract with a refrigerator manufacturer to design a super energy efficient refrigerator. On June 30, 1993, the corporation entered into a contract with Whirlpool. Under the contract the utilities committed funds to a pool that is used to pay Whirlpool the incremental cost of the super energy efficient refrigerator. These funds are paid to Whirlpool as the super energy efficient refrigerators are sold within the utility service areas.

Approximately 250,000 super energy refrigerators are to be placed in the participating member utilities' service territories between 1994 and 1997, of which 3,850 are to be placed in Utah. That is, 3,850 super energy efficient refrigerators will be made available for sale through various retail outlets in the Company's service territory. The retailer will sell these super energy efficient refrigerators in the normal course of business. As each unit is sold at a Utah retail outlet the Company will remit \$103 to Whirlpool.

The super energy efficient refrigerator is a large side-by-side model. Based on various studies performed by the Electric Power Research Institute ("EPRI"), the super energy efficient refrigerator is expected to use approximately 292 Kwh per year less than the similar 1993 comparable model refrigerator.

The Company wishes to categorize the sales of these super energy efficient refrigerators as a residential appliance demand-side program. Accordingly, the Company is seeking to defer the payments made to Whirlpool as the refrigerators are sold, as well as lost revenues resulting from the sale of these refrigerators. The Company has based its calculation of lost revenues on the 292 Kwh difference in usage between the super energy efficient refrigerator and the similar 1993 model. This lost revenue calculation, the Company claims, is conservative since it assumes that a current level (i.e. 1993) of efficiency is being replaced with a more efficient level. It should also be noted that the Company's analysis provided with this filing claimed lost revenues for all units sold.

Should the Company be allowed to defer the payments to Whirlpool? Yes. This is a market transformation program and as such is consistent with the Company's RAMPP-3, the purpose of which was to encourage the production of a more energy efficient and environmentally friendly refrigerator than currently existed on the market. The Company was only obligated to make these payments if the refrigerator developed by Whirlpool met certain specifications and then only as the refrigerators are sold. Whirlpool, not the Company, assumes the market risk. The Company is essentially purchasing the market transformation towards the super energy efficient refrigerator as it proves successful.

Should the Company be allowed to claim lost revenues for all SERP units sold in Utah? No. Lost revenues, if any, should only be allowed for those SERP units which are connected in the Company's service territory. These refrigerators are being sold by retail outlets in the normal course of business. Just because these retail outlets are located in the Company's service territory does not guarantee that the refrigerator will be sold to one of the Company's customers. Anyone can buy one of these refrigerators. The refrigerator could be trucked out of state or outside UP&L's service territory. It is unreasonable to request that customers cover, yet alone pay a carrying charge on, lost revenues which occur outside the Company's service territory.

The cost-effectiveness analysis provided by the Company assumed savings for all SERP units sold at Utah retail outlets. Should some of the SERP units sold not reside in the Company's service territory, the results of the cost-effectiveness tests would be as follows:

PERCENT SERP UNITS NOT IN COMPANY'S SERVICE TERRITORY	TRC TEST	RIM TEST	UTILITY COST TEST	PARTI- CIPANT TEST
10%	1.25	0.39	1.14	n/a
20%	1.11	0.37	1.01	n/a
30%	0.97	0.35	0.89	n/a
40%	0.84	0.33	0.76	n/a
50%	0.70	0.30	0.63	n/a

If more than 20% of the SERP units are not connected in the Company's service territory, the

program is not cost-effective from the utility's standpoint. Note that this analysis only measures the cost of the incremental savings (i.e. 292 Kwh).

Furthermore, the Committee believes that the 292 Kwh difference upon which lost revenues are based may be high, particularly if it were to be applied to SERP units sold in subsequent years. Since the customer is not being offered any incentive to replace their current refrigerator, the only lost revenue (i.e. extra savings) that could reasonably be claimed by the Company is the difference between the energy usage of the refrigerator the customer would have purchased absent the SERP unit being available and the SERP unit. It is reasonable to assume that the customer would have purchased a similar side by side model. Given no significant energy improvements between similar 1993 models and 1994 models, the 292 Kwh may reasonably be applied to SERP units sold in 1994. However, if this market transformation program is truly successful, one would expect other manufacturers to begin to compete with the SERP unit, eventually negating and even surpassing the energy efficiency of the SERP unit. Therefore, the Committee questions the appropriateness of allowing the Company to claim lost revenues for market transformation programs.

However, under the Joint Recommendation, to which the Committee was a party, the Company, as an incentive to pursue its demand-side programs, was allowed to claim lost revenues. Therefore, in this instance, the Company may be allowed to claim lost revenues of 292 Kwh per year for SERP units connected in its service territory.

3) SCHEDULE 5 SURVEY:

In its Order in Docket No. 90-035-06, the Commission found that "additional effort should be made to target DSM programs to the remaining Schedule 5 customers" and requested the DSM task force established by this Order "analyze the possibility of using Schedule 5 to test appropriate future DSM programs". As a result, the Company conducted an energy use survey, in the form of a questionnaire mailed to Schedule 5 customers, to determine which, if any, of the DSM programs consistent with the Company's integrated resource plan, should be targeted to Utah's Schedule 5 customers. To encourage the completion of its survey, the Company offered a "Water Smart" kit, which contained one low flow showerhead, 2 faucet aerators, and various adapters to customers who returned a completed energy use survey.

