- BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH -

In the Matter of the Acknowledgment of PACIFICORP'S Integrated Resource Plan 2003	))))	DOCKET NO. 03-2035-01 REPORT AND ORDER

ISSUED: May 30, 2003

SYNOPSIS

The Integrated Resource Plan 2003 and Action Plan conform to applicable Standards and Guidelines and are therefore acknowledged.

By The Commission:

INTRODUCTION

On January 24, 2003, PacifiCorp, doing business in Utah as Utah Power & Light Company ("Company"), filed its seventh Integrated Resource Plan (IRP) as required by IRP Standards and Guidelines ("Guidelines") adopted in Docket No. 90-2035-01, *In the Matter of Analysis of an Integrated Resource Plan for PacifiCorp*, Report and Order issued June 18, 1992. Entitled Integrated Resource Plan 2003 ("IRP 2003"), the Report presents PacifiCorp's plan to supply and manage growing demand for electricity over the next 20 years. The report identifies as its least cost plan, investment in a diversified portfolio of power plants and power purchases, coupled with customer efficiency programs and direct-control load management. The type, timing and magnitude of resource additions is noted and an action plan is provided.

Based on its assumptions of plants retired, contracts expired and load growth, PacifiCorp identifies a deficiency between existing resources and peak system requirements plus a 15% planning margin that grows from 1,257 megawatts in 2004 to 4,116 megawatts in 2013.[1] Absent the 15% planning margin, there is a slight surplus of 59 megawatts in 2004 and the deficiency grows to 2,559 megawatts in 2013.

PacifiCorp identifies "Diversified Portfolio I" as its least cost plan to meet this deficiency. PacifiCorp bases this selection on its analysis of the present value of future revenue requirement, load growth uncertainty, fuel and market price volatility, firm transmission transfer capability, hydro variability, mitigation of environmental impact and lead time required for plant construction or bidding. To serve system-wide peak hour demand over the next ten years, cumulative additions in this portfolio range from 1,790 megawatts in 2004 to 6,602 megawatts in 2013: 4,715 megawatts from investment in long-term peaking, wind and base load power plant; 1,650 megawatts in short to intermediate-term power purchases; and 237 megawatts in demand side management through customer efficiency and direct-control load management programs. All additions in the near term come from firm power purchases of less than 5 years duration and demand side management. Long-term investments begin in 2006. By 2013, the additional resources are 50% conventional power plant (18% peaking, 32% base load)[2], 25% purchases of less than 5 years, 22% wind and 4% customer efficiency and direct-control load management.

---

[1] Chapter 2, page 33. These values are the difference between the Peak Hour Requirement plus 15% planning margin and existing capacity values shown in Figure 2.2.

[2] PacifiCorp notes that these resources may be built by themselves or acquired through a long-term firm power purchase agreement.

By fuel type, the conventional power plant is 41% natural gas and 9% coal. Specifically, the portfolio requires the following additional investments or purchases to serve expected growth in system-wide peak hour demand:[3] 1) 1,000 MW of short-term[4] power purchases each year; 2) 1,025 megawatts of intermediate-term[5] power purchases; 3) 237 megawatts of demand side management through customer efficiency and direct-control load management programs; 4) 350 megawatts of short to intermediate-term power purchases; 5) 1,160 megawatts of peaking power plant; 6) 1,420 megawatts of wind power; and, 7) 2,135 megawatts of base load power plant.

Under the Guidelines, we consider whether to "acknowledge" IRP 2003. Acknowledgment means IRP 2003 complies with regulatory requirements but conveys no sense of regulatory approval of Company resource acquisition decisions. Instead, integrated resource planning is an open, public process through which all relevant supply-side and demand-side resources, and the factors influencing choice among them, are investigated in the search for the optimal set of resources given the expected combination of costs, risks and uncertainty over the long-run to provide electric service to customers. Clearly, management retains responsibility for its decisions.

COMMENTS AND RECOMMENDATIONS OF THE PARTIES

On January 31, 2003, the Commission asked interested parties to submit written comments and recommendations on IRP 2003. The Division of Public Utilities ("Division"), the

---

[3] Appendix D, Table D.1.

[4] The Federal Energy Regulatory Commission (FERC) defines short-term firm as a contract of less than 1 year.

[5] The FERC defines intermediate-term firm as a contract of greater than 1 year and less than 5 years.

