# NORTHWEST POWER POOL AREA
# ASSESSMENT OF RELIABILITY AND ADEQUACY
# 2005-2006 WINTER OPERATING CONDITIONS

September XX, 2005

## INTRODUCTION

The Northwest Power Pool (Power Pool) area is comprised of all or major portions of the states of Washington; Oregon; Idaho; Wyoming; Montana; Nevada; and, Utah; a small portion of Northern California; and, the Canadian provinces of British Columbia and Alberta. The Power Pool in collaboration with its members has conducted an assessment of reliability in response to questions raised regarding the ability of the Power Pool to meet the load requirements during the winter 2005-2006. Analyses indicate the Northwest region will be able to meet firm loads and required forced outage reserve for the 2005-2006 winter operations, assuming normal ambient temperature and normal weather conditions.

This assessment is valid for the Northwest Power Pool area as a whole; however, these overall results do not necessarily apply to all sub-areas (individual members, Control Areas, states, and or provinces) when assessed separately.

### Report Details

- Demand and Energy

  The Northwest Power Pool 2004-2005 coincidental winter peak of 55,407 MW occurred on January 5, 2005.

  During the time of the January 2005 peak the Power Pool weighted average temperature was 1° Fahrenheit above normal, which results in about 350 MW lower peak load. Therefore, the Power Pool weather adjusted coincidental winter peak is 55,757 MW or 99.6% of the original forecast.

  The 2005-2006 coincidental winter peak forecast for the Power Pool area of 57,500 MW is based on normal weather, reflects the prevailing economic climate, and has a 50% probability of not being exceeded. The Power Pool peak load forecast includes approximately 240 MW of interruptible demand capability and load management. The aggregate sum of the individual control areas' forecasts produces a higher forecast load because of the inability to account for the diversity of loads among the various control areas.

  Under normal weather conditions, the Power Pool Area does not anticipate depending on imports from external areas during winter peak demand periods.

- Resource Assessment

  Over 60% of the Power Pool resource capability is from hydro generation. In addition, generation is produced from conventional thermal plants and miscellaneous resources, such as non-utility owned gas-fired cogeneration.

  #### Hydro Capability

  Northwest power planning is done by sub-area. Idaho, Nevada, Wyoming, Utah, British Columbia and Alberta individually optimize their resources to their demand. The Coordinated System (Oregon, Washington and western Montana) coordinates the operation

of its hydro resources to serve its demand. The Coordinated System hydro operation is based on critical water planning assumptions (currently the 1936-1937 water years). Critical water in the Coordinated System equates to approximately 11,000 average megawatts of firm energy load carrying capability, when reservoirs start full. Under Average water year conditions, the additional non-firm energy available is approximately 3,000 average megawatts.

The Coordinated System hydro reservoirs refilled to approximately 93.8% of the energy content curve by July 31, 2005. The water "fueling" associated with hydro powered resources can be difficult to manage because there are several competing purposes including but not limited to: Current electric power generation, future (winter) electric power generation, flood control, biological opinion requirements resulting from the Endangered Species Act, as well as, special river operations for recreation, irrigation, navigation, and the refilling of the reservoirs each year. Any time precipitation levels are below normal, balancing these interests becomes even more difficult.

With the competition for the water, power operations for the 2005-2006 Winter must be effective and efficient. The goal is to manage all the competing requirements while refilling the reservoirs to the highest extent possible.

Sustainable Hydro Capability

Operators of the hydro facilities optimize the use of available water throughout the year while assuring all the competing purposes are evaluated. Although available capacity margin at time of peak can be calculated to be greater than 20%, this can be misleading. Since hydro can be limited due to conditions (either lack of water or imposed restrictions), the expected sustainable capacity must be determined before establishing a representative capacity margin. In other words, the firm energy load carrying capability (FELCC) is the amount of energy that the system may be called on to produce on a firm or guaranteed basis during actual operations. The FELCC is highly dependent upon the availability of water for hydro-electric generation.

The Power Pool has developed the expected sustainable capacity based on the aggregated information and estimates that the members have made with respect to their own hydro generation. Sustainable capacity is for periods at least greater than two-hours during daily peak periods assuming various conditions. This aggregated information yielded a reduction for sustained capability of approximately 7,000 MW. This reduction is more relative to the Northwest in the winter.

Thermal Generation

No thermal plant or fuel problems are anticipated. To the extent that existing thermal resources are not scheduled for maintenance, thermal and other resources should be available as needed during the winter peak.

- Planning Margin

The 2005-2006 Power Pool area generating capability is projected to be 80,400 MW, prior to adjusting for maintenance. In determining planning margin, one must further adjust both load and capability for a severe weather event. A severe weather event for the entire Power Pool area will add approximately 6,000 MW of load while at the same time reduce the capability by 7,000 MW. Accounting for the severe weather event yields a planning margin of approximately 15.6%.

- Transmission Assessment

  Constrained paths within the Power Pool area are known. Operating studies modeling these constraints have been performed and operating procedures have been developed to assure safe and reliable operations.

  The Northwest Operational Planning Study Group (NOPSG) coordinates seasonal inter-area transmission transfer capability studies. Daily studies to determine transfer capabilities during planned outage conditions are coordinated by the operators of the individual operating paths.

  During the winter period all major area transmission facilities are anticipated to be available.

- Reliability Coordinator

  The Reliability Coordinator (Pacific Northwest Security Coordinator {PNSC}) is responsible for monitoring, advising, and directing action when necessary, in order to preserve the reliability of transmission service between and within the interconnected systems of the Pacific Northwest control areas. Also, Coordination occurs between the PNSC and the two other Western Electricity Coordinating Council (WECC) Reliability Coordination Centers.

- Reserve Sharing

  Control areas within the Power Pool use a fully automated system of sharing resources, when requested, to meet the NERC Disturbance Control Standard for loss of generation in the Pool area. The system has the ability to automatically move generation over a 2-Province, 7-State area while taking into consideration transmission constraints within the area. This system assures adequate resources are available over a broad area; an adequate response is delivered within the prescribed time; and the impact of the disturbance to internal as well as neighboring systems is mitigated.

## MISCELLANEOUS ITEMS

During late 2000 and 2001 electricity demand decreased due to concerns surrounding the electricity crisis, large increase in electricity rates (retail and wholesale) and an economic slowdown. The Northwest Direct Service Industry (DSI), which are mostly aluminum smelters, electricity consumption dropped from just above 2,500 average megawatts in 2000 to less than 500 average megawatts in 2002. It is anticipated that the electricity consumption for the DSIs will remain relatively flat for the 2005-2006 winter season.

## STRATEGIC UNDERTAKINGS

- Adequacy Response Team

  The Northwest has developed an Adequacy Response Process whereby a team addresses the area's ability to avoid a power emergency by promoting regional coordination and communications. Essential pieces of that effort include timely analyses of the power situation and communication of that information to all parties including but not limited to utility officials, elected officials and the general public.

- Emergency Response Team (ERT)

  In the fall of 2000, the area developed an Emergency Response Process to address immediate power emergencies. The ERT remains in place and will be utilized in the event of an immediate emergency. The ERT would work with all parties in pursuing options to resolve the emergency including but not

limited to load curtailment and or imports of additional power from other areas outside of the Power Pool.

CONCLUSIONS

In view of the present overall power conditions, including the forecasted water condition, the area represented by the Power Pool is estimating that it will be able to meet firm loads including the required reserve. Should any resources be lost to the area beyond the required forced outage reserve margin and or loads are greater than expected as a result of extreme weather, the Power Pool area may have to look to alternatives, which may include emergency measures to meet obligations.