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June 30, 1992

Paul Curl, Secretary
Washington Utilities
& Transportation Commission
Chandler Plaza Building
1300 S. Evergreen Park Drive S.W.
Olympia, WA 98504
Mail Stop: 7250

Re: Puget Sound Power & Light Company 1992-93 Least Cost Plan
UE-910151

Dear Mr. Curl:

Enclosed please find an original plus 19 copies of Public Counsel's comments to Puget Power's 1992-93 Least Cost Plan.

Thank you.

Respectfully,

Kevin Winters
Utility Analyst
Public Counsel Section

Enc.
cc: Corey Knutsen, Puget Power
Bruce Folsom, WUTC

IN THE MATTER OF	
PUGET SOUND POWER & LIGHT COMPANY	PUBLIC COUNSEL COMMENTS
1992-93 LEAST-COST PLAN	JUNE 30, 1992
DOCKET NO. UE-910151	

I. OVERVIEW

On May 26, 1992, Public Counsel offered comments to the Commission on Puget Sound Power & Light Company's (Puget, or company) 1992-93 Least Cost Plan, entitled "Integrated Resource Plan 1992-93: Planning and Innovating Together for Excellence." At that public meeting, Public Counsel recommended that the Commission accept Puget's Least Cost Plan. Public Counsel also recommended that the Commission note the Plan's more significant shortcomings, and clarify in the letter conveying acceptance of the Plan that by doing so the Commission does not pre-approve specific elements contained in the Plan.

These comments will focus on more detail than our comments of May 26th. While our comments focus on areas in which our office believes the company should focus efforts to improve its next Plan, areas where Puget has been particularly successful in implementing the 1991-92 Plan and especially strong sections of the 1992-93 Plan will also be noted.

It is important to recognize at the outset that Puget Power, Public Counsel, and many other interested parties have been working hard together on a great number of important issues involving resource acquisition and utility regulation. The company has achieved considerable advances on a number of fronts, including DSM program design, implementation, and measurement and evaluation, decoupling and performance incentives, implementation of competitive bidding, identification and acquisition of high-efficiency cogeneration resources, and planning reliability and capacity improvements to its transmission and distribution system. The point is that it would be difficult for Puget to incorporate into the Plan all of these developments as they occur.

Puget's Plan does not do a particularly good job of providing a "snapshot" of the company's planning efforts. Under different circumstances, this would be a cause of serious concern to Public Counsel. However, the failure of this Plan to demonstrate a superior level of planning does not necessarily indicate to Public Counsel that the Company is unprepared for the future. Rather, in

this case, it is an indication of how quickly events and the company's planning have overtaken its ability to incorporate it all into this version of the Least Cost Plan. While this is not a cause for grave concern, Puget must realize that this should not be repeated. Public Counsel submits that it is vitally important for the Company to communicate clearly through its least cost plans its vision of the future, and demonstrate convincingly that the company's strategies to meet the demands of the future are indeed least cost.

II. PUBLIC PARTICIPATION

The company's commitment to making public participation an integral part of its planning and decision-making is an excellent model for other utilities to emulate. The company has had broad participation in its least cost planning Technical Advisory Committee (TAC) meetings throughout the planning process. The Collaborative processes the company has led have been successful in bringing diverse regional and state energy interests together and building consensus around Puget's improved DSM programs, and in their efforts to encourage the development of high-efficiency cogeneration and QF resources. The company's efforts to inform, educate, and receive input from its customers through Consumer Panels have also been positive.

As growth continues, the need for new resource acquisitions, expanded DSM programs, and new transmission and distribution facilities to serve customer demand will also continue. To successfully meet these demands, the company must continue to achieve public consensus and support. Public Counsel believes that meaningful participation from Puget customers, from the TAC group, and from members of the Collaborative will become more and more crucial to the company's efforts.

III. FORECASTING

The load forecasts included in Puget's Plan are representative of the range of energy loads the company is likely to face over the next twenty years. Load forecasts are bounded at 0.5% annual growth on the low end and 4.5% annual growth on the high end. Annual growth for the medium forecast was not listed in the Plan. Current energy loads are 2243 aMW. In the year 2010, the low forecast load is 2404 aMW, the high forecast is 5301 aMW, and the medium expected load is 3546 aMW.

