Upper Columbia Alternative Flood Control and Fish Operations

Record of Decision for Libby Dam Flood Control and Fish Operations
U.S. Army Corps of Engineers

Introduction

The U.S. Army Corps of Engineers (Corps) was authorized by Congress to construct, operate and maintain multiple use projects in the Columbia River Basin for such purposes as flood control, power generation, navigation, recreation, and fish and wildlife. This Record of Decision (ROD) documents the basis for the decision to adopt the preferred alternative for the operation of Libby Dam described in the Upper Columbia Alternative Flood Control and Fish Operations Final Environmental Impact Statement (UCEIS). Based on my review of the UCEIS (April 2006) and comments received from the public on this document, my selected plan is the preferred alternative, VARQ Flood Control[1] with fish flows up to powerhouse capacity plus 10,000 cubic feet per second (10 kcfs) (herein the "Selected Plan"[2]). The Selected Plan is consistent with statutory and regulatory requirements, including applicable environmental statutes and the Corps' treaty and trust responsibilities to the affected Native American Tribes; provides for the congressionally authorized uses of Libby Dam and the Federal Columbia River Power System (FCRPS); is an environmentally preferred alternative; and, is in the public interest.

Background

Libby Dam is one of 14 FCRPS projects that have altered the natural river hydrology of the Columbia River and some of its major tributaries. The FCRPS storage projects - Libby, Hungry Horse, Dworshak, Albeni Falls and Grand Coulee dams, store the spring snowmelt runoff to control floods and release water for multiple uses. Populations of threatened and endangered fish in the Columbia River basin are affected by the altered hydrograph.

In accordance with the Endangered Species Act (ESA), the Corps, the Bureau of Reclamation (Reclamation), and the Bonneville Power Administration (BPA) engaged in formal consultation on the effects of the operation of the FCRPS on anadromous and resident fish species listed as threatened or endangered. In Biological Opinions (BiOps) issued by the United States Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS), most recently the 2008 NMFS BiOp[3], on the effects of the operation of the FCRPS on species under their jurisdiction, recommendations to implement VARQ Flood Control and certain flow operations to benefit listed fish at Libby and Hungry Horse dams were included. Additionally, the Fish and

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[1] VARQ Flood Control is Variable Discharge with Q representing engineering shorthand for discharge.

[2] Also known as the preferred alternative "LVB" in the Final UCEIS, which allows for spill when reservoir and inflow conditions make this possible.

[3] Consultation on Remand for Operation of the Federal Columbia River Power System, 11 Bureau of Reclamation Projects in the Columbia Basin and ESA Section 10(a)(10(A) Permit for Juvenile Fish Transportation Program (Revised and reissued oursuant to court order, *NWF v. NMFS*, Civ. No. (CV 01-640-RE (D. Oregon). May 5, 2008.

Wildlife Program and the 2003 Mainstem Amendments issued by the Northwest Power and Conservation Council (NPCC) included a recommendation to adopt VARQ Flood Control Procedures.

Purpose and Need

In response to the recommendations in the BiOps, the Corps and Reclamation proceeded with evaluating alternative flood control operations at Libby and Hungry Horse (operated by the Bureau of Reclamation or Reclamation) and flow operations for the benefit of fish. To ensure these recommendations were consistent with the Corps' responsibilities under the National Environmental Policy Act (NEPA), the UCEIS evaluated a range of different flood control and fish flow operations "to provide reservoir and flow conditions at and below Libby and Hungry Horse dams for anadromous (mainstem Columbia River) and resident fish listed as threatened or endangered under the ESA consistent with authorized purposes, including maintaining the current level of flood control benefits."

Description of Alternatives

The Corps evaluated and considered a range of alternatives in an effort to select an alternative that was consistent with the stated purpose and need to provide reservoir and flow conditions at and below Libby and Hungry Horse dams for anadromous and resident fish listed as threatened or endangered under the ESA, consistent with authorized project purposes. Accordingly, the UCEIS evaluates flood control and fish operations alternatives, including those recommended in the applicable NMFS and USFWS BiOps.

It is important to note that several comments on the UCEIS recommended consideration of alternatives that address a broad array of actions that are components of the USFWS and/or NMFS BiOp Reasonable and Prudent Alternatives (RPAs). The UCEIS was not intended to, nor does it, address all actions recommended in the respective BiOps, as many are not germane to the UCEIS's purpose and need. The UCEIS evaluates the environmental and socio-economic effects of alternative flood control operations and improved flexibility to adopt varying Libby Dam release operations for the benefit of listed species.

