

VI. TREATY, AGREEMENTS, AND ACTIVITIES

A. COLUMBIA RIVER TREATY

The Columbia River Treaty between the United States and Canada, formally adopted on September 16, 1964, provided for the construction and operation of Mica, Arrow, and Duncan dams in Canada, and Libby Dam in the United States. Under the Treaty, each nation has designated an operating entity. The Canadian entity is British Columbia Hydro and Power Authority, while the United States entity consists jointly of the Bonneville Power Administration and the North Pacific Division, Corps of Engineers. The entities have, in turn, appointed representatives to two committees, the Operating Committee and Hydrometeorological Committee, which are charged with carrying out the operating arrangements necessary to implement the Treaty.

Each year, the Operating Committee meets bi-monthly to coordinate the details of the operation of the Treaty projects and to prepare plans for future year's operations. The committee prepared four reports which are issued each year. This year the reports were: "The Assured Operation Plan (AOP) for Operating Year 2001-2002"; "Determination of Downstream Benefits Resulting from Canadian Storage for Operating Year 2001-2002"; "Detailed Operating Plan for Operating Year 1996-1997"; and "Annual Report on Operation of Treaty Projects." The operating plans are based on system analysis studies conducted by the Operating Committee.

The Hydrometeorological Committee meets twice each year to coordinate the collection and exchange of hydromet and operational data between the entities, and to coordinate runoff volume forecasts and forecasting procedure development. Each year the Committee reviews their publication of the hydrometeorological stations used for treaty operational studies.

B. PACIFIC NORTHWEST COORDINATION AGREEMENT

Operation of system storage for power generation during the 1996-1997 operating year was governed by the

Pacific Northwest Coordination Agreement (PNCA). This is an agreement among the major generating utilities of the Pacific Northwest which provides for planned electric power operation during the operating year. The PNCA also provides for the use of Columbia River Treaty storage at downstream plants. Execution of the agreement began in August 1964 and will terminate on June 30, 2003.

The agreement provides for procedures for establishing system operating criteria for each succeeding operating year. The PNCA operating year begins on August 1 and concludes on July 31 of each year. Development of the annual operating plan begins in February and should be completed in September of every year. Studies made during the development of the annual operating plan determine the

- ! system firm load carrying capability (FLCC),
- ! energy exchanges,
- ! schedule of levels that each storage reservoir should follow in order to assure meeting FLCC,
- ! determine headwater benefits, and
- ! establishes rights and obligations of each party for use of stored water at headwater projects.

During realtime operations, studies are made at least twice monthly to update the system's operation and draft rights as they change with new streamflow forecasts. The semi-monthly performance of the Actual Energy Regulation (AER) meets system FLCC, recomputes the end-of-month storage level of each reservoir, and updates the rights and obligations of each party.

C. SYSTEM OPERATIONS REVIEW

Several studies, agreements, and activities have been undertaken in response to additional demands on Columbia River system operations for varied and often conflicting uses such as power production, flood control, navigation, recreation, fisheries, irrigation, and environmental quality. Of particular interest is the need to adjust system

operation to respond to the listing of salmon, steelhead and sturgeon species in the Columbia Basin under the Endangered Species Act (ESA). Three salmon species have been listed under ESA by the National Marine Fisheries Service (NMFS): the Snake River sockeye salmon (endangered listing of November 20, 1991), the Snake River fall chinook salmon (threatened listing of April 22, 1992), and the Snake River spring/summer chinook salmon (threaten listing of April 22, 1992 reclassified to endangered listing of August 18, 1994). The United States Fish and Wildlife Service (USFWS) listed the Kootenai River white sturgeon as an endangered species in September 1994.

Recently steelhead have been listed under ESA, but specific actions have not yet been defined to address recovery actions. The ESA listings for steelhead are the Upper Columbia River steelhead (endangered listing of October 17, 1997) and Snake River steelhead (threatened listing of October 17, 1997). The ESA listings were followed by numerous litigations, court findings, and agency studies, and agency decisions. The following briefly describes some of the major ongoing activities and key recent actions, all of which have, or will, influence the operation of Columbia River system.

The Columbia River System Operation Review (SOR) was a five year study undertaken as a joint effort of the Corps of Engineers, the Bureau of Reclamation, and the Bonneville Power Administration. The study focus was on the operation of 14 Federal Columbia River system hydropower projects. A main goal for this study was to develop a system operating strategy and regional forum for allowing interested parties, other than the Federal agencies, a long-term role in system planning. Another goal was to undertake the necessary studies to address the approaching expiration of the Pacific Northwest Coordination Agreement (PNCA) and the Canadian Entitlement Allocation Agreement (CEAA). The SOR provided the background studies for decisions on renewal of these agreements.