These forecasts were made using separate end-use models for the residential and commercial market sectors. Industrial demand was forecasted using an econometric approach. The company also began an in-depth study of 1990 census data to identify demographic trends in its service territory, and to quantify the effects of these trends on customer electricity use. Preliminary results from this study were incorporated into the forecasts used in this Plan.

Public Counsel believes that greater understanding of customers and the changing ways they use electricity can be a valuable forecasting tool, and encourages Puget's efforts in this area.

IV. DSM

Puget has done excellent work over the last two years analyzing DSM issues and taking aggressive actions to cost-effectively acquire available conservation resources on its system. Unfortunately, not all of the work that the company has done comes through in this Plan. The company's DSM program Measurement and Evaluation efforts are a good example. Puget's evaluations of its DSM programs have been collaboratively designed to confirm that the DSM resources projected to be acquired through programs are actually there and producing kwh for the company. Confirmation of the viability of the DSM resource is important to the power supply section of the company, so that it can plan system operations confident that DSM resources are reducing loads. Confirmation is also important to convince customers, regulators, and regional skeptics that DSM resources are real and measurable. Puget's evaluation efforts also improve program design and delivery, thereby helping to minimize the cost of DSM resources. Public Counsel, through the Collaborative, has supported and will continue to support thorough measurement and evaluation of the impact on loads of the company's DSM programs.

Over the last two years Puget has become the regional leader in implementing broad-based, comprehensive DSM programs to acquire all available cost-effective DSM resources available to the company. Public Counsel is impressed and encouraged by the company's accomplishments in this area, and believes that these efforts should continue at the same or still higher levels. Puget's recent study of the conservation potential in its service territory identifies large quantities of DSM remaining that can be captured cost-effectively by the company. The conservation potential analysis is a useful study and a valuable tool for targeting programs. However, Public Counsel believes, as Commission staff noted in their comments on May 26th, that the study may underestimate the potential for cost-effective acquisition of DSM resources over the planning horizon.

The Plan states on page 34 that "[DSM] Targets in later years may decline because opportunities for cost-effective conservation are expected to decrease." Public Counsel does not agree with this statement, nor does our office believe the Plan adequately demonstrates its accuracy. The conservation potential study used high discount rates and conservative program penetration rates in estimating the quantities available. As staff noted, the study also does not include any DSM that may become cost-effective as new technologies emerge or as the cost of existing energy-saving technologies fall. Finally, the study did not fully incorporate the value of DSM's ability to shave peak loads. When the company better identifies the value of peak resources on its system, and

better quantifies the peak savings conservation can achieve, DSM resources may become more attractive than they are currently. Public Counsel strongly urges the Company not to limit its DSM acquisition in the coming years to what looks cost-effective now, but to continue its commitment to acquiring all cost-effective DSM available.

A serious concern of Public Counsel's during Collaborative meetings has been with Puget's Communications and Advertising Plan. We have expressed concerns about the cost of this program, how specific to conservation efforts the advertising has been, and the benefits received in relation to the dollars spent. Puget's Action Plan calls for continued investment in the Communications Plan.

One note of interest: a new commercial MCS is expected to go into effect in July of next year, which by all reports is a great improvement over past commercial codes. This code is expected to capture a majority of the DSM potential in new commercial construction that Puget identified in its study. A big challenge for the company now will be code support activities to ensure that these resources are indeed captured. Contractor and building inspector training to support code compliance will become an important activity in Puget DSM programs. Efforts to improve multi-family and lights and appliances DSM programs should also become priorities to the company.

V. PLANNING ISSUES

Puget Power's load forecasts indicate that significant new resources will be needed over the twenty-year planning horizon to keep pace with growing customer demand for electricity. In selecting strategies to acquire resources that are least cost to its customers from a long term perspective, Puget must deal effectively with several sources of risk and uncertainty. Future loads may vary significantly from forecasts. The costs of new resources are uncertain, especially when estimating over a twenty- or forty-year plant life. The fuels needed to operate new resources have costs which can fluctuate sharply over time. There are particular risks with the future cost and availability of natural gas. The environmental effects of different resources, and potential changes to regulation or taxation of environmental damage, are extremely important to consider when evaluating potential new resources. Finally, potential transmission and distribution constraints could have an impact on resource choices.

