

VII. OPERATING PLAN FOR 1999-2000

Guidelines and Rule Curves Regulation under ESA

Each year the regulation of the Columbia River Basin reservoir system is unique in many details but similar in seasonal characteristics. While most of this annual report describes the unique features of the past year's operation, this chapter briefly describes the general operating plan for the coming water year for major reservoirs.

A. GUIDELINES AND RULE CURVES

Seasonal operational guidelines were established either on a permanent basis in preconstruction documents or were developed, based on studies of historical stream flows that were adjusted for current conditions. These guidelines for the major reservoirs are given in [Table 25](#). They were established on a continuing basis and are changed each year, while other guidelines are recomputed annually or seasonally to meet varying conditions. These operating guidelines, or "rule curves," give a schedule of reservoir elevations that are desirable and provide guidance in meeting project functions: to assure adequate space is available for flood control, to assure there is an adequate water supply to meet electric power demands by using storage and natural flow efficiently, and also to reasonably assure reservoir refill. The guidelines shown do not reflect special regulations under the ESA for fisheries.

The PNCA provides that prior to the start of each operating year (from August 1 through July 31), a reservoir operating and storage schedule be developed to provide the optimum firm energy load carrying capability (FELCC) for each reservoir in the coordinated system. System regulation studies are to define reservoir elevations as critical rule curves (CRC) on a monthly basis to ensure that adequate firm energy will be available from the coordinated system if there is a recurrence of any critical flow conditions.

Assured Refill Curves (ARC), consisting of monthly reservoir elevations, are also determined to limit reservoir drafts for secondary energy and guide the refill of reservoirs. These curves provide a high degree of assurance that a reservoir will refill by the end of the operating year. In some cases, refill target elevations are recomputed each month during the refill season based on the latest snowpack and precipitation measurements, and these are called variable energy content curves (VECC).

Each individual reservoir has several sets of curves. A listing of either monthly upper rule curve or flood control rule curve elevations, monthly critical rule curve elevations, and monthly base energy content curve elevations is given for some major reservoirs in [Table 26](#). The rule curves are based on the 1936-37 Water Year. The values in this table indicate a range of mid-month and month-end elevations which are used as a guide in regulating individual reservoirs, as well as the total reservoir system given a recurrence of the 1936-37 water condition. Obviously, operations must be flexible and deviations must be made from exact planned elevations to provide for changes in weather, inflows, load demands, plant outages, usual general seasonal considerations, and changing social priorities.

B. SPECIAL REGULATIONS UNDER ESA

Under the Endangered Species Act (ESA), two 1995 BiOps were prepared, one for the white sturgeon and the other for Snake River salmon. A 1998 Supplemental BiOp to the 1995 BiOps were prepared and addressed Upper Columbia River Steelhead flow objectives to be met at Priest Rapids Dam of 135 kcfs April 10 through June 30. Flow objectives for the lower Columbia River at McNary Dam and the Snake River at Lower Granite Dam were developed based on the forecasted runoff volume. Spring flow targets at McNary range from 220 to 260 kcfs, and the summer target is 200 kcfs. The Lower Granite spring flow objectives range from 85 to 100 kcfs and summer objectives from 50 to 55 kcfs.

Libby Dam will be operated on minimum flow or flood control in January through April to attempt to provide a 75% level of confidence of being on flood control on April 10. Libby will be operated to meet the Bonners Ferry

flow objectives in May through July as interpreted by the Action Agencies from the 1996 Draft Sturgeon Recovery Plan and as provided in the 1999 Bull Trout and Sturgeon Biological Assessment, page 90. The objectives are based upon the Libby, May 1, April-August forecast. Libby will not operate for sturgeon in the lowest 20% of the water years. Libby will be operated in July through August to attempt to meet the McNary flow objectives identified in the 1995 Salmon BiOp without violating the IJC order or the flood control requirements. Libby will draft no lower than 2439.0 ft. to meet the McNary flow objectives.

Hungry Horse Dam will be operated in January through April 10 to achieve a 75% level of confidence of reaching flood control on April 10. The project will operate on flood control the second half of April through June, refill to 3560.0 ft in July, and support McNary flow objectives in August. Hungry Horse may draft to 3550.0 ft by August 15, and to 3540.0 ft by August 31 to support McNary flow objectives.

Albeni Falls will operate to the three-year test operation intended to maintain the reservoir at 2055.0 ft. during the winter through April 29. The three-year test operation was to be completed in 1999, but was agreed to be extended for another year as of the time of the PNCA data submittal.

Grand Coulee will be operate in January through April 10 to achieve an 85% level of confidence of reaching flood control by April 10. The project will operate to flood control on April 15, Priest Rapids flow objectives from 1998 Steelhead BiOp and the McNary flow objectives the second half of April and May, on flood control in June, and for McNary flow objectives July through August. The Grand Coulee draft limits for McNary and Priest Rapids flow augmentation are 1280.0 ft except in July, where the draft limit is 1285.0 ft.

Dworshak will operate on minimum flow or flood control from September through March, and will support flow objectives at Lower Granite according to the 1995 BiOp the remainder of the year. The draft limit of the pool level for supporting the Lower Granite flow objectives is 1520.0 ft. The maximum outflow during flow augmentation is 14.0 kcfs, unless more is needed to meet the Lower Granite flow objective and provided that the necessary waivers for the total dissolved gas standards are received.