BEFORE THE WASHINGTON UTILITIES AND TRANSPORTATION

COMMISSION

Docket Nos. UE-060256

WUTC v. CASCADE

RESPONSE OF PUBLIC COUNSEL TO STAFF DATA REQUESTS

Request No:	52
Directed to:	Judith Krebs
Date Received:	August 21, 2006
Date Produced:	September 6, 2006
Prepared by:	Jim Lazar
Witnesses:	Jim Lazar

WUTC STAFF DATA REQUEST NO. 52

Re: Witness Jim Lazar

Referring to page 33 lines 6 to10 of Mr. Lazar's direct testimony, a reference is made to a 17-year-old statement by Mr. Richard Byers of Commission Staff, indicating that the residential space-heating load factor for a gas distribution company is only 20 percent and the load factor for the water heating customers is 90 percent. Please provide all load studies done by Mr. Lazar covering the test year in this proceeding that update Mr. Byers' statement. In addition, please indicate how this load factor information appears in the final design of Mr. Lazar's inverted block rates for Cascade Natural Gas Company.

RESPONSE:

Mr. Lazar has not updated Mr. Byers study.

Mr. Lazar is a member of the Northwest Power and Conservation Council's Regional Technical Forum (RTF), which advises the Council on energy efficiency issues. In that context, he has been involved in the valuation of space heating conservation measures, based upon the annual load factor and seasonal and diurnal load shape of space heating consumption. The RTF calculated space heating load factors for the Northwest which range from 13% relative to an extreme winter peak up to 27% for a normal winter peak, so these newer analyses are consistent with Mr. Byers study. Residential water heating load factor was measured at 38% relative to a normal winter peak, also consistent with Mr. Byers analysis. In addition, Mr. Lazar was involved in setting up Puget Sound Energy's methodology for valuing residential weatherization and residential water heating efficiency measures. Those programs relied on the RTF analysis, and WUTC

Staff had no objection to the use of the RTF data. The RTF analysis is attached as "WUTC 52 RTF Load Factors and Load Shape.xls"

Monthly Load Factor

End Use	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
ResCOOK	1.19	0.96	1.04	0.94	0.99	0.97	1.04	1.12	1.21	1.04	1.27	1.10
ResDRY	1.31	1.31	0.93	1.05	0.89	0.63	0.65	0.68	1.27	1.29	1.37	1.07
ResWASH	0.68	1.01	0.75	1.18	0.95	0.54	0.74	0.71	0.87	1.36	1.15	1.23
ResFRIG	0.98	1.10	1.02	1.06	1.08	1.07	1.01	1.00	1.10	1.08	1.04	1.05
ResFRZR	1.26	1.09	1.18	1.17	1.18	1.15	1.02	0.98	1.20	1.20	1.20	1.20
ResLIGHT	0.79	0.80	0.86	0.83	0.83	0.93	0.97		0.83	0.79	0.85	0.88
ResDHW	0.44	0.45	0.40	0.48	0.40	0.44	0.86	0.93	0.44	0.42	0.43	0.48
ResSpHtHP	0.52	0.42	0.38	0.27	0.26	0.48	0.59	0.75	0.49	0.22	0.42	0.56
ResSpHtFAF	0.49	0.42	0.33	0.27	0.21	0.31	0.76	0.55	0.29	0.25	0.42	0.58
ResSpHtBB	0.63	0.53	0.52	0.40	0.34	0.23	0.58	1.21	0.26	0.32	0.53	0.64
ResSHWX	0.55	0.46	0.41	0.31	0.28	0.30	0.63	0.65	0.28	0.29	0.46	0.57
ResSHNEW	0.58	0.49	0.41	0.35	0.28	0.32	0.60	0.75	0.43	0.22	0.51	0.64
ResCAC	12.00	12.00	12.00	1.87	3.09	0.08	0.50	0.58	0.28	2.29	12.00	12.00
ResOTHER	0.88	0.87	0.91	0.91	0.91	0.91	0.90	0.93	0.94	0.89	0.94	0.92
ResTTL	0.62	0.57	0.52	0.56	0.51	0.61	0.90	1.03	0.66	0.49	0.61	0.68
FLAT	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
IrrgAGR	12.0	12.0	0.3	0.6	0.6	0.8	0.9	0.7	0.6	0.5	0.3	12.0

