



# United States Department of the Interior

FISH AND WILDLIFE SERVICE  
911 NE 11th Avenue  
Portland, Oregon 97232-4181

IN REPLY REFER TO  
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FEB 22 2006

*Electronically Filed*

Ms. Magalie R. Salas  
Secretary  
Federal Energy Regulatory Commission  
888 First Street, NE – Room 1A  
Washington, DC 20426

Subject: **MODIFIED SECTION 18 PRESCRIPTIONS FOR FISHWAYS** – Lewis River  
Hydroelectric Projects, Merwin, Project No. 935; Yale, Project No. 2071; Swift No. 1,  
Project No. 2111; and Swift No. 2, Project No. 2213; Lewis River, Clark and Skamania  
Counties, Washington

Dear Ms. Salas:

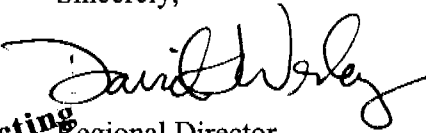
Enclosed for filing with the Federal Energy Regulatory Commission (Commission) regarding the proceedings to relicense the Merwin, Project No. 935; Yale, Project No. 2071; Swift No. 1, Project No. 2111; and Swift No. 2, Project No. 2213; Hydroelectric Projects, located on the Lewis River, Clark and Skamania Counties, Washington, are the U.S. Department of the Interior's modified Prescriptions for Fishways pursuant to section 18 of the Federal Power Act, Response to Public Comments on its Preliminary Prescription for Fishways, and the Index to the Administrative Record. The Administrative Record will be submitted to the Commission within 45 days after it is duplicated. Each party named on the service list for this proceeding is being provided a copy of the above documents at this time. Any party may request a copy of materials from the Administrative Record by writing to:

U.S. Fish and Wildlife Service  
Western Washington Fish and Wildlife Office  
510 Desmond Drive, Suite 102  
Lacey, WA 98503

We will respond promptly and documents will be mailed via first class mail.

Thank you for your assistance in the filing of these documents.

Sincerely,

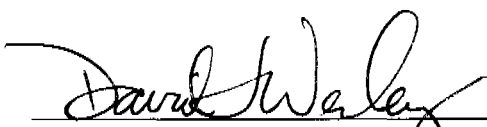
  
**Acting** Regional Director

BEFORE THE  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

PacifiCorp	)	Lewis River Hydroelectric Projects
Portland, Oregon	)	FERC Project Nos. 935, 2071, and 2111
	)	
	)	
Cowlitz PUD	)	Lewis River Hydroelectric Projects
Longview, Washington	)	FERC Project No. 2213
	)	

United States Department of the Interior  
Fish and Wildlife Service  
Prescriptions for Fishways  
Pursuant to Section 18 of the Federal Power Act

Approved this 22<sup>nd</sup> day of February, 2006, by:

  
For: David B. Allen, Regional Director

United States Department of the Interior  
Fish and Wildlife Service  
911 NE 11<sup>th</sup> Avenue  
Portland, OR 97232-4181

**UNITED STATES DEPARTMENT OF THE INTERIOR  
FISH AND WILDLIFE SERVICE  
PRESCRIPTIONS FOR FISHWAYS  
PURSUANT TO SECTION 18 OF THE FEDERAL POWER ACT  
FOR THE  
LEWIS RIVER HYDROELECTRIC PROJECTS  
(FERC Project Nos. P-935, P-2071, P-2111, and P-2213)**

**Introduction:**

The U.S. Fish and Wildlife Service (FWS), on behalf of the U.S. Department of the Interior (Department), hereby submits its modified prescriptions for fishways for the Lewis River Hydroelectric Projects, pursuant to section 18 of the Federal Power Act (FPA), as amended. The FWS is submitting this document to the Federal Energy Regulatory Commission (Commission), with an index to its administrative record, and will file its supporting administrative record within 45 days after this filing.

On November 30, 2004, the Department, through its component agencies; the FWS, National Park Service and the Bureau of Land Management, signed a comprehensive Settlement Agreement (Agreement) with PacifiCorp and the Public Utility District No. 1 of Cowlitz County, Washington (Cowlitz PUD) that includes provisions for fishways. The Agreement, intended to resolve all issues related to the relicensing of the four Lewis River Projects, was filed with the Commission on December 3, 2004 (PacifiCorp 2004; Cowlitz PUD 2004).

On December 9, 2004, the Commission issued a Notice of Settlement Agreement and Applications for New Licenses and Soliciting Comments, and Final Recommendations, Terms and Conditions, and Prescriptions (REA Notice) for the four Lewis River Projects. In response, the Department filed comments, recommendations, and preliminary prescriptions for fishways on February 4, 2005. The Department's preliminary prescriptions were intended to be consistent with the provisions of the Settlement Agreement, and were based on the results of studies and reviews performed during the collaborative alternative licensing process. The studies and reviews supporting our preliminary prescriptions are detailed in the Settlement Agreement, including the Joint Explanatory Statement, and in our February 4, 2005, filing. These documents are hereby incorporated by reference.

In addition to filing preliminary prescriptions on February 4, 2005, the Department also invited public comment on its preliminary prescriptions for fishways. Interested parties were provided 60 days from the closure of the Commission's REA Notice to provide comment and submit any new information relevant to the Department's preliminary prescriptions. No comments or additional factual material were received in response to the Department's invitation. However, on April 18, 2005, the applicants filed reply comments with the Commission pursuant to the REA Notice expressing concerns about the Department's preliminary prescriptions. The modified prescriptions that follow address these comments as well as comments submitted in

response to the Commission's Draft Environmental Impact Statement (DEIS) (Commission 2005), and the Commission's staff analysis in the DEIS.

For clarity and convenience, we have attached to this document our modified fishway prescriptions for each project. These modified fishway prescriptions use the same language and number scheme as contained in the revised proposed license articles filed with the Commission by the applicants on December 19, 2005, and January 6, 2006, respectively (Cowlitz PUD 2005, PacifiCorp 2006). The FWS has worked with the applicants and other parties to the Settlement Agreement (Parties) to translate our preliminary prescriptions into proposed license articles for each of the four projects while ensuring consistency with the Settlement Agreement. In addition, the language of the revised proposed license articles addresses the concerns voiced by the applicants on our preliminary prescriptions. All Parties have reviewed the revised proposed license articles and support them. We are, therefore, adopting the applicants' revised proposed license articles that contain provisions for fishways as our modified fishway prescriptions.

The modified prescriptions for fishways attached to this document apply to the Lewis River Hydroelectric projects located on the North Fork Lewis River. The four projects begin approximately 10 miles east of Woodland, Washington and proceed in an upstream sequence as follows: Merwin (Project No. 935); Yale (Project No. 2071); Swift No. 1 (Project No. 2111); and Swift No. 2 (Project No. 2213). The Merwin, Yale, and Swift No. 1 projects represent a linked reservoir/powerhouse system covering over 30 miles of the Lewis River. The Swift No. 2 project does not include a dam and reservoir. It uses water directly from the tailrace of Swift No. 1, which flows into a 3.2-mile-long canal that discharges through the Swift No. 2 powerhouse into Yale Lake.

The three-reservoir, four-project system is operated in a coordinated fashion to achieve optimum benefits for power production and flood management, and to provide for natural resources in the basin such as fish, wildlife and recreation. The four projects utilize the water resources within the North Fork Lewis River basin from elevation 50 ft msl (Merwin Project tailwater) to 1,000 ft msl (Swift No. 1 normal pool). The total usable storage in the reservoirs is 814,000 acre-feet. The total installed capacity for the four projects is 580 MW. More detailed descriptions of each project are contained in our preliminary terms and conditions (USFWS 2005).

## **Section 1. Resource Management Goals and the Need for Fishways**

In our February 4, 2005, filing, we described the affected fishery resources and resource management goals, and indicated the need for fishways. To summarize, before the project dams were constructed, anadromous steelhead, sea-run cutthroat trout, coho, and spring Chinook salmon spawned throughout the Lewis River basin. Resident fish species of significance include bull trout, listed as threatened under the Endangered Species Act (16 U.S.C. 1531 *et seq.*), kokanee, cutthroat trout and rainbow trout. The dams constitute a barrier to migration that prevents natural production of these fish in the majority of the basin. Fish populations have declined in the Lewis River basin, and a primary factor in that decline is the blockage of fish passage.

The overall objective of the Parties in negotiating the Agreement was to include measures to protect and enhance fish, wildlife, and other ecological resources affected by the Lewis River Projects. Resource goals in achieving those objectives include; a) achieving genetically viable, self-sustaining, naturally reproducing, harvestable anadromous salmonid populations above Merwin Dam; b) reconnecting all life stages of bull trout populations, c) enhancing and improving wetlands, riparian and riverine habitats for salmonids and resident species; d) restoring marine-derived nutrients to the upper watershed to benefit fish and wildlife; e) developing a hatchery and supplementation program that supports reintroduction of anadromous fish to the upper watershed; f) implementing instream flows, and ramping rates, that benefit fish and wildlife in the basin; and g) acquiring interests in land and managing the land to benefit a broad range of fish, wildlife, and native plant species (PacifiCorp 2004; Cowlitz PUD 2004).

## **Section 2. Statutory Authority**

Section 18 of the FPA (16 U.S.C. 811) states in part that “the Commission shall require the construction, maintenance, and operation by a licensee of . . . such fishways as may be prescribed by the Secretary of Commerce or the Secretary of the Interior.” Section 1701 (b) of the National Energy Policy Act of 1992, P.L. 102-486, provides guidance as to what constitutes a fishway. Section 1701(b) states, “The items which may constitute a ‘fishway’ under section 18 for the safe and timely upstream and downstream passage of fish shall be limited to physical structures, facilities, or devices necessary to maintain all life stages of such fish, and project operations and measures related to such structures, facilities, or devices which are necessary to ensure the effectiveness of such structures, facilities, or devices, for such fish.”

The prescriptions for fishways herein are issued under the authority delegated to the Regional Director, Region 1, U.S. Fish and Wildlife Service, the Director, U.S. Fish and Wildlife Service, the Assistant Secretary for Fish, Wildlife and Parks; from the Secretary of the Interior; and pursuant to section 18 of the FPA. See 64 Stat. 1262; 209 Departmental Manual 6.1; and 242 Departmental Manual 1.1A.

## **Section 3. Relicensing Proceeding**

The FWS has fully participated in the relicensing process since 1999. In that year, PacifiCorp and Cowlitz PUD requested and received approval to initiate an alternative licensing process (ALP). Also in 1999, the Commission approved the applicants’ request to coordinate the processing of the license applications for all four projects and accelerate the expiration of the Merwin license to coincide with the other projects. The Commission also granted in 1999 PacifiCorp’s request to defer processing of the Yale license application until the applications for Merwin, Swift No. 1, and Swift No. 2 were filed.

PacifiCorp and Cowlitz PUD convened meetings on April 29 and April 30, 1999, to initiate the collaborative process. These meetings were followed with a series of public meetings to establish the structure and ground rules of the collaborative process, the goals and objectives of the participants, a memorandum of agreement, and a communications protocol. Through these meetings, the participants established a relicensing steering committee and various workgroups

to study and address particular resource issues, including the aquatics (including fish passage) and terrestrial committees. The applicants formally initiated public scoping on May 17, 2000, with the release of Scoping Document 1 and held public scoping meetings with site tours in June of 2000. Written and oral comments were summarized and addressed in Scoping Document 2, issued on January 10, 2001.

In March 2002, negotiating, policy, and legal groups were formed to develop the Lewis River Settlement Agreement for the implementation of long-term conservation measures for the projects. Interest-based settlement negotiations with stakeholders representing Federal and state resource agencies, Indian tribes, non-governmental agencies, utilities, and others, ensued over a period of three years, covering a broad array of interests and resource areas. On April 28, 2004, PacifiCorp filed with the Commission license applications for Swift No. 1 and Merwin projects, and Cowlitz PUD filed a license application for the Swift No. 2 project. PacifiCorp had previously filed a license application for the Yale Project in 1999. The Agreement was signed by 22 parties on November 4, 2004 and filed with the Commission on December 3, 2004, along with a supplemental preliminary draft environmental assessment updating the environmental analysis for the action.

On December 9, 2004, the Commission issued a notice of Settlement Agreement, applications and applicant-prepared environmental assessments accepted for filing, and solicited comments, recommendations, terms and conditions and prescriptions. In response, the Department filed with the Commission its preliminary comments, recommendations, terms and conditions, and prescriptions on February 4, 2005. The Department's filing included prescriptions for fishways to accommodate upstream and downstream passage for native species of fish, including anadromous salmon, steelhead, and bull trout. The Department also invited comments pertaining to the preliminary prescriptions for fishways.

On April 18, 2005, the license applicants filed with the Commission their concerns about the Department's terms and conditions and prescriptions. In response to these comments, the FWS met with the applicants and other Parties to address those concerns and to translate our preliminary prescriptions into license articles for each project. During the process, all language changes were scrutinized to maintain consistency with the Settlement Agreement. All Parties reviewed and approved these draft license articles.

On September 16, 2005, the Commission mailed its Draft Environmental Impact Statement to interested parties. The Commission noticed the DEIS in the *Federal Register* on September 23, 2005 and solicited comments. On November 22, 2005 and November 23, 2005, Cowlitz PUD and PacifiCorp, respectively, commented on the DEIS and filed the proposed draft license articles with the Commission. Subsequently, additional minor changes to the draft license articles were negotiated. Cowlitz PUD filed the revised proposed license articles for the Swift No. 2 project on December 19, 2005, and PacifiCorp filed revised proposed license articles for the Merwin, Yale, and Swift No. 1 projects on January 6, 2006. All Parties, including the Department, have approved these revisions. We are adopting the revised proposed license articles that contain provisions for fishways as our modified fishway prescriptions.

## **Section 4. Administrative Record**

Evidence to support the Department's Prescription for Fishways is contained in the administrative record before the Commission, and citations to the extant record are provided herein. To the extent that additional information has been considered and used, the Department is filing an index to its administrative record (Appendix 1), and will file said administrative record within forty-five (45) days of submission of its modified prescription for Fishways.

## **Section 5. Fish Passage Options Considered**

Parties evaluated various fish passage options through an engineering feasibility study for all four project facilities (PacifiCorp and Cowlitz PUD 2004). The process involved developing background information on the projects, the species blocked by the projects that would use the fishways, and a literature review; identifying passage facilities that might be effective at the Lewis River projects and necessary design criteria; and producing a feasibility report comparing the proposed facilities from the following criteria: a) biological performance, b) engineering, and c) the interrelationship between run timing, project flow needs, and basin flows. These criteria were developed by the members of the aquatics resources group, fish facility engineers, biologists, and published references on fish passage design from the National Marine Fisheries FWS, the Washington Department of Fish and Wildlife, and other published criteria.

### **Section 5.1. Fish Passage Options Considered but Eliminated From Detailed Study**

#### Dam Decommissioning

Decommissioning of one or more of the Swift No. 1, Swift No. 2, Yale, and Merwin projects was considered but eliminated from further study. Decommissioning would not meet the regional need for power and other important project benefits such as flood control would be lost. The project reservoirs also provide important functions including recreation and sport fisheries. No participant suggested that dam removal or project retirement would be appropriate in lieu of the prescription of fishways. For these reasons, dam decommissioning was not considered to be a reasonable fish passage option.

#### No Action

No action, representing no improvements in fish passage at Merwin, Yale, Swift No. 1 or Swift No. 2, was considered, but not pursued. The no action option would not accomplish the anadromous and resident fish restoration goals identified in the Federal, state, and Tribal resource management plans described in our preliminary Fishway prescriptions. Without the inclusion of fish passage, the Lewis River hydroelectric Projects would continue to be a complete barrier to upstream movement and migration of anadromous fish and impede their access to approximately 170 miles of suitable habitat upstream of the Lewis River Projects.

### Fish Ladders and Exclusionary Screens

Volitional upstream passage (fish ladders) and downstream exclusionary V-screens were among the options considered. Downstream passage systems included two types of exclusionary V-screens at each dam, one that would meet NMFS criteria for an approach velocity of 0.4 fps, and the other a screen that would have relaxed criteria for approach velocity of 0.8 fps. Fish and water leaving the bank of V-screens would flow to a secondary dewatering facility that would release a flow to a bypass pipeline routed through a sub-sampling facility, then directly to the reservoir or river below each project. Fish would be released to the receiving water body through an outfall structure designed to accommodate the tailwater fluctuation at the release point.

The criteria screens would be very large, resulting in a complex of about 240 feet wide by 600 feet long and would necessitate excavation of the shoreline near the intakes. Costs for materials and construction for the screens alone would be high, and with bypass pipelines, sub-sampling and head-dissipation facilities, the total system for all three dams would be cost prohibitive. In addition, the engineers believed that exclusionary screens, particularly at Swift No. 1, would create operational difficulties due to the need to manage debris. Using a relaxed criterion for approach velocity, the exclusionary screens would be smaller, but this option was still costly. Performance standards for downstream fish passage, agreed to by the Parties, could likely be met without screening the turbine intakes, using a surface collector design, and so the screen options were eliminated from further study.

A fish ladder system, providing volitional passage around all three dams, was also considered. The fish ladder system necessary to provide passage around all three projects, would be the tallest in the world in rise over length dimensions, rising 197 feet at Merwin, 259 feet at Yale, and a 530 feet rise around the Swift projects. The exit structure in Swift Reservoir would need to be large to accommodate a 40 foot fluctuation of the reservoir. Overall cost of the series of ladders was high. Given the height and length of the fish ladder system that would be necessary at the Lewis River Projects, successful upstream passage with this option was considered uncertain relative to other options.

In summary, it was uncertain that conventional fish ladders and exclusionary screening options would perform better than other, less costly options, and therefore they were eliminated from further study.

### **Section 5.2. Fish Passage Options Adopted in the Department's Modified Fishway Prescriptions**

The fish passage options adopted in the Department's modified prescriptions for fishways were developed collaboratively with the Parties. An overview of these options is provided in the Joint Explanatory Statement, the Settlement Agreement, and the attachments to the Settlement Agreement filed with the Commission. These options are further described in the proposed license articles filed with the Commission by the applicants on December 19, 2005 and January 6, 2006.



