Section 1

Overview

1. Fish Passage Plan

1.1. Overview

The Fish Passage Plan (FPP) is developed by the U.S. Army Corps of Engineers (Corps) in coordination with the region's fish agencies, Indian tribes, Bonneville Power Administration (BPA), and other participants through the Corps' Fish Passage Operations and Maintenance Coordination Team (FPOM). The FPP describes year-round project operations necessary to protect and enhance anadromous and resident fish species listed as endangered or threatened under the Endangered Species Act (ESA), as well as other migratory fish species. The FPP guides Corps actions in regard to providing fish protection and passage at the eight Corps mainstem lower Columbia and Snake River projects, and at Chief Joseph Dam. Other Corps documents and agreements related to fish passage at these projects are consistent with the FPP.

The FPP is revised as necessary to incorporate changes to project operations and maintenance as a result of new facilities or changes in operational procedures. Revisions will incorporate changes adopted through coordination with the National Oceanic and Atmospheric Administration (NOAA) Fisheries and U.S. Fish and Wildlife Service (USFWS) as part of the ESA Section 7 consultation, Recovery Plan, or Section 10 permit processes, and through consideration of other regional input and plans. When revising the FPP, the Corps also considers the amended Northwest Power and Conservation Council's Columbia River Basin Fish and Wildlife Program to the fullest extent practicable.

The current FPP revisions reflect provisions contained in the NOAA Fisheries Biological Opinion (BiOp), issued November 30, 2004 and titled "Consultation on Remand for Operation of the Columbia River Power System and 19 Bureau of Reclamation Projects in the Columbia Basin", the Updated Proposed Action (UPA) prepared by the Corps, BPA, and the Bureau of Reclamation (Action Agencies) and released November 24, 2004, and the USFWS BiOp, issued December 20, 2000 and titled "Effects to Listed Species from Operations of the Federal Columbia River Power System." The Corps prepared a Record of Consultation and Statement of Decision (ROCASOD) relative to the NOAA Fisheries BiOp in January 2005 and also prepared a ROCASOD relative to the USFWS BiOp in May 2001. The two ROCASODs state how the Corps plans to meet its ESA responsibilities to protect multiple ESA-listed fish species. Also, the Action Agencies are preparing an Implementation Plan (IP) as called for in the 2004 UPA. Longer-term project actions to increase capability and reliability of project fish passage are described in the IP.

Comments on the FPP are welcome and may be sent either to the FPOM or the Corps' Northwestern Division, Reservoir Control Center (RCC) Fish Team in Portland, Oregon.

1.2. Emergency Deviations From FPP. River operations emergencies may occur which require projects to deviate temporarily from the FPP. To the extent possible, these operations will be conducted to minimize fish impacts and coordinated with fish agencies and tribes. Normally, coordination occurs prior to an action. However, if an emergency situation requires immediate attention, coordination will be done as soon as possible afterwards.

The phrase "when practicable" appears in the FPP to help describe those project actions for fish that may vary on a case-by-case basis and thus require judgment calls by the project for a particular situation. This is due to factors such as real time biological or other environmental conditions, project manpower or mechanical equipment availability, and fish facility or dam structural integrity. In these cases the project biologist and other project personnel will consider all relevant factors and determine the best way to proceed, then implement the appropriate action. These actions will be coordinated with fish agencies and tribes when they deviate from the FPP.

1.3. Technical Management Team. In-season decisions on river operations to achieve BiOp biological performance standards for spring and summer outmigrants will be made in coordination with the Regional Forum Technical Management Team (TMT). Coordination of special operations identified in the FPP will occur through the TMT and will be identified in the Water Management Plan. These may include maintenance or research activities requiring unit outages that affect other river operations, operation of turbines outside of the 1% of best efficiency range, zero nighttime flow, and implementation of the Juvenile Fish Transportation Plan (JFTP - see Appendix B).

1.4. Spill at Corps Mainstem Projects. Corps mainstem projects will provide spill for juvenile fish passage in accordance with the UPA (specifications in Appendix E) to protect ESA-listed salmon species. Spill at the three lower Snake River collector projects, Lower Monumental, Little Goose, and Lower Granite Dams, will occur when spring seasonal average flows at Lower Granite are projected to meet or exceed 70 kcfs (UPA, page 40). Spill will occur through April 20 when the seasonal flow projection is between 70 and 85 kcfs, and spill will occur throughout the spring season when seasonal average flows are projected to exceed 85 kcfs. Target spill levels and dates are developed through consultation with NOAA Fisheries and may be adjusted during the fish migration season as recommended by the TMT. Continuous

spill is provided at Lower Monumental and Lower Granite Dams, and nightly spill is provided at John Day, McNary, and Little Goose Dams, for spring outmigrants. Continuous spill is provided at Bonneville, The Dalles, and Ice Harbor Dams for both spring and summer outmigrants, and continuous spill is provided at John Day Dam for summer outmigrants.