Committee of Consumer Services ("Committee"), the Utah Energy Office ("UEO"), the Land and Water Fund of the Rockies ("LAW Fund"), RES North America, LLC ("RES"), Desert Power, L.P., Salt Lake Community Action Program ("SLCAP"), Salt Lake City Corporation, ("SLC"), and the Utah Association of Energy Users ("UAE") responded. On May 9, 2003, PacifiCorp filed responsive comments.

All parties except for SLC and Desert Power explicitly recommend the Commission acknowledge the IRP and its Action Plan.[6] The recommendations are based upon Parties' determinations that the report and action plan generally adhere to Commission Guidelines. Nonetheless, parties raise issues that going forward must be considered as the Company implements its IRP and Action Plan. Comments are extensive, thoughtful and provide for varying degrees of support for the IRP and Action Plan. Parties comment on the public process, link to strategic business plan, portfolio composition, action plan path analysis and financial analysis. We recapitulate the salient points of these comments below.

Public Process

The responding parties commend PacifiCorp for its open, public process and for its efforts in considering participants concerns and responding as necessary. The use of video-conferencing and telephone access allowed many more Utah parties to participate directly in public input meetings. UAE additionally raises a concern with the use of confidential data and

---

[6] SLC does not make a recommendation on acknowledgment. Desert Power recommends against acknowledgment in its current form.

models. UAE recommends the Commission require that PacifiCorp allow regulators and interveners full access to the data, spreadsheets, and models used to generate the IRP.

Business Plan Link

Most parties commend the Company for preparing an IRP that is linked to its business plan. The Committee cites PacifiCorp's decision to move the IRP function from its Regulation Department to its Commercial and Trading Department as evidence of this link. This move integrates the resource procurement, trading and risk management functions. Further, the Committee applauds the renewed commitment by PacifiCorp management to acquire long-term resources to serve its regulated customers.   However, the Committee is also concerned that strategic business decisions continue to unduly influence the IRP. This is primarily with respect to Company focus on full cost recovery of existing resources and minimization of risk to shareholders in acquisition of new resources. While the Committee finds it reasonable for the Company to strive for full cost recovery, it is concerned that Company emphasis on risk avoidance may delay implementation of the IRP or narrow the options it is willing to examine in developing its portfolios and lead to selection of a sub-optimal resource portfolio.

Portfolio Composition

Primary focus of comments is on portfolio composition. Resource addition logic, modeling techniques and assumptions regarding demand side management, planning margin, market exposure, cost/risk tradeoff and carbon taxes, risk analysis, rate impact analysis, transmission capability, and proper development of a base case all affect the magnitude, type and timing of resource additions. Modeling techniques and assumptions are shown to drive the selection of resources and therefore affect the degree to which the plan is considered to be optimal. We next review comments on these “portfolio composition” issues.

Automated Resource Addition Logic

Parties recommend the Company adopt automatic resource addition logic in future IRPs. The Division notes that the IRP model lacks optimizing logic and thus, it cannot be shown that the IRP is least cost in the traditional sense. The Committee believes that the Company did a reasonable job developing alternative resource portfolios, but the manual method Pacificorp employed is time consuming and gives no assurance that the set of portfolios developed contains the least possible cost resource plan. The Committee recommends that the Commission require PacifiCorp to acquire and use automatic resource logic as part of its next IRP. PacifiCorp responds that automatic resource addition logic selection tools are under consideration as components of the next IRP model, subject to cost/benefit consideration.

Demand Side Management Modeling and Assumptions

UEO supports use of the decrement method for demand side management analysis, but faults the Company for not including in Diversified Portfolio I the commitment to secure the additional 150-300 average megawatts of demand side management from unidentified programs shown to be cost-effective. PacifiCorp responds that results from a Request for Proposal due to be issued prior to summer 2003 to achieve additional demand side management will provide information necessary to establish annual targets. It will include annual targets in its next IRP. The Division contends that the IRP test for modeling the appropriate level of DSM is not appropriate and may overstate cost-effective demand side management. PacifiCorp responds that it runs all of the cost-effectiveness tests when proposing or evaluating a program. Further it states that it is open to refinement of the decrement valuation of demand side management. Several parties also recommend inclusion of transmission and distribution avoided costs in the evaluation of cost-effective DSM. PacifiCorp argues that the value is too site specific. It feels that it would introduce imprudent modeling risk to include unknown cost savings. It intends to target new DSM programs to distribution substations and circuits where distribution value can be realized. Such value will be passed on to customers and included in the evaluation of program benefits. The Division recommends a local resource planning process to evaluate distribution investment, demand side alternatives, rate design, combined heat and power, and distributed generation along with supply and transmission investments as modeled in this current IRP. PacifiCorp responds that it is reviewing and preparing the scope of this resource review project and will talk to the Division soon.