The Corps evaluated and screened out from further consideration five alternatives because they: (1) were not consistent with the ESA recommendations for VARQ flood control and fish flows; (2) failed to meet Columbia River system or local flood control needs; (3) were outside the scope of the EIS; or, (4) were similar in scope, intent, and effects to other alternatives being considered in this EIS. Please refer to the UCEIS for additional information concerning a description of and the rationale for elimination of these alternatives.

Alternatives Considered in Detail

The Corps evaluated six alternatives in the EIS in detail, which are summarized in Table 1 and in the text below.

Table 1. Libby Dam summary of alternatives.

	Flood Control Method		Fish Flows Provided			
Alternatives	Standard FC	VARQ FC	Sturgeon up to ~25 kcfs	Sturgeon up to ~35 kcfs	Bull trout	Salmon
LS1	X		X		X	X
LV1		X	X		X	X
LS2	X			X	X	X
LV2		X		X	X	X
LSB	X		X[a]	up to 25% of years	X	X
LVB (selected plan)		X	X[a]	up to 50% of years	X	X

a. Sturgeon flows provided based on tiers in 2006 USFWS BiOp. Depending upon reservoir elevation, reservoir inflow, and/or water temperatures, releases may vary from 25 kcfs to 35 kcfs. Duration of the release would also vary year to year.

Standard flood control with fish flows up to powerhouse capacity (Alternative LS1, the No Action Alternative): This alternative consists of Standard Flood Control with sturgeon, bull trout, and salmon/steelhead flow augmentation. Sturgeon flow augmentation is consistent with recommended tiered sturgeon volumes and other operational objectives included in the 2006 USFWS BiOp using a maximum Libby Dam release rate up to the existing powerhouse capacity (about 25 kcfs).

VARQ flood control with fish flows up to powerhouse capacity (Alternative LV1): As of 2003, Alternative LV1 was the interim operation for Libby Dam consisting of VARQ Flood Control with sturgeon, bull trout, and salmon/steelhead flow augmentation. Sturgeon flow augmentation is consistent with recommended tiered sturgeon volumes and other operational objectives included in the 2006 USFWS BiOp using a maximum Libby Dam release rate up to the existing powerhouse capacity (about 25 kcfs).

Standard flood control with fish flows up to powerhouse capacity plus 10 kcfs (Alternative LS2): Alternative LS2 is the same as Alternative LS1, except that sturgeon flow augmentation would be consistent with recommended sturgeon volumes and other operational objectives included in the 2006 USFWS BiOp using a maximum Libby Dam release rate at some level up to 10,000 cfs above the approximately 25,000-cfs powerhouse capacity. LS2 does not identify a specific mechanism to achieve the 10 kcfs of additional flow and presumes that the additional 10 kcfs of flow would be provided for all sturgeon flow augmentation events except when limited to avoid exceeding flood stage of 1,764 feet at Bonners Ferry, Idaho.

VARQ flood control with fish flows up to powerhouse capacity plus 10 kcfs (Alternative LV2): Alternative LV2 would utilize VARQ Flood Control and would have the same fish flow augmentation as LS2

Standard flood control with fish flows up to powerhouse capacity plus 10 kcfs, using spill when reservoir and inflow conditions make this possible (Alternative LSB): Alternative LSB consists of Standard Flood Control with sturgeon, bull trout, and salmon flow augmentation, which includes spill as the mechanism for providing up to 10 kcfs above powerhouse capacity when conditions allow.

VARQ Flood Control with fish flows up to powerhouse capacity plus 10 kcfs, using spill when reservoir and inflow conditions make this possible (Alternative LVB): Alternative LVB is similar to LSB, but with VARQ Flood Control rather than Standard Flood Control.

Environmentally Preferred Alternatives

In 40 CFR §1505.2 CEQ requires that, in cases requiring EISs, an alternative or alternatives that are considered environmentally preferable should be identified. In identifying the environmentally preferred alternative, the Corps considered biological benefits, particularly those related to assisting in the recovery of ESA listed species, while also taking into account potential negative environmental impacts.

The Corps identifies two alternatives considered environmentally preferred alternatives based on the analysis in the UCEIS: VARQ Flood Control with fish flows up to powerhouse capacity (Alternative LV1), and VARQ Flood Control with fish flows up to powerhouse capacity plus spill up to 10 kcfs, when reservoir and inflow conditions are sufficient (Alternative LVB). Factors the Corps considered in evaluating environmentally preferred alternatives included the impacts these alternatives would have on Kootenai River white sturgeon and bull trout and their habitats, anadromous fish species in the Columbia River, other resident fish, and water quality.