1.5. Total Dissolved Gas Monitoring. Total dissolved gas (TDG) saturation levels are monitored at the forebay and tailrace of each mainstem project during the fish passage season. The water quality standard and criterion for TDG developed by the states of Idaho, Montana, Oregon, and Washington, in coordination with EPA is 110% of saturation at ambient temperature and pressure. The Corps' policy is to operate each mainstem project to meet state standards insofar as physically possible unless other overriding reasons cause temporary deviations. The Corps also recognizes that the UPA and NOAA Fisheries 2004 BiOp call for fish spill to be provided at levels that create TDG levels higher than 110% (Appendix D). The UPA states that the Federal Columbia River Power System (FCRPS) projects should be operated so that forebays do not exceed 115% and tailwaters do not exceed 120% TDG levels for anadromous fish passage. In response to this recommendation by NOAA Fisheries, the Corps has worked with the states of Oregon and Washington to spill to these higher TDG levels. The State of Oregon has provided a variance through the 2007 spill season. The State of Washington has modified its rule to provide for spill specified in the UPA. The State of Washington has accepted the Corps’ gas abatement plan on an annual basis and is expected to continue this practice.

Spring freshet river flows above the generation capacity of the FCRPS projects has occurred in the past, causing TDG levels to exceed the 115% and 120% levels. Also, implementation of fish spill requests from fish agencies and tribes has resulted in TDG levels of 120% or greater. Therefore, fish spill implementation will be subject to further coordination with appropriate entities through TMT if excessive TDG levels occur or if evidence of gas bubble disease is observed in fish.

The Corps will take those actions necessary to coordinate with the region and provide spill to protect ESA-listed fish. RCC issues a teletype spill priority list which specifies spill discharge levels and the sequence in which projects are to spill at higher TDG levels in order to manage both spill for fish passage and involuntary spill. The sequence is coordinated through TMT while spill levels are evaluated daily by RCC during the spill season and modified as needed in subsequent teletypes. TDG information is provided to the TMT and summarized for the year in the Corps’ TDG and Water Temperature Annual Report.

The Corps has coordinated with the Bureau of Reclamation on a joint operation of Chief Joseph and Grand Coulee dams to minimize TDG levels. This operation may result in more spill from Chief Joseph Dam (Appendix D). This is a spill management action to reduce TDG below those projects and is not a fish passage operation.

1.6. System Load Shaping. Guidelines coordinated by BPA on system load shaping to consider fish impacts are included in Appendix C. The guidelines describe procedures BPA follows to make hydropower load requests that enable the Corps to operate units consistent with the criterion to operate turbine units within 1% of best efficiency. The time period for this operation is April 1 through October 31 at both the lower Columbia and lower Snake River projects.

1.7. Juvenile Fish Transportation Plan. Juvenile fish will be transported in accordance with the UPA, NOAA Fisheries BiOp, and Section 10 permit. Transport criteria are contained in the Juvenile Fish Transportation Plan (JFTP), Appendix B. The JFTP covers collection, holding, and transport of juvenile fish. Other project criteria on operation of the juvenile fish bypass facilities are contained in Sections 2 through 9 of this document (project specific sections). Additional criteria may be developed as part of the ESA Section 10 permit process and/or in coordination with the TMT. Implementation of juvenile fish transportation, including deviation from the plan described in Appendix B, will be coordinated through the TMT and with NOAA Fisheries (ESA).

1.8. Project Fish Passage Facilities Inspection and Reporting Criteria.

1.8.1. General. Sections 2 through 9 of this document include detailed criteria for inspection and reporting for fish passage facilities at the Corps projects on the lower Snake and lower Columbia Rivers. The Corps provides weekly written inspection reports to the NOAA Fisheries Hydropower Program office in Portland, Oregon describing out-of-criteria situations, adjustments made to resolve problems, and a detailed account of how out-of-criteria situations affected project fish passage and survival. The weekly inspection reports also include summaries of equipment calibrations, adult fish collection channel velocity monitoring, and water temperature monitoring. Equipment which does not require calibration will not routinely be included in the weekly report. The Corps also provides an annual report to NOAA Fisheries that summarizes project operations and maintenance, fish passage facility inspections and monitoring, severity of out-of-criteria conditions, and avian predation

abatement actions. In addition, the Corps is developing methods to report hourly individual spill bay and turbine unit operations at mainstem projects as called for in the UPA. An acceptable procedure will be coordinated with NOAA Fisheries and other FPOM participants.