Rate Impact and Load Growth

The Division does not accept the rate of peak load growth used in the IRP. It expects PacifiCorp to refine its estimates of peak load growth going forward as more demand side management measures are implemented. PacifiCorp responds that its long-term load forecast will continue to be updated as demand side management programs are successfully implemented. Desert Power indicates that the IRP does not provide enough information about the demand projections for the Commission to make an informed decision about the future resource requirement. PacifiCorp responds that it will provide more detail on load forecasting in the next IRP, particularly during the public input process. Several parties noted PacifiCorp needs to provide analysis of the effect on consumption of projected price increases due to IRP investments. Also, parties request greater detail regarding rate impacts. PacifiCorp responds that the risk model assumed a correlation between price and load which provides a representation of the price elasticity of demand. This assumption will be reviewed and updated if appropriate.

Wind Resource Modeling and Assumptions

Parties note the significant impact on resource additions from PacifiCorp's assignment of zero capacity value to wind resource additions. They note that a stress test which assumes a 15% capacity factor rather than zero for wind, reduces total resource additions by 400 MW. Further, parties are concerned that integration costs are too high, resulting in lower selection of wind. Parties note that an earlier online date for wind could produce valuable cost and performance data. Finally, parties find counterintuitive the results that an all renewable resource portfolio is more volatile than a fossil based portfolio. PacifiCorp agrees there is merit to further study of wind integration costs and capacity value, including a possible Loss of Load Probability Study. PacifiCorp also commits to earlier economic installation of wind resources pursuant to favorable results of its up-coming Request for Proposals. PacifiCorp explains that the reason the Renewable Portfolio has high volatility is due to the substantial amount of gas fired thermal resources added in that portfolio.

Planning Margin and 5% Limit on Market Exposure

UAE is concerned that the Company's assumed 15% planning margin is too high and results in 500-550 megawatts more resource by 2013 than would a planning margin of 10%. UAE states that PacifiCorp's 15% planning margin assumption coupled with its 5% limit on expected short term market exposure drives approximately 1,500 of 4,000 megawatts of projected new capacity requirements. UAE states that these assumptions may increase rate stability and mitigate upward market price risk but may come with a significant price tag.

The Committee, on the other hand, is concerned that the 5% limit on expected short term market exposure may be too high; at an extreme, it could represent half the summer high load hours on the east side of the system and could have severe financial consequences. The Committee recommends this criterion be examined especially in light of the use of average hydro conditions. The Committee is concerned that the 15% planning margin assumption, although reasonable, should not be imposed as an upper limit because such a limit may constrain the amount of base load capacity added in a given year prior to risk analysis and lead to a sub-optimal portfolio.

PacifiCorp responds that while 15% is a reasonable planning margin, it has in its action plan, an action item to determine the planning margin it will use if different from the 15%. Further analysis of the trade-off between more or less planning margin and operational stability / risk will be performed and changes provided in its October 2003 Action Plan Update filing.

Cost/Risk Tradeoff and Carbon Tax Assumptions

The Division, MSRP and the LAW Fund question the basis for selecting a portfolio with a coal plant in the early years. LAW Fund notes that the selection of the coal plant had more to do with its online date than its fuel type. Changing the online order of the coal and gas plants has a minimal cost impact. LAW Fund and MSRP recommend a delay in the coal plant online date to take advantage of better information regarding carbon taxes, Integrated

Gasification Combined Cycle (IGCC) technology and carbon sequestration possibilities in order to minimize ratepayer impact from potential carbon or other pollution taxes. The Division requests the Company make explicit the cost/risk tradeoff from selecting Diversified Portfolio I versus the alternative case which changed the order of the coal and gas plant online dates. PacifiCorp responds that it will include a risk analysis comparison of each variation of Diversified Portfolio I in the October 2003 Action Plan filing. Further it recognizes the benefits of IGCC and has recently joined an alliance to support President Bush's FutureGen Initiative, which seeks the creation of a near zero-emission power plant and hydrogen production facility with integrated carbon dioxide management.

