



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

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Main Office Location: Natural Resources Building • 1111 Washington Street SE • Olympia, WA

July 22, 1996

Mr. E. A. Stauffer, Station Leader
Packwood Hydroelectric Project
Washington Public Power Supply System
Post Office Box 449
Packwood, Washington 98361

RE: Packwood Hydroelectric Project, FERC No. 2244, Mitigation Agreement dated
November 2, 1967

Dear Mr. Stauffer:

I enjoyed the opportunity to participate in the Federal Energy Regulatory Commission (FERC) inspection of the Packwood Hydroelectric Project on May 22, 1996. One of the issues that we inspected was the instream structures at the mouth of Lake Creek that was installed by the Washington Public Power Supply System in compliance with the November 2, 1967, mitigation agreement. The parties to the mitigation agreement anticipated that the reduction in streamflow in Lake Creek caused by diversion of flow into the power conduit might lead to a fish passage problem near the mouth. Thus, the instream structures were designed to consolidate the streamflow and help ensure that fish would have unimpeded passage.

During the floods this winter, Lake Creek overflowed its banks and threatened a house and other property. This caused representatives of the Goat Rocks housing area to request a Hydraulic Project Approval from this department to remove accumulated material from the vicinity of the mouth. Anna Bruce, area habitat biologist, issued that approval and the material had been removed prior to our inspection of May 22. At that time, you pointed out that most of the instream structures had been covered with streambed material or disturbed by the equipment that performed the removal. As I recall, the two farthest upstream instream structures were still in place.

In stipulation number three of the November 2, 1967, agreement the Supply System and the Department of Fisheries (now Department of Fish and Wildlife) agreed to inspect these structures in June of each year and determine what repair, if any, is required to maintain them. Those joint inspections have not occurred for some time, if ever. For the last few years, you have

E. A. Stauffer
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Page 2

photographed the vicinity and distributed those photographs to this agency and others. At the May 22 inspection, you questioned whether it is possible to change the language of the agreement to reflect current conditions.

We remain interested in maintaining fish passage into Lake Creek for both resident fish and the possible re-introduction of anadromous fish. It appears that the creek has maintained itself over these past 29 years so that fish passage has not been blocked. The instream structures were in place and functioning during that period and may have had some influence on the stream. We anticipate that Lake Creek will most likely remain passable for fish without the instream structures being rebuilt but, we think it is wise that annual monitoring of the situation continue. We recommend that Supply System personnel inspect the mouth of Lake Creek each June to determine if it appears that any fish passage problems exist, or are beginning to develop. If problems exist, or are developing, please contact Craig Olds, biologist with our Major Projects Section, Habitat Program, in Olympia at (360) 902-2540. You do not need to continue the annual photographs.

Sincerely,



David R. Mudd
Major Projects Section Manager

cc: Richard Taug, FERC, Portland
Steve Kozlowski, U.S. Forest Service, Randle
Steve Fransen, U.S. Fish & Wildlife Service, Olympia
Scott Carlon, National Marine Fisheries Service, Portland
Craig Olds
Anna Bruce
John Weinheimer

~~123~~
Effective - March 1, 1960
Outstanding - August 10, 1960

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

General License Articles
(L-2 Form) in Packwood
Dam File

Before Commissioners: Jerome K. Kuykendall, Chairman; Frederick Stueck
and Arthur Kline.

Washington Public Power Supply System) Project No. 2244

ORDER ISSUING LICENSE (MAJOR)

(Issued July 7, 1960)

Application was filed April 20, 1959 by Washington Public Power Supply System, of Kennewick, Washington, for a license under the Federal Power Act (hereinafter referred to as the Act) for proposed major Project No. 2244, to be located on Lake Creek and Packwood Lake near Packwood in Lewis County, Washington, and affecting lands of the United States within Gifford Pinchot National Forest.

The Assistant Chief of Civil Works, U. S. Corps of Engineers, Department of the Army, in reporting on the application, advised that the proposed project would not affect the interests of navigation or flood control and that no objection is made to granting the license.

The Assistant Secretary of Agriculture, acting for the Secretary of Agriculture, who has supervision over the Gifford Pinchot National Forest, in originally reporting on the application, recommended for inclusion in any license issued for the proposed project certain special conditions in the interests of the Department of Agriculture, in addition to the conditions usually included in licenses for such projects. However, in a supplemental report, the Assistant Secretary transmitted to us copies of an agreement between Applicant and the Department of Agriculture, Forest Service, executed May 3 and May 10, 1960, respectively, embodying all but two of the special conditions, which latter are included herein as hereinafter provided, (Filed under License

An Assistant Secretary of the Interior, in reporting on the application, has recommended the inclusion in any license issued for the proposed project of certain special conditions in the interests of the Department of the Interior, in addition to the conditions usually included in licenses for such purpose - all as hereinafter substantially provided.