Upstream passage will consist of trap-and-transport from below Merwin to Swift Reservoir by year 4.5; from below Merwin Dam to Yale Lake by year 13; and from below Merwin Dam to Lake Merwin, from Lake Merwin into Yale Lake, and from Yale Lake to Swift Reservoir by year 17. Initially, all transport will be by truck, but by the time passage is provided throughout all the projects, alternative technologies (e.g., fish lifts or trams) will be evaluated and substituted for trucking if biologically warranted and economically feasible.

Modular surface collectors will provide downstream passage at all three dams to collect, sort, tag, and transport juvenile and adult migratory species to stress ponds located downstream of Merwin Dam. Downstream passage will occur at Swift Reservoir in year 4, at the same time as upstream passage at Merwin. Installation of collectors and related facilities will occur at Yale in year 13 and Merwin in year 17.

Bull trout will continue to be collected in the tailraces at Yale and Swift No. 2 and transported to Yale Lake and Swift Reservoir, respectively. Until passage is provided for anadromous fish or better upstream collection methods determined, the Licensees will continue collecting and moving bull trout to locations in Yale Lake or Swift Reservoir as determined by the FWS. Downstream passage for bull trout will be provided first at Swift Dam and later at Yale and Merwin to collect and transport downstream migrating bull trout.

## **Section 6. Response to Comments**

On February 4, 2005, the Department filed comments, recommendations, and prescriptions with the Commission and invited public comment on its preliminary prescriptions for fishways. Interested parties were provided 60 days from the closure of the Commission's REA Notice to provide comment and submit any new information relevant to the Department's preliminary prescriptions. No comments were received in response to the Department's invitation.

The Department did review the applicants' comments on the preliminary prescriptions filed with the Commission dated April 18, 2005 (PacifiCorp 2005, Cowlitz PUD 2005a), and reviewed the comments filed with the Commission by all parties regarding the DEIS, including Commission staff, to discern if any party commented on our fishway prescriptions. Based on our review of available documents, we conclude that the applicants' comments filed with the Commission on April 18, 2005, constitute the only substantive comments submitted on our preliminary prescriptions. In these letters, the applicants were concerned that our preliminary prescriptions were combined in one document representing four separate projects and two separate utilities. As a result, the obligations of each licensee for each specific project were not always clearly delineated. In addition, the applicants were concerned that specific language in the Settlement Agreement qualifying or limiting their obligations was absent from our prescriptions, and therefore the prescriptions were not consistent with the Settlement Agreement.

In response to these comments, the FWS met with the applicants and other Parties to address these concerns and to translate our preliminary prescriptions into license articles for each project while ensuring that any language changes remained consistent with the Settlement Agreement.

This was a time-consuming process, lasting about five months, but productive, because it resolved issues raised by the applicants regarding the preliminary prescriptions. At the end of this process, Cowlitz PUD and PacifiCorp filed with the Commission a final set of proposed license articles on December 19, 2005 and January 6, 2006, respectively. All Parties, including the Department, had an opportunity to review these proposed license articles and support them. We are adopting the revised proposed license articles that contain provisions for fishways as our modified fishway prescriptions. The modified fishway prescriptions for each project are included as attachments to this document (See Attachments 1, 2, 3, and 4). Our modified prescriptions use the same language and number scheme as contained in the applicant's revised proposed license articles.

Our modified prescriptions are substantively the same as our preliminaries. However, the language has been changed in some cases to more closely comport with the Settlement Agreement. We have made the additional change of omitting the In lieu Fund from the list of fishway prescriptions. We believe this measure does not constitute a prescription for fishways under section 18 of the FPA. In addition, at the request of the applicants, we have added two paragraphs at the end of each set of prescriptions for the four projects. The additional language makes the modified prescriptions more consistent with the Settlement Agreement. The added conditions relate to the "obligation to consult" and "dispute resolution."

## **Section 7. Reservation of Authority to Prescribe Fishways**

The Department has prepared its prescriptions for fishways in response to the proposals being considered by the Commission in this proceeding involving the proposed re-licensing of the Merwin, Project No. 935; Yale, Project No. 2071; Swift No. 1, Project No. 2111; and Swift No. 2, Project No. 2213; Hydroelectric Projects. If any proposal is modified as a result of licensing or after licensing, the Department, through the FWS, will require adequate opportunity to reconsider each prescription and make modifications it deems appropriate and necessary for submittal to the Commission. Therefore, the Department requests that the Commission include the following condition in any license it may issue for these projects:

Authority is reserved for the Department of the Interior, as delegated to the U.S. Fish and Wildlife Service, to prescribe the construction, operation, and maintenance of fishways at the Merwin, Project No. 935; Yale, Project No. 2071; Swift No. 1, Project No. 2111; and Swift No. 2, Project No. 2213; Hydroelectric Projects, as appropriate, including measures to determine, ensure, or improve the effectiveness of such fishways, pursuant to Section 18 of the FPA, as amended. This reservation includes, but is not limited to, authority to prescribe fishways for Chinook salmon, steelhead, coho salmon, Pacific lamprey, bull trout, and cutthroat trout, and any other fish to be managed, enhanced, protected, or restored to the Lewis River Basin during the term of the license.

## **Section 8. Prescription for Fishways**

Pursuant to Section 18 of the FPA (16 U.S.C. 81 1), the Secretary of the Interior hereby prescribes the construction, operation, and maintenance of fishways at the Lewis River Hydroelectric Projects as set forth in the following attachments: Merwin, Project No. 935 (Attachment 1); Yale, Project No. 2071 (Attachment 2); Swift No. 1, Project No. 2111 (Attachment 3); and Swift No. 2, Project No. 2213 (Attachment 4). All capitalized terms in the fishway prescriptions shall have the same meanings that they do in the Settlement Agreement.

Our modified prescriptions for fishways presume that the revised proposed license articles filed by PacifiCorp on January 5, 2006, and Cowlitz PUD on December 19, 2005, are accepted in their entirety and without material modification. Our prescriptions rely, in part, on the information in the Settlement Agreement and its attachments as substantial evidence in support of our modified terms and conditions and fishway prescriptions. If the Settlement Agreement noticed by the Commission on December 9, 2004, is not accepted in its entirety or is materially modified by the Commission or a court order, the FWS reserves the right to modify these prescriptions for fishways, if warranted.

## **Section 9. Literature Cited**

The literature cited in our preliminary terms and conditions and prescriptions is hereby incorporated by reference. Other supporting documentation for our modified prescriptions is contained in the administrative record before the Commission, or is listed in the index to our administrative record for the prescriptions of fishways (Appendix 1).

## **Appendix 1**

**U.S. Department of the Interior  
Fish and Wildlife Service  
Prescription for Fishways  
Lewis River Hydroelectric Projects  
(FERC Project Nos. P-935, P-2071, P-2111, and P-2213)**

### **Index to Administrative Record**

This is the index for the administrative record for the prescriptions for fishways submitted by the Department of the Interior (Department) on or about February 23, 2006. This administrative record supports the Department's prescriptions for fishways made pursuant to Section 18 of the Federal Power Act, and submitted to the Federal Energy Regulatory Commission with the Department's modified prescriptions for the Lewis River Hydroelectric Projects, Merwin, Project No. 935; Yale, Project No. 2071; Swift No. 1, Project No. 2111; and Swift No. 2, Project No. 2213; located on the Lewis River in Cowlitz, Clark and Skamania counties, Washington.

#### **A. Documents Incorporated by Reference**

All public records and documents currently part of the Commission's record for Project Nos. 935, 2071, 2111, and 2213, including but not limited to:

Commission (The Federal Energy Regulatory Commission). 2005. Draft environmental impact statement, Lewis River hydroelectric projects, Washington, Swift No. 1 (Project No. 2111; Swift No. 2 (Project No. 2213); Yale (Project No. 2071); and Merwin (Project No. 935). Washington D.C. September 2005.

Cowlitz PUD. 2004. Swift No. 2 (P-2213) Hydroelectric Project Relicensing Proceeding and Offer of Settlement Public Utility District No. 1 of Cowlitz County, Washington. Letter and attachments filed with the Commission December 3, 2004.

Cowlitz PUD. 2005. Revised draft license articles for Swift No. 2 (Project No. 2213) submitted as supplemental comments on the Federal Energy Regulatory Commission draft environmental Impact statement. Letter and attachment filed with the Commission December 19, 2005.

Cowlitz PUD. 2005a. Public Utility District no. 1 of Cowlitz County, Washington answer to U.S. Department of Interior motion to intervene and comments, recommendations, terms and conditions, and prescriptions. Letter filed with the Commission April 18, 2005.

U.S. Fish and Wildlife Service. 2005. Comments, recommendations, terms and conditions, and prescriptions – notice of settlement agreement and applications for new licenses and soliciting comments, and final recommendations, terms and conditions, and prescriptions for the Merwin, Project No. 935; Yale, Project No. 2071, Swift No. 1 Project No. 2111;

and Swift No. 2, Project No. 2213; Hydroelectric Projects, Lewis River, Clark and Skamania Counties, Washington. 105 pages filed with the Commission on February 4, 2005.

PacifiCorp. 2004. Settlement Agreement for the Lewis River Hydroelectric Projects (Merwin, FERC Project No. 935; Yale, FERC Project No. 2071; Swift No. 1, FERC Project No. 2111; and Swift No. 2, FERC Project No. 2213. Letter and attachments filed with the Commission December 2, 2004.

PacifiCorp. 2005. PacifiCorp reply comments on comments, recommendations, terms and conditions, and prescriptions. Letter and attachment filed with the Commission. April 18, 2005.

PacifiCorp. 2006. Re: revised proposed license articles for PacifiCorps's Merwin Project (FERC No. 935), Yale Project (FERC No. 2071), and Swift No. 1 Project (FERC No. 2111). Letter and attachments filed with the Commission January 5, 2006.

USDOl (U.S. Department of the Interior). 2000. Policy for review of mandatory conditions developed by the departments of Interior and Commerce in the Context of hydropower licensing. U.S. department of the Interior and U.S. Department of Commerce, Washington D.C. January 19, 2001.

## **B. Other Documentation Cited, References, considered, or Relied Upon in Support of the Department's Prescription for Fishways**

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- FWS (U.S. Fish and Wildlife Service). 2001. Biological Opinion for the Operations of the Lewis River Projects, FERC Nos. 935, 2071, 2111, and 2113. Western Washington Fish and Wildlife Office. Lacey, Washington.
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## **Attachment 1**

**UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE  
PRESCRIPTIONS FOR FISHWAYS  
PURSUANT TO SECTION 18 OF THE FEDERAL POWER ACT  
FOR THE  
MERWIN HYDROELECTRIC PROJECT  
PROJECT NO. 935**

(For convenience and clarity, these prescriptions are numbered to match the numbers contained in the applicants revised draft license articles filed with the Commission on January 6, 2006)

### **2 Fish Passage Facilities Design**

To provide for the safe, timely and effective passage past the Project of upstream and downstream migrating salmonids, the Licensee shall develop and implement the Merwin Downstream Facility and Merwin Upstream Transport Facility in accordance with, and subject to the limitations included in, all of the relevant provisions of the Settlement Agreement Concerning the Relicensing of the Lewis River Hydroelectric Projects, FERC Project Nos. 935, 2071, 2111, and 2213, Cowlitz and Skamania Counties, Washington, dated November 30, 2004, and filed with the Commission on December 3, 2004.

#### **2.1 Studies to Inform Design Decisions**

The Licensee, in Consultation with the ACC (including at least the Services) and subject to the final approval of the FWS, must develop and carry out studies to inform the design of upstream and downstream fish passage facilities described in the Settlement Agreement with the goal of improving the likelihood that the passage facilities will be successful as initially constructed. Needed information may include the hydraulic characteristics of the Swift No. 1, Yale, and Merwin forebays and tailraces (e.g., a three-dimensional numerical flow-field analysis) and the movement of adult and juvenile salmonids. The Licensee must complete these studies sufficiently in advance of the design decisions required by the Settlement Agreement so that the Licensee, the FWS, the National Park Service, and the Bureau of Land Management (Services), and the ACC can take the resulting information into account when making final design decisions.

## **2.2 Design Review**

Except as otherwise provided under Section 4.1.9 of the Settlement Agreement, the Licensee must design the Merwin Downstream Facility and the Merwin Upstream Transport Facility, to meet the performance standard targets set out in Section 4.1.4.b of the Settlement Agreement, as applicable. The Licensee must use the best available technology for the type of passage facility being constructed, and design the passage facility to provide flexibility for subsequent expansion or Facility Adjustments, if needed, to meet performance standards. A fish passage facility may include duplication of some components (for example, multiple entrances) and still be considered a single passage facility. The Licensee must coordinate with and provide 30 percent and 60 percent completed preliminary designs for review and comment to the FWS and Washington Department of Fish and Wildlife. The Licensee must notify the ACC when design work has begun, and provide the 30 percent and 60 percent preliminary designs to any other Party to the Settlement Agreement at the Party's request. The Licensee must provide the FWS and WDFW 45 days to provide their comments. The Licensee must submit the 90 percent preliminary designs with the relevant engineering, hydraulic, and biological work to the ACC (including at least the Services) at the times set forth in the Settlement Agreement. The Licensee must provide the ACC (including at least the Services) 45 days to provide its comments on the 90 percent preliminary designs and must finalize the designs in Consultation with the ACC (including at least the Services) and with the approval of the Services. The Licensee must consider and address in writing those written comments provided by the members of the ACC (including at least the Services) when submitting final designs to the Services for approval.

## **3 Permits and Time for Construction**

Upon approval of passage facility designs by the Commission, the Licensee must diligently and expeditiously acquire all required Permits. The time by which each passage facility must be placed in operation is set forth in the Settlement Agreement.

## **4 Performance Standards for Fish Passage**

The Licensee must provide for the safe, timely, and effective passage of salmonids being transported past the Project as described in the Settlement Agreement. The sole performance standard for kelts and downstream migration of adult sea-run cutthroat must be safe, timely, and effective passage. Specific life stages described below (not including kelts or downstream migrating sea-run cutthroat) have quantitative standards. The Licensee must construct and provide for the operation and maintenance of fish passage facilities that collect all life stages of salmonids that are present at the facility, and function during all flows and during all seasons; except for upstream passage facilities, to the extent it is infeasible due to flood events that require spill that could not be reasonably accommodated by the passage facility.

The Licensee must employ the following definitions in carrying out and monitoring the performance standards:

- **Adult Trap Efficiency (“ATE”):** The percentage of adult Chinook, coho, steelhead, bull trout, and sea-run cutthroat that are actively migrating to a location above the trap and that are collected by the trap.
- **Collection Efficiency (“CE”):** The percentage of juvenile anadromous fish of each of the species to be transported, as described in Section 4.1.7 of the Settlement Agreement, that is available for collection and that is actually collected.
- **Collection Survival (“CS”):** The percentage of juvenile anadromous fish of each of the species to be transported collected that leave Release Ponds alive.
- **Injury:** Visible trauma (including, but not limited to, hemorrhaging, open wounds without fungus growth, gill damage, bruising greater than 0.5 cm in diameter, etc.), loss of equilibrium, or greater than 20 percent descaling. “Descaling” is defined as the sum of the area on one side of the fish that shows recent scale loss. This does not include areas where scales have regenerated or fungus has grown.
- **Overall Downstream Survival (“ODS”):** The percentage of juvenile anadromous fish of each of the species to be transported that enter the reservoirs from natal streams and that survive to enter the Lewis River below Merwin Dam by collection, transport, and release via the juvenile fish passage system, passage via turbines, or some combination thereof, calculated as provided in Schedule 4.1.4 of the Settlement Agreement.
- **Upstream Passage Survival (“UPS”):** Percentage of adult fish of each of the species to be transported that are collected that survive the upstream trapping-and-transport process. For sea-run cutthroat and bull trout, “adult” means fish greater than 13 inches in length.

#### **4.1 Overall Fish Passage Performance Standards for Salmonids**

For each species, the Licensee must achieve the following overall performance standards for fish passage: ODS of greater than or equal to 80 percent until such time as the Yale Downstream Facility is built as provided in the License for the Yale project (P-2071), or the funds from the In Lieu Fund, as described in Section 7.6 of the Settlement Agreement, become available to the Services in lieu of constructing the Yale Downstream Facility, after which time ODS must be greater than or equal to 75 percent; UPS of greater than or equal to 99.5 percent; and ATE to be established as described in the Settlement Agreement. ODS, as defined by the Settlement Agreement, must include several components of juvenile passage, including reservoir survival, collection efficiency and collection survival, with the latter two terms having individual, quantitative performance standards, as described in Section 4.1.4 of the Settlement Agreement. Moreover, ODS must also incorporate estimates of juvenile survival rates for fish that elude collection but successfully navigate through Project turbines. For purposes of estimating ODS, until turbine survival studies are performed, the Licensee must assume that the turbine survival is equal to zero percent (0%). If the performance standards for ODS, UPS and ATE are not achieved within a reasonable time, the Licensee must make Facility Adjustments and Modifications, as described in Section 4.1.6 of the Settlement Agreement.

#### **4.2 Passage Facility Design Performance Standards for Salmonids**

The Licensee must design and construct downstream fish passage facilities to achieve, for each species, a CE of equal to or greater than 95 percent, a CS of equal to or greater than 99.5 percent

for smolts and 98 percent for fry, and adult bull trout survival of equal to or greater than 99.5 percent. Design performance objectives for Injury are less than or equal to 2 percent. The Licensee must design and construct upstream fish passage facilities to achieve the UPS equal to or greater than 99.5 percent and the ATE to be established as described in the Settlement Agreement.

### **4.3 Adult Trap Efficiency for Salmonids**

As soon as practicable, and following Consultation described by the Settlement Agreement, the Licensee must develop an ATE performance standard for the Merwin Upstream Transport Facility to ensure the safe, timely, and effective passage of adult salmonids. Until such time as the standard has been developed, the Licensee must use NOAA Fisheries' fish passage guidelines (Anadromous Salmonid Passage Facility Guidelines and Criteria, NMFS (Jan. 31, 2004)). The Licensee must consider without limitation entry rate, fall back, crowding at the entrance, delay, and abandonment of the trap area. When performance standards for ATE have been developed, the Licensee must submit the standards to the Commission and such standards must be used to judge performance for the facilities when considering Facility Adjustments or Facility Modifications.