Puget states in the Plan that its evaluation and selection of new resource additions are driven by three considerations: 1) cost; 2) public acceptance; and 3) environmental effects. Using these planning guidelines, the company charted out a strategy to minimize the risks inherent in acquiring new resources. In order to minimize exposure to gas price and availability risk, the company decided to limit the total amount of gas-fired resources on its system to 1600 aMW, and to maximize the efficiency of gas-fired

resources. This strategy also reduces the risk of over-reliance on one type of resource generation. To limit the risk of overbuilding and to better match loads and resources from year to year, the company decided to seek several small, flexible resources rather than large units. In recognition of environmental risks, the company gave DSM and renewable resources a 10% price credit when comparing these resources' costs to traditional fossil-fuel resources.

Public Counsel believes that these risk reduction strategies are conceptually sound. The end result is that DSM, renewable resources, and high-efficiency cogeneration resources (as defined by the Collaborative) are the company's top resource priorities. The problem with these strategies is that while they are conceptually sound, the Plan does not fully disclose how these decisions were made. For example, the decision to avoid "overdependence" on any one type of resource needs to be more fully discussed. How much risk does this strategy mitigate? What criteria were used to define "overdependence"? What percentage of total generating capacity results in overdependence? How did the company select a maximum of 1600 aMW of gas-fired resources on its system? Is 1600 aMW an estimate of reliable pipeline transportation? A percentage of load?

The company's decision to give renewables a 10% price credit over non-renewable resources also needs to be documented in the Plan. Is 10% an estimate of the risk of fuel price escalation? Is it an estimate of the value of avoiding air pollutants? How was 10% selected? Did this price credit have any effect on which resources were selected? Further, the company's decision to seek "resource diversity" needs much more explanation. Has the company identified an optimum resource mix? What does it look like? Does this Plan attain it?

In the Planning Issues section of the Plan, the company has done a good job of identifying the sources of significant risk that affect resource decisions today. The company's strategy to reduce these risks is also conceptually sound. However, the company should have done a better job of explaining how risk-mitigation strategies were developed, chosen, and implemented by the company in this Plan. Most importantly, the company must demonstrate in the Plan the effect these planning criteria had on resource selection, how successfully these strategies reduced risk, and how much they reduced overall revenue requirements over the planning horizon.

VI. SCENARIOS

In order to adequately demonstrate the effects planning criteria had on resource selections, a utility runs different scenarios on its resource model to compare the overall costs of different strategies and how these strategies perform under different conditions. In summarizing the planning uncertainties Puget faces, the Plan states that "the use of scenario planning, guided by

comprehensive resource planning guidelines, is a way for Puget Power to address plausible future changes and uncertainties" (p. 15). To evaluate this Plan, we must ask if these goals were accomplished.

Unfortunately, the scenario analyses included in this Plan are not very informative. It is the weakest section of the Plan. The scenarios analyzed included one resource strategy for each of the five load forecasts, plus one scenario analyzing potential sudden loss of generating resources. All these scenario analyses really tell us is that Puget can acquire resources to meet the expected range of loads on its system over the planning horizon. The analysis does not demonstrate that Puget is pursuing a least cost resource strategy.

The scenario analyses do not show the resources being brought on-line from year to year by size and type, nor does it contain tables or graphs which show what effect these additions have on energy and peak load deficits. Nowhere does it show how much DSM is acquired in each year. This is important information, especially considering that the company expects to scale down its DSM acquisitions over time.

Another problem with Puget's analysis of resource choices is its use of high discount rates in evaluating their long-term costs. The company used a 5.66% real discount rate in its financial analyses. By comparison, PacifiCorp uses a 4.42% real discount rate. Our office believes that both of these are too high, and that an appropriate discount rate would be the social discount rate, commonly estimated to be 3% real. The effect of Puget using such a high discount rate in comparing resource costs is to make high capital, low operating cost resources like DSM and some renewables look unattractive when compared to low capital, high fuel and operating cost resources such as natural gas fired resources. This is because the discount rate discounts future costs, making future-year costs look cheap and first-year costs look comparatively expensive.