1.8.2. Annual Reporting of Excursions Outside the 1% of Best Efficiency Turbine Operating Range. Excursions outside the 1% of best efficiency turbine operating range are tracked by BPA for each project during the fish passage season. The Corps determines the cause of each excursion and provides this information to BPA. This information is compiled bi-weekly. After the fish passage season, BPA submits an annual report to the Corps and NOAA Fisheries which describes instances where turbines at lower Columbia and lower Snake River projects operate outside the 1% of best efficiency range for significant periods, as defined under the guidelines in Appendix C. The intent of excursion reporting is to provide a means for quality assurance for project operations.

1.9. Turbine Dewatering Procedure at Chief Joseph Dam. The Corps has coordinated and adopted a procedure to dewater turbine draft tubes for maintenance at Chief Joseph Dam (Appendix H). While this project does not have fish passage facilities, ESA-listed salmon and steelhead occur in the tailrace. The procedure provides for turbine dewaterings and recovery of any trapped fish in a manner that protects those fish.

1.10. Implementation of the Fish Passage Plan.

Implementation of the FPP requires information from and coordination with NOAA Fisheries, BPA, other Federal and state fish agencies, and tribes. RCC coordinates operation of Corps projects that affect system water management, spill, unit availability, or other project uses through the TMT. District biologists coordinate directly with technical staff from the fish agencies and tribes on other project-specific operations that do not have system impacts.

The RCC participates in TMT meetings throughout the year to consider recommendations for river operations to implement the UPA, BiOps, and other recommendations from fish interests. As part of this process TMT may evaluate research data and advise on whether existing operations are consistent with current study results. These meetings are held in the Corps' Northwestern Division office in Portland, Oregon, and are open to the public. Corps representatives are available at these meetings to discuss the latest weather and runoff forecasts, as well as fish, hydrologic, water quality, and power generation information to

assist in planning upcoming operations for fish passage. Fish operation recommendations are evaluated by the Corps to determine

impact on overall system operations. The Corps also coordinates with NOAA Fisheries and USFWS to meet ESA requirements for listed species.

1.10.1. Agency Responsibilities.

1.10.1.1. U.S. Army Corps of Engineers.

a. Coordinate with NOAA Fisheries and USFWS on operational actions that might impact threatened, endangered, or candidate species.

b. Prepare Water Management Plans and seasonal updates for in-season management, in coordination with TMT members, to implement the Corps' ROCASOD.

c. In cooperation with the fish agencies and tribes, provide fish passage monitoring, surveillance, and reporting at Corps projects throughout the migration period.

d. Provide timely information on all proposed and/or scheduled studies or special operations that may negatively impact or otherwise constrain fish passage or energy production. Discuss unforeseen changes in fish passage operation with fish agencies and tribes.

e. Carry out routine and emergency fish passage operations and maintenance procedures in accordance with criteria in Sections 2 through 9 and Appendix A.

f. Conduct the TDG Monitoring Program as described in Appendix D.

1.10.1.2. Fish Agencies and Indian Tribes.

a. Request spill for fish through TMT to protect ESA-listed species or other species in accordance with the TMT Guidelines.

b. Through TMT, provide RCC with a spill priority list and recommendations for modifications.

c. Provide biological monitoring and surveillance reports throughout the migration period from predetermined locations, such as Smolt Monitoring Program sample sites.

d. Provide status reports on the timing of the downstream migration, including pertinent marked fish release and recovery

data, with weekly written reports estimating percentage of runs past key projects.

e. Where biologically and logistically feasible, coordinate hatchery releases to ensure they are protected by regulated fish flows and spills while minimizing impacts on ESA-listed species. Provide and update hatchery release schedules weekly.

f. Provide recommendations to the operating agencies for maintaining acceptable fish passage conditions. This information can be used to maximize other project uses, including power generation.

g. Provide information on all proposed and scheduled studies or special operations designed to improve fish passage operations that may affect energy production or project operation. Discuss unforeseen changes with the Corps.

h. Recommend viable methods and procedures to reduce mortality to migratory and resident fish. This may include such operations as collection and transport of migrants, use of alternate bypass strategies, or other methods to minimize fish mortality.