### **4.4 Monitoring and Evaluation of Performance Standards**

As described in the Settlement Agreement, once the Merwin Upstream Transport Facility or Merwin Downstream Facility, is constructed and placed in operation, and after each Facility Adjustment or Facility Modification, the Licensee must evaluate, in Consultation with the ACC (including at least the Services) and with the approval of the Services, whether performance standards are being met for each of the species designated in the Settlement Agreement, in accordance with the monitoring and evaluation plan described in Section 9 of the Settlement Agreement.

### **4.5 Adjustments or Modifications to Passage Facilities to Achieve Performance Standards**

A "Facility Adjustment" means a physical passage facility upgrade, improvement, or addition that was part of the original design of the passage facility, or an adjustment to the fish passage facility or its operations. A "Facility Modification" means a physical alteration or addition to a physical passage facility that requires a new design. When making Facility Modifications, the Licensee must follow the design process set out in Section 4.1.2 of the Settlement Agreement, in Consultation with the ACC (including at least the Services). Whenever any Facility Adjustment or Facility Modification is completed, the Licensee must test the operation of the relevant facility for a reasonable time to determine the effectiveness of such adjustment or modification. At the direction of the Services and after any required Commission approvals and obtaining all required Permits, the Licensee must make Facility Adjustments and Facility Modifications to the relevant passage facility to achieve the relevant performance standards for each of the species designated in the Settlement Agreement as soon as practicable.

(a) If ODS is not being met, then the Licensee must make Facility Adjustments or Facility Modifications to downstream passage facilities as follows:

(1) If the CE is less than 95 percent and greater than or equal to 75 percent or the CS for smolts is less than 99.5 percent and greater than or equal to 98 percent, or the CS for fry is less than 98 percent and greater than or equal to 96 percent, or Injuries to juvenile Transported Anadromous Species caused by downstream collection and transport are greater than 2 percent but less than 4 percent, the Licensee must make Facility Adjustments directed by the Services to achieve the performance standard or standards that are not being met but is not required to make Facility Modifications; or

(2) If the CE is less than 75 percent, or the CS for smolts is less than 98 percent, or the CS for fry is less than 96 percent, or Injuries to juvenile Transported Anadromous Species caused by downstream collection and transport are greater than or equal to 4 percent, the Licensee must make the Facility Modifications directed by the Services to achieve the performance standard or standards that are not being met; provided that if the Services believe a Facility Adjustment will likely achieve the performance standard or standards that are not being met, then the Licensee must first make Facility Adjustments as directed by the Services.

(b) If the ODS is being met but the CE is less than 95 percent, the CS for smolts is less than 99.5 percent, the CS for fry is less than 98 percent, or Injury to juvenile Transported Anadromous Species caused by downstream collection and transport is greater than 2 percent, the Licensee must make Facility Adjustments directed by the Services to downstream facilities but is not required to make Facility Modifications.

(c) For bull trout, the Licensee shall make Facility Adjustments or Facility Modifications to downstream passage facilities as follows:

(1) If the survival of bull trout is less than 99.5% and is greater than or equal to 98%, or Injuries caused by downstream collection and transport are greater than 2% but less than 4%, the Licensee shall make Facility Adjustments directed by the FWS to achieve the performance standard or standards that are not being met, but shall not be required to make Facility Modifications; or

(2) If the survival of bull trout is less than 98%, or Injuries caused by downstream collection and transport are greater than or equal to 4%, the Licensee shall make the Facility Modifications directed by the FWS to achieve the performance standard or standards that are not being met; provided that if the FWS determines that a Facility Adjustment will likely achieve the performance standard or standards that are not being met, then the Licensees shall make Facility Adjustments as directed by the FWS.

(d) For Transported Species, if UPS and/or ATE are not being met, then the Licensee will make Facility Adjustments or Facility Modifications to upstream passage facilities as directed by the Services, consistent with the Settlement Agreement.

(e) Except as required in a proceeding initiated with Section 15.3.2 of the Settlement Agreement, or as provided in Section 3.5.2.b of the Settlement Agreement, the Licensee shall not be required to (1) make structural or operational changes with respect to its generating facilities or Project reservoir to achieve standards, (2) replace any fish passage facility with another passage facility, or (3) install additional collection and transport facilities or alternative fish passage facilities beyond those required by the Settlement Agreement. This Article is not intended to alter specific obligations provided under this License or the Settlement Agreement, including, without limitation, operational constraints required under Settlement Agreement Sections 4.2, 4.9.1, and 6.2.

## **5 Species to be Transported**

For purposes of all fish passage provisions contained herein, the Licensee must only provide for the transport of spring Chinook, winter steelhead, coho, bull trout, and sea-run cutthroat. Notwithstanding the preceding sentence, the Licensee, after Consultation with the ACC (including at least the Services), and if directed by the Services, must also provide for the transport of fall Chinook or summer steelhead that enter the passage facilities.

## **6 Upstream Transport Before Full Adult Fish Passage**

Unless and until alternative technologies are implemented, the Licensee must provide for the transport by truck of all Transported Species collected at the Merwin Upstream Transport Facility. Once the Merwin Upstream Transport Facility is completed, and for so long as trucks are used, the Licensee must provide for transport according to the Upstream Transport Plan described in Section 4.1.8.c of the Settlement Agreement.

## **7 Upstream Transport After Full Adult Fish Passage**

On or before the 13th anniversary of the Issuance of the last of the Licenses for the Merwin (P-935), Yale (P-2071), Swift No. 1 (P-2111), and Swift No. 2 (P-2213) projects, the Licensee must evaluate alternative adult fish transport technologies (such as fish trams, cable lifts, or other new technologies) at the facility that allow transportation of the fish with the least practicable amount of handling or other stress-inducing actions, considering the need for sorting fish. The Licensee must implement such technologies provided that (1) alternative technologies are determined, by engineers qualified in fish passage and designated respectively by the WDFW, FWS, NOAA Fisheries, and the Licensee to be feasible and effective in transporting fish over dam facilities; (2) the Services determine that such technologies are suitable for meeting the Services' fish passage goals and the biological benefits are expected to be equal to or greater than the benefits of trap-and-transport by truck; and (3) the costs of the selected technology (considering both initial capital cost and ongoing operational and maintenance costs) do not significantly exceed the costs of transporting fish by truck. If there is a disagreement with the engineers' determination under (1) above, the Licensee shall allow for the resolution of disputes in accordance with the ADR Procedures in Section 15.10 of the Settlement Agreement. The Licensee must begin carrying out such technologies after acquisition of all required Permits according to the schedule set forth in the Settlement Agreement. The selection of such technologies and selection of final designs by the Licensee must be made with the approval of

the Services after Consultation with the ACC (including at least the Services), pursuant to Section 4.1.2 of the Settlement Agreement. The costs for such alternate technologies must be considered cumulatively for all of the Lewis River projects, so that a cost savings from alternate technology at one Project could offset a cost increase for such technology at another Project, compared to trapping and transporting by truck. If costs are determined to significantly exceed the costs of transporting fish by truck, the Parties to the Settlement Agreement may make reasonable efforts to find more cost-effective facility designs that will achieve the same or greater biological benefit compared to trap-and-transport by truck. If (i) after due comparison of the costs of initial capital and ongoing operations and maintenance through the remaining term of the Licenses of trapping and transporting by truck versus such costs of an alternative technology for upstream passage it appears that such alternate technologies would not be implemented because of increased costs; and (ii) any Party (other than the Licensee or the licensees for the Swift No.1, Swift No. 2 and Yale projects): (A) identifies alternate sources of funding, (B) provides a guarantee of payment acceptable to the Licensee of the difference in capital and ongoing operations and maintenance costs over the remaining term of the Licenses between trap-and-transport and such alternative technology, and (C) provides such funding without additional conditions unacceptable to the Licensee, express or implied; then the Licensee, shall implement such technologies after acquisition of all required Permits for the Merwin Upstream Transport Facility after any required time for transition between truck and alternative transport facilities but no earlier than upon operation of both the Yale Upstream Facility and Swift Upstream Facility pursuant to the licenses for the Yale project and the Swift No. 1 and Swift No. 2 projects, respectively. If alternative methods are not used at any facility because they do not meet the standards of Section 4.1.8 of the Settlement Agreement, then the Licensee must continue to use trap and transport by truck at such facility.

## **7.1 Upstream Transport Plan**

The Licensee must develop, in Consultation with the ACC and with the approval of the Services, subject to Section 15.14 of the Settlement Agreement, a plan that must describe the frequency and procedures to achieve safe, timely, and effective upstream passage (the “Upstream Transport Plan”) from the Merwin Upstream Transport Facility. The Licensee must provide for the transport of fish at a minimum frequency of once daily, or more if necessary, to achieve safe, timely, and effective passage. The Licensee must submit the Upstream Transport Plan to the Commission before completion of the Merwin Upstream Transport Facility. The Licensee, must modify the Upstream Transport Plan in Consultation with the ACC and with the approval of the Services, subject to Section 15.14 of the Settlement Agreement, to identify the distribution of adults transported to Yale Lake and Swift Reservoir when the Yale Downstream Facility as provided in the License for the Yale project (P-2071) is completed and prior to completion of the Yale Upstream Facility as provided in the License for the Yale project (P-2071) and Swift Upstream Facility as provided in the Licenses for the Swift No. 1 and Swift No. 2 projects. The Licensee, together with the licensees for the Yale, Swift No. 1 and Swift No. 2 projects, must modify the Upstream Transport Plan to address transport from the Yale Upstream Facility and the Swift Upstream Facility as provided in the licenses for the Yale, Swift No. 1 and Swift No. 2 projects.

## **8 Downstream Transport**

The Licensee must provide for the downstream transport of migrating Transported Species collected in the Merwin Downstream Facility by truck.

If the Licensee has not yet commenced construction of the Merwin Downstream Facility, the Licensee must construct and provide for the operation of a bypass passage system in lieu of trapping and transporting by truck if the Services determine that a salmonid bypass passage system would provide equal or greater biological benefit, and would not have unacceptable impacts on other fish, such as wild fall Chinook, between Merwin Dam and the Release Ponds which will be located further downstream.

If the Licensee has commenced construction of the Merwin Downstream Facility and the Services subsequently determine that a salmonid bypass passage system would provide equal or greater biological benefit and would not have unacceptable impacts on fish between Merwin Dam and the Release Ponds, and the Licensee does not determine that the capital, operation and maintenance costs of such bypass would be significantly greater than the capital, operation and maintenance costs of continued use of trap and transport by truck, then the Licensee must Consult with the ACC (including at least the Services) regarding a possible change in methods for downstream passage, in accordance with the Settlement Agreement.

### **8.1 Downstream Transport Plan**

The Licensee, together with the licensees for the Yale and Swift No. 1 projects, must modify the Downstream Transport Plan prepared in accordance with the License for the Yale and Swift No. 1 projects, in Consultation with the ACC, and with the approval of the Services subject to Section 15.14 of the Settlement Agreement, to address transport from the Merwin Downstream Facility. The plan must describe the frequency and procedures to achieve safe, timely, and effective downstream transport. The Licensee, together with the licensees for the Yale and Swift No. 1 projects must submit the modified Downstream Transport Plan to the Commission before completion of the Merwin Downstream Facility.

### **9.1 Merwin Trap Flow Restrictions**

To the extent feasible, the Licensee must limit the discharge from the generation facilities at Merwin Dam for safety purposes to a maximum of 5,250 cubic feet per second (“cfs”) or other flow level to be determined by the Licensee and the State of Washington Department of Fish and Wildlife (WDFW), measured at the Ariel gage, when personnel are working in the existing fish trap. This practice must continue until such time as upgrades to the Merwin Trap are made and the Licensee determines, in Consultation with WDFW, that such upgrades are effective in providing a greater margin of safety for such personnel. The Licensee must coordinate with WDFW on scheduling such flows and times when fish collection will occur.



## **9.2 Merwin Trap Upgrades**

The Licensee must determine what information is required to improve operating conditions for personnel working in the Merwin Trap by providing a greater margin of safety. The Licensee must gather such information promptly to allow design of operating improvements. By the second anniversary of the Issuance of this License, the Licensee must modify the Merwin Trap as needed to improve the human working environment such that flow restrictions described above are no longer necessary, without introducing additional risk to fish. The Licensee must coordinate with and must provide 30 percent and 60 percent completed preliminary designs for review and comment to the Services and WDFW. The Licensee must provide the 90 percent preliminary designs for the improvements described in this article to the ACC (including at least the Services) within 30 days after the issuance of this License, in accordance with the Settlement Agreement. The Licensee must submit final designs to the Commission upon approval by the Services, subject to Section 15.14 of the Settlement Agreement, but not later than 90 days after Issuance of the Merwin License, or Aug. 31, 2006, whichever is later. Once the improvements are completed or beginning upon the second anniversary of the Issuance of this License, whichever is later, the Licensee must provide for fish to be sorted at the Lewis River Hatchery rather than at the Merwin Trap and must provide up to two additional staffers, if necessary, to clear the Merwin Trap once daily for the benefit of the fish in the facility.

## **9.3 Interim Merwin Trap Operations**

Until construction of the Merwin Upstream Transport Facility, the Licensee must operate the upgraded Merwin Trap solely for the following purposes: to collect hatchery fish returning from the ocean and to transport any bull trout collected to Yale Lake, and fish other than hatchery fish and bull trout will be returned to the river below Merwin Dam. Until the Merwin Upstream Transport Facility is completed, the Licensee, in coordination with WDFW, must make reasonable efforts to operate the Merwin powerhouse to allow fish trapping operations at the Merwin Trap.

## **9.4 Merwin Upstream Collection and Transport Facility**

By six months after the fourth anniversary of the Issuance of this License, the Licensee must construct and provide for the operation of an adult trap and transport facility for use to collect, sort, and transport hatchery fish and upstream-migrating adult Transported Species. The Licensee must provide for the transport of adult Transported Anadromous Species as provided in the Settlement Agreement. The Licensee shall provide for the transport of any bull trout collected below Merwin Dam to Yale Lake unless otherwise directed by the FWS.

The Merwin Upstream Transport Facility must be designed by the Licensee, to the extent feasible, to be compatible both with truck transport and with alternate modes of transport that may be selected as described in section 4.1.8 of the Settlement Agreement. When designing the Merwin Upstream Transport Facility, the Licensee must consider a wide range of design options for the trap and transport facility, including, without limitation, a complete new facility and incorporation of the Merwin Trap (as upgraded) into the new design. The Licensee must consider designs for the Merwin Upstream Transport Facility such that it would meet applicable

performance standards regardless of the operational state of the hydroelectric generation facilities at Merwin Dam. The Licensee must provide for the operation of the passage facility year-round for the remaining term of this License. In Consultation with the Services, the Licensee must provide for safe, timely, and effective handling of all species entering the Merwin Upstream Transport Facility. The Licensee must ensure that all species that will not be transported above Merwin Dam or destined for the Hatchery Facilities shall be returned to the Lewis River below Merwin Dam in a manner and frequency that adequately protects them. The Licensee must provide the 90 percent preliminary designs to the ACC (including at least the Services) by the first anniversary of the Issuance of this License and must follow the procedures set forth in the Settlement Agreement. Subject to Section 15.14 of the Settlement Agreement, the Licensee must submit final designs to the Commission upon approval by the Services, but no later than six months after the first anniversary of the Merwin License.

## **10 Release Ponds**

The Licensee, together with the licensees for the Swift No. 1 and Yale projects, must design and construct, in Consultation with the ACC and with the final approval of NOAA Fisheries, stress Release Ponds below the Merwin Project to be used for downstream migrating fish that are collected at the Swift Downstream Facility, the Yale Downstream Facility and the Merwin Downstream Facility, as described in Section 4.4.3 of the Settlement Agreement.

## **11 Downstream Passage at Merwin Dam**

On or before the 17th anniversary of the Issuance of this License, the Licensee must construct and provide for the operation of a passage facility or facilities at Merwin Dam to collect, sort, tag, and transport downstream-migrating Transported Anadromous Species (the “Merwin Downstream Facility”), unless otherwise directed by the Services pursuant to Section 4.1.9 of the Settlement Agreement. Specifically, the Licensee must construct either a modular surface collector or, as directed by the Services, an alternate passage facility or set of facilities provided the detailed engineering estimate of the cost does not exceed the sum of factors described in Section 4.6 of the Settlement Agreement. The Licensee must provide for the downstream transport of migrating transported anadromous juvenile and adult salmonids from Lake Merwin to the Release Ponds below Merwin Dam. Bull trout collected in the Merwin Downstream Facility shall be returned to Lake Merwin unless otherwise directed by the FWS; provided that bull trout with a smolt-like appearance, as determined by the Licensee (using methods derived in Consultation with the ACC including at least the Services), shall be transported in the same manner as Transported Anadromous Species, as described in Section 4.1.8 of the Settlement Agreement, and shall be transported to a location determined by the FWS below Merwin Dam.

The Licensee must provide for the tagging of a statistically valid sample of the fish transported as appropriate to accomplish the monitoring and evaluation objectives set forth below, the methodology of such tagging to be determined by the Licensee in Consultation with the ACC (including at least the Services) and approved by the Services. The Licensee must provide for the operation of the passage facility for the remaining term of this License unless the Services determine, after discussion with the ACC, that operation of the Merwin Downstream Facility should not continue. If the Services make such determination after the passage facility has been

operating, the Licensee shall notify the Commission of such decision. The Licensee must provide 90 percent preliminary designs to the ACC (including at least the Services) on or before the 13th anniversary of this License. Subject to Section 15.14 of the Settlement Agreement, the Licensee must submit final designs to the Commission upon approval by the Services, but not later than six months after providing preliminary designs to the ACC.

