



1 **Q. Please state your name, business address and present position with**  
2 **PacifiCorp (the Company).**

3 A. My name is Gregory N. Duvall. My business address is 825 NE Multnomah St.,  
4 Suite 600, Portland, Oregon 97232. My present title is Director, Long Range  
5 Planning and Net Power Costs.

6 **Qualifications**

7 **Q. Briefly describe your educational and professional background.**

8 A. I received a degree in Mathematics from the University of Washington in 1976  
9 and a Master of Business Administration degree from University of Portland in  
10 1979. I was first employed by Pacific Power in 1976 and have held various  
11 positions in resource and transmission planning, regulation, resource acquisitions  
12 and trading. From 1997 through 2000 I lived in Australia where I managed the  
13 Energy Trading Department for Powercor, a PacifiCorp subsidiary at that time.  
14 After returning to Portland, I was involved in direct access issues in Oregon and  
15 was responsible for directing the analytical effort for the Multi-State Process  
16 (“MSP”). Currently, I direct the work of the integrated resource planning group,  
17 the load forecasting group, the market assessment group, and the net power cost  
18 group in the Company.

19 **Purpose of Testimony**

20 **Q. What is the purpose of your testimony in this proceeding?**

21 A. Along with Company witness Mr. Stefan A. Bird, I present documentation to  
22 demonstrate the prudence of PacifiCorp’s decision to acquire the Chehalis Power  
23 Generating Plant (“the Plant”) located in Chehalis, Washington. Specifically, as

1 the person responsible for the Company's economic analysis of the Plant  
2 acquisition, I explain how the results of that analysis demonstrate both the  
3 prudence of the acquisition and the fact that the Plant is now used and useful in  
4 Washington.

5 **PacifiCorp's Economic Analysis of the Plant**

6 **Q. Please identify the information, data, models and analyses used by the**  
7 **Company in evaluating whether to acquire the Plant.**

8 A. The Company used data and models from its 2007 integrated resource plan  
9 ("2007 IRP"), 2007 integrated resource plan update ("2007 IRP Update") and  
10 information regarding the Plant obtained from the previous owner in analyzing  
11 whether to acquire the Plant. The Company conducted due diligence with regard  
12 to the data provided by the previous owner and concluded that the data was  
13 reasonably reliable and consistent with expectations relative to other similar  
14 facilities. The Company analyzed this data using the system optimizer and  
15 planning and risk models, which are the same models used in performing analysis  
16 for the 2007 IRP.

17 **Q. Please describe how the Company evaluated the Plant acquisition.**

18 A. The Company compared the cost of acquiring the Plant in 2008 to the cost of  
19 acquiring generation resources in accordance with the 2007 IRP Update. To do  
20 this, the Company first ran the system optimizer model assuming the Plant was in  
21 service beginning on October 1, 2008. The results of this system optimizer model  
22 run showed the Plant displaces front office transactions prior to 2012 and  
23 displaces a combined cycle combustion turbine beginning in 2012. This new

1 portfolio was next analyzed using the planning and risk model through 2027. The  
2 present value revenue requirement of this new portfolio was then compared to the  
3 present value revenue requirement of the 2007 IRP Update using two estimates  
4 for the cost of the displaced combined cycle combustion turbine.

5 **Q. Please describe the assumptions used in the studies.**

6 A. The Company assumed the Plant was included in the resource portfolio beginning  
7 October 1, 2008, with availability after forced outages and maintenance of 92  
8 percent. The maximum capacity was determined monthly, based on average daily  
9 temperatures and ranges from 481<sup>1</sup> megawatt (“MW”) average in the summer to  
10 511 MW average in the winter. Wholesale electricity and natural gas prices were  
11 based on the Company’s December 31, 2007 official forward price curve. The  
12 analyses included capital cost recovery, fixed and variable operation and  
13 maintenance expense, start-up and shut-down costs, pipeline costs, sales tax and  
14 property tax.

