

APPENDIX - 6

STREAMLINE PROCEDURES FOR FORECASTING AOP STEP I LOADS AND RESOURCES, USE OF SAME AOP OPERATING CRITERIA, AND PREPARATION OF STEP II/III 30-YEAR STUDIES

The Entities completed the 2006-07, 2007-08, and 2008-09 Assured Operating Plans (AOP) and Determination of Downstream Power Benefits (DDPB) using the procedures defined in the October 2003 Principles and Procedures document (Traditional Procedure) plus the three Streamline Procedures described below.

The Streamline Procedures resolved problems with obtaining load and resource data, simplified and reduced efforts to prepare operating plans and calculate downstream power benefits, and produced essentially the same results as prior procedures. The Streamline Procedures are consistent with all Treaty requirements, including independent calculation of loads and resources, Steps I, II, and III critical period determinations of firm load carrying capability and critical rule curves, 30-year system regulation studies (US and Joint Optimum), and calculation of the Entitlement.

The Entities expect to use the first Streamline Procedure, "Forecasting Loads and Resources," in future AOP's. This procedure is consistent with the 2003 POP document, except for use of a generic thermal installation which will replace subsection 3.2.B(5) of the 2003 POP.

The second Streamline Procedure, "Multi-year Use of Same Operating Criteria for Canadian Storage," is consistent with Section 3.2.B of POP, and may be used in future studies if the Operating Committee agrees there is not a significant change in the Step I coordinated hydro model load shape, nonpower constraints, modified flows, or plant data compared to the prior AOP.

The third Streamline Procedure, "Monthly Hydro Energy Reshaping for Steps II and III 30-year System Regulation Studies," is consistent with Sections 2 and 3 of the 2003 POP document, and may be used in future AOP's if the Operating Committee agrees there are not significant changes in hydro system physical capability or the loads and thermal resources.

1. Forecasting Loads and Resources

- a) Use BPA's most current White Book forecast of Pacific Northwest (PNW) Area loads, exports, imports, exchanges, and miscellaneous resources. Exclude imports that are clearly thermal or flow-through transfers; and
- b) Add seasonal energy exchanges, to and from outside the region, that are similar to real-world exchanges. Balance these imports and exports on an equal annual average;
- c) Update miscellaneous resources (non-thermal or small non-utility resources) to the latest BPA forecast. These are mainly wind turbines but also include geo-thermal resources and non-utility hydro.
- d) Create a generic thermal installation (project) that replaces all individual existing and potential thermal projects that meet the PNW Area load, except for the Columbia

Generating Station (CGS) nuclear power project, and is sized as needed to balance the Step I average critical period loads and resources.

The annual shape of thermal maintenance and percent minimum required generation for the Generic Thermal Installation for the 07, 08, and 09 AOP's were based on the AOP06 without CGS. An individual forecast of the CGS nuclear project was retained for each AOP due to its large size and unusual two-year maintenance cycle with an outage every other year. Future studies may need to update the thermal resource annual shape and minimum generation.

Generic thermal installations have been used occasionally in past AOP's. There was no difference between the Streamline and Traditional Procedure for the AOP08 PNW Area firm load, but minor differences in imports and exports between the Streamline and Traditional Procedure resulted in a minor difference in the thermal installation size.

2. Multi-Year Use of Same Operating Criteria for Canadian Treaty Storage

The need for annual changes in AOP operating criteria has diminished in recent years because added seasonal exchanges (extra-regional imports and exports that balance on an annual basis), that reflect differences between AOP and actual hydro capability, have the effect of making the Step I regulated hydro load very similar to prior years. With no change in the Step I coordinated hydro model load shape, and no change in physical hydro system capability (e.g. irrigation depletions, installed capacity, and operating constraints), any new studies would produce the same results. For the 07, 08, and 09 AOP's, the Entities:

- a) Adjusted slightly the added seasonal exchanges so the Step I hydro loads were exactly the same; and
- b) Used the Joint Optimum 08 Step I system regulation study for all three AOP's.

Firm load carrying capability, rule curves, and other operating criteria are developed using Traditional Procedures for Step I critical period and 30-year system regulation studies.

3. Monthly Hydro Energy Reshaping for Steps II and III 30-year System Regulation Studies.

The energy entitlement is based on the difference between the Steps II and III 30-year average usable hydro energy, which varies from year to year mainly because of changes in loads and thermal resources. However, the total annual Steps II and III hydro energy varies little from year to year. The Entities have recognized that a simple reshaping procedure can accurately forecast the effect on usable hydro energy without running new Steps II and III system regulation studies.

For the 07 and 09 DDPB studies, the Entities used a spreadsheet calculation to reshape the monthly hydro energy from the 08 DDPB Steps II and III 30-year system regulation studies. The method borrows surpluses from future months to meet any deficits caused by changes to the hydro load; calculates adjusted surplus hydro energy; and then determines the average annual usable hydro energy and resulting Energy Entitlement using the normal Treaty method.