VARQ Flood Control with fish flows to powerhouse capacity plus up to 10 kcfs (Alternative LVB) is most closely aligned with the recommendations in the applicable USFWS and NMFS BiOps and provides the greatest potential operational flexibility for providing a range of flows from Libby to achieve specific habitat attributes expected to benefit the endangered Kootenai River white sturgeon, as well as provide flow augmentation for listed anadromous fish in the Columbia River, and avoid adverse modification of critical habitat for these species. The Libby Dam releases evaluated in this alternative have the potential to result in elevated total dissolved gas (TDG) levels above the Montana water quality standard for sturgeon operations. While this impact is undesireable for other resident fish species below Libby Dam, the short-term effect has been analyzed by the USFWS and was found acceptable in the 2006 USFWS BiOp Incidental Take Statement.

The other environmentally preferred alternative, VARQ Flood Control with fish flows up to powerhouse capacity (Alternative LV1), provides somewhat less flexibility to tailor Libby Dam operations to achieve sturgeon habitat attributes. While this alternative does not include voluntary spill for fish flows, it has higher potential to result in involuntary spill for flood control purposes.

Rationale for the Selected Plan

In reviewing the best available information with regard to each alternative, the Corps determined that the Selected Plan, Alternative LVB, best satisfies the UCEIS purpose and need for Libby Dam operations based on the following considerations:

- The Selected Plan is consistent with the congressionally authorized project uses, existing treaties and the International Joint Commission Order of 1938 for operation of Kootenay Lake.

- The Selected Plan is consistent with the Corps' Tribal Treaty and Trust responsibilities.

- The Selected Plan is consistent with the Corps' ESA responsibilities.

- The Selected Plan is consistent with the Corps' responsibilities under the Northwest Power Act.

- The Selected Plan is one of the environmentally preferred alternatives, and includes provisions to minimize impacts to the environment.

Authorized Uses

The Corps has reviewed its authorities concerning implementation of the Selected Plan and determined that the operation of Libby Dam under the Selected Plan is consistent with its authorizing legislation.[4] The VARQ Flood Control Procedures and fish flow operations maintain the current level of flood control benefits in the Kootenai(y) and Columbia River basins. For instance, to the extent possible, flow releases from Libby Dam are managed to avoid exceeding channel capacity in the Libby/Troy, Montana area, and to avoid exceeding flood stage of elevation 1764 feet msl (mean sea level) at Bonners Ferry, Idaho. Additionally, the Selected Plan does not impair the Corps' ability to operate Libby Dam and the FCRPS to meet the other authorized project purposes, including hydropower, fish and wildlife, recreation, navigation, irrigation, water supply, and water quality.

Implementation of the Selected Plan requires continuing coordination between the U.S. and Canadian Entities to resolve power, flood control, and non-power issues pursuant to the Columbia River Treaty. In accordance with the Columbia River Treaty (Treaty) between the United States and Canada, the Corps' Division Engineer and the Administrator of BPA are designated as the U.S. Entity, and have responsibility for coordinating the planning and operation of the FCRPS with the Canadian Entity. To the extent possible, the Corps works through the Entities to coordinate changes in operations such as those identified in the Selected Plan.

Pursuant to the Treaty, an agreement was developed to address operational changes at Libby Dam for listed species. The Libby Coordination Agreement (LCA) sets forth the implementing procedures for the Entities continuing cooperation on coordination of the operation of Libby Dam for listed species with the operation of hydroelectric plants on the Kootenay River in Canada. The U.S. Entity will continue to provide annual updates to the Canadian Entity on the expected operation of Libby Dam including power, flood control, and other non-power requirements.

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[4] Congress authorized Libby Dam to provide purposes that include hydropower generation, flood control, navigation, fish, and wildlife, and recreation.

The Selected Plan is consistent with the 1938 International Joint Commission Order. The 1938 Order addresses Kootenay Lake elevations, 140 miles downstream from Libby Dam in Canada, and can constrain the operation of Libby Dam, particularly in January through March. If the level of Kootenay Lake is above the elevation specified in the 1938 Order, releases from Libby Dam should not exceed the natural inflow to the reservoir behind Libby Dam during this period. The Corps coordinates Libby Dam operations with BC Hydro and Fortis BC when Kootenay Lake is above the elevations stipulated in the 1938 Order.

Tribal Treaty and Trust Responsibilities

The Selected Plan advances the Corps' Tribal Treaty and Trust responsibilities to Columbia Basin Native American Tribes.

The United States government recognizes the sovereign status of Native American Tribes and reserved rights of Native American Tribes as documented in treaties and other agreements among the United States and the Tribes. Treaties between the U.S. government and some Columbia Basin Tribes document agreements reached and the federal government has a trust responsibility to protect the tribal rights under these treaties.