The Company now wishes to construe this activity as the Schedule 5 showerhead program contained in the RAMPP-3 Demand-Side Resource Two-Year Action Plan. Quoting from page 145, of the RAMPP-3 Demand-Side Appendix, the Company plans to "offer a saturation show head program for customers currently on Schedule 5 in the State of Utah". (No this is not a typo, the text states "show head"). And now, having designated this survey activity as the Schedule 5 showerhead program, the Company wishes to defer in addition to the cost of the "Water Smart" kits, the survey costs, the cost of the consultant who tabulated the survey results, etc.

Should the costs of conducting this survey be deferred just because the customers who returned a completed survey received a "Water Smart" kit? No. The collection and tabulation of load characteristic data is a normal part of the Company's load reasearch activities. The "Water Smart" kits were simply a means to an end, an incentive for the customer to provide the data, a cost

of the survey itself, as would have been any other incentive offered to elicit a response.

However, the provision of a "Water Smart" kit to those who responded to the survey is similar to a demand-side program instituted in Oregon wherein customers who returned a card received a "Water Smart" kit. Therefore, the cost of the "Water Smart" kit may be deferred.

Should the Company be allowed to count energy savings resulting from the distribution of the "Water Smart" kits to Schedule 5 customers who responded to the survey towards the achievement of its commitment under the Joint Recommendation? Yes. The provision of the "Water Smart" kit did provide those select customers who responded to the survey with "hands-on" experience in an energy efficient technology. To the extent that this experience was influential in reducing the customer's energy usage, the Company should receive credit.

The Company has estimated the energy savings resulting from the distribution of the "Water Smart" kits to be 1,261,348 Kwh and 2,468 KW on an annualized basis. This estimate is based on the average annual savings experienced by the ECONS showerhead program, 681 Kwh, per unit and the assumption that 70% of the respondents who received the "Water Smart" kit would actually install the measures. The 70% assumption is based on the results (i.e. penetration rate) realized by an Oregon showerhead program wherein the Company mailed low flow showerheads to customers who returned a card. Based on past Company experience, the estimated energy savings would seem reasonable.

Although not advocating that this survey be considered for the Joint Recommendation accounting treatment, the Committee did review the Company's cost-effectiveness analysis submitted with this application. The basic purpose of the Committee's analysis was to determine if the survey

as a cost-effective means of obtaining and disseminating customer information relating to energy saving measures.

Two changes were made to the cost-effectiveness analysis filed by the Company. First, the Utah Retail Price was changed to the Schedule 5 tailblock rate. The Company's analysis used the Schedule 1 rate in error. Secondly, it was assumed that this rate would remain relatively stable throughout the analysis period, only experiencing a 2% increase in 1997 and again in 2000. The Company's analysis assumed the retail rate would increase 2% per year beginning in 1995. These two changes impacted the cost-effectiveness tests as follows:

	TRC TEST	RIM TEST	UTILITY COST TEST	PARTI- CIPANT TEST
As Filed by Company	1.48	0.29	1.52	32.79
As Changed by Committee	1.36	0.31	1.39	28.87

Next a sensitivity analysis was conducted on three variables used in the Company's analysis; the measure's life, the penetration rate and installed cost. Runs, as well as combinations of runs, were made: reducing the measure life from 7 to 5 years; reducing the penetration rate by 10%; and, assuming that all customers (versus 20% of the customers as assumed by the Company's analysis), paid to have the measure installed. The results were as follows:

	TRC TEST	RIM TEST	UTILITY COST TEST	PARTI- CIPANT TEST
5 Year Life	1.07	0.27	1.09	25.62
Penetration reduced 10%	1.23	0.30	1.25	25.98
All customers pay installation	0.95	0.31	1.39	5.77
5 Year Life				
Penetration reduced 10%	0.96	0.26	0.98	23.06
5 Year Life				
All customers pay installation	0.75	0.27	1.09	5.12
5 Year Life				
Penetration reduced 10%				
All customers pay installation	0.67	0.26	0.98	4.61
7 Year Life				
Penetration reduced 10%				
All customers pay installation	0.86	0.30	1.25	5.20

Based upon the results of this analysis it would appear that obtaining customer energy usage characteristics through a mailed survey coupled with the offer of an energy efficiency measure to the customer for completing the survey can be a win win situation for the Company and the customer who completes the survey. Whether or not such an approach is cost-effective to the Company is dependent upon the cost, life and energy savings realized from the measure offered; as well as the

response rate the offer elicits from customers. In this instance the response rate was 40%.

However, consider the results of the TRC test, which takes into consideration costs incurred by the Company as well as the customer. In many instances the TRC falls below 1.0 though the Utility Cost Test and the Participant Cost Test are greater than 1.0. It appears that the TRC can produce counterintuitive results when both the utility and the customer share in the costs of an energy efficient measure, and therefore, should not be the sole basis upon which to judge demand-side programs.

This leads to another point. This analysis assigns any costs for the installation of the showerhead to the customer. Now suppose that subsequent to this survey analysis, the Company decides to extend ECONS (i.e. offer a saturation showerhead program) to Schedule 5 customers. The installation costs would now be assigned to the Company, putting the results of the Utility Cost Test shown above on par with the results of the TRC test. This is to say that the inclusion of the survey costs with the installation costs (i.e. a contract with an outside provider to install showerheads, etc.) does not make a cost-effective showerhead program. The survey is separate and distinct from any showerhead program and would not normally be a part of any showerhead program; therefore should not be deferred, but rather expensed in the normal course of business.