## **12 Bull Trout Entrainment Reduction**

Unless already completed, the Licensee shall design and implement a study to evaluate bull trout entrainment reduction methods in Consultation with the ACC (including at least the Services). Potential entrainment reduction methods include installation of exclusion devices, such as strobe lights, and installation of barrier nets with submersible cork lines and designed to accommodate a Merwin-type floating trap. Due to the small numbers of bull trout in Yale Lake and Lake Merwin, any evaluation of strobe lights shall be performed in Swift Reservoir. Upon the request of the FWS, the Licensee shall, in Consultation with the ACC and subject to the approval of the FWS, develop criteria to determine when entrainment reduction measures similar to those implemented at the Yale project as provided in the license for the Yale project (P-2111) should be implemented at Merwin Dam. The Licensee shall submit the criteria to the Commission for approval after obtaining approval by the FWS subject to Section 15.14 of the Settlement Agreement, within 12 months after the FWS request for criteria. Once approved by the Commission, if and when such criteria are met, the Licensee shall commence the entrainment reduction measures, and shall maintain such measures until commencing operation of the Merwin Downstream Facility.

## **13 Downstream Bull Trout Facilities**

If, pursuant to Section 4.1.9 of the Settlement Agreement, the Licensee does not build the Merwin Downstream Facility, then when the FWS determines that bull trout populations have increased sufficiently in Lake Merwin, but not sooner than the 17th anniversary of the Issuance of this License, the Licensee shall construct and provide for the operation of a passage facility similar to the Yale Downstream Bull Trout Facility at Merwin Dam (Merwin Downstream Bull Trout Facility).

The Merwin Downstream Bull Trout Facility shall be similar in magnitude and scale to modular floating Merwin-type collectors and are not intended to be passage facilities of the same magnitude and expense as the Merwin Downstream Facility. The Licensee shall provide for monitoring of performance as provided in the Monitoring and Evaluation Plan (M&E Plan) described in Section 9 of the Settlement Agreement, and make necessary and appropriate Facility Adjustments and Facility Modifications to the Merwin Downstream Bull Trout Facility, in Consultation with the ACC (including at least the Services) and with approval of the FWS, subject to Section 15.14 of the Settlement Agreement, to achieve relevant performance standards, provided that such modifications shall not require installation of a different type of passage facility. The Licensee shall provide preliminary (30%) designs to the ACC for the Merwin Downstream Bull Trout Facility within 12 months after a determination by the FWS and NOAA Fisheries under Section 4.1.9 of the Settlement Agreement. The Licensee shall follow the provisions in Sections 4.1.1 through 4.1.3 of the Settlement Agreement, when developing

designs for the facilities. The Licensee shall submit final designs to the Commission upon approval by the FWS, subject to 15.14 of the Settlement Agreement, but not later than 60 days after submission of the final design to the FWS.

#### **14 Obligation to Consult**

Notwithstanding any other provision of these prescriptions for Fishways, and with respect to the requirements contained therein, the Licensee's obligation to convene the ACC shall be subject to Section 15.12 of the Settlement Agreement. Where Consultation is required by the Settlement Agreement, the Licensee shall not have an obligation to Consult regarding these Fishway prescriptions with Parties (other than the Services) which have withdrawn from the Settlement Agreement, or with any Party (other than the Services) if the Settlement Agreement is terminated, except as described in Section 15.13 of the Settlement Agreement.

#### **15 Dispute Resolution**

In implementing these prescriptions for Fishways, the Licensee shall allow for the resolution of disputes, if any, among the Parties to the Settlement Agreement in accordance with the non-binding Alternative Dispute Resolution procedures set forth in the Settlement Agreement.

## **Attachment 2**

**UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE  
PRESCRIPTIONS FOR FISHWAYS  
PURSUANT TO SECTION 18 OF THE FEDERAL POWER ACT  
FOR THE  
YALE HYDROELECTRIC PROJECT  
PROJECT NO. 2071**

(For convenience and clarity, these prescriptions are numbered to match the numbers contained in the applicants revised draft license articles filed with the Commission on January 6, 2006)

### **2 Fish Passage Facilities Design**

To provide for the safe, timely and effective passage past the Project of upstream and downstream migrating salmonids, the Licensee shall develop and implement the Yale Downstream Facility and the Yale Upstream Facility in accordance with, and subject to the limitations included in, all of the relevant provisions of the Settlement Agreement Concerning the Relicensing of the Lewis River Hydroelectric Projects, FERC Project Nos. 935, 2071, 2111, and 2213, Cowlitz and Skamania Counties, Washington, dated November 30, 2004, and filed with the Commission on December 3, 2004.

#### **2.1 Studies to Inform Design Decisions**

The Licensee, in Consultation with the ACC (including at least the Services) and subject to the final approval of the Services, must develop and carry out studies to inform the design of upstream and downstream fish passage facilities described in the Settlement Agreement with the goal of improving the likelihood that the passage facilities will be successful as initially constructed. Needed information may include the hydraulic characteristics of the Swift No. 1, Yale, and Merwin forebays and tailraces (e.g., a three-dimensional numerical flow-field analysis) and the movement of adult and juvenile salmonids. The Licensee must complete these studies sufficiently in advance of the design decisions required by the Settlement Agreement so that the Licensee, the Services, and the ACC can take the resulting information into account when making final design decisions.

#### **2.2 Design Review**

Except as otherwise provided under Section 4.1.9 of the Settlement Agreement, the Licensee must design the Yale Downstream Facility and the Yale Upstream Facility, to

meet the performance standard targets set out in Section 4.1.4.b of the Settlement Agreement, as applicable. The Licensee must use the best available technology for the type of passage facility being constructed, and design the passage facility to provide flexibility for subsequent expansion or Facility Adjustments, if needed, to meet performance standards. A fish passage facility may include duplication of some components (for example, multiple entrances) and still be considered a single passage facility. The Licensee must coordinate with and provide 30 percent and 60 percent completed preliminary designs for review and comment to the Services and WDFW. The Licensee must notify the ACC when design work has begun, and provide the 30 percent and 60 percent preliminary designs to any other Party to the Settlement Agreement at the Party's request. The Licensee must provide the Services and WDFW 45 days to provide their comments. The Licensee must submit the 90 percent preliminary designs with the relevant engineering, hydraulic, and biological work to the ACC (including at least the Services) at the times set forth in the Settlement Agreement. The Licensee must provide the ACC (including at least the Services) 45 days to provide its comments on the 90 percent preliminary designs and must finalize the designs in Consultation with the ACC (including at least the Services) and with the approval of the Services. The Licensee must consider and address in writing those written comments provided by the members of the ACC (including at least the Services) when submitting final designs to the Services for approval.

### **3 Permits and Time for Construction**

Upon approval of passage facility designs by the Commission, the Licensee must diligently and expeditiously acquire all required Permits. The time by which each passage facility must be placed in operation is set forth in the Settlement Agreement.

### **4 Performance Standards for Fish Passage**

The Licensee must provide for the safe, timely, and effective passage of salmonids being transported past the Project as described the Settlement Agreement. The sole performance standard for kelts and downstream migration of adult sea-run cutthroat must be safe, timely, and effective passage. Specific life stages described below (not including kelts or downstream migrating sea-run cutthroat) have quantitative standards. The Licensee must construct and provide for the operation and maintenance of fish passage facilities that collect all life stages of salmonids that are present at the facility, and function during all flows and during all seasons; except for upstream passage facilities, to the extent it is infeasible due to flood events that require spill that could not be reasonably accommodated by the passage facility.

The Licensee must employ the following definitions in carrying out and monitoring the performance standards:

- Adult Trap Efficiency ("ATE"): The percentage of adult Chinook, coho, steelhead, bull trout, and sea-run cutthroat that are actively migrating to a location above the trap and that are collected by the trap.
- Collection Efficiency ("CE"): The percentage of juvenile anadromous fish of each of the species to be transported, as described in Section 4.1.7 of the Settlement Agreement, that is available for collection and that is actually collected.

- **Collection Survival (“CS”):** The percentage of juvenile anadromous fish of each of the species to be transported collected that leave Release Ponds alive.
- **Injury:** Visible trauma (including, but not limited to, hemorrhaging, open wounds without fungus growth, gill damage, bruising greater than 0.5 cm in diameter, etc.), loss of equilibrium, or greater than 20 percent descaling. “Descaling” is defined as the sum of the area on one side of the fish that shows recent scale loss. This does not include areas where scales have regenerated or fungus has grown.
- **Overall Downstream Survival (“ODS”):** The percentage of juvenile anadromous fish of each of the species to be transported that enter the reservoirs from natal streams and that survive to enter the Lewis River below Merwin Dam by collection, transport, and release via the juvenile fish passage system, passage via turbines, or some combination thereof, calculated as provided in Schedule 4.1.4 of the Settlement Agreement.
- **Upstream Passage Survival (“UPS”):** Percentage of adult fish of each of the species to be transported that are collected that survive the upstream trapping-and-transport process. For sea-run cutthroat and bull trout, “adult” means fish greater than 13 inches in length.

#### **4.1 Overall Fish Passage Performance Standards for Salmonids**

For each species, the Licensee must achieve the following overall performance standards for fish passage: ODS of greater than or equal to 80 percent until such time as the Yale Downstream Facility is built or the funds from the In Lieu Fund, as described in Section 7.6 of the Settlement Agreement, become available to the Services in lieu of constructing the Yale Downstream Facility, after which time ODS must be greater than or equal to 75 percent; UPS of greater than or equal to 99.5 percent; and ATE to be established as described in the Settlement Agreement. ODS, as defined by the Settlement Agreement, must include several components of juvenile passage, including reservoir survival, collection efficiency and collection survival, with the latter two terms having individual, quantitative performance standards, as described in Section 4.1.4 of the Settlement Agreement. Moreover, ODS must also incorporate estimates of juvenile survival rates for fish that elude collection but successfully navigate through Project turbines. For purposes of estimating ODS, until turbine survival studies are performed, the Licensee must assume that the turbine survival is equal to zero percent (0%). If the performance standards for ODS, UPS and ATE are not achieved within a reasonable time, the Licensee must make Facility Adjustments and Modifications, as described in Section 4.1.6 of the Settlement Agreement.

#### **4.2 Passage Facility Design Performance Standards for Salmonids**

The Licensee must design and construct downstream fish passage facilities to achieve, for each species, a CE of equal to or greater than 95 percent, a CS of equal to or greater than 99.5 percent for smolts and 98 percent for fry, and adult bull trout survival of equal to or greater than 99.5 percent. Design performance objectives for Injury are less than or equal to 2 percent. The Licensee must design and construct upstream fish passage facilities to achieve the UPS equal to or greater than 99.5 percent and the ATE to be established as described in the Settlement Agreement.

### **4.3 Adult Trap Efficiency for Salmonids**

As soon as practicable, and following Consultation described by the Settlement Agreement, the Licensee must develop an ATE performance standard for the Yale Upstream Facility to ensure the safe, timely, and effective passage of adult salmonids. Until such time as the standard has been developed, the Licensee must use NOAA Fisheries' fish passage (Anadromous Salmonid Passage Facility Guidelines and Criteria, NMFS (Jan. 31, 2004)). The Licensee must consider without limitation entry rate, fall back, crowding at the entrance, delay, and abandonment of the trap area. When performance standards for ATE have been developed, the Licensee must submit the standards to the Commission and such standards must be used to judge performance for the facilities when considering Facility Adjustments or Facility Modifications.

### **4.4 Monitoring and Evaluation of Performance Standards**

As described in the Settlement Agreement, once the Yale Upstream Facility or Yale Downstream Facility is constructed and placed in operation, and after each Facility Adjustment or Facility Modification, the Licensee must evaluate, in Consultation with the ACC (including at least the Services) and with the approval of the Services, whether performance standards are being met for each of the species designated in the Settlement Agreement, in accordance with the monitoring and evaluation plan described in Section 9 of the Settlement Agreement.

### **4.5 Adjustments or Modifications to Passage Facilities to Achieve Performance Standards**

A "Facility Adjustment" means a physical passage facility upgrade, improvement, or addition that was part of the original design of the passage facility, or an adjustment to the fish passage facility or its operations. A "Facility Modification" means a physical alteration or addition to a physical passage facility that requires a new design. When making Facility Modifications, the Licensee must follow the design process set out in Section 4.1.2 of the Settlement Agreement, in Consultation with the ACC (including at least the Services). Whenever any Facility Adjustment or Facility Modification is completed, the Licensee must test the operation of the relevant facility for a reasonable time to determine the effectiveness of such adjustment or modification. At the direction of the Services and after any required Commission approvals and obtaining all required Permits, the Licensee must make Facility Adjustments and Facility Modifications to the relevant passage facility to achieve the relevant performance standards for each of the species designated in the Settlement Agreement as soon as practicable.

(a) If ODS is not being met, then the Licensee must make Facility Adjustments or Facility Modifications to downstream passage facilities as follows:

- (1) If the CE is less than 95 percent and greater than or equal to 75 percent or the CS for smolts is less than 99.5 percent and greater than or equal to 98 percent, or the CS for fry is less than 98 percent and greater than or equal to 96 percent, or Injuries to juvenile Transported Anadromous Species caused by downstream collection and transport are greater than 2 percent but less than 4 percent, the Licensee must make Facility



Adjustments directed by the Services to achieve the performance standard or standards that are not being met but is not required to make Facility Modifications; or

(2) If the CE is less than 75 percent, or the CS for smolts is less than 98 percent, or the CS for fry is less than 96 percent, or Injuries to juvenile Transported Anadromous Species caused by downstream collection and transport are greater than or equal to 4 percent, the Licensee must make the Facility Modifications directed by the Services to achieve the performance standard or standards that are not being met; provided that if the Services believe a Facility Adjustment will likely achieve the performance standard or standards that are not being met, then the Licensee must first make Facility Adjustments as directed by the Services.

(b) If the ODS is being met but the CE is less than 95 percent, the CS for smolts is less than 99.5 percent, the CS for fry is less than 98 percent, or Injury to juvenile Transported Anadromous Species caused by downstream collection and transport is greater than 2 percent, the Licensee must make Facility Adjustments directed by the Services to downstream facilities but is not required to make Facility Modifications.

(c) For bull trout, the Licensee shall make Facility Adjustments or Facility Modifications to downstream passage facilities as follows:

(1) If the survival of bull trout is less than 99.5% and is greater than or equal to 98%, or Injuries caused by downstream collection and transport are greater than 2% but less than 4%, the Licensee shall make Facility Adjustments directed by the FWS to achieve the performance standard or standards that are not being met, but shall not be required to make Facility Modifications; or

(2) If the survival of bull trout is less than 98%, or Injuries caused by downstream collection and transport are greater than or equal to 4%, the Licensee shall make the Facility Modifications directed by the FWS to achieve the performance standard or standards that are not being met; provided that if the FWS determines that a Facility Adjustment will likely achieve the performance standard or standards that are not being met, then the Licensees shall make Facility Adjustments as directed by the FWS.

(d) For Transported Species, if UPS and/or ATE are not being met, then the Licensee will make Facility Adjustments or Facility Modifications to upstream passage facilities as directed by the Services, consistent with the Settlement Agreement.

(d) Except as required in a proceeding initiated with Section 15.3.2 of the Settlement Agreement, or as provided in Section 3.5.2.b of the Settlement Agreement, the Licensee shall not be required to (1) make structural or operational changes with respect to its generating facilities or Project reservoir to achieve standards, (2) replace any fish passage facility with another passage facility, or (3) install additional collection and transport facilities or alternative fish passage facilities beyond those required by the Settlement Agreement. This Article is not intended to alter specific obligations provided under this License or the Settlement Agreement, including, without

limitation, operational constraints required under Settlement Agreement Sections 4.2, 4.9.1, and 6.2.

## **5 Species to be Transported**

For purposes of all fish passage provisions contained herein, the Licensee must only provide for the transport of spring Chinook, winter steelhead, coho, bull trout, and sea-run cutthroat. Notwithstanding the preceding sentence, the Licensee, after Consultation with the ACC (including at least the Services), and if directed by the Services, must also provide for the transport of fall Chinook or summer steelhead that enter the passage facilities.

## **6 Upstream Transport Before Full Adult Fish Passage**

Unless and until alternative technologies are implemented, the Licensee must provide for the transport by truck of all Transported Species collected at the Yale Upstream Facility. Once the Merwin Upstream Transport Facility is completed, and for so long as trucks are used, the Licensee must provide for transport according to the Upstream Transport Plan described in Section 4.1.8.c of the Settlement Agreement.

## **7 Upstream Transport After Full Adult Fish Passage**

On or before the 13th anniversary of the Issuance of the last of the Licenses for the Merwin (P-935), Yale (P-2071), Swift No. 1 (P-2111), and Swift No. 2 (P-2213) projects, the Licensee must evaluate alternative adult fish transport technologies (such as fish trams, cable lifts, or other new technologies) at the facility that allow transportation of the fish with the least practicable amount of handling or other stress-inducing actions, considering the need for sorting fish. The Licensee must implement such technologies provided that (1) alternative technologies are determined, by engineers qualified in fish passage and designated respectively by WDFW, FWS, NOAA Fisheries, and the Licensee, to be feasible and effective in transporting fish over dam facilities; (2) the Services determine that such technologies are suitable for meeting the Services' fish passage goals and the biological benefits are expected to be equal to or greater than the benefits of trap-and-transport by truck; and (3) the costs of the selected technology (considering both initial capital cost and ongoing operational and maintenance costs) do not significantly exceed the costs of transporting fish by truck. If there is a disagreement with the engineers' determination under (1) above, the Licensee shall allow for the resolution of disputes in accordance with the ADR Procedures in Section 15.10 of the Settlement Agreement. The Licensee must begin carrying out such technologies after acquisition of all required Permits according to the schedule set forth in the Settlement Agreement. The selection of such technologies and selection of final designs by the Licensee must be made with the approval of the Services after Consultation with the ACC (including at least the Services), pursuant to Section 4.1.2 of the Settlement Agreement. The costs for such alternate technologies must be considered cumulatively for all of the Lewis River projects, so that a cost savings from alternate technology at one Project could offset a cost increase for such technology at another Project, compared to trapping and transporting by truck. If costs are determined to significantly exceed the costs of transporting fish by truck, the Parties to the Settlement Agreement may make reasonable efforts to find more cost-effective facility designs that will achieve the same or

greater biological benefit compared to trap-and-transport by truck. If (i) after due comparison of the costs of initial capital and ongoing operations and maintenance through the remaining term of the Licenses of trapping and transporting by truck versus such costs of an alternative technology for upstream passage it appears that such alternate technologies would not be implemented because of increased costs; and (ii) any Party (other than the Licensee and the licensees for the Swift No.1, Swift No. 2 and Merwin projects): (A) identifies alternate sources of funding, (B) provides a guarantee of payment acceptable to the Licensee of the difference in capital and ongoing operations and maintenance costs over the remaining term of the License between trap-and-transport and such alternative technology, and (C) provides such funding without additional conditions unacceptable to the Licensee, express or implied; then the Licensee shall implement such technologies after acquisition of all required Permits according to the schedule set forth in Section 4.7 of the Settlement Agreement for the Yale Upstream Facility. If alternative methods are not used at any facility because they do not meet the standards of Section 4.1.8 of the Settlement Agreement, then the Licensee must continue to use trap and transport by truck at such facility.