The continued decline of salmon runs in the Columbia basin surfaced the need to examine ways to improve survival of salmon and other species. Columbia River salmon and sturgeon survival evolved as the major focus of the SOR when certain Snake River salmon species and the Kootenai River white sturgeon were listed as endangered or threatened species under the ESA. With the ESA listings, the National Marine Fisheries Service (NMFS) became a key player in the SOR. The study not only served as a vehicle to examine possible changes in the operation of the Columbia system, but it also provided an

avenue to develop, evaluate, and implement recovery actions under ESA. The outcome of the report was an Environmental Impact Statement which covered the draft salmon and sturgeon recovery actions and the renewal of the regional power agreements.

The final EIS was published in November 1995 and consisted of a Main report and twenty technical appendices. The EIS covered four decision areas: (1) a long term system operation strategy for the Columbia-Snake system, (2) a process for involving regional interests in the review and recommendation process, (3) a renewal process for the regional power coordination process (Pacific Northwest Coordination Agreement), and (4) a course of action for the Canadian Entitlement Allocation Agreement. The final analysis evaluated in detail seven separate system operating strategies which included a wide range of possibilities; from operating the system to optimize power generation, to an operation that would severely reduce power generation to enhance salmon and sturgeon survival. The strategies that would most impact hydropower production included lowering several reservoirs to a natural river elevation, or operating the reservoirs to maximize flow augmentation during the downstream migration of salmon. The flow augmentation plans would drastically reduce the power pool storage and flexibility during the peak load winter months. The agencies' Preferred Alternative represented the operation of the 14 Federal dams as recommended by the National Marine Fisheries Service and the US Fish and Wildlife Service in their Biological Opinions to support the recovery of ESA listed species. On February 20, 1997 the Corps issued a Record of Decision (ROD) to implement the preferred alternative (the Reasonable and Prudent Alternative (RPA)) and to respond to the NMFS Biological Opinion.

D. CANADIAN ENTITLEMENT ALLOCATION EXTENSION

On April 29, 1997, five Canadian Entitlement Allocation Extension Agreement (CEAEA) were executed between the BPA and each of the five public utility district-owned dams on the mid-Columbia River. The five mid-Columbia projects are Priest Rapids, Wanapum, Wells, Rock Island and Rocky Reach. The CEAA was executed in 1964 and describes the distribution of power benefits gained in the United States from the Canadian storage provided by the Columbia River Treaty. The CEAEA will begin to replace the CEAA in 1998 when the first portion of the Canadian Entitlement is returned to Canada.

E. SYSTEM CONFIGURATION STUDY

The System Configuration Study (SCS) was initiated by the Corps of Engineers in 1991 to evaluate technical, environmental, and economic effects of potential modifications of Federal dams and reservoirs on the Snake and Columbia Rivers with the goal of improving survival rates for anadromous salmonides migrating down river.

Phase I completed in June 1995, was a reconnaissance level screening of 22 alternatives to improve passage, possible upstream water storage sites for augmentation flows, annual drawdowns of the four Lower Snake River projects and John Day, and collection facilities upstream of Lower Granite Dam. The study narrowed the list of options to be considered in greater detail to three possible drawdown options.

Phase II (Ongoing) has developed into a major program containing many separate and specific studies. The Lower Snake River Juvenile Salmon Migration

Feasibility Study was initiated in 1994 to evaluate the potential modifications to the four lower Snake River dams in order to increase the survival of juvenile salmon and steelhead that migrate through the project areas. An Interim Status Report issued in December 1996 reduced options for further study to: (1) Existing conditions as directed by the 1995 BiOp, (2) Removing sections or all of the four Snake River dams to permanently drain the reservoirs to operate as a natural river, and (3) System improvements including surface bypass collection, fish guidance improvements, turbine improvements, gas abatement measures, and possible operational changes (*ie*, augmentation and spill). The Corps is currently conducting the Feasibility Study to examine the biological, engineering, economic, and social effects associated with the three options and will recommend a course of action in a draft report and environmental impact statement in April 1999.



Shoshone Falls. Under typical June flows only the minimum required instream flows are passed over the falls and the remainder diverted by the diversion into the powerhouse below the falls (see the cover photo).



Archer Highway bridge across the Snake River between Ririe and Rexburg, Idaho.



Snake River flooding of private residence near Blackfoot, Idaho.