BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE INVESTIGATION OF INTER-JURISDICTIONAL ISSUES AFFECTING PACIFICORP DBA UTAH POWER & LIGHT CO.	)))))	CASE NO. PAC-E-02-3 SUPPLEMENTAL DIRECT TESTIMONY OF GREGORY N. DUVALL

JULY 2004

1 **Q. Mr. Duvall, did you previously file testimony in this proceeding?**

2 A. Yes. My Direct Testimony was part of the Company's original filing with the

3 Commission in September of 2003.

4 **Q. What is the purpose of your Supplemental Direct Testimony?**

5 A. The purpose of my Supplemental Direct Testimony is to describe various analyses

6 done by the Company since the September, 2003 Protocol filing, with particular

7 emphasis on studies related to the issue of whether relatively faster growing States

8 inappropriately shift costs to relatively slower growing States. I also sponsor

9 Exhibit No. 20, which is Appendix F to the Revised Protocol. That Appendix

10 provides details on the calculation of the Mid-Columbia (MC) allocation factor.

11 **Analyses**

12 **Q. Why did the Company continue to perform analyses of MSP issues**

13 **subsequent to the September, 2003 filing?**

14 A. As indicated by Ms. Kelly in her Supplemental Direct Testimony, it was evident

15 that few parties supported the Company's original Protocol proposal for a hydro

16 endowment matched with a "coal endowment". It was also evident that the hydro

17 endowment included in the Modified Accord, known as the fuel adjustment, was

18 no longer acceptable. This is discussed further in Mr. Taylor's Supplemental

19 Direct Testimony. Therefore, we needed to design and test an alternate means of

20 implementing a hydro endowment. The first such substitute tested was the "load

21 decrement method". Mr. Taylor's Supplemental Direct Testimony describes this

22 approach and explains why the Company's analyses of the load decrement

23 method indicated that it was not likely to be workable. The Company's analysis of

1 the fuel adjustment approach and the load decrement approach led us to develop
2 and conduct analyses of the "embedded cost differential method". These analyses
3 did not identify any apparent flaws in the embedded cost differential method and
4 it was, therefore, incorporated into the Revised Protocol.

5 **Q. In your Direct Testimony, you concluded that the "MSP Solution",**
6 **incorporated in the original Protocol, did not result in a "material" subsidy**
7 **flowing from slower-growing States to faster growing States. Why did you**
8 **continue to study the load growth issue after the September, 2003 Protocol**
9 **filing?**

10 A. For two reasons. First, Oregon parties were not convinced that the analyses done
11 before the September filing were adequate to resolve the load growth issue.
12 Second, the concept of "materiality" is somewhat subjective. Oregon parties
13 pointed out that what appears to be an apparently "small" cost shift, when
14 expressed as a percentage of existing rates, can nonetheless translate into a
15 significant impact when expressed in dollars. Because our September filing did
16 not resolve the load growth issue, parties in Oregon and Utah submitted a number
17 of additional data requests which gave rise to a number of additional studies.

18 **Q. Please describe the nature of these studies.**

19 A. Most of the studies assumed either a one-time increase in Utah loads or a
20 continuing pattern of higher Utah load growth which were matched with different
21 types of Resource additions. Additional similar studies were done assuming
22 higher Oregon load growth and corresponding Resource additions. Furthermore,
23 a study was done which attempted to quantify the cumulative impact of faster

1 Utah load growth over a 14-year period. This study (made in response to DPU 7.3
2 and OPUC 59 and 60), estimates and compares two different cost streams -- one
3 corresponding to low Utah load growth (equal to the average of the other States'
4 projected load growth) and one corresponding to the higher rate of Utah load
5 growth that is currently forecasted. For purposes of this study, the difference
6 between these cost streams is predictive of the impact on other States of the costs
7 of Utah's additional relative load growth.

8 **Q. What quantitative assumptions underlie these studies?**

9 A. Major assumptions are as follows:

10 1. All studies use the Company's 2003 load forecast.

11 2. Additional Resources are layered on top of underlying load growth and
12 planned IRP Resource additions.