## **7.1 Upstream Transport Plan**

The Licensee, together with the licensee for the Merwin project, must modify the Upstream Transport Plan, prepared in accordance with the License for the Merwin (P-935) project, in Consultation with the ACC (including at least the Services) and with the approval of the Services, subject to Section 15.14 of the Settlement Agreement, to address transport from the Yale Upstream Facility if trucking is to be used for transport from that facility. The plan must describe the frequency and procedures to achieve safe, timely, and effective upstream passage. The Licensee must provide for the transport of fish at a minimum frequency of once daily, or more if necessary, to achieve safe, timely, and effective passage. The Licensee, together with the licensee for the Merwin project, must submit the modified Upstream Transport Plan to the Commission before completion of the Yale Upstream Facility. The Licensee, together with the licensees for the Merwin, Swift No. 1 and Swift No. 2 projects, must modify the Upstream Transport Plan to address transport from the Swift Upstream Facility as provided in the licenses for the Swift No. 1 and Swift No. 2 projects.

## **8 Downstream Transport**

The Licensee must provide for the downstream transport of migrating Transported Species collected in the Yale Downstream Facility by truck.

For the Yale Downstream Facility, the Licensee must Consult with the ACC (including at least the Services) regarding a possible change in methods for downstream passage, e.g., a bypass facility in lieu of trap and transport by truck, if (i) the Yale Downstream Facility has been constructed, (ii) a determination has been made that the Licensee for the Merwin project must construct and operate a bypass facility at the Merwin Downstream Facility as provided in the License for the Merwin project (P-935); (iii) the Services determine that a salmonid bypass passage system would provide equal or greater biological benefit; and (iv) the Licensee does not determine that the capital, operation, and maintenance costs of such bypass would be

significantly greater than the capital, operation, and maintenance costs of continued use of trap and transport by truck.

## **8.1 Downstream Transport Plan**

The Licensee, together with the licensee for the Swift No. 1 project, must modify the Downstream Transport Plan prepared in accordance with the License for the Swift No. 1 project, in Consultation with the ACC (including at least the Services), and with the approval of the Services subject to Section 15.14 of the Settlement Agreement, to address transport from the Yale Downstream Facility. The plan must describe the frequency and procedures to achieve safe, timely, and effective downstream transport. The Licensee, together with the licensee for the Swift No. 1 project, must submit the modified Downstream Transport Plan to the Commission before completion of the Yale Downstream Facility.

## **9 Release Ponds**

The Licensee, together with the licensees for the Swift No. 1 and Merwin projects, must design and construct, in Consultation with the ACC and with the final approval of NOAA Fisheries, stress Release Ponds below the Merwin Project to be used for downstream migrating fish that are collected at the Swift Downstream Facility, the Yale Downstream Facility and the Merwin Downstream Facility, as described in Section 4.4.3 of the Settlement Agreement.

## **10 Downstream Passage at Yale Dam**

On or before the 13th anniversary of the Issuance of this License, the Licensee must complete construction and provide for the operation of a passage facility or facilities at Yale Dam to collect, sort, tag, and transport downstream-migrating Transported Anadromous Species (the “Yale Downstream Facility”), unless otherwise directed by the Services pursuant to Section 4.1.9 of the Settlement Agreement. Specifically, the Licensee must either construct a modular surface collector or, as directed by the Services, an alternate passage facility or set of facilities, provided the detailed engineering estimate of the cost does not exceed the sum of factors described in Section 4.5 of the Settlement Agreement. The Licensee must provide for the downstream transport of migrating Transported Species from Yale Lake to the Release Ponds below Merwin Dam. Bull trout collected in the Yale Downstream Facility shall be returned to Yale Lake unless otherwise directed by the FWS, except that bull trout with a smolt-like appearance, as determined by the Licensee (using methods devised in Consultation with the ACC including at least the Services), shall be transported in the same manner as Transported Anadromous Species, as described in Section 4.1.8 of the Settlement Agreement, and shall be transported to a location determined by the FWS below Merwin Dam.

Unless otherwise directed by the Services, the Licensee must provide for the marking of all the transported juvenile anadromous salmonids collected by the Yale Downstream Facility until such time as the Yale Upstream Facility is completed pursuant to this license and the Swift Upstream Facility is completed pursuant to the Swift No. 1 and Swift No. 2 licenses, and must provide for the tagging of a statistically valid sample of the fish transported as appropriate to accomplish the monitoring and evaluation objectives set forth below, the methodology of such tagging to be

determined by the Licensee in Consultation with the ACC (including at least the Services) and approved by the Services. The Licensee must provide for the operation of the passage facility for the remaining term of the License for the Yale project unless at any time the Services, after discussion with the ACC, determine that operation of the Yale Downstream Facility should no longer be continued. If the Services make such determination after the passage facility has been operating, the Licensee shall notify the Commission of such decision.

The Licensee must provide 90 percent preliminary designs to the ACC (including at least the Services) on or before the ninth anniversary of the Issuance of this License. Subject to Section 15.14 of the Settlement Agreement, the Licensee must submit final designs to the Commission upon approval by the Services, but not later than six months after providing preliminary designs to the ACC.

## **11 Upstream Passage at Yale Dam**

Unless otherwise directed by the Services pursuant to Section 4.1.9 of the Settlement Agreement, on or before the 17th anniversary of the Issuance of this License, the Licensee must complete construction and provide for the operation of an adult trap and transport facility to collect, sort, and transport upstream-migrating adult Transported Anadromous Species from Lake Merwin into Yale Lake, except that the FWS may direct that bull trout be transported to a different location. The Licensee must provide for the operation of the passage facility for the remaining term of this License unless the Services later determine, after discussion with the ACC, that operation of the Yale Upstream Facility should not continue. If the Services make such determination after the passage facility is operational, the Licensee shall notify the Commission of such decision. The Licensee must submit preliminary designs to the ACC on or before the 14th anniversary of Issuance of this License and shall file final designs with the Commission upon approval by the Services, subject to Section 15.14 of the Settlement Agreement, but no later than six months after providing preliminary designs to the ACC. The final design for the Yale Upstream Facility will address, if necessary based on the results of water quality monitoring, temperature variations at the upper end of Lake Merwin arising from discontinuous operation of the Yale project. If these facilities do not function as well to collect bull trout as the interim collection method based on effectiveness monitoring, as determined by the FWS, the Licensee shall continue the interim collection method.

## **12 Yale Spillway Modifications**

The Licensee must design, permit, and construct improvements to the Yale spillway by six months after the fourth anniversary of the Issuance of this License to improve fish survival over the spillway during spill events. The Licensee must design the improvements in Consultation with the ACC and must provide preliminary designs to the ACC (including at least the Services) within six months after Issuance of this License. The Licensee must provide the ACC (including at least the Services) 60 days to review and comment on the preliminary design. Subject to Section 15.14 of the Settlement Agreement, the Licensee must submit final designs to the Commission upon approval by the Services, but not later than the first anniversary of the Issuance of the License for the Yale project.

### **13 Interim Bull Trout Collect and Haul Programs**

Until the earlier of (a) operation of the Yale Upstream Facility and the Swift Upstream Facility or (b) alternative measures are implemented as provided herein, and unless otherwise directed by the FWS, the Licensee shall implement the bull trout collect-and-haul program at the Yale tailrace. A description of the bull trout collect-and-haul programs to be implemented at Yale tailrace is provided in Schedule 4.9.1 of the Settlement Agreement. The operational practices at Yale included in Schedule 4.9.1 of the Settlement Agreement are not precluded by the provisions of Section 4.1.6 of the Settlement Agreement. The Licensee shall provide for the transport of bull trout collected at the Yale tailrace to Yale Lake. Upon the request of and subject to approval by the FWS, the Licensee in Consultation with the ACC, shall develop criteria, based on the latest research, to determine if, when, and where alternative release locations are needed. Any such alternative locations shall be accessible by transport truck or other mutually acceptable transportation system. At the direction of the FWS, the Licensee shall provide for the transport of bull trout to such alternative locations. The Licensee shall continue to prepare, in Consultation with the ACC and with the approval of the FWS, an annual Bull Trout Collection and Transport Program outlining the manner of and schedule for bull trout collection and passage at Project facilities, incorporating as appropriate either (1) the collection method identified in this Article and testing of alternative interim collection methods as provided in Section 4.9.2 of the Settlement Agreement; or (2) an alternative collection method developed pursuant to Section 4.9.2 of the Settlement Agreement. The Licensee may propose minor modifications to the program identified in Schedule 4.9.1 of the Settlement Agreement as part of the Bull Trout Collection and Transport Program. The Licensee shall not implement any modifications to the Bull Trout Collection and Transport Program until the FWS has approved those changes.

### **14 Investigation of Alternative Bull Trout Collection Methods**

The Licensee shall investigate the use of alternative interim bull trout collection methods in Consultation with the ACC (including at least the Services). Such methods may include, but are not limited to, fyke traps, Denil steep passes, seines, fish wheels, and other types of active and passive gear. Annual testing of alternative methods shall begin upon approval of the Bull Trout Collection and Transport Program described in Section 4.9.1 of the Settlement Agreement, and shall continue until the FWS approves an alternate interim collection method or until operation of the Yale Upstream Facility and the Swift Upstream Facility. The Licensee, together with the licensees for the Swift No. 1 and Swift No. 2 projects, shall submit, annually, a draft report to the ACC (including at least the Services) evaluating alternative interim collection methods tested during the prior year. The Licensee, together with the licensees for the Swift No. 1 and Swift No. 2 projects, shall provide the ACC (including at least the Services) 90 days to comment on the draft report. The Licensee, together with the licensees for the Swift No. 1 and Swift No. 2 projects, shall finalize the report, respond to the comments of the ACC (including at least the Services), and submit a final report to the Commission within 180 days after sending out the report for comments.

## **15 Implementation of Alternative Bull Trout Collection Methods**

If the Licensee identifies, as part of the annual reporting process, an alternative interim collection method that will more safely and effectively collect bull trout than the collection method in use at that time, and if the FWS concurs, then the collection method shall be modified. The Licensee shall (1) within 180 days of submission of the report to the Commission, prepare a plan to implement such method in Consultation with the ACC and with the approval of the FWS, subject to Section 15.14 of the Settlement Agreement, and the Commission; (2) implement such alternative method as soon as practicable after obtaining FWS approval, subject to Section 15.14 of the Settlement Agreement; and (3) continue to implement the alternative method until the FWS approves an alternate interim collection method or until operation of the Yale Upstream Facility.

## **16 Bull Trout Entrainment Reduction**

Unless already completed, the Licensee shall design and implement a study to evaluate bull trout entrainment reduction methods in Consultation with the ACC (including at least the Services). Potential entrainment reduction methods include installation of exclusion devices, such as strobe lights, and installation of barrier nets with submersible cork lines and designed to accommodate a Merwin-type floating trap. Due to the small numbers of bull trout in Yale Lake and Lake Merwin, any evaluation of strobe lights shall be performed in Swift Reservoir. Based upon its evaluation of entrainment reduction methods, the Licensee shall prepare, in Consultation with the ACC (including at least the Services), a draft entrainment reduction plan. The plan shall be developed to minimize unacceptable incidental impacts to bull trout or other fish species. The Licensee shall submit the draft plan to the ACC (including at least the Services) for comment within 16 months after completing the entrainment reduction study. The Licensee shall allow at least 45 days for comment on the draft plan. The Licensee shall finalize the plan and obtain the approval of the FWS. The Licensee shall submit the final plan to the Commission upon approval by the FWS, subject to Section 15.14 of the Settlement Agreement, but not later than November 30, 2007. The Licensee shall commence the approved entrainment reduction measures within one year after the Issuance of this License, and shall maintain such measures until commencing operation of the Yale Downstream Facility.

## **17 Downstream Bull Trout Facilities**

If, pursuant to Section 4.1.9 of the Settlement Agreement, the Licensee does not build the Yale Downstream Facility, then the Licensee, on or before the 13th anniversary of the Issuance of this License, shall construct and provide for the operation of a downstream bull trout collection and transport facility (the “Yale Downstream Bull Trout Facility”) in the Yale forebay.

The Yale Downstream Bull Trout Facility shall be similar in magnitude and scale to modular floating Merwin-type collectors and are not intended to be passage facilities of the same magnitude and expense as the Yale Downstream Facility. The Licensee shall provide for monitoring of performance as provided in the Monitoring and Evaluation Plan (M&E Plan) described in Section 9 of the Settlement Agreement, and make necessary and appropriate Facility Adjustments and Facility Modifications to the Yale Downstream Bull Trout Facility, in

Consultation with the ACC (including at least the Services) and with approval of the FWS, subject to Section 15.14 of the Settlement Agreement, to achieve relevant performance standards, provided that such modifications shall not require installation of a different type of passage facility. The Licensee shall provide preliminary (30%) designs to the ACC for the Yale Downstream Bull Trout Facility within 12 months after a determination by the FWS and NOAA Fisheries under Section 4.1.9 of the Settlement Agreement. The Licensee shall follow the provisions in Sections 4.1.1 through 4.1.3 of the Settlement Agreement, when developing designs for the facilities. The Licensee shall submit final designs to the Commission upon approval by the FWS, subject to 15.14 of the Settlement Agreement, but not later than 60 days after submission of the final design to the FWS.

## **18 Upstream Bull Trout Facilities**

If pursuant to Section 4.1.9 of the Settlement Agreement, the Licensee does not build the Yale Upstream Facility, and the FWS determines on or before the 17th anniversary of the Issuance of the License for the Yale project that collect-and-haul methods established under Sections 4.9.1 or 4.9.2 of the Settlement Agreement, are not meeting bull trout performance standards provided in Section 4.1.4 of the Settlement Agreement, then on or before the 17th anniversary of the Issuance of the License for the Yale project, the Licensee shall complete construction of and provide for the operation of an alternate passage facility (Yale Upstream Bull Trout Facility).

The Yale Upstream Bull Trout Facility is not intended to be a passage facility of the same magnitude and expense as the Yale Upstream Facility described in Section 4.7 of the Settlement Agreement. The Licensee shall select an alternative passage facility design for the Yale Upstream Bull Trout Facility, in Consultation with the ACC (including at least the Services) and with approval of the FWS, subject to Section 15.14 of the Settlement Agreement. The Licensee shall construct and provide for the operation of such passage facility for the remaining term of this License. The Licensee shall follow the provisions of Sections 4.1.1 through 4.1.3 of the Settlement Agreement, when developing designs for these facilities.

The Licensee shall monitor performance of the Yale Upstream Bull Trout Facility as provided in the Monitoring and Evaluation Plan (M&E Plan) described in Section 9 of the Settlement Agreement, and make necessary and appropriate Facility Adjustments and Facility Modifications to the Yale Upstream Bull Trout Facility pursuant to Section 4.1.6 of the Settlement Agreement.

## **19 Obligation to Consult**

Notwithstanding any other provision of these prescriptions for Fishways, and with respect to the requirements contained therein, the Licensee's obligation to convene the ACC shall be subject to Section 15.12 of the Settlement Agreement. Where Consultation is required by the Settlement Agreement, the Licensee shall not have an obligation to Consult regarding these Fishway prescriptions with Parties (other than the Services) which have withdrawn from the Settlement Agreement, or with any Party (other than the Services) if the Settlement Agreement is terminated, except as described in Section 15.13 of the Settlement Agreement.



## **20      Dispute Resolution**

In implementing these prescriptions for Fishways, the Licensee shall allow for the resolution of disputes, if any, among the Parties to the Settlement Agreement in accordance with the non-binding Alternative Dispute Resolution procedures set forth in the Settlement Agreement.

## **Attachment 3**

**UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE  
PRESCRIPTIONS FOR FISHWAYS  
PURSUANT TO SECTION 18 OF THE FEDERAL POWER ACT  
FOR THE  
SWIFT NO. 1 HYDROELECTRIC PROJECT  
PROJECT NO. 2111**

(For convenience and clarity, these prescriptions are numbered to match the numbers contained in the applicants revised draft license articles filed with the Commission on January 6, 2006)

### **2 Fish Passage Facilities Design**

To provide for the safe, timely and effective passage past the Project of upstream and downstream migrating salmonids, the Licensee shall develop and implement the Swift Downstream Facility and, together with the licensee for the Swift No. 2 project, shall develop and implement the Swift Upstream Facility in accordance with, and subject to the limitations included in, all of the relevant provisions of the Settlement Agreement Concerning the Relicensing of the Lewis River Hydroelectric Projects, FERC Project Nos. 935, 2071, 2111, and 2213, Cowlitz and Skamania Counties, Washington, dated November 30, 2004, and filed with the Commission on December 3, 2004.

#### **2.1 Studies to Inform Design Decisions**

The Licensee, in Consultation with the ACC (including at least the Services) and subject to the final approval of the Services, must develop and carry out studies to inform the design of upstream and downstream fish passage facilities described in the Settlement Agreement with the goal of improving the likelihood that the passage facilities will be successful as initially constructed. Needed information may include the hydraulic characteristics of the Swift No. 1, Yale, and Merwin forebays and tailraces (e.g., a three-dimensional numerical flow-field analysis) and the movement of adult and juvenile salmonids. The Licensee must complete these studies sufficiently in advance of the design decisions required by the Settlement Agreement so that the Licensee, the Services, and the ACC can take the resulting information into account when making final design decisions.

