

BEFORE THE PUBLIC SERVICE COMMISSION OF UTAH

In the Matter of the Application of)	Docket No. 04-035-_____
PACIFICORP for a Certificate of)	
Convenience and Necessity Authorizing)	DIRECT TESTIMONY OF
Construction of the Lake Side Power Project)		MELISSA A. SEYMOUR

MAY 2004

1 **Q. Please state your name, business address and position with PacifiCorp.**

2 A. My name is Melissa A. Seymour. My business address is 825 NE Multnomah, Portland, OR,
3 97232. I am currently the Manager of Planning and Financial Analysis for PacifiCorp.

4 **Q. Please describe your educational and professional experience.**

5 A. I have a Bachelor of Science in Engineering Science and Mechanics from the University of
6 Tennessee. Prior to my employment with PacifiCorp, I worked as an applications engineer
7 for Computational Systems, Inc. in Knoxville, TN and held various strategic planning and
8 analysis roles at Southern Company Energy Marketing and Georgia Natural Gas in Atlanta,
9 GA. I have been an employee of the Resource Planning department at PacifiCorp since July
10 2001.

11 **Q. What are your responsibilities in your current position at PacifiCorp?**

12 A. In my current role, I manage a team of analysts who formulate, execute and present analysis
13 in support of PacifiCorp's Integrated Resource Plan (IRP).

14 **Q. Have you previously appeared in any proceedings before the Utah Public Utility
15 Commission?**

16 A. Yes. I testified in Docket No. 03-035-29 (the certificate proceeding for the Currant Creek
17 project).

18 **Purpose of Testimony**

19 **Q. What is the purpose of your testimony?**

20 A. The purpose of my testimony is to discuss PacifiCorp's resource needs as identified in the
21 2003 Integrated Resource Plan (IRP), the update to the IRP, and the public process
22 surrounding both filings. My testimony will address the growing gap between PacifiCorp's
23 load and the resources available to serve it with an emphasis on the implications for the East

1 portion of PacifiCorp's system. Finally, my testimony will support the conclusion that there
2 is a need based on both the acknowledged IRP and updates to the IRP, and that the proposed
3 resource will assist in filling the need beginning in fiscal year ("FY") 2008 (April 2007 to
4 March 2008).

5 **Summary of the resource needs identified in the 2003 IRP**

6 **Q. Please describe the IRP and its purpose.**

7 A. PacifiCorp is obligated to file an integrated resource plan in five out of its six jurisdictions
8 every two years. Specific requirements of the plan vary in each state. However, each state
9 generally requires that the Company develop a report, through a rigorous public process,
10 summarizing PacifiCorp's load and resource balance as well as providing an outline of the
11 resource needs expected in the future. PacifiCorp's latest IRP was filed in January 2003.

12 **Q. What were the general findings of the IRP?**

13 A. The IRP found a need for substantial new resources, particularly in the East portion of
14 PacifiCorp's system. The East portion of the system includes loads, resources, and contracts
15 in Idaho, Utah and Wyoming. Alternatively stated, PacifiCorp has a gap between the load in
16 its service territories and the resources available to serve it. This gap grows through time.
17 Rising demand, particularly demand during peak hours, rather than needs during all hours,
18 principally drives increases in the gap. However, expiring supply contracts, declining
19 hydroelectric output, as well as thermal plant reductions also contribute. This gap widens to
20 ~ 4,000 MW by FY 2013 (April 2012 to March 2013).

21 **Q. Please describe Exhibit UP&L__(MAS-1).**

22 A. Exhibit UP&L__(MAS-1), originally presented in the IRP, provides an illustration of
23 PacifiCorp's peak system requirement with a 15 percent planning margin and the capacity of

1 PacifiCorp's existing resources in the future. The peak system requirement is defined as the
2 hour of the year when the loads plus long-term firm sales minus long-term firm purchases
3 result in the largest requirement of the system. The planning margin (15 percent above the
4 system peak requirement) is the target reserve level assumed in the IRP. The planning
5 margin target fell within the 12-18 percent range proposed under FERC's Standard Market
6 Design proposal. The margin is intended to provide sufficient future resources to meet
7 requirements in the event of unplanned outages and to meet WECC operating reserve
8 requirements and regulating margin (load following), as well as respond to unanticipated
9 levels of demand growth and weather-related events that vary from normal.