Presidential executive orders were also used to recognize reservation of land and rights for other Columbia River Basin Tribes, and the federal government has extended rights to these executive order tribes as well.

The government's trust responsibility is an obligation under which federal officials consult with Tribes on management and use of resources, such as preserving and maintaining the trust asset. In carrying out its fiduciary duty, it is the Corps' responsibility to ensure that Indian treaty and other reserved rights are given full effect.

The Corps will act in accordance with the Executive Order on Consultation and Coordination with Indian Tribal Governments. In formulating and implementing activities that have Tribal implications, the Corps will consult with the affected tribes.

In the process of scoping the UCEIS, development and review of the studies supporting the UCEIS, and review and preparation of the draft and final UCEIS, the Corps, with cooperation from Reclamation, coordinated and sought input from the Kootenai Tribe of Idaho (KTOI), the Confederated Salish-Kootenai Tribes of the Flathead Reservation, the Coeur d'Alene Tribe, the Kalispel Tribe, the Spokane Tribe, the Confederated Tribes of the Colville Reservation (Colville Tribe), and other tribes and tribal organizations (i.e., the Upper Columbia United Tribes, Columbia River Intertribal Fish Commission) within the Columbia River Basin.

The Selected Plan improves reliability of providing flows for tribal fisheries throughout the region, including Kootenai River white sturgeon, bull trout, burbot, and other resident fish species as well as salmon and steelhead in the Columbia River.

Impacts to trust and cultural resources were carefully considered in the adoption of the Selected Plan. The Selected Plan will have fewer impacts to cultural resources along the shoreline of Lake Koocanusa, in comparison to the Standard Flood Control alternatives, since these resources will more likely be submerged during a greater portion of the year and therefore less vulnerable to vandalism. While the Selected Plan (in concert with a VARQ Flood Control operation at Hungry Horse Dam in Montana) will contribute to slightly lower elevations for Lake Roosevelt in the late winter/early spring, which could increase human exposure to contaminated lake bed sediments and exposure of cultural resources, the likelihood of increase negative impacts to environmental or human health, or cultural resources is expected to be minor when compared to present conditions. Reclamation and the Corps will continue to coordinate with the Colville Tribe concerning those potential impacts to cultural resources.

Endangered Species Act Responsibilities

The Selected Plan fulfills key operational elements of the Corps responsibilities under ESA for Libby Dam. In particular, it is consistent with the recommendations for VARQ Flood Control in both the 2006 USFWS BiOp RPA and the 2008 NMFS BiOp RPA concluding no-jeopardy.

Consideration of the NPCC Fish and Wildlife Program Mainstem Amendments

The Selected Plan is consistent with Libby Dam VARQ Flood Control operations and Libby summer drafts recommended in the Northwest Power and Conservation Council's Fish and Wildlife Program Mainstem Amendments.

Environmentally Preferred Alternative and Actions to Minimize Environmental Effects

The Selected Plan provides the greatest potential operational flexibility for providing a range of flows from Libby to achieve specific habitat attributes expected to benefit the endangered Kootenai River white sturgeon and their critical habitat, as well as flow augmentation for listed anadromous fish in the Columbia River. The Corps recognizes that the range of releases up to 10 kcfs above powerhouses capacity to benefit listed sturgeon can result in TDG levels exceeding the Montana state water quality standard. The Selected Plan includes coordination with the State of Montana and other regional interests to ensure releases for sturgeon above powerhouse capacity are biologically meaningful and consistent with applicable laws and regulations.

Description of the Selected Plan

The Selected Plan adopts the VARQ Flood Control Procedures, which were developed to provide similar system and local flood control protection as the procedures previously used, called Standard Flood Control. The VARQ Flood Control Procedures enable the Corps to more reliably store water to supply a range of flows for fish in the spring and summer while also better ensuring higher reservoir levels in the summer.

The Selected Plan for Libby Dam consists of:

- Variable Discharge (or VARQ, with Q representing engineering shorthand for discharge) Flood Control;
- Fish Operations including:
  - Flow operations for Kootenai River white sturgeon ranging up to 10,000 cubic feet per second (10 kcfs) above powerhouse capacity, approximately 25 kcfs;
  - Certain minimum flow thresholds for Kootenai River bull trout; and,
  - Flow augmentation for Columbia River salmon and steelhead;
- Regional Coordination;
- Monitoring and Adaptive Management.