#### **2.2 Design Review**

Except as otherwise provided under Section 4.1.9 of the Settlement Agreement, the Licensee must design the Swift Downstream Facility and, together with the licensee for the Swift No. 2 project, shall design the Swift Upstream Facility to meet the performance standard targets, as set

out in Section 4.1.4.b of the Settlement Agreement as applicable. The Licensee, together with Swift No. 2 with respect to the Swift Upstream Facility, must use the best available technology for the type of passage facility being constructed, and design the passage facility to provide flexibility for subsequent expansion or Facility Adjustments, if needed, to meet performance standards. A fish passage facility may include duplication of some components (for example, multiple entrances) and still be considered a single passage facility. The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must coordinate with and provide 30 percent and 60 percent completed preliminary designs for review and comment to the Services and WDFW. The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must notify the ACC when design work has begun, and provide the 30 percent and 60 percent preliminary designs to any other Party to the Settlement Agreement at the Party's request. The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must provide the Services and WDFW 45 days to provide their comments. The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must submit the 90 percent preliminary designs with the relevant engineering, hydraulic, and biological work to the ACC (including at least the Services) at the times set forth in the Settlement Agreement. The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must provide the ACC (including at least the Services) 45 days to provide its comments on the 90 percent preliminary designs and must finalize the designs in Consultation with the ACC (including at least the Services) and with the approval of the Services. The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must consider and address in writing those written comments provided by the members of the ACC (including at least the Services) when submitting final designs to the Services for approval.

### **3 Permits and Time for Construction**

Upon approval of passage facility designs by the Commission, the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must diligently and expeditiously acquire all required Permits. The time by which each passage facility must be placed in operation is set forth in the Settlement Agreement.

### **4 Performance Standards for Fish Passage**

The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must provide for the safe, timely, and effective passage of salmonids being transported past the Project as described in the Settlement Agreement. The sole performance standard for kelts and downstream migration of adult sea-run cutthroat must be safe, timely, and effective passage. Specific life stages described below (not including kelts or downstream migrating sea-run cutthroat) have quantitative standards. The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must construct and provide for the operation and maintenance of fish passage facilities that collect all life stages of salmonids that are present at the facility, and function during all flows and during all seasons; except (i) for the downstream facility at Swift No. 1 when it is infeasible to function during flood events that require spill that could not be reasonably accommodated by the passage facility, or

(ii) for upstream passage facilities, to the extent it is infeasible due to flood events that require spill that could not be reasonably accommodated by the passage facility.

The Licensee must employ the following definitions in carrying out and monitoring the performance standards:

- **Adult Trap Efficiency (“ATE”)**: The percentage of adult Chinook, coho, steelhead, bull trout, and sea-run cutthroat that are actively migrating to a location above the trap and that are collected by the trap.
- **Collection Efficiency (“CE”)**: The percentage of juvenile anadromous fish of each of the species to be transported, as described in Section 4.1.7 of the Settlement Agreement, that is available for collection and that is actually collected.
- **Collection Survival (“CS”)**: The percentage of juvenile anadromous fish of each of the species to be transported collected that leave Release Ponds alive.
- **Injury**: Visible trauma (including, but not limited to, hemorrhaging, open wounds without fungus growth, gill damage, bruising greater than 0.5 cm in diameter, etc.), loss of equilibrium, or greater than 20 percent descaling. “Descaling” is defined as the sum of the area on one side of the fish that shows recent scale loss. This does not include areas where scales have regenerated or fungus has grown.
- **Overall Downstream Survival (“ODS”)**: The percentage of juvenile anadromous fish of each of the species to be transported that enter the reservoirs from natal streams and that survive to enter the Lewis River below Merwin Dam by collection, transport, and release via the juvenile fish passage system, passage via turbines, or some combination thereof, calculated as provided in Schedule 4.1.4 of the Settlement Agreement.
- **Upstream Passage Survival (“UPS”)**: Percentage of adult fish of each of the species to be transported that are collected that survive the upstream trapping-and-transport process. For sea-run cutthroat and bull trout, “adult” means fish greater than 13 inches in length.

#### **4.1 Overall Fish Passage Performance Standards for Salmonids**

For each species, the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must achieve the following overall performance standards for fish passage: ODS of greater than or equal to 80 percent until such time as the Yale Downstream Facility is built as provided in the License for the Yale project (P-2071), or the funds from the In Lieu Fund, as described in Section 7.6 of the Settlement Agreement, become available to the Services in lieu of constructing the Yale Downstream Facility, after which time ODS must be greater than or equal to 75 percent; UPS of greater than or equal to 99.5 percent; and ATE to be established as described in the Settlement Agreement. ODS, as defined by the Settlement Agreement, must include several components of juvenile passage, including reservoir survival, collection efficiency and collection survival, with the latter two terms having individual, quantitative performance standards, as described in Section 4.1.4 of the Settlement Agreement. Moreover, ODS must also incorporate estimates of juvenile survival rates for fish that elude collection but successfully navigate through Project turbines. For purposes of estimating ODS, until turbine survival studies are performed, the Licensee must assume that the turbine survival is equal to zero percent (0%). If the performance standards for ODS, UPS and ATE are not achieved within a reasonable time, the Licensee, together with the licensee for the Swift No. 2

project with respect to the Swift Upstream Facility, must make Facility Adjustments and Modifications, as described in Section 4.1.6 of the Settlement Agreement.

#### **4.2 Passage Facility Design Performance Standards for Salmonids**

The Licensee must design and construct downstream fish passage facilities to achieve, for each species, a CE of equal to or greater than 95 percent, a CS of equal to or greater than 99.5 percent for smolts and 98 percent for fry, and adult bull trout survival of equal to or greater than 99.5 percent. Design performance objectives for Injury are less than or equal to 2 percent. The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must design and construct upstream fish passage facilities to achieve the UPS equal to or greater than 99.5 percent and the ATE to be established as described in the Settlement Agreement.

#### **4.3 Adult Trap Efficiency for Salmonids**

As soon as practicable, and following Consultation described by the Settlement Agreement, the Licensee, together with the licensee for the Swift No. 2 project must develop an ATE performance standard for the Swift Upstream Facility to ensure the safe, timely, and effective passage of adult salmonids. Until such time as the standard has been developed, the Licensee must use NOAA Fisheries' fish passage guidelines (Anadromous Salmonid Passage Facility Guidelines and Criteria, NMFS (Jan. 31, 2004)). The Licensee, together with the licensee for the Swift No. 2 project, must consider without limitation entry rate, fall back, crowding at the entrance, delay, and abandonment of the trap area. When performance standards for ATE have been developed, the Licensee, together with the licensee for the Swift No. 2 project, must submit the standards to the Commission and such standards must be used to judge performance for the facilities when considering Facility Adjustments or Facility Modifications.

#### **4.4 Monitoring and Evaluation of Performance Standards**

As described in the Settlement Agreement, once the Swift Downstream Facility or Swift Upstream Facility is constructed and placed in operation, and after each Facility Adjustment or Facility Modification, the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must evaluate, in Consultation with the ACC (including at least the Services) and with the approval of the Services, whether performance standards are being met for each of the species designated in the Settlement Agreement, in accordance with the monitoring and evaluation plan described in Section 9 of the Settlement Agreement.

#### **4.5 Adjustments or Modifications to Passage Facilities to Achieve Performance Standards**

A "Facility Adjustment" means a physical passage facility upgrade, improvement, or addition that was part of the original design of the passage facility, or an adjustment to the fish passage facility or its operations. A "Facility Modification" means a physical alteration or addition to a physical passage facility that requires a new design. When making Facility Modifications, the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift

Upstream Facility, must follow the design process set out in Section 4.1.2 of the Settlement Agreement, in Consultation with the ACC (including at least the Services). Whenever any Facility Adjustment or Facility Modification is completed, the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must test the operation of the relevant facility for a reasonable time to determine the effectiveness of such adjustment or modification. At the direction of the Services and after any required Commission approvals and obtaining all required Permits, the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must make Facility Adjustments and Facility Modifications to the relevant passage facility to achieve the relevant performance standards for each of the species designated in the Settlement Agreement as soon as practicable.

(a) If ODS is not being met, then the Licensee must make Facility Adjustments or Facility Modifications to downstream passage facilities as follows:

(1) If the CE is less than 95 percent and greater than or equal to 75 percent or the CS for smolts is less than 99.5 percent and greater than or equal to 98 percent, or the CS for fry is less than 98 percent and greater than or equal to 96 percent, or Injuries to juvenile Transported Anadromous Species caused by downstream collection and transport are greater than 2 percent but less than 4 percent, the Licensee must make Facility Adjustments directed by the Services to achieve the performance standard or standards that are not being met but is not required to make Facility Modifications; or

(2) If the CE is less than 75 percent, or the CS for smolts is less than 98 percent, or the CS for fry is less than 96 percent, or Injuries to juvenile Transported Anadromous Species caused by downstream collection and transport are greater than or equal to 4 percent, the Licensee must make the Facility Modifications directed by the Services to achieve the performance standard or standards that are not being met; provided that if the Services believe a Facility Adjustment will likely achieve the performance standard or standards that are not being met, then the Licensee must first make Facility Adjustments as directed by the Services.

(b) If the ODS is being met but the CE is less than 95 percent, the CS for smolts is less than 99.5 percent, the CS for fry is less than 98 percent, or Injury to juvenile Transported Anadromous Species caused by downstream collection and transport is greater than 2 percent, the Licensee must make Facility Adjustments directed by the Services to downstream facilities but is not required to make Facility Modifications.

(c) For bull trout, the Licensee shall make Facility Adjustments or Facility Modifications to downstream passage facilities as follows:

(1) If the survival of bull trout is less than 99.5% and is greater than or equal to 98%, or Injuries caused by downstream collection and transport are greater than 2% but less than 4%, the Licensee shall make Facility Adjustments directed by the FWS to achieve the performance standard or standards that are not being met, but shall not be required to make Facility Modifications; or

(2) If the survival of bull trout is less than 98%, or Injuries caused by downstream collection and transport are greater than or equal to 4%, the Licensee shall make the Facility Modifications directed by the FWS to achieve the performance standard or standards that are not being met; provided that if the FWS determines that a Facility Adjustment will likely achieve the performance standard or standards that are not being met, then the Licensees shall make Facility Adjustments as directed by the FWS.

(d) For Transported Species, if UPS and/or ATE are not being met, then the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, will make Facility Adjustments or Facility Modifications to upstream passage facilities as directed by the Services, consistent with the Settlement Agreement.

(e) Except as required in a proceeding initiated with Section 15.3.2 of the Settlement Agreement, or as provided in Section 3.5.2.b of the Settlement Agreement, the Licensee shall not be required to (1) make structural or operational changes with respect to its generating facilities or Project reservoir to achieve standards, (2) replace any fish passage facility with another passage facility, or (3) install additional collection and transport facilities or alternative fish passage facilities beyond those required by the Settlement Agreement. This Article is not intended to alter specific obligations provided under this License or the Settlement Agreement, including, without limitation, operational constraints required under Settlement Agreement Sections 4.2, 4.9.1, and 6.2.

## **5 Species to be Transported**

For purposes of all fish passage provisions contained herein, the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must only provide for the transport of spring Chinook, winter steelhead, coho, bull trout, and sea-run cutthroat. Notwithstanding the preceding sentence, the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, after Consultation with the ACC (including at least the Services), and if directed by the Services, must also provide for the transport of fall Chinook or summer steelhead that enter the passage facilities.

## **6 Upstream Transport Before Full Adult Fish Passage**

Unless and until alternative technologies are implemented, the Licensee, together with the licensee for the Swift No. 2 project, must provide for the transport by truck of all Transported Species collected at the Swift Upstream Facility. Once the Merwin Upstream Transport Facility is completed, and for so long as trucks are used, the Licensee, together with the licensee for the Swift No. 2 project, must provide for transport according to the Upstream Transport Plan described in Section 4.1.8.c of the Settlement Agreement.

## **7 Upstream Transport After Full Adult Fish Passage**

On or before the 13th anniversary of the Issuance of the last of the Licenses for the Merwin (P-935), Yale (P-2071), Swift No. 1 (P-2111), and Swift No. 2 (P-2213) projects, the Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility,

must evaluate alternative adult fish transport technologies (such as fish trams, cable lifts, or other new technologies) at the facility that allow transportation of the fish with the least practicable amount of handling or other stress-inducing actions, considering the need for sorting fish. The Licensee, together with the licensee for the Swift No. 2 project with respect to the Swift Upstream Facility, must implement such technologies provided that (1) alternative technologies are determined, by engineers qualified in fish passage and designated respectively by the WDFW, FWS, NOAA Fisheries, the Licensee, and the licensee for the Swift No. 2 project, to be feasible and effective in transporting fish over dam facilities; (2) the Services determine that such technologies are suitable for meeting the Services' fish passage goals and the biological benefits are expected to be equal to or greater than the benefits of trap-and-transport by truck; and (3) the costs of the selected technology (considering both initial capital cost and ongoing operational and maintenance costs) do not significantly exceed the costs of transporting fish by truck. If there is a disagreement with the engineers' determination under (1) above, the Licensee, together with the licensee for Swift No. 2 with respect to the Swift Upstream Facility shall allow for the resolution of disputes in accordance with the ADR Procedures in Section 15.10 of the Settlement Agreement. The Licensee, together with the licensee for the Swift No. 2 project, must begin carrying out such technologies after acquisition of all required Permits according to the schedule set forth in the Settlement Agreement. The selection of such technologies and selection of final designs by the Licensee, together with the licensee for the Swift No. 2 project, must be made with the approval of the Services after Consultation with the ACC (including at least the Services), pursuant to Section 4.1.2 of the Settlement Agreement. The costs for such alternate technologies must be considered cumulatively for all of the Lewis River projects, so that a cost savings from alternate technology at one Project could offset a cost increase for such technology at another Project, compared to trapping and transporting by truck. If costs are determined to significantly exceed the costs of transporting fish by truck, the Parties to the Settlement Agreement may make reasonable efforts to find more cost-effective facility designs that will achieve the same or greater biological benefit compared to trap-and-transport by truck. If (i) after due comparison of the costs of initial capital and ongoing operations and maintenance through the remaining term of the Licenses of trapping and transporting by truck versus such costs of an alternative technology for upstream passage it appears that such alternate technologies would not be implemented because of increased costs; and (ii) any Party (other than the Licensee or the licensees for the Swift No. 2, Merwin or Yale projects): (A) identifies alternate sources of funding, (B) provides a guarantee of payment acceptable to the Licensee and the licensee for the Swift No. 2 project of the difference in capital and ongoing operations and maintenance costs over the remaining term of the Licenses between trap-and-transport and such alternative technology, and (C) provides such funding without additional conditions unacceptable to the Licensee and the licensee for the Swift No. 2 project, express or implied; then the Licensee, together with the licensee for the Swift No. 2 project, shall implement such technologies after acquisition of all required Permits according to the schedule set forth in Section 4.8 of the Settlement Agreement for the Swift Upstream Facility. If alternative methods are not used at any facility because they do not meet the standards of Section 4.1.8 of the Settlement Agreement, then the Licensee, together with the licensee for the Swift No. 2 project, must continue to use trap and transport by truck at such facility.



## **7.1 Upstream Transport Plan**

The Licensee, together with the licensees for the Merwin, Yale, and Swift No. 2 projects, must modify the Upstream Transport Plan prepared in accordance with the licenses for the Merwin and Yale projects, in Consultation with the ACC and with the approval of the Services, subject to Section 15.14 of the Settlement Agreement, to address transport from the Swift Upstream Facility if trucking is to be used for transport from that facility. The plan must describe the frequency and procedures to achieve safe, timely, and effective upstream passage. The Licensee, together with the licensee for the Swift No. 2 project, must provide for the transport of fish at a minimum frequency of once daily, or more if necessary, to achieve safe, timely, and effective passage. The Licensee, together with the licensees for the Merwin, Yale and Swift No. 2 projects, must submit the modified Upstream Transport Plan to the Commission before completion of the Swift Upstream Facility.

## **8 Downstream Transport**

The Licensee must provide for the downstream transport of migrating Transported Species collected in the Swift Downstream Facility by truck.

For the Swift Downstream Facility, the Licensee must Consult with the ACC (including at least the Services) regarding a possible change in methods for downstream passage, e.g., a bypass facility in lieu of trap and transport by truck, if (i) the Swift Downstream Facility has been constructed, (ii) a determination has been made that the Licensee for the Merwin project must construct and operate a bypass facility at the Merwin Downstream Facility as provided in the License for the Merwin project (P-935); (iii) the Services determine that a salmonid bypass passage system would provide equal or greater biological benefit; and (iv) the Licensee does not determine that the capital, operation, and maintenance costs of such bypass would be significantly greater than the capital, operation, and maintenance costs of continued use of trap and transport by truck.

### **8.1 Downstream Transport Plan**

The Licensee must develop, in Consultation with the ACC (including at least the Services) and with the approval of the Services, a plan that must describe the frequency and procedures to achieve safe, timely, and effective downstream transport from the Swift Downstream Facility (the “Downstream Transport Plan”), subject to Section 15.14 of the Settlement Agreement. The Licensee must submit the Downstream Transport Plan to the Commission before completion of the Swift Downstream Facility. The Licensee, together with the licensees for the Yale and Merwin projects, must modify the Downstream Transport Plan to provide for transport from the Yale Downstream Facility as provided in the license for the Yale project and from the Merwin Downstream Facility as provided in the license for the Merwin project.

## **9 Downstream Transport at Swift No. 1 Dam**

By six months after the fourth anniversary of the Issuance of the License for the Swift No. 1 project or the Swift No. 2 project, whichever is later, the Licensee must construct and provide for

the operation of a passage facility at the Swift No. 1 Dam, including a modular surface collector, to collect, sort, tag, and transport downstream-migrating anadromous species (the “Swift Downstream Facility”). The Licensee must provide for the downstream transport of migrating Transported Anadromous Species to below Merwin Dam to a Release Pond. Unless otherwise directed by the FWS, bull trout collected in the Swift Downstream Facility shall be transported to Yale Lake, except that bull trout with a smolt-like appearance, as determined by the Licensee (using methods devised in Consultation with the ACC, including at least the services and in the case of bull trout the FWS), shall be transported to a location determined by the FWS below Merwin Dam.

The Licensee must consult with the ACC (including at least the Services) concerning the precise location of the passage facility, which the Licensee must incorporate into the design to be approved by the Services.