The Department of Fisheries and the Department of Game, both of the State of Washington were notified of the Commission's receipt of the application for license, but to date have not commented on the application.

The Commission finds:

- (1) The proposed project will affect lands of the United States.
- (2) The proposed project would consist of:

(a) All lands constituting the project area and enclosed by the project boundary or the limits of which are otherwise defined, and/or interests in such lands necessary or appropriate for the purpose of the project, whether such lands or interests therein are owned or held by the applicant or by the United States; such project area and project boundary being more generally shown and described by certain exhibits which formed part of the application for license and which are designated and described as follows:

Superseded
by Instr. 5

Exhibit J: ~~Sheet 1 (FPC No. 2244-3) Location Map;~~

~~Sheet 2 (FPC No. 2244-4) General Project Map;~~

~~Sheet 3 (FPC No. 2244-5) Vicinity Transmission System;~~

Exhibit K: ~~Sheets 1 through 10 (FPC Nos. 2244-6 by Instr. 5 through 15) Project Topography;~~

except 10 & 12 which were superseded

Superseded
by Instr. 2

~~Sheet 11 (FPC No. 2244-16) Packwood Lake;~~

~~Sheets 12 through 25 (FPC Nos. 2244-17 through 30) Plan and Profile, Pipe Line;~~

~~Sheets 26 through 28 (FPC Nos. 2244-31, -32 and 33) Penstock Plan and Profile; and~~

~~Sheet 29 (FPC No. 2244-34) Plan and Profile Penstock, Powerhouse Site and Tailrace.~~

Amended
by Instr. 2
which was then
amended
by Instr. 5

~~(b) The project would consist of an overflow concrete weir structure with two foot flashboards in Lake Creek, at the outlet of Packwood Lake, providing a maximum operation pool at elevation 2,858.5 feet and creating usable power storage of 3,500 acre-feet; intake structure with trash racks; slide-type headgate; a 75 inch diameter concrete pipeline 23,300 feet in length; surge chamber; 5,800 feet of steel penstock 46-1/4 inches to 41-3/4 inches in diameter; outdoor type powerhouse, containing a~~

~~single impulse turbine rated at 27,600 horsepower connected to a generator rated at 22,200 kva at 0.90 pf.; 5,600 feet of tailrace channel; semi-automatic control equipment; transmission line; access roads and other appurtenant facilities;~~

the location, nature and character of which are more specifically shown and described by the exhibits which also formed part of the application for license and which are designated and described as follows:

Amended
see
Instr. 5

Exhibit L: ~~Sheet 1 (FPC No. 2244-35) General Plan Intake Area and Weir;~~

} Superseded by Instr. 2

~~Sheet 2 (FPC No. 2244-36) Intake, Pipe Line and Weir Details and Sections;~~

~~Sheet 3 (FPC No. 2244-37) Geological Plan and Sections - Intake Area;~~

} Superseded by Instr. 5

~~Sheet 4 (FPC No. 2244-38) Powerhouse Plans and Elevations;~~

} Superseded by Instr. 2

~~Sheet 5 (FPC No. 2244-39) Powerhouse Yard and Tailrace, Plans and Sections; and~~

} Superseded by Instr. 5

Exhibit M: ~~Two typewritten sheets entitled, "General Description and General Specifications of Equipment."~~

} Superseded by Instr. 2

(c) All other structures, fixtures, equipment or facilities used or useful in the maintenance and operation of the project and located on the project area, including such portable property as may be used or useful in connection with the project or any part thereof, whether located on or off the project area, if and to the extent that the inclusion of such property as a part of the project is approved or acquiesced in by the Commission; also, all riparian or other rights, the use or possession of which is necessary or appropriate in the maintenance and operation of the project.

(3) The Applicant is a municipal corporation organized under the laws of the State of Washington and has submitted satisfactory evidence of compliance with the requirements of all applicable State laws insofar as necessary to effect the purposes of a license for the project.

(4) Public notice of the application has been given. Two informal protests against the application were received from sportsmen's organizations. No conflicting application is before the Commission.

(5) The proposed project does not affect any Government dam, nor will the issuance of a license for the project, as hereinafter provided, affect the development of any water resources for public purposes which should be undertaken by the United States.