13 3. All studies assume an underlying system peak Resource deficiency in the
14 early years and the addition of Resources that closely match the Diversified
15 Portfolio I from the Company's 2003 Integrated Resource Plan with two long-
16 term purchased power contracts removed from the west control area to reflect the
17 lower loads forecast for the west in the Company's 2003 load forecast.

18 4. Most of the studies assume that future wholesale gas and electricity prices
19 will follow the Company's forward price curves. Some of the studies were done
20 with a high natural gas/electricity price assumption.

21 **Q. Please summarize the results of these studies.**

22 A. Under a rolled-in allocation method, a faster-growing State supports both its
23 allocated share of any new Resource additions and a larger share of the

1 Company's existing costs. Correspondingly, slower growing States support their
2 allocated share of the cost of the New Resource addition, but a smaller share of
3 the Company's existing costs. In our studies, the sum of these two State revenue
4 requirement impacts is compared to the total revenue requirement impact of the
5 new Resource additions. If the total revenue requirement increase experienced by
6 a faster-growing State is equal to or greater than the total revenue requirement
7 impact of a new Resource, the faster growing State is deemed to be "supporting
8 the cost of its load growth" and not causing a cost shift to slower growing States.
9 When considered from this perspective, our studies suggest that under the
10 various approaches, a rolled-in allocation method, as embodied in the Revised
11 Protocol, results in the growth State supporting between 86 percent and 127
12 percent of the cost of its load growth.
13 **Q. Why do the percentages differ from study to study?**
14 A. It appears that principal drivers of the study outcomes are:
15 1. The greater the rate of growth of one State compared to other States, the
16 greater is the potential for cost shifts to slower growing States.
17 2. The higher the cost of new Resource additions compared to existing
18 Resources, the greater is the potential for cost shifts to slower growing States.
19 3. The better New Resource additions are matched to load patterns through
20 an effective IRP process, the lower is the potential for cost shifts to slower
21 growing States.

1 **Q. Do these study results suggest that parties should ignore the potential for**
2 **faster growing States shifting costs to slower growing States?**
3 A. No. The studies indicate that there is a potential for some shifting of costs. As a
4 general proposition, MSP participants seem to favor eliminating any potential cost
5 shift, as long as that could be done in a relatively simple and understandable way
6 without giving rise to other, undesirable unintended consequences.
7 **Q. Are there other mitigating factors to consider?**
8 A. Yes. When a State loses load unexpectedly, other states are automatically
9 allocated a greater share of the fixed and variable costs of all Resources. This
10 helps to mitigate the impact on the remaining customers in the State that loses
11 load who would otherwise bear a larger share of the fixed and variable costs.
12 In addition, the impact of Utah load growth is mitigated by the expected
13 Resource loss in western States. One of the underlying tenets of the Revised
14 Protocol is that all States bear a rolled-in share of resources that are acquired to
15 replace existing Resources. Existing Resources that will require replacement over
16 the next several years include expiring long-term wholesale contracts (primarily
17 on the west side of the system), plant retirements and the lost generation from
18 Hydro-Electric Resources and Mid-Columbia Contracts as a result of relicensing
19 and contract renegotiation. For the States that are recipients of the Hydro
20 Endowment, this means that other States are paying a share of the costs of
21 replacing resources from which the Hydro Endowment states have benefited.

1 **Q. Has an acceptable method of eliminating any potential for cost shifts been**
2 **identified?**
3 A. No. However, as indicated by Ms. Kelly, the Company and other parties have
4 committed to further discussions and analysis of potential additional allocation
5 mechanisms or structural changes that would better address the issue.
6 **Development of the MC Factor**
7 **Q. What is contained in Exhibit No. 20?**
8 A. Exhibit No. 20 is Appendix F to the Revised Protocol and contains a description
9 of the calculation of the MC factor as well as example calculations of the factor.
10 The MC factor is used in the Revised Protocol to allocate the Mid-Columbia
11 Adjustment among the States.
12 **Q. Why has the Company developed an MC factor?**
13 A. The Company performed an extensive review of the Mid-Columbia Contracts at
14 the request of the MSP participants. There are four contracts that were entered
15 into in the 1950's and 1960's, and three contracts that were entered into in 2001.
16 These latter three contracts are successor contracts to the two earlier contracts
17 with Grant County which provide the Company a share of the output of the Priest
18 Rapids and Wanapum dams. The Priest Rapids contract stated that the output was
19 for the benefit of Oregon customers and the Wanapum contract stated that the
20 output was for the benefit of Oregon and Washington customers. Based on this
21 language, the MC factor is developed as though the Priest Rapids energy is
22 assigned to Oregon and the Wanapum energy is assigned to Oregon and
23 Washington as described in Appendix F. The energy from the three successor