10 **Q. What can be concluded from this Exhibit?**

11 A. As shown in the Exhibit, PacifiCorp's system begins with a large resource deficit, 1,394 MW
12 in FY 2005 (April 2004 to March 2005). The deficit grows substantially over time,
13 ultimately exceeding 4,000 MW. The increasing deficit is the result of a growing peak
14 system requirement in conjunction with declining resources.

15 **Q. How does the resource deficit pertain to PacifiCorp's East System?**

16 A. The East portion of the system, in general, requires more physical resources to fulfill
17 PacifiCorp's obligation to serve load. Discussed at a number of the 22 public meetings
18 supporting the development of the IRP, transmission constraints distinguish the East system
19 from the West system. These constraints limit imports from other electrical systems and
20 create a need to buy or build additional regional capacity and/or upgrade the transmission
21 network to allow additional imports into the East. The East portion of the system also
22 contains the largest load-center in PacifiCorp's service territory. The difficulties of this
23 constrained, large-load center are compounded by a load-shaping problem because the peak

1 in the East is growing faster than the average load.

2 **Determining the size and timing of new resources to fill the “gap”**

3 **Q. Please describe the IRP process used for identifying the size and timing of resource**
4 **additions to fill PacifiCorp’s resource deficit.**

5 A. The IRP employed an analytical framework simulating the integration of new resource
6 alternatives with PacifiCorp’s existing generation and transmission assets. Explained
7 extensively in Chapter 4 and Appendix J of the acknowledged IRP, the approach compared
8 the cost, measured as present value of revenue requirements (PVRR), and performance (risk
9 and variability of PVRR) of various resource plans. The approach can generally be
10 summarized in the following five steps:

- 11 • *Portfolio Development:* The first step was the formulation of resource portfolios and the
12 selection of modeling assumptions. Formulating the portfolios requires specifying the types
13 and timing of resource additions such that anticipated loads are reliably served. Portfolios
14 were chosen to span a complete range of likely resource strategies. (Twenty-six of the
15 portfolios chosen for study are summarized in Appendix D of the IRP).
- 16 • *Operational Simulation:* Next, the operation of each portfolio was simulated. The simulation
17 develops a base or reference view of the future. In so doing, this step requires calculating the
18 operating costs of the integrated system (both the portfolio additions and the existing
19 resource system) and other performance characteristics under a representative set of
20 assumptions about the future.
- 21 • *Cost Analysis:* Each portfolio’s system operating costs were then combined with the
22 corresponding capital costs, yielding the PVRR, the main cost metric.
- 23 • *Screening:* The PVRR and other measures of a portfolio’s performance allow a screening of

1 portfolios, while highlighting those with the most promising performance (lower costs).
2 Focusing only on portfolios that survive this screening allows the risk analysis to be
3 performed on the most promising portfolios.

- 4 • *Risk Analysis & Stress Testing:* The risk analysis simulates the performance of a portfolio under
5 a large number of possible futures. The risk analysis also allows conclusions to be drawn
6 regarding each portfolio's sensitivities to assumptions about the future and assessments to be
7 made regarding the variability of a portfolio's cost (see Chapter 3 of the IRP for additional
8 information regarding the risk analysis).

9 The IRP's analytical approach was discussed extensively during the public
10 process and was a source of praise throughout comments to the filed IRP. The result of the
11 IRP approach was a least-cost, least-risk portfolio of resources – referred to as Diversified
12 Portfolio 1 (DP1).

13 **Findings of Need and the Action Plan**

14 **Q. Please summarize the Findings of Need and the resulting Action Plan identified in the**
15 **IRP.**

16 A. The IRP analysis in conjunction with input from the public process resulted in 9 specific
17 Findings of Need and 28 specific action items. The findings and actions are listed in Tables
18 9.1 and 9.2 of the I R P.

