EXHIBIT NO. _____ (WAG-4)
DOCKET NO._____
2001 PSE INTERIM RATE CASE
WITNESS: WILLIAM A. GAINES

BEFORE THE
WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION

WASHINGTON UTILITIES AND TRANSPORTATION COMMISSION,

Complainant,

v.

PUGET SOUND ENERGY, INC.

Respondent.

EXHIBIT TO DIRECT TESTIMONY OF WILLIAM A. GAINES ON BEHALF OF PUGET SOUND ENERGY, INC.

PUGET SOUND ENERGY, INC.

DESCRIPTION OF USE OF AURORA TO DEVELOP PROJECTED NET POWER COSTS

The Company has projected its net power costs in the same manner as was done in its currently filed general rate case. PSE has used the Aurora model, which is a fundamentals based hourly production cost model – i.e., it relies upon factors such as supply, demand, and transportation that drive resource operations and prices in the electric power market. Aurora uses hourly demand and individual resource operating characteristics in a transmission constrained, chronological dispatch algorithm for the entire WSCC area. For modeling purposes, the WSCC is divided into thirteen areas and the economic dispatch for each area is determined based on the loads and resources in each area and its transmission interconnection capacity with other areas. Through balancing the economic dispatch among all of the areas, an hourly market clearing price is determined. A full description of the Aurora model is attached.

To adapt Aurora to produce projected net power costs for the PSE system, the Company and Aurora vendor EPIS have made the following extensions and database updates to the model:

1. Developed generation output data for Northwest hydroelectric projects for each of the 60 water-years of record based on the Northwest Power Pool Final 2000-2001 Regulation. Specific generation data was developed for each of the 5 Mid-Columbia hydroelectric projects from which the Company purchases power as well as the Company-owned hydroelectric projects.
2. Developed additional portfolio contract types to simulate the cost calculations of the non-utility generating (NUG) power purchase contracts.

3. Updated the Aurora WSCC database to include resources projected to come on-line through 2004.

4. Developed the data and databases to include the Company's load and resources as a specific "Portfolio" within the Oregon/Washington/North Idaho dispatch area. To define a Portfolio within Aurora it is necessary to: (a) identify the specific generating resources to be allocated to the Portfolio, (b) define the power purchase and sales contracts included in the Portfolio, and (c) provide forecasts of the monthly loads as well as the hourly shape of the loads for the Portfolio.

An important input to the Aurora model is the forecast of natural gas prices, since Aurora computes the market clearing price for power based upon the marginal generator in each hour of the dispatch simulation and that marginal generator is typically gas fueled. To project natural gas prices for the applicable period, the Company adopted the forward market prices for natural gas as of September 28, 2001. Of course, these forward market prices will vary during the course of this rate case (and afterward) and are one of the sources of variability in the Company's power costs.

In its recent general rate case filing, the Company is proposing that the Commission allow the Company to use the 60 years of available stream-flow data to project net power costs. However, the Company has used 40 years of available data in its projection of power costs in this proceeding, which is consistent with prior Commission orders. In that regard, the power costs in current rates were based on 40 years of available stream-flow data.