1 contracts is assigned to Oregon during the time subsequent to the expiration of the
2 Priest Rapids contract and prior to the expiration of the Wanapum contract. After
3 both contracts have expired, the energy from the successor contracts is split
4 between Oregon and Washington as described in Appendix F. In the MC factor,
5 the energy from the remaining two contracts, associated with the Rocky Reach
6 and Wells projects, is spread system-wide as these two contracts do not have
7 specific language identifying any particular State as the beneficiary of the output.
8 The MC factor is then calculated by dividing the energy assigned and allocated to
9 each State by the total energy from the Mid-Columbia Contracts. The Mid-
10 Columbia Adjustment is then made based on an allocated share of the costs of all
11 of the Mid-Columbia Contracts using the MC factor. This adjustment ensures
12 that no one State is burdened if the costs under one of the Mid-Columbia
13 Contracts diverge from the other contracts. This method ensures that all States
14 are afforded a share of the costs and benefits of the Mid-Columbia Contracts, with
15 Oregon and Washington receiving a larger share than would be the case of they
16 were treated as System Resources.
17 **Q. Does that conclude your Supplemental Direct Testimony?**
18 A. Yes.

Case No. PAC-E-02-3
Exhibit No. 20
Witness: Gregory N. Duvall

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

PACIFICORP

Exhibit Accompanying Supplemental Direct Testimony of Greg N. Duvall

Appendix F – Methodology for Determining Mid-C (MC) Factor

July 2004

Protocol Appendix F
Methodology for Determining Mid-C (MC) Factor

Energy for each Mid-C contract is allocated as follows to determine the MC factor.

- Priest Rapids energy is assigned 100% to Oregon.
- Rocky Reach energy is allocated on the SG factor.
- Wanapum energy is assigned to Oregon and Washington based upon each state's respective share of the SG factor.
  - Wanapum energy assigned to Oregon = Oregon SG / (total Oregon and Washington SG).
  - Wanapum energy assigned to Washington = Washington SG / (total Oregon and Washington SG).
- Wells energy is allocated on the SG factor.
- The Grant replacement contracts begin at the time the Priest Rapids contract terminates. The energy from these contracts is assigned to Oregon through October 31, 2009.
- Effective November 1, 2009, the date the Wanapum contract expires, the Grant replacement contract energy is divided into two pieces based on PacifiCorp's share of the nameplate of Priest Rapids and Wanapum as shown in the following calculation:

	Nameplate Capacity Mw	PacifiCorp's Share - %	PacifiCorp's Share of Nameplate - Mw	PacifiCorp's % share of nameplate
Priest Rapids	789	13.9%	110	41.35%
Wanapum	831	18.7%	155	58.65%
	1,620		265	100.00%

- The Priest Rapids portion of the Grant County replacement contracts is 41.35%. The energy associated with the Grant County replacement contracts for Priest Rapids is assigned 100% to Oregon.
- The Wanapum portion of the Grant County replacement contracts is 58.65%. The energy associated with the Grant County replacement contracts for Wanapum is assigned to Washington based on the ratio of the Washington SG factor to the sum of the Oregon and Washington SG factors. The remaining energy from the Wanapum portion is assigned to Oregon.

After all of the energy from the Mid-Columbia Contracts has been assigned or allocated to each State, then the MC factor is created by dividing each State's energy by the total energy associated with the Mid-Columbia Contracts. The MC factor is used to allocate the Mid-Columbia Contract embedded cost differential to each State.