VARQ Flood Control

During the draft (winter) season in the majority of years for the months of April through August, VARQ Flood Control provides less flood storage space in Libby Dam's reservoir, Lake Koocanusa, than does the previous Standard Flood Control operation. During reservoir refill (spring), VARQ Flood Control varies water releases from Libby based on the current April-August water supply forecast (updated monthly), the actual reservoir elevation, and the estimated duration of the flood control season. The adjustment in water releases during refill effectively compensate for the reduced wintertime reservoir draft. To ensure that system flood control in the Columbia River is maintained, the flood control draft at Grand Coulee Dam is adjusted to compensate for less draft at Libby in years with near-average water supply forecasts.

In years with greater than about 120% of average water supply forecasts for April-August, VARQ Flood Control Procedures result in reservoir elevations at the beginning of the refill period that are the same as Standard Flood Control.

The Corps will implement the Selected Plan in adherence with the VARQ Flood Control Procedures and plans to continue operating Libby Dam, to the extent practicable, to avoid exceeding Kootenai River flood stage elevation 1764 feet msl, as measured at Bonners Ferry, Idaho. The Corps acknowledges that in any given year there is a risk of high water events, including flooding and spill, when operating in accordance with any flood control procedure.

Fish Operations

Under the Selected Plan, a range of operations at Libby Dam may be implemented to accommodate recommendations to provide flows for the benefit of Kootenai River white sturgeon, bull trout in the Kootenai River, and various populations of salmon and steelhead in the mainstem Columbia River.

Under the Selected Plan, Libby Dam is operated to provide tiered volumes of water (typically during the period from May through early July) based on the April-August water supply forecast for sturgeon spawning and early life stages. Releases for sturgeon may range up to full powerhouse release capacity (about 25 kcfs), and with suitable reservoir conditions, the project may release up to 10 kcfs via the dam spillway (for a total water release of up to about 35 kcfs).

Because spill of more than about 2 kcfs will elevate the TDG saturation levels above the State of Montana's water quality standard of 110%, the Corps will continue to work with the state and other regional entities in order to implement an operation to ensure releases for fish above powerhouse capacity are biologically meaningful and consistent with applicable laws and regulations.

Under the Selected Plan, Libby Dam operations will allow for minimum flows for bull trout as recommended in the USFWS 2006 BiOp.

The Selected Plan also allows for a range of flow operations for listed salmon and steelhead, and is consistent with provisions in the NMFS 2008 BiOp and NPCC Mainstem Amendments.

Regional Coordination

The Corps will continue working with regional sovereign partners to develop and coordinate Libby Dam operations each year. In so doing, the Corps will ensure the region is aware of the multiple and complex factors and risks that are considered when making operational decisions to meet all statutory and regulatory responsibilities. The U.S. Entity will continue to coordinate with the Canadian Entity through the Columbia River Treaty Operating Committee process. Regular meetings with the Kootenai Valley Resource Initiative, based in Bonners Ferry, Idaho, will allow stakeholder input concerning Libby Dam operations. The annual public meeting concerning planned Libby operations will continue providing the public with a forum to hear from Corps managers and provide input for consideration by the Corps.

The Corps will continue to utilize the NMFS Regional Forum process, the Technical Management Team (TMT) and the Implementation Team (IT), to coordinate implementation of real-time operations.

Unforeseen project emergencies, drought, power or transmission system reliability concerns, floods, or other natural disasters can occur and may require modifications in Libby Dam operations. Operational actions including powerhouse operations, spill, reservoir fill or draft goals, and other actions may be modified or curtailed if necessary for flood control, or to maintain power system reliability, or sufficiency, or for other emergencies. To the extent possible, modifications will be coordinated with the region before they are undertaken and normal operations will be restored as soon as possible once the emergency has passed.

Monitoring and Adaptive Management

The Corps will make operating decisions for Libby Dam using the latest information through out each year. Records of flows, temperatures, reservoir levels and river stages are routinely kept by the Corps and are used in a variety of processes. While there is no monitoring specifically addressed in the UCEIS, the Corps routinely monitors the current snow pack and river conditions, weather and water supply forecasts, river water quality (TDG and temperature), fish movement, and other factors to inform decision making and to document and report on performance and effectiveness of measures implemented for ESA compliance.

In partnership with BPA and the Corps, there are ongoing efforts by the USFWS, the KTOI, the States of Montana and Idaho, and the members of the Kootenai River White Sturgeon Recovery Team to assess the relationship of the monitoring results with Libby Dam operations and other ecosystem factors, and to adaptively manage operations and other ecosystem recovery actions.