The Licensee must provide for the tagging of a statistically valid sample of the fish transported as appropriate to accomplish the monitoring and evaluation objectives set forth in the monitoring plan described in Section 9 of the Settlement Agreement, the methodology of such tagging to be determined by the Licensee in Consultation with the ACC (including at least the Services) and with the approval of the Services. The Licensee must provide for the operation of the passage facility for the remaining term of the License for the Swift No. 1 project.

The Licensee must provide the 90 percent preliminary designs to the ACC (including at least the Services) by the first anniversary of the Issuance of the License for the Swift No. 1 project or the Swift No. 2 project, whichever is later. Subject to Section 15.14 of the Settlement Agreement, the Licensee must submit final designs to the Commission upon approval by the Services, but not later than six months after the first anniversary of the Issuance of a License for the Swift No.1 or Swift No.2 project, whichever is later.

If NOAA Fisheries determines that the Swift Downstream Facility does not adequately collect juvenile spring Chinook, the Licensee, in Consultation with the ACC (including at least the Services) and with the approval of NOAA Fisheries, must evaluate the behavior of the spring Chinook to determine why they are not being collected by the Swift Downstream Facility. If NOAA Fisheries concludes that the Swift Downstream Facility is not working because of fish behavior and that a different type of satellite passage facility has a reasonable likelihood of collecting spring Chinook, the Licensee, in Consultation with the ACC (including at least the Services) and with the final approval of the Services, must design and install the satellite passage facility. The Licensee must design the satellite passage facility to minimize unacceptable incidental impacts to species other than spring Chinook. The Licensee, as part of the monitoring plan required in Section 9 of the Settlement Agreement, must develop and carry out a plan to monitor the satellite facility effectiveness and its effects on species other than spring Chinook. Should NOAA Fisheries conclude, given the behavior of the spring Chinook, that another passage facility would not likely be successful, the Licensee must continue to attempt to collect spring Chinook at the Swift Downstream Facility and must make any further Facility Adjustments or Facility Modifications required by Section 4.1.6 of the Settlement Agreement.

## **10 Release Ponds**

By six months after the fourth anniversary of the Issuance of the License for either the Swift No. 1 project or the Swift No. 2 project, whichever is later, the Licensee, together with the licensees for the Merwin and Yale projects, in Consultation with the ACC and with the final approval of NOAA Fisheries, must design and construct stress Release Ponds below the Merwin project to be used for downstream migrating fish that are collected at the Swift Downstream Facility, the Yale Downstream Facility and the Merwin Downstream Facility, in accordance with the Settlement Agreement. To the extent practicable, the Release Ponds will be located downstream of Eagle Island to minimize interaction of the transported fish with wild fall Chinook. The Licensee must Consult with the ACC concerning the precise locations of the Release Ponds, which must become part of the design to be approved by NOAA Fisheries. The Licensee must provide preliminary designs to the ACC by the first anniversary of the Issuance of the License for the Swift No. 1 project. Subject to Section 15.14 of the Settlement Agreement, the Licensee must submit final designs to the Commission upon approval by NOAA Fisheries, but not later than six months after the first anniversary of the Issuance of the License for the Swift No.1 project.

## **11 Upstream Passage at the Swift Projects**

Unless otherwise directed by the Services pursuant to Section 4.1.9 of the Settlement Agreement, on or before the 17th anniversary of the Issuance of the License for the Swift No. 1 project or the Swift No. 2 project, whichever is later, the Licensee, together with the licensee for the Swift No. 2 project, must complete construction and provide for the operation of an adult trap and transport facility at the single best site above Yale Lake, based on biological and hydrological factors, to collect, sort, and transport upstream-migrating adult Transported Anadromous Species to above the Swift No. 1 Dam (the “Swift Upstream Facility”), except that the FWS may direct that bull trout be transported to a different location. The specific location of the Swift Upstream Facility must be determined by the Licensee, together with the licensee for the Swift No. 2 project, in Consultation with the ACC (including at least the Services) and with the approval of the Services subject to Section 15.14 of the Settlement Agreement, on or before 12th anniversary of Issuance of the License for the Swift No. 1 project or the Swift No. 2 project, whichever is later. The Licensee, together with the licensee for the Swift No. 2 project, must provide for the operation of the Swift Upstream Facility for the remaining term of this License unless the Services determine, after discussion with the ACC, that operation of the Swift Upstream Facility should not continue. If the Services make such determination after the passage facility is operational, the Licensee, together with the licensee for the Swift No. 2 project, shall notify the Commission of such decision. The Licensee, together with the licensee for the Swift No. 2 project, must provide 90 percent preliminary designs to the ACC (including at least the Services) on or before the 14th anniversary of the Issuance of the License for the Swift No. 1 project or the Swift No. 2 project, whichever is later, including any engineering, hydraulic and biological information considered by the design team. Subject to Section 15.14 of the Settlement Agreement, the Licensee, together with the licensee for the Swift No. 2 project, must submit final designs to the Commission upon approval by the Services, but not later than six months after providing preliminary designs to the ACC. If these facilities do not function as well to collect bull trout as the interim collection method based on effectiveness monitoring, as

determined by the FWS, the Licensee, together with the licensee for the Swift No. 2 project, shall continue the interim collection method established in Section 4.9 of the Settlement Agreement.

## **12 Interim Bull Trout Collect and Haul Programs**

Until the earlier of (a) operation of the Yale Upstream Facility and the Swift Upstream Facility or (b) alternative measures are implemented as provided herein, and unless otherwise directed by the FWS, the Licensee, together with the licensee for the Swift No. 2 project shall implement a collect-and-haul program below Swift No. 2. A description of the bull trout collect-and-haul programs to be implemented below Swift No. 2 is provided in Schedule 4.9.1 of the Settlement Agreement. The Licensee, together with the licensee for the Swift No. 2 project, shall provide for the transport of bull trout collected at Swift No. 2 to above Swift No. 1. Upon the request of and subject to approval by the FWS, the Licensee, together with the licensee for the Swift No. 2 project, and in Consultation with the ACC, shall develop criteria, based on the latest research, to determine if, when, and where alternative release locations are needed. Any such alternative locations shall be accessible by transport truck or other mutually acceptable transportation system. At the direction of the FWS, the Licensee, together with the licensee for the Swift No. 2 project, shall provide for the transport of bull trout to such alternative locations. The Licensee, together with the licensee for the Swift No. 2 project, shall continue to prepare, in Consultation with the ACC and with the approval of the FWS, an annual Bull Trout Collection and Transport Program outlining the manner of and schedule for bull trout collection and passage at Project facilities, incorporating as appropriate either (1) the collection method identified in this Article and testing of alternative interim collection methods as provided in Section 4.9.2 of the Settlement Agreement; or (2) an alternative collection method developed pursuant to Section 4.9.2 of the Settlement Agreement. The Licensee, together with the licensee for the Swift No. 2 project, may propose minor modifications to the program identified in Schedule 4.9.1 of the Settlement Agreement as part of the Bull Trout Collection and Transport Program. The Licensee, together with the licensee for the Swift No. 2 project, shall not implement any modifications to the Bull Trout Collection and Transport Program until the FWS has approved those changes.

## **13 Investigation of Alternative Bull Trout Collection Methods**

The Licensee, together with the licensee for the Swift No. 2 project, shall investigate the use of alternative interim bull trout collection methods in Consultation with the ACC (including at least the Services). Such methods may include, but are not limited to, fyke traps, Denil steep passes, seines, fish wheels, and other types of active and passive gear. Annual testing of alternative methods shall begin upon approval of the Bull Trout Collection and Transport Program described in Section 4.9.1 of the Settlement Agreement, and shall continue until the FWS approves an alternate interim collection method or until operation of the Yale Upstream Facility and the Swift Upstream Facility. The Licensee, together with the licensees for the Yale and Swift No. 2 projects, shall submit, annually, a draft report to the ACC (including at least the Services) evaluating alternative interim collection methods tested during the prior year. The Licensee, together with the licensees for the Yale and Swift No. 2 projects, shall provide the ACC (including at least the Services) 90 days to comment on the draft report. The Licensee, together with the licensees for the Yale and Swift No. 2 projects, shall finalize the report,

respond to the comments of the ACC (including at least the Services), and submit a final report to the Commission within 180 days after sending out the report for comments.

#### **14 Implementation of Alternative Bull Trout Collection Methods**

If the Licensee, together with the licensee for the Swift No. 2 project, identifies, as part of the annual reporting process, an alternative interim collection method that will more safely and effectively collect bull trout than the collection method in use at that time, and if the FWS concurs, then the collection method shall be modified. The Licensee, together with the licensee for the Swift No. 2 project, shall (1) within 180 days of submission of the report to the Commission, prepare a plan to implement such method in Consultation with the ACC and with the approval of the FWS, subject to Section 15.14 of the Settlement Agreement, and the Commission; (2) implement such alternative method as soon as practicable after obtaining FWS approval, subject to Section 15.14 of the Settlement Agreement; and (3) continue to implement the alternative method until the FWS approves an alternate interim collection method or until operation of the Swift Upstream Facility.

#### **15 Upstream Bull Trout Facilities**

If pursuant to Section 4.1.9 of the Settlement Agreement, the Swift Upstream Facility is not constructed, and the FWS determines on or before the 13th anniversary of the Issuance of the License for the Swift No. 1 project or the Swift No. 2 project, whichever is later, that bull trout collect-and-haul methods established under Sections 4.9.1 or 4.9.2 of the Settlement Agreement, are not meeting bull trout performance standards provided in Section 4.1.4 of the Settlement Agreement, then on or before the 17th anniversary of the Issuance of the License for the Swift No. 1 project or the Swift No. 2 project, whichever is later, the Licensee, together with the licensee for the Swift No. 2 project, shall complete construction of and provide for the operation of an alternate upstream passage facility (Swift Upstream Bull Trout Facility) for the Swift No. 1 and Swift No. 2 projects.

The Swift Upstream Bull Trout Facility is not intended to be a passage facility of the same magnitude and expense as the Swift Upstream Facility described in Section 4.8 of the Settlement Agreement. The Licensee, together with the licensee for the Swift No. 2 project, shall select an alternative passage facility design for the Swift Upstream Bull Trout Facility, in Consultation with the ACC (including at least the Services) and with approval of the FWS, subject to Section 15.14 of the Settlement Agreement. The Licensee, together with the licensee for the Swift No. 2 project for the Swift Upstream Bull Trout Facility, shall construct and provide for the operation of such passage facility for the remaining term of this License. The Licensee, together with the licensee for the Swift No. 2 project, shall follow the provisions of Sections 4.1.1 through 4.1.3 of the Settlement Agreement, when developing designs for these facilities.

The Licensee, together with the licensee for the Swift No. 2 project, shall monitor performance of the Swift Upstream Bull Trout Facility as provided in the Monitoring and Evaluation Plan (M&E Plan) in Section 9 of the Settlement Agreement, and make Facility Adjustments and Facility Modifications pursuant to Section 4.1.6 of the Settlement Agreement, to the Swift Upstream Bull Trout Facility.

## **16 Obligation to Consult**

Notwithstanding any other provision of these prescriptions for Fishways, and with respect to the requirements contained therein, the Licensee's obligation to convene the ACC shall be subject to Section 15.12 of the Settlement Agreement. Where Consultation is required by the Settlement Agreement, the Licensee shall not have an obligation to Consult regarding these Fishway prescriptions with Parties (other than the Services) which have withdrawn from the Settlement Agreement, or with any Party (other than the Services) if the Settlement Agreement is terminated, except as described in Section 15.13 of the Settlement Agreement.

## **17 Dispute Resolution**

In implementing these prescriptions for Fishways, the Licensee shall allow for the resolution of disputes, if any, among the Parties to the Settlement Agreement in accordance with the non-binding Alternative Dispute Resolution procedures set forth in the Settlement Agreement.

## **Attachment 4**

**UNITED STATES DEPARTMENT OF THE INTERIOR  
U.S. FISH AND WILDLIFE SERVICE  
PRESCRIPTIONS FOR FISHWAYS  
PURSUANT TO SECTION 18 OF THE FEDERAL POWER ACT  
FOR THE  
SWIFT NO. 2 HYDROELECTRIC PROJECT  
PROJECT NO. 2213**

(For convenience and clarity, these prescriptions are numbered to match the numbers contained in the applicants revised draft license articles filed with the Commission on December 19, 2005)

### **2 Fish Passage Facilities Design**

To provide for the safe, timely and effective passage past the Project of upstream migrating salmonids, the Licensee, together with the licensee for Swift No. 1 (P-2111), shall develop and implement the Swift Upstream Facility in accordance with, and subject to the limitations included in, all of the relevant provisions of the Settlement Agreement Concerning the Relicensing of the Lewis River Hydroelectric Projects, FERC Project Nos. 935, 2071, 2111, and 2213, Cowlitz and Skamania Counties, Washington, dated November 30, 2004, and filed with the Commission on December 3, 2004.

#### **2.1 Design Review**

Except as otherwise provided under Section 4.1.9 of the Settlement Agreement, the Licensee, together with the licensee for Swift No. 1 (P-2111), must design the Swift Upstream Facility to meet the performance standard targets set out in Section 4.1.4.b of the Settlement Agreement, as applicable. The Licensee, together with the licensee for Swift No. 1 (P-2111), must use the best available technology for the type of passage facility being constructed, and design the passage facility to provide flexibility for subsequent expansion or Facility Adjustments, if needed, to meet performance standards. A fish passage facility may include duplication of some components (for example, multiple entrances) and still be considered a single passage facility. The Licensee, together with the licensee for Swift No. 1 (P-2111), must coordinate with and provide 30 percent and 60 percent completed preliminary designs for review and comment to the Services and WDFW. The Licensee, together with the licensee for Swift No. 1 (P-2111), must notify the ACC when design work has begun, and provide the 30 percent and 60 percent preliminary designs to any other Party to the Settlement Agreement at the Party's request. The Licensee, together with the licensee for Swift No. 1 (P-2111), must provide the Services and WDFW 45 days to provide their comments. The Licensee, together with

the licensee for Swift No. 1 (P-2111), must submit the 90 percent preliminary designs with the relevant engineering, hydraulic, and biological work to the ACC (including at least the Services) at the times set forth in the Settlement Agreement. The Licensee, together with the licensee for Swift No. 1 (P-2111), must provide the ACC (including at least the Services) 45 days to provide its comments on the 90 percent preliminary designs and must finalize the designs in Consultation with the ACC (including at least the Services) and with the approval of the Services. The Licensee, together with the licensee for Swift No. 1 (P-2111), must consider and address in writing those written comments provided by the members of the ACC (including at least the Services) when submitting final designs to the Services for approval.

### **3 Permits and Time for Construction**

Upon approval of the Swift Upstream Facility design by the Commission, the Licensee, together with the licensee for Swift No. 1 (P-2111), must diligently and expeditiously acquire all required Permits. The time by which such passage facility must be placed in operation is set forth in the Settlement Agreement.

### **4 Performance Standards for Fish Passage**

The Licensee, together with the licensee for Swift No. 1 (P-2111), must provide for the safe, timely, and effective passage of salmonids being transported past the Project as described in the Settlement Agreement. Specific life stages described below have quantitative standards. The Licensee, together with the licensee for Swift No. 1 (P-2111), must construct and provide for the operation and maintenance of the Swift Upstream Facility that collects all life stages of salmonids that are present at the facility, and functions during all flows and during all seasons; except to the extent it is infeasible due to flood events that require spill that could not be reasonably accommodated by the passage facility.

The Licensee must employ the following definitions in carrying out and monitoring the performance standards:

- **Adult Trap Efficiency (“ATE”):** The percentage of adult Chinook, coho, steelhead, bull trout, and sea-run cutthroat that are actively migrating to a location above the trap and that are collected by the trap.
- **Injury:** Visible trauma (including, but not limited to, hemorrhaging, open wounds without fungus growth, gill damage, bruising greater than 0.5 cm in diameter, etc.), loss of equilibrium, or greater than 20 percent descaling. “Descaling” is defined as the sum of the area on one side of the fish that shows recent scale loss. This does not include areas where scales have regenerated or fungus has grown.
- **Overall Downstream Survival (“ODS”):** The percentage of juvenile anadromous fish of each of the species to be transported that enter the reservoirs from natal streams and that survive to enter the Lewis River below Merwin Dam by collection, transport, and release via the juvenile fish passage system, passage via turbines, or some combination thereof, calculated as provided in Schedule 4.1.4 of the Settlement Agreement.



- Upstream Passage Survival (“UPS”): Percentage of adult fish of each of the species to be transported that are collected that survive the upstream trapping-and-transport process. For sea-run cutthroat and bull trout, “adult” means fish greater than 13 inches in length.

#### **4.1 Fish Passage Performance Standards for Upstream Facilities**

For each species, the Licensee, together with the licensee for Swift No. 1 (P-2111), must achieve the following overall performance standards for fish passage: UPS of greater than or equal to 99.5 percent; and ATE to be established as described in the Settlement Agreement. If the performance standards for UPS and/or ATE are not achieved within a reasonable time, the Licensee, together with the licensee for Swift No. 1 (P-2111), must make Facility Adjustments and Modifications, as described in Section 4.1.6 of the Settlement Agreement.

#### **4.2 Passage Facility Design Performance Standards for Salmonids**

The Licensee, together with the licensee for Swift No. 1 (P-2111), must design and construct the Swift Upstream Facility to achieve the UPS equal to or greater than 99.5 percent and the ATE to be established as described in the Settlement Agreement.

#### **4.3 Adult Trap Efficiency for Salmonids**

As soon as practicable, and following Consultation described by the Settlement Agreement, the Licensee, together with the licensee for Swift No. 1 (P-2111), must develop an ATE performance standard for the Swift Upstream Facility, to ensure the safe, timely, and effective passage of adult salmonids. Until such time as the standard has been developed, the Licensee must use NOAA Fisheries fish passage guidelines. [Anadromous Salmonid Passage Facility Guidelines and Criteria, NMFS (Jan. 31, 2004)] The Licensee, together with the licensee for Swift No. 1 (P-2111), must consider without limitation entry rate, fall back, crowding at the entrance, delay, and abandonment of the trap area. When performance standards for ATE have been developed, the Licensee, together with the licensee for Swift No. 1 (P-2111), must submit the standards to the Commission and such standards must be used to judge performance for the Swift Upstream Facility when considering Facility Adjustments or Facility Modifications.