15 **Q. What costs were assumed for the combined cycle combustion turbine that is**  
16 **displaced in 2012?**

17 A. The Company assumed the cost of a new combined cycle combustion turbine to  
18 be \$1,000 to \$1,150 per kilowatt in 2008 dollars. This assumption was based on a  
19 variety of factors. The primary factor was the results of the 2012 RFP, as  
20 described in the direct testimony of Mr. Bird. This assumption was also  
21 supported by the costs incurred by the Company in constructing other resources in  
22 recent years and costs included in studies performed by Standard & Poor’s and

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<sup>1</sup> The capacity contribution to the system coincident peak of the Plant was recently increased from 481 megawatts to 509 megawatts.

1 The Brattle Group, which are described in Mr. Bird's direct testimony.

2 **Q. What were the results of the analysis?**

3 A. The results of the analysis the Company performed are shown in Exhibit  
4 No.\_\_(GND-2). Exhibit No.\_\_(GND-2) shows the present value revenue  
5 requirement of the 2007 IRP Update compared to that of the 2007 IRP Update as  
6 modified to include the Plant commencing on October 1, 2008. Adding the Plant  
7 to the 2007 IRP Update reduces total variable costs by \$52.1 million over the  
8 study horizon. This reduction is driven by lower overall purchased power costs  
9 offset by increased fuel and wheeling expenses and a reduction in revenue from  
10 wholesale sales.

11 Exhibit No.\_\_(GND-2) also shows the overall benefit under two views of  
12 the cost of the new facility that is displaced in 2012 by the addition of the Plant in  
13 2008. If the cost of a new facility is assumed to be \$1,000 per kW, then the total  
14 benefit of adding the Plant to the Company's portfolio in 2008 is about \$142  
15 million. Assuming the cost of a new facility is \$1,150 per kW, the total benefit  
16 rises to \$197 million.

17 In summary, this analysis demonstrates that acquisition of the Plant  
18 reduced present value revenue requirement by about \$142 million to \$197 million.  
19 This analysis is conservative because it does not include the benefits of avoiding  
20 the risks associated with building a new plant including, slippages in permitting,  
21 capital cost escalation and overruns, unknown terms and conditions and slippage  
22 of construction schedules. The assumptions used in the study are contained in  
23 Confidential Exhibit No.\_\_(GND-3C) and the confidential detailed output from

1 the IRP models is provided in my workpapers.

2 **Q. Does the purchase of the Plant in 2008 versus waiting to acquire another**  
3 **resource in 2012 benefit the Company's customers?**

4 A. Yes. The Company's analysis shows that the Company's customers are better off  
5 through acquisition of the Plant now than acquisition of a similar resource in 2012  
6 based on market pricing and responses to the 2012 RFP.

7 **Q. How sensitive is the foregoing analysis to changes in the price of natural gas?**

8 A. Given the significant correlation between prices for natural gas and market prices  
9 for electricity, changes in the price of natural gas will have the same effect on the  
10 costs and benefits of any new generation resource with the characteristics of the  
11 Plant. The Company has less exposure to the volatile wholesale natural gas and  
12 electricity markets with the Plant than without the Plant. With the Plant, the  
13 Company is not exposed to either natural gas prices or electricity prices alone, but  
14 rather the Company relies on the ratio of electricity prices to natural gas prices,  
15 which is the implied spark spread, to determine the extent the Plant is economical  
16 to run. The volatility in the implied spark spread is far less than the volatility of  
17 either electricity or natural gas market prices due to the significant correlation of  
18 those two commodities. This correlation is due to natural gas-fired generation  
19 being the generation on the economic margin in the region. The Plant is  
20 anticipated to be economical to run a significant amount of time due to its low  
21 heat rate.

1 **Q. If the Company did not acquire the Plant, what alternatives were available to**  
2 **meet the Company's needs?**

3 A. As demonstrated by the 2007 IRP and the 2007 IRP Update, the Company needs  
4 to acquire substantial additional resources by 2012. The alternative to acquisition  
5 of the Plant was the addition of similar plants at higher costs or increased  
6 purchases of power on the market. The impact of these alternatives on the  
7 Company's revenue requirement would certainly be less favorable than  
8 acquisition of the Plant. This is demonstrated by the analysis in Exhibit  
9 No.\_\_(GND-2).