Environmental Compliance Documentation

The recommendation to evaluate VARQ Flood Control was derived from USFWS and NMFS BiOps as well as the NPCC's Fish and Wildlife Program and its Amendments. There are a number of laws and regulations, which the Corps must consider in making its decisions. When making the decision concerning the adoption of the Selected Plan, the Corps reviewed its compliance with applicable laws in the Final UCEIS. These include, but are not limited to:

- Archaeological Resources Protection Act
- National Historic Preservation Act
- Native American Graves Protection and Repatriation Act
- Clean Air Act
- Federal Water Pollution Control Act (Clean Water Act).
- Endangered Species Act
- Fish and Wildlife Coordination Act
- National Environmental Policy Act
- Pacific Northwest Electric Power Planning and Conservation Act
- Migratory Bird Treaty Act
- Magnuson Fishery Conservation and Management Act
- Wild and Scenic Rivers Act
- River and Harbors Acts
- Executive Orders and Council on Environmental Quality (CEQ) Guidelines and Memorandum
- Other Federal, State, and Local Plans and Laws

The following addresses certain Acts in which the Corps determined discussion was warranted.

Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act)

Under the Northwest Power Act, the Corps is required to exercise its responsibilities for operating the FCRPS in a manner that provides equitable treatment for fish and wildlife with other purposes for which the Corps facilities are operated and managed; and, to take into consideration in its decision-making the Northwest Power and Conservation Council's (NPCC) Fish and Wildlife Program and Mainstem Amendments to the fullest extent possible.

The Mainstem Amendments recommend the adoption of VARQ Flood Control Procedures and the Libby Dam summer operations that consist of stable or flat flows extending into September with a 10-foot draft limit in most years. The Corps proposed these operations in a Biological Assessment submitted to NMFS and the 2008 NMFS BiOp includes a recommendation to

operate Libby Dam in the summer as described in the Mainstem Amendments. The Libby Dam summer operation is different from that analyzed in the UCEIS for the Selected Plan, which includes a 20-foot draft limit by the end of August. However, the summer operations recommended in the Mainstem Amendments for Libby Dam are within the normal range of operations and within the range of impacts analyzed in the UCEIS or in other NEPA documents.

National Environmental Policy Act

With the finalization of the UCEIS, the Corps has comprehensively evaluated the environmental and socio-economic effects associated with long-term implementation of VARQ Flood Control Procedures and a range of fish flows up to 10,000 cfs above powerhouse capacity, including use of spill (up to 35,000 cfs total release) from Libby Dam. Other NEPA documents relevant to Libby Dam operations include the Libby Dam and Lake Koocanusa EIS dated January 1972[5]; the Columbia River System Operation Review EIS (SOR EIS) completed with the issuance of a Record of Decision (ROD) in 1996; the Upper Columbia Alternative Flood Control and Fish Operations Interim Implementation at Libby and Hungry Horse Dams Final Environmental Assessment dated December 2002; and, the Libby Dam Spill Test Final Environmental Assessment dated June 2002.

The analysis of UCEIS alternatives addressed specific elements of ESA BiOp recommendations such as habitat attributes, sturgeon tiered volumes, and temperature ranges that may change based on the best available science or new information over the course of time. The extensive analyses contained in the UCEIS are expected to be broad enough to support operational adjustments at Libby Dam to address the needs of listed species; therefore, the Corps does not anticipate issuing RODs on an annual basis to address adjustments in FCRPS operations as a result of adaptive management. If new information develops that calls for significant operational adjustments with associated environmental impacts that have not yet been analyzed, additional NEPA compliance will ensue as appropriate.

The Corps, in coordination with the region, has expended considerable effort in developing alternatives that will assist in the recovery of listed fish species, while meeting the Corps' obligations for local and system flood control, and hydropower production. The effects of implementation of the Selected Plan have been documented in the UCEIS, and to the extent possible, measures currently available to minimize or avoid adverse impacts are being pursued. The following summarizes several of the impacts.

- Increased water releases during the spring and summer will tend to increase the likelihood of high river stages up to flood stage at various flood damage areas. This effect tends to increase adverse impacts due to shoreline/levee erosion, agricultural

[5] As well as the Libby Reregulating Dam At-Site Power EIS (July 1973); the Libby Dam and Lake Koocanusa EIS Supplement I – Libby Dam Additional Units and LAURD (January 1976); Libby Dam and Lake Koocanusa EIS Supplement II – Libby Dam Additional Units and LAURD Information Supplement – Temporary Haul Bridge (March 1978); Libby Dam and Lake Koocanusa EIS Information Supplement III – Bald Eagle (October 1978); Libby Dam and Lake Koocanusa EIS Supplement IV – Cultural Resources (Feb 1979); and, Libby Dam and Lake Koocanusa EIS Supplement V – Alternatives to Libby Additional Units and Reregulating Dam.

seepage and resulting crop impacts, and reduced recreational access. The magnitude and likelihood of such impacts is highest for areas of the Kootenai River valley in Idaho.