19 **Q. How do the findings and actions summarized in the IRP relate to PacifiCorp's recent**
20 **resource procurement activities?**

21 A. Among the Findings of Need, the IRP identified a need in the East portion of PacifiCorp's
22 system for approximately 570 MW of base load generation (Finding 2), 200 MW of peaking
23 resources (Finding 4) and a range of shaped/super-peaking products (Finding 6). These

1 findings in turn led to a series of actions to be implemented. Action Item 2 has been
2 reproduced from the IRP and shown in Exhibit UP&L__(MAS-2).

3 **Q. What steps has PacifiCorp taken to implement this action item?**

4 A. PacifiCorp issued a request for proposal (RFP) on June 6, 2003. The RFP, called RFP
5 2003A, solicited 995 MW of supply-side resources in three bid categories, as described
6 further in the testimony of Mr. Mark Tallman.

7 **Q. Was DSM considered as a possible solution to the Company's resource needs?**

8 A. DSM is an important part of the resource mix identified by the IRP. The IRP set an
9 aggressive goal of obtaining 450 MWa of cost-effective DSM and 90 MW of load control. In
10 the 2003 IRP Action Plan, 10 items were dedicated to increasing DSM resources to meet
11 customer needs. Three new DSM programs were launched in Utah during 2003, and an open
12 RFP was issued in June, 2003 asking for up to 100 MWa or more of new DSM resources.
13 To date, this DSM RFP has resulted in two new cost effective programs that will be
14 launched, subject to appropriate regulatory approvals, in FY 2005 (April 2004 to March
15 2005). They combine to achieve 5.9 MWa or 24.3 MW at peak (equals roughly 26.3 MW at
16 the generator) in Utah. In addition, there is a new load control program from this RFP that
17 will likely be launched, subject to appropriate regulatory approvals, in FY 2005 (April 2004
18 to March 2005).

19 **Q. At the conclusion of the RFP 2003 A and the DSM RFP, will PacifiCorp have procured
20 all of the resources needed to meet its obligation to serve load in its East system?**

21 A. No. The IRP Action Plan identified additional resource needs in its East system. These
22 needs are expected to be addressed in subsequent RFP's including the current renewable
23 resource RFP (RFP 2003B) which was issued on February 5, 2004. PacifiCorp expects to

1 issue a third Request for Proposals once results from RFP 2003A and RFP 2003B are
2 reviewed and a new load/resource balance is determined. PacifiCorp anticipates that it will
3 issue RFP 2004A in calendar year 2004 requesting additional resources to serve PacifiCorp's
4 growing load obligation. Based on the action item list contained in PacifiCorp's IRP, it is
5 currently expected that PacifiCorp will procure additional resources that can be delivered in
6 or to the East portion of PacifiCorp's service territory.

7 **Updates Since the 2003 IRP Filing**

8 **Q. Did PacifiCorp develop and file an update to the 2003 IRP?**

9 A. Yes. PacifiCorp recognizes that integrated resource planning is a continuous process rather
10 than a one-time or occasional event. The plan stated (pg. 152) that the IRP Action Plan “will
11 be implemented as described...but is subject to change as new information becomes
12 available or as circumstances change.” Also, the plan stated (pg. 152) that it is “PacifiCorp’s
13 intention to revisit and refresh the Action Plan no less frequently than annually.” PacifiCorp
14 submitted an update to the IRP as an informational filing with Commission in October 2003.

15 **Q. What information was refreshed in the IRP update and what was the affect of the** 16 **update on the need for new resources in the East?**

17 A. Since the IRP was filed in January 2003, PacifiCorp revised its long term load forecast. The
18 revised load forecast, in conjunction with updated inputs and assumptions, result in a
19 substantially larger load and resource gap for the East than that projected in the IRP.