Transmission

Parties voiced concern with the transmission modeling. Parties contend that PacifiCorp did not adequately evaluate transmission alternatives; i.e., incremental transmission additions, wheeling revenues, and alternative generation resources coupled with transmission. The Division requests that non-firm transmission be modeled. The Committee is concerned that the paradigm risk, especially to shareholders, associated with potential RTO West formation may have limited PacifiCorp's analysis and thus transmission was not considered in a consistent and comparable way to generation. The Division recommends that transmission-oriented portfolios be evaluated based on possible RTO West funding mechanisms. Desert Power states that the IRP does not adequately address the balance between transmission upgrades and resource additions. PacifiCorp responds that it considered large transmission upgrades that were considerably higher cost than other alternatives. It concurs that RTO rules could alter the way transmission is analyzed.

Risk Analysis

Parties commended PacifiCorp's risk analysis as vastly improved from prior IRP reports. The Division, however, requests further explanation from the Company of technical modeling details. PacifiCorp responds that it is currently engaged with Henwood (the risk model developer) to develop a response to the Division's requests. Further, the Company suggests a technical workshop to address questions and concerns with the model. UAE is concerned that decision criteria like the 5% market exposure and 15% planning margin, avoid too much risk at customer expense. PacifiCorp responds that it is an action item to study the 15% planning margin and 5% market exposure limit. SLCAP is concerned that reliance on market resources in the early years of deficiency is too risky a strategy.

Base Case

UAE indicated the need for a base case with only known and measurable changes in the assumptions. Assumptions that are speculative such as planning margin, carbon taxes and non-firm transmission availability, should be modeled in sensitivity analysis or other risk analysis. PacifiCorp agrees with the importance of a base case and is unclear how its base case differs. PacifiCorp will seek clarity during the next public input process.

Action Plan Path Analysis

The Division, Committee and UAE note the lack of a "decision mechanism" that will be used to select among different resources or modify the resource acquisition path. The

Committee defines Path Analysis as a process by which a utility company would evaluate the impact of a major change in assumptions mid-way through the study horizon. PacifiCorp responds that it will continue to work in a collaborative effort with public input meeting participants to improve this area in future IRP's. It anticipates that the 'decision mechanism' will adhere to the least cost / lowest risk dictim given prevailing conditions when a decision is made.

Financial Analysis

The Committee states that financial analysis is completely lacking in the IRP. The Committee defines financial analysis as the process of evaluating the financial impacts of a new resource expansion plan on the overall financial health of the utility. It states that present value of revenue requirement is useful for evaluating expansion plans that have both high and low capital costs but does not consider the utility's ability to finance and construct a capital-intensive resource plan. PacifiCorp responds that its financial position and capital expenditure projections are effected by regulatory and RFP processes and legislative developments. Further this financial position is updated quarterly and therefore is inappropriate to include in the filed IRP document.

CONCLUSION

Comments and recommendations received in response to our request are detailed and extensive. We are encouraged by the level of support for the IRP public input process. We concur that the IRP Report and Action Plan are generally consistent with our Guidelines. We direct the Company to take heed of the comments filed in this case as it proceeds in implementing its Action Plan and begins its next IRP. Specifically, with respect to the next IRP we direct the Company to develop a base case for analytical purposes, use automatic resource addition logic unless evaluation proves it to be unreasonable, evaluate transmission alternatives on a consistent and comparable basis with generation alternatives, include analysis of transmission upgrades and improve transmission analysis especially with respect to the RTO West paradigm, evaluate in greater detail the risk burden of alternative portfolios upon customers and shareholders. Finally, customer rate impact analysis should be included, greater detail on rate impact provided and impact on demand from rate change and rate design studied.

ORDER

NOW, THEREFORE, IT IS HEREBY ORDERED, that

1. The IRP 2003 Report and Action Plan are acknowledged.

DATED at Salt Lake City, Utah, this 30th day of May, 2003.

/s/ Stephen F. Mecham, Chairman

/s/ Constance B. White, Commissioner

/s/ Richard Campbell, Commissioner

Attest:

/s/ Julie Orchard
Commission Secretary
G#33923