- Under the Selected Plan, analysis shows the likelihood of exceeding flood stages at flood damage areas downstream of the dam is essentially equivalent to Standard Flood Control.

- The Selected Plan slightly decreases the value of annual hydropower sales compared to the Standard Flood Control alternatives due to lower power production during the winter when power is generally more valuable.

- Due to a more natural river hydrograph under the Selected Plan, aquatic productivity in the reservoir and river will increase and riparian habitat forming processes will improve. There will be more flexibility to provide lower December and January river flows for the benefit of burbot migration and spawning in the Kootenai River in Idaho.

- Release of high flows from the dam under the Selected Plan for flood control or flow augmentation will tend to increase the adverse effects of entrainment on reservoir fish populations, particularly kokanee.

- The Selected Plan may have impacts on the environment as a result of spill and water quality (TDG) impacts on fish, including threatened bull trout as a result of exceeding powerhouse capacity for sturgeon flows or for flood control operations. Releases from Libby Dam in excess of powerhouse capacity for sturgeon flows resulting in spill that would exceed the State of Montana maximum standard for TDG will not be undertaken without coordinating with Montana.

A review of comments received after the publication of the final UCEIS was completed and considered in reaching a decision to adopt the Selected Plan. Some of these comments are directed at recommended actions contained in the USFWS and/or NMFS BiOps that are beyond the scope of consideration in making this selection.

Clean Water Act

The actions evaluated in the UCEIS will be implemented consistent with the Corps' legal obligations under the Clean Water Act (CWA), to the extent practicable. When reservoir levels, water temperatures, and inflow conditions permit,[6] the Selected Plan will allow Libby Dam to provide spillway releases of up to 35,000 cfs. A test operation in 2002 demonstrated that spilling approximately 2 kcfs above powerhouse capacity will result in exceeding the State of Montana's TDG water quality standard of 110% saturation along portions of the Kootenai River between Libby Dam and Kootenai Falls.

[6] In order to spill for any length of time, the reservoir elevation must be approximately at elevation 2416 feet, and inflow must be sufficient to allow the desired outflow while still supporting continued refill. Reservoir temperature conditions must also be such that warm enough water can be released without exhausting the available warm layer and causing a sudden drop in river temperatures at Bonners Ferry that causes sturgeon to abandon their spawning migration and move back downstream.

In the near term, the Corps will continue coordination with the State of Montana to identify a process to address concerns relating to water quality while adaptively managing Libby Dam operations to support the Corps' ESA responsibilities and sturgeon recovery. The Corps' objective is to operate Libby Dam in a manner that harmonizes compliance with both the ESA and the applicable state water quality standards. In the long-term, if flows up to 35,000 cfs are demonstrated to be necessary to meet ESA responsibilities, the Corps will work with the region to consider engineering solutions to provide flows in excess of current powerhouse capacity without adverse local water quality impacts.

Endangered Species Act

Operations at a multi-purpose dam such as Libby Dam inherently involve a challenging balance between the benefits and impacts to different interests. The Selected Plan provides flexibility to implement the operational components for Libby Dam specified in the respective ESA BiOps. These elements include implementation of VARQ Flood Control, release of sturgeon flows, provision of minimum flows for bull trout, and flow augmentation for migrating salmon and steelhead. The UCEIS was not intended to be a comprehensive analysis of actions prescribed in current or former BiOps relating to Libby Dam.

The Corps believes the operations in the Selected Plan are consistent with the best available science concerning the listed species addressed in the respective BiOps as well as engineering expertise to ensure all project uses are continued.

By achieving a more normative spring hydrograph in the Kootenai River, the Selected Plan provides flexibility for Libby Dam releases to meet operation-related elements of the 2006 USFWS BiOp. It does this by better assuring availability of water for flows of sufficient timing, quantity, and duration to best meet the desired habitat attributes to benefit listed sturgeon in the Kootenai River. This includes the ability to provide for a range of releases for listed sturgeon from Libby up to 35,000 cfs. Each year the Corps, USFWS, regional sovereigns and other regional entities will analyze a range of fish flows in coordination with the TMT, and will recommend an operational scenario for listed sturgeon to balance achieving the habitat attributes with protecting public safety.

The 2008 NMFS BiOp recommends implementation of VARQ Flood Control, which assists in providing flexibility for spring and summer flows for the benefit of salmon and steelhead in the mainstem Columbia River. With improved reliability of refill under the Selected Plan, more water will be available when desired for the benefit of migrating juvenile threatened and endangered salmon and steelhead species in the Columbia River as recommended in the 2008 NMFS BiOp.