20 As part of the IRP Update, PacifiCorp further analyzed the impact of transmission constraints
21 on the system. The evaluation of transmission constraints highlighted the importance of
22 having the ability to review transmission constrained areas of the system and analyze them in
23 more granularity. The Utah ‘Bubble’ was identified as a transmission-constrained area on

1 the PacifiCorp system where there is a risk of insufficient resource capacity to meet the
2 maximum firm capacity obligation. The Utah 'Bubble' is within the East portion of the
3 PacifiCorp system as is defined by loads, resources, and contracts in Southeast Idaho, Utah
4 and Southwest Wyoming.

5 Based on the updated load forecast and more detailed evaluation of the transmission
6 constraints, PacifiCorp is able to conclude that resource requirements in the East are
7 accelerated as compared with resources in the IRP's Diversified Portfolio 1 (DP1).
8 Determination of the total increase in new resource requirements will occur within the next
9 IRP cycle, which commenced in December 2003 and will conclude in late 2004 with a
10 revised IRP.

11 **Q. Was the Company's updated load forecast and deficiency calculation communicated**
12 **to the public participants in the IRP process?**

13 A. Yes. The Company committed to holding quarterly IRP Public Input Meetings to ensure the
14 public was informed of the Company's intent to move forward with improvements to the IRP
15 process, and to communicate and solicit feedback on changes or updates to inputs and
16 assumptions that were used in the 2003 IRP. The public process leading up to the October
17 IRP update filing involved three Quarterly Public Input Meetings and two Load Forecasting
18 Technical Workshops.

19 **Q. Please describe Exhibit UP&L__(MAS-3).**

20 A. Exhibit UP&L__(MAS-3) was originally presented at the September 30, 2003 public input
21 meeting, and compares the new forecast of loads in the Utah 'Bubble', mentioned in my
22 previous answer, with the corresponding resources and import capabilities into the Utah
23 'Bubble' through FY 2010 (April 2009 to March 2010).

1 The 'Net Position' line of the table isolates the portion of the Company's entire Load and
2 Resource Gap that can be attributed to the Utah 'Bubble'. The Utah 'Bubble' short position
3 begins at -1,049 MW and almost doubles by FY 2010 (April 2009 to March 2010). The
4 Exhibit underscores the size and urgency of new resource additions. The Exhibit also
5 demonstrates a need for a larger, more aggressive resource addition program than originally
6 forecast by the acknowledged IRP.

7 **Q. What unit outage assumption has been used in this proceeding?**

8 A. The Company uses an outage assumption based on two units out of service (550 MW).
9 Based on five years of historical information, 13.32 percent of the time there have been two
10 or more units out during the summer in the Utah 'Bubble' (Exhibit UP&L_(MAS-4)).
11 PacifiCorp therefore believes that it is a prudent planning assumption to plan for an outage of
12 this magnitude when looking at resource planning. This is the same assumption the
13 Company used in the Carrant Creek proceeding.

14 **Q. Have there been any changes to your net position since your IRP Update filing in**
15 **October?**

16 A. Yes. There are a number of transactions that have occurred since the IRP Update was filed in
17 October. For example, a certificate has been issued for the Carrant Creek plant and, as
18 mentioned earlier in my testimony, approximately 24 MW of cost-effective DSM is being
19 pursued at peak. There have also been additional shorter term transactions (1 – 3 years) and
20 a long term power purchase agreement to fill the resource deficit. These transactions are
21 discussed in more detail in Mr. Tallman's testimony.

22 **Q. What are the results of these new transactions on your net position?**

23 A. Exhibit UP&L_(MAS-5) is an updated version of Exhibit UP&L__(MAS-3) and reflects

1 transactions since the IRP Update filing in October, as well as the projected additions of
2 DSM and the proposed resource (Lake Side Power Project). The Exhibit demonstrates there
3 is still a need for a resource in FY 2008 (April 2007 to March 2008), and that the proposed
4 resource will assist in filling this need.

5 **Q. Does this conclude your direct testimony?**

6 A. Yes.