Further, the company included a 2% adder to the cost of equity in its analysis of DSM resource costs (p. H-22). One assumes this 2% adder to the cost of financing is a proxy for incentive payments to Puget shareholders for attaining DSM performance standards. It is questionable, however, whether it is appropriate to include an incentive as a <u>cost</u> to the company. If the incentive was truly an added cost to the company when it accesses financial markets to fund DSM programs, I'm sure the company would not be eager to accept any incentives. Since ratepayers are paying the incentive to shareholders, it may be inappropriate to include incentives as an added cost when estimating DSM resource costs. Adding incentives to resource cost estimates could result in less DSM acquisition, since some DSM measures may no longer be least-cost after accounting for the cost of incentives. This seems contrary to the intent of incentives. On the other hand, customers are

interested in least cost resources. How to incorporate incentives into the planning process is a difficult issue which needs to be taken up in Puget's next planning cycle.

The most significant failing of Puget's 1992-93 Plan is that it contains no comparison of different resource strategies modelled over the same forecast assumptions to compare resource costs and overall revenue requirements. The only cost information provided in the Plan is the average levelized cost of new resources, about 55 mills. This is a serious problem with Puget's Plan. A least cost plan which does not demonstrate that the selected resource strategy is lower in cost than other possible resource strategies is incomplete.

Another problem with Puget's scenario analyses is that they do not present information necessary to evaluate alternative resource strategies. For instance, the company did not quantify the environmental effects of its resource selection. How many tons of air pollutants will be emitted? How many tons of emissions were saved by selecting the chosen strategy over an alternative?

Finally, the Plan's scenario analyses did not contain results from sensitivity analyses. Sensitivity analyses are important sources of information about the amount of risk the company faces. Puget identified several sources of risk in the Planning Issues section of the Plan, but did not use sensitivity runs to help quantify those risks in terms of dollars added to twenty-year revenue requirements. How much risk is involved with natural gas prices? How much do revenue requirements increase with a given increase in gas prices?

There are numerous questions raised in evaluating the Plan which cannot be answered because the company failed to model different resource strategies over the same load assumptions to identify changes in overall revenue requirements. How much risk is associated with load fluctuations from year to year? How much did it cost ratepayers when Puget selected DSM, renewables, and high-efficiency cogeneration as its resource priorities? How much benefit resulted in terms of lower environmental damage and less risk? What happens to revenue requirements if a carbon tax is imposed sometime during the planning horizon? How much does it cost to mitigate this risk?

Public Counsel believes that Puget's resource strategies are conceptually sound, and probably are low-cost. However, the lack of basic information in the Plan makes it impossible to verify that Puget has appropriately considered the effects of various risks and uncertainties, and has adopted a resource strategy that is a least cost response to a variety of possible futures. In its next planning cycle Puget must adequately address these shortcomings. The company must make full use of its modelling capabilities and perform adequate scenario analyses which demonstrate that its chosen resource additions are indeed least cost.

VII. FUTURE ISSUES

Puget's Plan identified many difficult issues which the company will address in coming years. Included are further regulatory changes, environmental externalities, Mid-Columbia salmon, transmission and distribution constraints, fuel switching, rate design changes, and planning for peak loads.

In this Plan Puget calls for further regulatory changes to support implementation of least cost plans. Specifically, the company wants incentives to encourage the acquisition of renewable resources, the inclusion of company-owned resources in annual PRAM rate adjustments, and the addition of cost-of-capital adjustments in annual PRAM proceedings. Also, the company expresses concern that as it acquires additional DSM resources its financing flexibility and its bond ratings may suffer, though the company has not offered any solutions to these perceived difficulties. While Public Counsel is eager to address true regulatory barriers to least cost planning, and is willing to meet and discuss these issues with Puget, our office does not believe more incentives or further additions to PRAM are appropriate at this time. We believe that the company is currently enjoying a substantial reduction in risk at ratepayer expense under PRAM as it now exists. The assumption of more risk from shareholders on the part of ratepayers would not be an appropriate change to regulation, nor does our office believe these changes would offer more support for least cost planning efforts.