Ultimately, the Corps will take into consideration recommended operations for listed fish before making operational decisions. As previously stated, the Corps will continue to work with the State of Montana to ensure releases for sturgeon above powerhouse capacity are biologically meaningful and consistent with applicable laws and regulations. Further, the Corps will also continue coordinating with the region to ensure operations are consistent with all authorized

project purposes and to avoid voluntarily exceeding the flood stage elevation of 1764 feet at Bonners Ferry, Idaho, or the channel capacity at Libby/Troy, Montana.

Public Involvement

The Corps and Reclamation issued a Notice of Intent to prepare a joint EIS, which was published in the Federal Register on October 1, 2001. Letters inviting public comment on the scope and conduct of investigations leading to preparation of the draft EIS were sent to more than 2000 interested parties in the Columbia Basin. A series of seven scoping meeting were held in Montana, Idaho, Washington, and Oregon in October and November 2001.

The Corps and Reclamation each prepared an Environmental Assessment (EA) to evaluate the environmental consequences of interim implementation of VARQ Flood Control while preparation of the EIS continued. The Corps issued a Draft EA on November, 14, 2002 and signed a Finding of No Significant Impact for interim operation on December 31, 2002.

The Draft UCEIS was issued for public review and comment on November 10, 2005. Seven public meeting were held in the region during the public review period on the Draft UCEIS. The 45 day public comment period closed on December 27, 2005.

The Corps and Reclamation considered the range of public comments received on the Draft UCEIS and developed responses to the comments which were incorporated into the Final UCEIS. The Final UCEIS was made available for public review for 30 days on April 28, 2006. In the Final UCEIS, Reclamation altered its status from co-lead to cooperating agency. Two new alternatives for Libby Dam operation were added to the Final UCEIS in response to recommendations in the USFWS BiOp issued in February 2006. Several comments were received on the Final UCEIS and have been considered in development of this ROD.

In the spring of 2006, following release of the Final UCEIS, conditions and Libby Dam operations in the Kootenai River Basin resulted in the Libby Dam spill as high as 31 kcfs. The Corps completed an After Action Report (AAR) following this event and coordinated its findings with the public in the fall of 2006. The AAR addressed emergency response actions, public coordination, and water management operations. Given the AAR findings, the Corps delayed issuance of a Record of Decision on the UCEIS to verify that the fundamental underpinnings of the VARQ Flood Control Procedures and the UCEIS impact assessment remained valid. The Corps clarified the VARQ Flood Control operating procedures in November 2007 to remove potential ambiguities while retaining the same substantive flood control protocol that was evaluated in the UCEIS. The Corps conducted other follow-on evaluations in response to the lessons learned identified in the AAR and prepared an updated report that was shared with the public in April 2008.

Statement of Decision

I have taken into consideration the specific environmental consequences, the socio-economic costs, and the biological data pertinent to each alternative flood control operation and range of fish operations at Libby Dam discussed in the UCEIS. After careful evaluation of the alternatives and their consequences, and consideration of public concerns, I have decided to implement the Selected Plan, Alternative LVB, and incorporate the VARQ Flood Control Procedures into the Libby Dam Water Control Manual.

In making this decision, I have taken into account the Tribal fishing rights, the United States' trust responsibility to Native American Indian Tribes, and the United States' responsibility to act in a manner consistent with the trust responsibility.

I have also determined that the Selected Plan is consistent with the Corps' responsibilities under the ESA to avoid jeopardy to the listed fish species affected by the operation of Libby Dam, and that these actions will not adversely affect their critical habitat.

I have considered the NPCC's Fish and Wildlife Program and Mainstem Amendments in making this decision to implement the Selected Plan. Further, the Corps believes the Selected Plan provides for the equitable treatment of fish and wildlife with the other purposes for which Libby Dam is operated and managed. The Corps will continue to coordinate with Canada on the operation of Libby Dam pursuant to the provisions of the Columbia River Treaty.

I have determined that the actions set forth in this ROD are consistent with the Corps' legal obligations under the CWA.

The Corps will continue to coordinate with Reclamation on the operation of the system and will make adjustments in operations if necessary to account for Reclamation's UCEIS final decision.

The Selected Plan is within the Corps existing authority and is in compliance with all laws governing water, air, and land resources, fish and wildlife requirements, and cultural resources requirements. The Corps will obtain full compliance with NEPA with the completion of this ROD.

Issued in Portland, Oregon on June 6, 2008.

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