(6) The project is best adapted to a comprehensive plan for improving or developing a waterway or waterways for the use or benefit of interstate or foreign commerce, for the improvement and utilization of water-power development, and for other beneficial public uses, including recreational purposes.

(7) The Applicant has submitted satisfactory evidence of its financial ability to construct and operate the proposed project.

(8) The installed horsepower capacity of the proposed project hereinafter authorized for the purpose of ~~computing~~ the capacity component of the administrative annual charge is 26,700 horsepower, and the energy generated thereby would be distributed to Applicant's member public utility districts.

*Presumably
changed by
Amend. #1 - 34*

(9) The issuance of a license for the proposed project will not interfere or be inconsistent with the purposes for which the Gifford Pinchot National Forest was created or acquired.

(10) The amount of annual charges to be paid under the license for the purpose of reimbursing the United States for the costs of administration of Part I of the Act and for recompensing it for the use, occupancy, and enjoyment of its lands is reasonable as hereinafter fixed and specified.

(11) The proposed 115 kilovolt transmission line, approximately two miles in length, between the Packwood power plant and substation, which was included in the application for license, is part of the project within the meaning of Section 3 (11) of the Act, and should be included in the license for the project as hereinafter provided.

(12) It is desirable to reserve for determination at a later date, what additional transmission lines, if any, should be included in the license.

(13) According to the application, Applicant proposes to commence construction of the project within one year after issuance of license and complete the project within two years thereafter.

(14) The exhibits designated and described in finding (2) above conform to the Commission's rules and regulations and should be approved as part of the license for the project.

(15) Exhibits F and K for the transmission line and final design Exhibit L drawings of the pipeline - all in accordance with the Commission's rules and regulations - should be filed as hereinafter provided.

The Commission orders:

(A) This license is issued to Washington Public Power Supply System, of Kennewick, Washington, (hereinafter referred to as the Licensee) for a period of 50 years, effective as of March 1, 1960, for the construction, operation, and maintenance of Project No. 2244 on Lake Creek and Packwood Lake, Washington, and affecting lands of the United States within the Gifford Pinchot National Forest, subject to the terms and conditions of the Federal Power Act which is incorporated by reference as a part of this license, and subject to such rules and regulations as the Commission has issued or prescribed under the provisions of the Act.

(B) This license is also subject to the terms and conditions set forth in Form L-2, December 15, 1953, entitled "Terms and Conditions of License for Unconstructed Major Project Affecting Lands of the United States," (17 FPC 62), which terms and conditions, designated as Articles 1 through 24, are attached hereto and made a part thereof, except for Articles 20 and 21 therein; and subject to the following special conditions set forth herein as additional articles:

Article 25. The Licensee shall commence construction of the project within one year from the effective date of this license, shall thereafter with due diligence prosecute such construction, and shall complete the project and place it in operation ~~within three years of the effective date of the license.~~
 → on or before August 31, 1964. (Instr. 3) Completed

Article 26. The Licensee shall consult with the Forest Service on the location of and shall, within one year after issuance of license, establish and mark on the ground the final project boundary. } Satisfied, see Instr. 5

~~Article 27. The Licensee shall construct, maintain, and operate or shall arrange for the construction, maintenance, and operation of such fish protective devices, including fish screens and racks, and shall comply with such reasonable modifications of project structures and operation in the interest of fish and wildlife resources of the project area, provided that such modifications shall be reasonably consistent with the primary purpose of the project, as may be prescribed hereafter by the Commission upon its own motion or upon recommendation of the Secretary of the Interior, the Washington Departments of Fisheries and Game or the Forest Service, after notice and opportunity for hearing and upon a finding based on substantial evidence that such modifications are necessary and desirable and consistent with the provisions of the Act Provided, however, That no modifications of project structures shall be required unless recommendations are made by the Secretary of the Interior, the Washington Departments of Fisheries and Game, or the Forest Service prior to October 31, 1960, or such further time as may be prescribed by the Federal Power Commission by its order issued prior to October 31, 1960.~~ } Amended see Instr. 6

Article 28. The Licensee shall return powerhouse tailrace discharges to Cowlitz River as far upstream as possible by extension of excavated channel directly to the river to supply the maximum possible mainstem spawning area with Lake Creek water. } previously satisfied construction of channel

Complied -

A Flume carries water over Hall Creek.

Article 29. The Licensee shall provide a gate on the culvert through the proposed earthen dam on Hall Creek to control flows and prevent mixing of Hall and Lake Creek waters in order to avoid detrimental effects to salmon hatchery operations and salmon spawning habitat, provided that control of flows shall be subject to the approval of the authorized representative of the Commission upon recommendation of the Washington Department of Fisheries.