Protocol Appendix F

Factors Used to Allocate Mid C Energy to Jurisdictions

2005 — Percent

Mid C Contracts	Priest Rapids 1/	Rocky Reach 2/	Wanapum 3/	Wells 4/	Priest Grant Replacement 5/	Wanapum Grant Replacement 5/
California		1.80%		1.80%		
Oregon	100.00%	28.86%	76.94%	28.86%	100.00%	76.94%
Washington		8.65%	23.06%	8.65%	0.00%	23.06%
Utah		41.93%		41.93%		
Idaho		5.85%		5.85%		
Wyoming		12.91%		12.91%		
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

2007 — Percent

Mid C Contracts	Priest Rapids 1/	Rocky Reach 2/	Wanapum 3/	Wells 4/	Priest Grant Replacement 5/	Wanapum Grant Replacement 5/
California		1.73%		1.73%		
Oregon	100.00%	27.56%	76.68%	27.56%	100.00%	76.68%
Washington		8.38%	23.32%	8.38%	0.00%	23.32%
Utah		44.13%		44.13%		
Idaho		5.59%		5.59%		
Wyoming		12.61%		12.61%		
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

2011 — Percent

Mid C Contracts	Priest Rapids 1/	Rocky Reach 2/	Wanapum 3/	Wells 4/	Priest Grant Replacement 5/	Wanapum Grant Replacement 5/
California		1.65%		1.65%		
Oregon	100.00%	26.13%	76.18%	26.13%	100.00%	76.18%
Washington		8.17%	23.82%	8.17%	0.00%	23.82%
Utah		46.96%		46.96%		
Idaho		5.20%		5.20%		
Wyoming		11.90%		11.90%		
	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%

Calculation of Mid C Factor

2005 — MWH

Mid C Contracts	Priest Rapids 1/	Rocky Reach 2/	Wanapum 3/	Wells 4/	Priest Grant Replacement 5/	Wanapum Grant Replacement 5/	Total Mid-C	MC Factor %
California		5,658		4,749			10,407	0.54%
Oregon	567,559	90,829	596,498	76,238	-	-	1,331,125	69.27%
Washington		27,222	178,772	22,849			228,842	11.91%
Utah		131,984		110,783			242,767	12.63%
Idaho		18,426		15,466			33,892	1.76%
Wyoming		40,636		34,108			74,744	3.89%
	567,559	314,754	775,270	264,193	-	-	1,921,777	100.00%

2007 — MWH

Mid C Contracts	Priest Rapids 1/	Rocky Reach 2/	Wanapum 3/	Wells 4/	Priest Grant Replacement 5/	Wanapum Grant Replacement 5/	Total Mid-C	MC Factor %
California		5,457		4,581			10,038	0.52%
Oregon	-	86,746	594,444	72,811	564,683	-	1,318,684	68.72%
Washington		26,388	180,826	22,149			229,363	11.95%
Utah		138,899		116,587			255,486	13.31%
Idaho		17,582		14,758			32,340	1.69%
Wyoming		39,682		33,308			72,990	3.80%
	-	314,754	775,270	264,193	564,683	-	1,918,900	100.00%

2011 — MWH

Mid C Contracts	Priest Rapids 1/	Rocky Reach 2/	Wanapum 3/	Wells 4/	Priest Grant Replacement 5/	Wanapum Grant Replacement 5/	Total Mid-C	MC Factor %
California		5,200		4,365			9,565	0.65%
Oregon	-	82,231	-	69,021	372,327	402,325	925,904	62.59%
Washington		25,708	-	21,579	-	125,776	173,064	11.70%
Utah		147,810		124,066			271,876	18.38%
Idaho		16,353		13,726			30,079	2.03%
Wyoming		37,452		31,436			68,887	4.66%
	-	314,754	-	264,193	372,327	528,101	1,479,375	100.00%

(1) Priest Rapids Power Sales Agreement with Grant County dated May 2, 1956
(2) Rocky Reach Power Sales Agreement with Chelan County dated November 14, 1957
(3) Wanapum Power Sales Agreement with Grant County dated June 22, 1959
(4) Wells Power Sales Agreement with Douglas County dated September 18, 1963
(5) Priest Rapids Project Product Sales Agreement with Grant County dated December 31, 2001
The Additional Product Sales Agreement with Grant County dated December 31, 2001
The Priest Rapids Reasonable Portion Power Sales Agreement with Grant County dated December 31, 2001