End Use Load Factors

END-USE	Bulk Power System Extreme Winter Peak	Bulk Power System Winter Peak	Bulk Power System Summer Peak	Group Diversified Peak Load Factor
ResCOOK	**0.70**	**0.92**	**1.23**	**0.12**
ResDRY	**1.43**	**1.24**	**0.75**	**0.24**
ResWASH	**0.82**	**0.95**	**0.75**	**0.22**
ResFRIG	**1.12**	**1.15**	**0.90**	**0.66**
ResFRZR	**1.48**	**1.36**	**0.86**	**0.49**
ResLIGHT	**0.67**	**0.73**	**1.11**	**0.40**
ResDHW	**0.65**	**0.38**	**1.06**	**0.29**
ResSpHtHP	**0.13**	**0.25**	**1.23**	**0.16**
ResSpHtHPZ1	**0.13**	**0.25**	**1.23**	**0.16**
ResSpHtHPZ2	**0.13**	**0.25**	**1.23**	**0.16**
ResSpHtHPZ3	**0.13**	**0.25**	**1.23**	**0.16**
ResSpHtFAF	**0.18**	**0.22**	**2.08**	**0.19**
ResSpHtFAFZ1	**0.18**	**0.22**	**2.08**	**0.19**
ResSpHtFAFZ2	**0.18**	**0.22**	**2.08**	**0.19**
ResSpHtFAFZ3	**0.18**	**0.22**	**2.08**	**0.19**
ResSpHtBB	**0.18**	**0.27**	**8.93**	**0.24**
ResSpHtBBZ1	**0.18**	**0.27**	**8.93**	**0.24**
ResSpHtBBZ2	**0.18**	**0.27**	**8.93**	**0.24**
ResSpHtBBZ3	**0.18**	**0.27**	**8.93**	**0.24**
ResSHWX	**0.17**	**0.25**	**2.57**	**0.21**
ResSHNEW	**0.15**	**0.24**	**3.52**	**0.18**
ResWACZ1	**12.00**	**12.00**	**0.58**	**0.17**

ResWACZ2	12.00	12.00	0.58	0.17
ResWACZ3	12.00	12.00	0.58	0.17
ResWACPNW	12.00	12.00	0.58	0.17
ResCACZ1	12.00	12.00	0.58	0.17
ResCACZ2	12.00	12.00	0.58	0.17
ResCACZ3	12.00	12.00	0.58	0.17
ResCACPNW	12.00	12.00	0.58	0.17
ResOTHER	0.74	0.84	0.94	0.45
ResTTL	0.32	0.40	1.91	0.31
FLAT	1.00	1.00	1.00	1.00
SysLOAD	NA	NA	NA	0.51
VendContrl	NA	NA	NA	0.17
IrrgAGR	12.00	12.00	0.87	0.30
ExCOMM	NA	NA	NA	0.48
NewCOMM	NA	NA	NA	0.51
ComLight	NA	NA	NA	0.54
SIC20	NA	NA	NA	0.48
SIC24	NA	NA	NA	0.60
SIC26	NA	NA	NA	0.54
DSIAlum	NA	NA	NA	0.57

Load Factor (LF) - Ratio of average energy for the year (annual kWh/8760) to peak demand. Load factors are computed for each time period defined above. Load factors can be greater than 1.0 when the coincident demand for the time period is lower than the average yearly demand.

Coincident Factors				
END-USE	Bulk Power System Extreme Winter Peak	Bulk Power System Winter Peak	Bulk Power System Summer Peak	End Use Diversified Peak
ResCOOK	0.04	0.03	0.02	0.21
ResDRY	0.02	0.03	0.04	0.14
ResWASH	0.04	0.03	0.04	0.13
ResFRIG	0.28	0.27	0.35	0.47
ResFRZR	0.18	0.19	0.31	0.53
ResLIGHT	0.31	0.28	0.18	0.51
ResSpHtHP	0.66	0.36	0.07	0.56
ResSpHtHPZ1	0.66	0.36	0.07	0.56
ResSpHtHPZ2	0.66	0.36	0.07	0.56
ResSpHtHPZ3	0.66	0.36	0.07	0.56
ResSpHtFAF	0.48	0.37	0.04	0.43
ResSpHtFAFZ1	0.48	0.37	0.04	0.43
ResSpHtFAFZ2	0.48	0.37	0.04	0.43
ResSpHtFAFZ3	0.48	0.37	0.04	0.43
ResSpHtBB	0.70	0.47	0.01	0.54
ResSpHtBBZ1	0.70	0.47	0.01	0.54

ResSpHtBBZ2	0.70	0.47	0.01	0.54
ResSpHtBBZ3	0.70	0.47	0.01	0.54
ResSHWX	0.59	0.40	0.04	0.48
ResSHNEW	0.61	0.37	0.03	0.50
ResWACZ1	0.00	0.00	0.55	0.68
ResWACZ2	0.00	0.00	0.55	0.68
ResWACZ3	0.00	0.00	0.55	0.68
ResWACPNW	0.00	0.00	0.55	0.68
ResCACZ1	0.00	0.00	0.55	0.68
ResCACZ2	0.00	0.00	0.55	0.68
ResCACZ3	0.00	0.00	0.55	0.68
ResCACPNW	0.00	0.00	0.55	0.68
ResDHW	0.18	0.32	0.11	0.42
ResOTHER	0.22	0.20	0.18	0.37
ResTTL	0.51	0.41	0.09	0.54
FLAT	1.00	0.64	1.00	0.64
VendContrl	NA	0.00	NA	0.00
IrrgAGR	0.00	0.00	1.00	0.30
ExCOMM	NA	0.46	NA	NA
NewCOMM	NA	0.49	NA	NA
ComLight	NA	0.36	NA	NA
SIC20	NA	0.25	NA	NA
SIC24	NA	0.56	NA	NA
SIC26	NA	0.33	NA	NA
DSIAlum	NA	0.37	NA	NA
SysLOAD	NA	0.49	NA	NA

Coincident Factor (CF) - Ratio of maximum demand to the site non-coincident peak. A related measure is the diversity factor which is the reciprocal of the coincidence factor.