#### **4.4 Monitoring and Evaluation of Performance Standards**

As described in the Settlement Agreement, once the Swift Upstream Facility is constructed and placed in operation, and after each Facility Adjustment or Facility Modification, the Licensee, together with the licensee for Swift No. 1 (P-2111), must evaluate, in Consultation with the ACC (including at least the Services) and with the approval of the Services, whether performance standards are being met for each of the species designated in the Settlement Agreement, in accordance with the monitoring and evaluation plan described in Section 9 of the Settlement Agreement.

#### **4.5 Adjustments or Modifications to Passage Facilities to Achieve Performance Standards**

A “Facility Adjustment” means a physical passage facility upgrade, improvement, or addition that was part of the original design of the passage facility, or an adjustment to the fish passage facility or its operations. A “Facility Modification” means a physical alteration or addition to a physical passage facility that requires a new design. When making Facility Modifications, the Licensee, together with the licensee for Swift No. 1 (P-2111), must follow the design process set out in Article 2, in Consultation with the ACC (including at least the Services). Whenever any Facility Adjustment or Facility Modification is completed, the Licensee, together with the licensee for Swift No. 1 (P-2111), must test the operation of the Swift Upstream Facility for a reasonable time to determine the effectiveness of such adjustment or modification. At the direction of the Services and after any required Commission approvals and obtaining all required Permits, the Licensee, together with the licensee for Swift No. 1 (P-2111), must make Facility Adjustments and Facility Modifications to the Swift Upstream Facility to achieve the relevant performance standards for each of the species designated in the Settlement Agreement as soon as practicable.

For Transported Species, if UPS and/or ATE are not being met, then the Licensee, together with the licensee for Swift No. 1 (P-2111), will make Facility Adjustments or Facility Modifications to the Swift Upstream Facility as directed by the Services, consistent with the Settlement Agreement.

Except as required in a proceeding initiated with Section 15.3.2 of the Settlement Agreement, or as provided in Section 3.5.2.b of the Settlement Agreement, the Licensee shall not be required to (1) make structural or operational changes with respect to its generating facilities or canal to achieve standards, (2) replace any fish passage facility with another passage facility, or (3) install additional collection and transport facilities or alternative fish passage facilities beyond those required by the Settlement Agreement. This Article is not intended to alter specific obligations provided under this License or the Settlement Agreement, including, without limitation, operational constraints required under Settlement Agreement Section 4.9.1.

#### **5 Species to be Transported**

For purposes of all fish passage provisions contained herein, the Licensee, together with the licensee for Swift No. 1 (P-2111), with respect to the Swift Upstream Facility, must only provide for the transport of spring Chinook, winter steelhead, coho, bull trout, and sea-run cutthroat. Notwithstanding the preceding sentence, the Licensee, together with the licensee for Swift No. 1 (P-2111), after Consultation with the ACC (including at least the Services), and if directed by the Services, must also provide for the transport of fall Chinook or summer steelhead that enter the Swift Upstream Facility.

#### **6 Upstream Transport Before Full Adult Fish Passage**

Unless and until alternative technologies are implemented, the Licensee, together with the licensee for Swift No. 1 (P-2111), must provide for the transport by truck of all Transported

Species collected at the Swift Upstream Facility. Once the Merwin Upstream Transport Facility is completed as provided in the Merwin Project (P-935) license, and for so long as trucks are used, the Licensee, together with the licensee for Swift No. 1 (P-2111), must provide for transport at the Swift Upstream Facility according to the Upstream Transport Plan described in Section 4.1.8.c of the Settlement Agreement.

## **7 Upstream Transport After Full Adult Fish Passage**

On or before the 13th anniversary of the Issuance of the last of the Licenses for Swift No. 2, Swift No. 1 (P-2111), Yale (P-2071), and Merwin (P-935), the Licensee, together with the licensee for Swift No. 1 (P-2111), must evaluate alternative adult fish transport technologies (such as fish trams, cable lifts, or other new technologies) at the Swift Upstream Facility that allow transportation of the fish with the least practicable amount of handling or other stress-inducing actions, considering the need for sorting fish. The Licensee, together with the licensee for Swift No. 1 (P-2111), must implement such technologies provided that (1) alternative technologies are determined, by engineers qualified in fish passage and designated respectively by the WDFW, FWS, NOAA Fisheries, the Licensee, and the licensee for Swift No. 1 (P-2111), to be feasible and effective in transporting fish over dam facilities; (2) the Services determine that such technologies are suitable for meeting the Services' fish passage goals and the biological benefits are expected to be equal to or greater than the benefits of trap-and-transport by truck; and (3) the costs of the selected technology (considering both initial capital cost and ongoing operational and maintenance costs) do not significantly exceed the costs of transporting fish by truck. If there is a disagreement with the engineers' determination under (1) above, the Licensee, together with the licensee for Swift No. 1 (P-2111), shall allow for the resolution of disputes in accordance with the ADR Procedures in Section 15.10 of the Settlement Agreement. The Licensee, together with the licensee for Swift No. 1 (P-2111), must begin carrying out such technologies after acquisition of all required Permits according to the schedule set forth in the Settlement Agreement. The selection of such technologies and selection of final designs by the Licensee, together with the licensee for Swift No. 1 (P-2111), must be made with the approval of the Services after Consultation with the ACC (including at least the Services), pursuant to Section 4.1.2 of the Settlement Agreement. The costs for such alternate technologies must be considered cumulatively for the Swift No. 2 Project (P-2213), and the Swift No. 1 (P-2111), Yale (P-2071) and Merwin (P-935) Projects, so that a cost savings from alternate technology at one Project could offset a cost increase for such technology at another Project, compared to trapping and transporting by truck. If costs are determined to significantly exceed the cost of transporting fish by truck, the Parties to the Settlement Agreement may make reasonable efforts to find more cost-effective facility designs that will achieve the same or greater biological benefit compared to trap-and-transport by truck. If (i) after due comparison of the costs of initial capital and ongoing operations and maintenance through the remaining term of the License of trapping and transporting by truck versus such costs of an alternative technology for upstream passage it appears that such alternate technologies would not be implemented because of increased costs; and (ii) any Party (other than the Licensee or the licensee for the Swift No. 1 (P-2111), Yale (P-2071) or Merwin (P-935) projects): (A) identifies alternate sources of funding, (B) provides a guarantee of payment acceptable to the Licensee and the licensee for Swift No. 1 (P-2111), of the difference in capital and ongoing operations and maintenance costs over the remaining term of the License between trap-and-transport and such alternative technology, and (C) provides such

funding without additional conditions unacceptable to the Licensee and the licensee for Swift No. 1 (P-2111), express or implied; then the Licensee, together with the licensee for Swift No. 1 (P-2111), shall implement such technologies after acquisition of all required Permits according to the schedule set forth in Section 4.8 of the Settlement Agreement for the Swift Upstream Facility. If alternative methods are not used at Swift Upstream Facility because they do not meet the standards of Section 4.1.8 of the Settlement Agreement, then the Licensee, together with the licensee for Swift No. 1 (P-2111), must continue to use trap and transport by truck at such facility.

## **7.1 Upstream Transport Plan**

The Licensee, together with the licensees for Swift No. 1 (P-2111), Merwin (P-935) and Yale (P-2071), must modify the Upstream Transport Plan prepared in accordance with the licenses for the Merwin (P-935) and Yale (P-2071) projects in Consultation with the ACC (including at least the Services) and with the approval of the Services, subject to Section 15.14 of the Settlement Agreement, to address transport from the Swift Upstream Facility if trucking is to be used for transport from that facility. The plan must describe the frequency and procedures to achieve safe, timely and effective passage. The Licensee, together with the licensee for Swift No. 1 (P-2111), must provide for the transport of fish at a minimum frequency of once daily, or more if necessary, to achieve safe, timely and effective passage. The Licensee, together with the licensees for Merwin (P-935) and Yale (P-2071) and Swift No. 1 (P-2111), must submit the modified Upstream Transport Plan to the Commission before completion of the Swift Upstream Facility.

## **8 Upstream Passage Facility at the Swift Projects**

Unless otherwise directed by the Services pursuant to Section 4.1.9 of the Settlement Agreement, on or before the 17th anniversary of the Issuance of the License for the Swift No. 1 Project (P-2111) or the Swift No. 2 Project (P-2213), whichever is later, the Licensee, together with the licensee for Swift No. 1 (P-2111), must complete construction and provide for the operation of an adult trap and transport facility at the single best site above Yale Lake, based on biological and hydrological factors, to collect, sort, and transport upstream-migrating adult Transported Anadromous Species to above the Swift No. 1 Dam (P-2111) (the “Swift Upstream Facility”), except that the FWS may direct that bull trout be transported to a different location. The specific location of the Swift Upstream Facility must be determined by the Licensee, together with the licensee for Swift No. 1 (P-2111), in Consultation with the ACC (including at least the Services) and with the approval of the Services subject to Section 15.14 of the Settlement Agreement, on or before the 12th anniversary of Issuance of the License for the Swift No. 1 Project (P-2111) or the Swift No. 2 Project (P-2213), whichever is later. The Licensee, together with the licensee for Swift No. 1 (P-2111), must provide for the operation of the Swift Upstream Facility for the remaining term of the License for the Swift No. 2 Project (P-2213) unless the Services determine, after discussion with the ACC, that operation of the Swift Upstream Facility should not continue. If the Services make such determination after the passage facility is operational, the Licensee, together with the licensee for Swift No. 1 (P-2111), shall notify the Commission of such decision. The Licensee, together with the Licensee for Swift No. 1

(P-2111), must provide 90 percent preliminary designs to the ACC (including at least the Services) on or before the 14th anniversary of the Issuance of the License for the Swift No. 1 Project (P-2111) or the Swift No. 2 Project (P-2213), whichever is later, including any engineering, hydraulic and biological information considered by the design team. Subject to Section 15.14 of the Settlement Agreement, the Licensee, together with the licensee for Swift No. 1 (P-2111), must submit final designs to the Commission upon approval by the Services, but not later than six months after providing preliminary designs to the ACC. If these facilities do not function as well to collect bull trout as the interim collection method based on effectiveness monitoring, as determined by the FWS, Licensee, together with the licensee for Swift No. 1 (P-2111), shall continue the interim collection method established in Section 4.9 of the Settlement Agreement.

## **9 Interim Bull Trout Collect and Haul Programs**

Until the earlier of (a) operation of the Yale Upstream Facility as provided in the License for the Yale Project (P-2071) and the Swift Upstream Facility or (b) alternative measures are implemented as provided herein, and unless otherwise directed by the FWS, the Licensee, together with the licensee for Swift No. 1 (P-2111), shall implement a bull trout collect-and-haul program below Swift No. 2 (P-2213). A description of the collect-and-haul programs to be implemented below Swift No. 2 (P-2213) tailrace is provided in Schedule 4.9.1 of the Settlement Agreement. The Licensee, together with the licensee for Swift No. 1 (P-2111), shall provide for the transport of bull trout collected at Swift No. 2 (P-2213) to above Swift No. 1(P-2111). Upon the request of and subject to approval by the FWS, the Licensee, together with the licensee for Swift No. 1 (P-2111), in Consultation with the ACC, shall develop criteria, based on the latest research, to determine if, when, and where alternative release locations are needed. Any such alternative locations shall be accessible by transport truck or other mutually acceptable transportation system. At the direction of the FWS, the Licensee, together with the licensee for Swift No. 1 (P-2111), shall provide for the transport of bull trout to such alternative locations. The Licensee, together with the licensee for Swift No. 1 (P-2111), shall continue to prepare, in Consultation with the ACC and with the approval of the FWS, an annual Bull Trout Collection and Transport Program outlining the manner of and schedule for bull trout collection and passage at Project facilities, incorporating as appropriate either (1) the collection method identified in this Article and testing of alternative interim collection methods as provided in Section 4.9.2 of the Settlement Agreement; or (2) an alternative collection method developed pursuant to Section 4.9.2 of the Settlement Agreement. The Licensee, together with the licensee for Swift No. 1 (P-2111), may propose minor modifications to the program identified in Schedule 4.9.1 of the Settlement Agreement as part of the Bull Trout Collection and Transport Program. The Licensee, together with the licensee for Swift No. 1 (P-2111), shall not implement any modifications to the Bull Trout Collection and Transport Program until the FWS has approved those changes.

## **10 Investigation of Alternative Bull Trout Collection Methods**

The Licensee, together with the licensee for Swift No. 1 (P-2111), with respect to the Swift No. 2 bull trout collect-and-haul program, shall investigate the use of alternative interim bull trout collection methods in Consultation with the ACC (including at least the Services). Such

methods may include, but are not limited to, fyke traps, Denil steep passes, seines, fish wheels, and other types of active and passive gear. Annual testing of alternative methods shall begin upon approval of the Bull Trout Collection and Transport Program described in Section 4.9.1 of the Settlement Agreement, and shall continue until the FWS approves an alternate interim collection method or until operation of the Yale Upstream Facility as provided in the License for the Yale Project (P-2071) and the Swift Upstream Facility. The Licensee, together with the licensees for Swift No. 1 (P-2111) and Yale (P-2071), shall submit, annually, a draft report to the ACC (including at least the Services) evaluating alternative interim collection methods tested during the prior year. The Licensee, together with the licensee for Swift No. 1 (P-2111), and Yale (P-2071), shall provide the ACC (including at least the Services) 90 days to comment on the draft report. The Licensee, together with the licensees for Swift No. 1 (P-2111) and Yale (P-2071), shall finalize the report, respond to the comments of the ACC (including at least the Services), and submit a final report to the Commission within 180 days after sending out the report for comments.

## **11 Implementation of Alternative Bull Trout Collection Methods**

If the Licensee, together with the licensee for Swift No. 1 (P-2111), with respect to Swift No. 2 (P-2213), identifies, as part of the annual reporting process, an alternative interim collection method that will more safely and effectively collect bull trout than the collection method in use at that time, and if the Services concurs, then the collection method shall be modified. The Licensee, together with the licensee for Swift No. 1 (P-2111), shall, with respect to the Swift No. 2 collect-and-haul program, (1) within 180 days of submission of the report to the Commission, prepare a plan to implement such method in Consultation with the ACC and with the approval of the FWS, subject to Section 15.14 of the Settlement Agreement, and the Commission; (2) implement such alternative method as soon as practicable after obtaining the FWS's approval, subject to Section 15.14 of the Settlement Agreement; and (3) continue to implement the alternative method until the FWS approves an alternate interim collection method, or until operation of the Yale Upstream Facility as provided in the License for the Yale Project (P-2071) and the Swift Upstream Facility.

## **12 Swift Upstream Bull Trout Facilities**

If pursuant to Section 4.1.9 of the Settlement Agreement, the Licensee, together with the licensee for Swift No. 1 (P-2111), does not build the Swift Upstream Facility, and the FWS determines on or before the 13th anniversary of the Issuance of the License for the Swift No. 1 Project (P-2111) or the Swift No. 2 Project (P-2213), whichever is later, that collect-and-haul methods established under Sections 4.9.1 or 4.9.2 of the Settlement Agreement, are not meeting bull trout performance standards provided in Section 4.1.4 of the Settlement Agreement, then on or before the 17th anniversary of the Issuance of the License for the Swift No. 1 Project (P-2111) or the Swift No. 2 Project (P-2213), whichever is later, the Licensee, together with the licensee for Swift No. 1 (P-2111), shall complete construction of and provide for the operation of an alternate upstream passage facility (Swift Upstream Bull Trout Facility).

The Swift Upstream Bull Trout Facility is not intended to be a passage facility of the same magnitude and expense as the Swift Upstream Facility described in Section 4.8 of the Settlement

Agreement. The Licensee, together with the licensee for Swift No. 1 (P-2111), shall select an alternative passage facility design for the Swift Upstream Bull Trout Facility, in Consultation with the ACC (including at least the Services) and with approval of the FWS, subject to Section 15.14 of the Settlement Agreement. The Licensee, together with the licensee for Swift No. 1 (P-2111), shall construct and provide for the operation of such passage facility for the remaining term of this License. The Licensee, together with the licensee for Swift No. 1 (P-2111), shall follow the provisions of Sections 4.1.1 through 4.1.3 of the Settlement Agreement, as applicable, when developing designs for this facility.

The Licensee, together with the Licensee for Swift No. 1 (P-2111), shall monitor performance of the Swift Upstream Bull Trout Facility as provided in the Monitoring and Evaluation Plan (M&E Plan) in Section 9 of the Settlement Agreement, and make Facility Adjustments and Facility Modifications pursuant to Section 4.1.6 of the Settlement Agreement, to the Swift Upstream Bull Trout Facility.

### **13      Obligation to Consult**

Notwithstanding any other provision of these prescriptions for Fishways, and with respect to the requirements contained therein, the Licensee's obligation to convene the ACC shall be subject to Section 15.12 of the Settlement Agreement. Where Consultation is required by the Settlement Agreement, the Licensee shall not have an obligation to Consult regarding these Fishway prescriptions with Parties (other than the Services) which have withdrawn from the Settlement Agreement, or with any Party (other than the Services) if the Settlement Agreement is terminated, except as described in Section 15.13 of the Settlement Agreement.

### **14      Dispute Resolution**

In implementing these prescriptions for Fishways, the Licensee shall allow for the resolution of disputes, if any, among the Parties to the Settlement Agreement in accordance with the non-binding Alternative Dispute Resolution procedures set forth in the Settlement Agreement.

**UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION**

PacifiCorp	)	Lewis River Hydroelectric Projects
Portland, Oregon	)	FERC Projects Nos. P-2111, P-2071, and P-935
	)	
Cowlitz County PUD	)	Lewis River Hydroelectric Projects
Longview, Washington	)	FERC Project No. 2213
	)	

**CERTIFICATE OF SERVICE**

I hereby certify that I have caused this day the foregoing letter and Index to the Administrative Record for Prescriptions for Fishways to be served upon each person designated on the official list compiled by the Secretary in the above referenced proceedings.

Dated at Portland, Oregon this \_\_\_\_\_ day of February, 2006.

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Kristi Chambers  
U.S. Fish and Wildlife Service  
Pacific Region  
Portland, Oregon