10 **Q. Is the Plant used and useful for Washington customers?**

11 A. Yes. The Plant is part of the west control area and is now providing low-cost  
12 power and ancillary services to meet the Company's Washington loads.  
13 Moreover, the Plant will ultimately replace four long-term purchase power  
14 agreements in the west control area that will expire between the summer of 2011  
15 and 2012. These four contracts currently provide 789 MW of capacity to the west  
16 control area and flexibility to provide operating reserves as well as follow changes  
17 in loads and wind generation. The largest of these, the 575 MW peak purchase  
18 contract with the Bonneville Power Administration, expires on July 31, 2011. The  
19 other three contracts are the Colockum Capacity Exchange (86 MW), the Rocky  
20 Reach purchased power contract (65 MW), and the Grant County Displacement  
21 purchased power contract (63 MW).

22 **Q. Is there a need for a new resource in the west control area?**

23 A. Yes. Table 9 in the Company's 2007 IRP Update identified a resource deficit in

1 the west control area of 575 MW in 2012 without the addition of the Plant. A  
2 copy of Table 9 is provided as Exhibit No.\_\_\_\_(GND-4).

3 **Q. Has the Company recently reassessed the need for resources?**

4 A. Yes. As part of its 2008 integrated resource planning process, the Company has  
5 recently reassessed the need for resources using a load forecast prepared on  
6 November 21, 2008. This forecast reflects the Company's most recent view of  
7 load growth as well as potential recessionary impacts on its loads.

8 **Q. Based on this new load forecast, what is the Company's current assessment  
9 of its resource need in 2012?**

10 A. The Company's current load and resource balance that includes the Plant in the  
11 existing portfolio is provided as Exhibit No.\_\_\_\_(GND-5) and shows a system  
12 need for 1,936 MW in 2012, which is nearly identical to the resource need  
13 identified in the 2007 IRP after the addition of the Plant. For the west control  
14 area, the deficit in 2012 even after the addition of the Plant is 415 MW.

15 **Q. The 2007 IRP Update indicates that the Company doesn't need resources in  
16 the west control area until 2012. Under these circumstances, why did you  
17 acquire the Plant in 2008?**

18 A. The Company acknowledges that the load and resource balance did not show an  
19 immediate need for new resources. However, the Plant was available on a time  
20 limited basis and the analysis identified economic benefits to customers that were  
21 compelling, both short- and long-term. The alternatives were to buy the Plant in  
22 2008 at a discount to market prices, or wait until 2012 and add a new resource at  
23 market prices. The Company's analysis accounts for the cost of purchasing the



1 plant in 2008 rather than buying a new plant in 2012 and shows that the  
2 Company's customers are better off through acquisition of the Plant now than  
3 acquisition of a similar resource in 2012 based on market pricing and responses to  
4 the 2012 RFP.

5 **Q. Your analysis is a system-wide analysis as opposed to a west control area**  
6 **analysis. Why is that?**

7 A. The Company plans, acquires and operates resources on a system basis consistent  
8 with the acknowledged 2007 IRP. Because the west control area has a need for  
9 new resources in 2012, and a reasonable alternative to meet this need is a CCCT  
10 based on market prices, the system-wide analysis is equally applicable to the west  
11 control area.

12 **Q. What do you conclude from the foregoing?**

13 A. The Company's analysis demonstrates that the Company's acquisition of the Plant  
14 was a prudent decision. The Plant provides immediate and lasting benefits to its  
15 Washington customers and is therefore used and useful. As such, I recommend  
16 that the Commission approve the Plant for inclusion in rate base as illustrated in  
17 the Exhibit No.\_\_(RBD-3) of Company witness Mr. R. Bryce Dalley.

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

19 A. Yes.