In this Plan Puget states that it will continue to monitor the progress of efforts to quantify and monetize environmental externalities, though it does support the use of externalities in regulation. The company states that "An arbitrary assignment of costs would introduce further uncertainty into the resource planning process, possibly distorting the relative attractiveness of resources" (p. 46). The company's substitute for accurate quantification of externalities is a 10% price credit for renewables and DSM, and a "preference" for high-efficiency cogeneration. While this is not the place for a full discussion of the externalities issue, it must be noted that a 10% price credit is a truly "arbitrary" value, and that <u>not</u> explicitly including the environmental effects of resources in the planning process is a true "distortion" of the relative attractiveness of resources. Public Counsel believes that the company's position on externalities is logically inconsistent and not defensible.

Our office believes Puget should be doing more to assess the impacts of environmental issues on its system. The company needs to better prepare for system impacts of potential events such as a carbon tax, or other states adopting externality policies which affect secondary and exchange markets or the cost of marginal resources. Even though the company is clearly opposed to explicit accounting for environmental effects in resource planning, it needs

to do a better job of identifying, measuring, and preparing for potential developments in this area.

The issue of salmon survival in the Mid-Columbia hydro system represents the largest potential impact on Puget's system. Public Counsel believes Puget should take a prudent, proactive role in addressing the salmon issue before endangered runs become extinct and more threatened runs become endangered. Cooperation with other users of the Columbia system is imperative to solving these critical problems. The longer solutions are delayed, the greater short- and long-term impacts on Puget ratepayers are likely to be.

Puget's ability to expand and upgrade transmission and distribution facilities is important to making efficient use of power markets and generating resources. Constraints on the development and/or use of transmission and distribution facilities could have significant impacts on costs as more expensive alternatives must be found to acquire and move power to customers. Public Counsel is encouraged that Puget is hosting public involvement panels and meetings, as it is important that the company attain public support for projects that are needed for the efficient and economic use of energy. Our office believes that the company's response to concerns about EMF has also been positive. Providing EMF measurement services and un-biased information to customers, continuing support of research and monitoring research results, and continuing to work with concerned customers in siting power lines and mitigating potential impacts are positive activities for the company to be taking. The company must avoid a heavy-handed approach to acquiring permits and rights-of-way for new projects. Public support is critical, but may be difficult for Puget to obtain. The company must continue to work cooperatively with the public and with local governments in order to gain support for needed projects.

Other issues the company has identified as needing further study and analysis include programmatic fuel switching to natural gas, the need for and value of peak power, and the potential for Direct Service Industries in Puget's service territory requesting service in the future. Public Counsel agrees with staff, which noted that the Collaborative has not committed to a position on programmatic fuel switching. This issue requires further analysis during the next two-year planning cycle to identify the potential for cost-effective fuel switching in Puget's service territory. Our office agrees with Puget that peak resource issues will require more and more attention, and that better information is needed in this area.

Rate design changes to facilitate Puget's least cost planning efforts are another important issue. Our office believes that some changes are needed in order to send correct economic signals to consumers. This is especially true of the industrial sector, in which a large portion of the DSM potential exists on Puget's system. Our office believes that rates for industrial customers are too low, especially considering the cost of marginal resources.

As a result these customers have little economic incentive to participate in Puget's DSM programs. Failure to acquire cost-effective DSM resources in the industrial sector will have an adverse effect on Puget's core customers when the company is forced to seek out more expensive resources.

VIII. ACTION PLAN

Staff noted in its May 26th comments that Puget's Action Plan was vague in stating its goals for the next two years. Public Counsel agrees with staff's assessment. The 1991 Plan had a more specific list of goals and actions to be taken than does this Plan.

IX. CONCLUSION

Public Counsel recommends that the Commission accept Puget Power's 1992-93 Least Cost Plan, while noting the deficiencies pointed out by Public Counsel and staff. The Plan raises some interesting and important planning and regulatory issues which the Commission and interested parties will undoubtedly hear more about during the next two years. Puget has made some impressive strides over the last two years in its DSM programs, and these also should be noted by the Commission. Public Counsel believes that the company is doing a good job planning for its future, with some notable exceptions which need to be addressed in the next planning cycle. Our office believes that the company is capable of making significant improvements in its next Plan, particularly in the area of resource and scenario analysis. Our office believes these improvements are vital to the success of Puget's coming planning cycle.