1.10.1.3. Bonneville Power Administration.

a. Report to RCC on updated load-resource studies during the April-to-September period to supplement the National Weather Service River Forecast Center's runoff volume forecast for fish passage planning assistance.

b. Provide to RCC, NOAA Fisheries, other fish agencies, and tribes, the BPA estimate of power market impacts of requested spill operations.

c. Utilize available flexibility of the Federal Columbia River Power System to shape flow requirements, spill priorities, and plant generation consistent with BPA policies and statutory requirements related to fish protection.

d. Adjust system generation to provide adequate water to meet fish operations requirements in accordance with the UPA and the NOAA Fisheries and USFWS BiOps on hydrosystem operations.

e. Provide project load requests on a real-time, hourly basis that enable the Corps to implement spill priorities.

f. Provide information on unit operation outside the 1% of best efficiency operating range, as indicated in Appendix C.

1.10.1.4. Mid-Columbia Public Utility Districts.

Operate projects for spill transfer in accordance with provisions of the FPP with at least one and one-half hours notification to start or stop spill.

1.10.2. Coordination Procedures.

1.10.2.1. Coordination of the FPP. The FPP is effective year-round and revisions are coordinated with FPOM, which includes NOAA Fisheries, USFWS, BPA, state fish agencies, tribes, and other interested parties. Different parts of the FPP may be revised at different times. Suggested revisions should be submitted to FPOM for consideration by the Corps. Draft FPP revisions will be provided for a two-week regional review. FPP revisions will be published two weeks after the close of the regional review period. FPP revisions are provided to TMT for use as part of the overall river operation plan. Sections dealing with special operational requirements also will be included in the Action Agency Water Management Plans.

1.10.2.2. Coordination Process. Actions that may impact fish system wide will be coordinated and documented through the TMT process. Actions that may impact fish at a specific project which are a result of actual operations, implementation of UPA actions, incidental take terms and conditions contained in the BiOps, or research projects, will be coordinated through the process outlined below.

The party responsible for the action will prepare and e-mail a memo to the NOAA Fisheries point of contact responsible for activities at that dam which describes the action, UPA or BiOp measure addressed, how the action may impact fish, and how the action has been designed to minimize impacts. NOAA Fisheries will provide concurrence or recommended changes in an e-mail response. This coordination process is described in a letter to Brigadier General Carl A. Strock from Brian J. Brown, U.S. Dept. of Commerce, NOAA, National Marine Fisheries Service, dated June 5, 2001. A copy of this letter is available from the District Biologist.

1.10.2.3. Day-to-day Coordination of River System.

a. Flow Augmentation and Reservoir Operations Recommendations. Procedures described in the Water Management Plan will be used for fish operations. Coordination for system and project operations will occur through TMT. This will include operation of turbine units outside of the 1% best efficiency range, zero nighttime flow in the Snake River,

reservoir operation at minimum operating pool (MOP) or some other specific level, and special operations for implementation of approved research projects as identified in Appendix A. During the time when reservoirs are not being operated to provide special protection for fish passage, projects may be operated within the full reservoir operating range.

b. Fish Spill Management. The Corps will implement UPA fish spill provisions described in Appendix E, including special TDG conditions for juvenile fish passage. The TDG and gas bubble trauma signs in fish will be monitored and evaluated during the spill season by the Corps, NOAA Fisheries, other fish agencies, tribes, and water quality agencies. Project spill levels will be adjusted as needed, based on daily physical and biological monitoring results, and coordinated with the TMT and tribes.

c. Special Operations Recommendations (Fish-related and for Project O&M Activities). Recommendations for special fish operations outside the Water Management Plan may be made to RCC. Coordination of these recommendations will be made through the TMT. Recommendations related to project O&M activities requiring special operations will be evaluated for impacts on fish migration and survival. Sufficient lead time will be given for a planned operation, whenever practical, to allow ESA coordination with the TMT, NOAA Fisheries, and USFWS. As much lead time as possible will be provided for activities requiring immediate action. After-action coordination will occur when advance notice is not possible, such as in emergency actions.

d. Other Operational Requests. As with Corps O&M requests, all other operational recommendations will be evaluated for impacts on fish migration and survival and effects on other project O&M requirements. Coordination of special operations with NOAA Fisheries, USFWS, other fish agencies, and tribes will occur through the TMT. Except as necessary for emergency actions, adequate time will be allowed for evaluation of all project and fish impacts prior to implementation. Coordination of emergencies, as identified in the Emergency Protocols adopted by the TMT (Water Management Plan, Appendix 2), will be followed.

1.10.2.4. Activities by Non-Corps Personnel. All non-Corps personnel intending to conduct any activity, such as fish handling or minor facility modifications, at a Corps facility must have prior written approval. This approval must be requested in writing to the Chief, Operations Division, at the Corps District office responsible for a particular project. If the activity could affect ESA-listed fish, proof of consultation with NOAA Fisheries or USFWS (Section 10 permit) must be provided. Appropriate state permits must be provided as well for

activities that may impact either ESA-listed or non-listed fish.