Ongoing

Article 30. The Licensee shall in the event the United States develops irrigation projects in and adjacent to the Cowlitz River Basin diverting water downstream from Project No. 2244, release sufficient water to maintain not less than the natural stream flow conditions when requested by the Commission as may be required for Federal reclamation development as determined by the Secretary of the Interior, without claim against the United States or its successors in interest in the irrigation projects.

Article 31. The Licensee shall pay to the United States the following annual charges:

AMENDED BY ORDER 4/30/80 Amend #3

- ~~(i) For the purpose of reimbursing the United States for the costs of administration of Part I of the Act, a reasonable annual charge in accordance with the provisions of Part II of the Commission's regulations. The authorized installed capacity for such purposes is 26,700 horsepower;~~
- (ii) For the purpose of recompensing the United States for the use, occupancy and enjoyment of its lands exclusive of those used for transmission-line purposes \$1,070; and
- (iii) For the purpose of recompensing the United States for the use, occupancy and enjoyment of its lands for transmission-line purposes only, an amount to be hereafter determined by the Commission.

Article 32. The project shall be coordinated with the U.S. Columbia River Power System and/or other entities so as to achieve maximum coordination benefits, provided that, there be an equitable sharing of the benefits resulting from such coordination.

Presumably satisfied by Instr. 2, but specifically not therein stated.

Article 33. The Licensee shall submit, in accordance with the Commission's rules and regulations, final design Exhibit L drawings of the pipeline; and the Licensee shall not begin construction of the pipeline until the Commission has approved such Exhibit L drawings.

Article 34. The Commission reserves the right to determine at a later date what additional transmission lines, if any, should be included in the license.

Article 35. The Licensee shall within one year from the date of completion of the project submit, in accordance with Commission's rules and regulations, Exhibits F and K for the transmission line. } Satisfied, see Instr. 5

(C) The exhibits designated and described in finding (2) above are approved as part of this license.

(D) This order shall become final 30 days from the date of its issuance unless application for rehearing shall be filed as provided in Section 313 (a) of the Federal Power Act, and failure to file such an application shall constitute acceptance of this license. In acknowledgment of the acceptance of this license, it shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this order.

By the Commission.

added } 35
37
38

2/28/62

Joseph H. Gutride,
Secretary.

Added } 40
2/17/62 { 41

42 - Added Land Use Conveyance / Easement Report



UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION

*Transmitted by letter
4/30/62*

Before Commissioners: Joseph C. Swidler, Chairman; Howard Morgan,
L. J. O'Connor, Jr., and Charles R. Ross.

Washington Public Power Supply System) Project No. 2244

ORDER AMENDING LICENSE (MAJOR)

(Issued February 28, 1962)

Application was filed on December 22, 1960, and supplemented on August 23 and December 19, 1961, by Washington Public Power Supply System, licensee for major Project No. 2244, for amendment of the license for the proposed project to be located on Lake Creek and Packwood Lake in Lewis County, Washington, and affecting lands of the United States within the Gifford Pinchot National Forest.

The amendment sought would principally: (1) increase the authorized installed capacity from 26,700 horsepower to 34,800 horsepower; (2) change the location and design of the diversion structure from an earth-fill dam and intake to a concrete drop structure and intake to be located on Lake Creek approximately 400 to 450 feet downstream from the outlet of Packwood Lake; (3) relocate center lines of certain pipe line sections and add tunnel sections wherever it will improve their hydraulic properties; (4) modify the tailrace canal by minor centerline relocation and detailing of structures; (5) change the design of the powerhouse from a semi-outdoor type to a semi-buried concrete structure; and (6) change the voltage of the 115 kv transmission line, now included in the license, to 69 kv and include in the project works an additional 69 kv transmission line to extend about 50 miles from the project to the Silver Creek Substation of the Bonneville Power Administration. X

According to the application and supplements thereto, the proposed changes and additions to the project works are necessary and desirable for the reasons that: (1) as a result of modifications in pipe line gradient to accommodate greater hydraulic capacity, the generating capacity is increased and the increase so realized will enhance the economic feasibility of the project; (2) the redesign and relocation of the spillway crest and the intake structure make a lower head diversion dam feasible; (3) seismic sections studies and pipe line gradient studies made possible better location of the pipe line; (4) relocation of the tailrace serves to benefit the area as a drainage ditch and to return water to the Cowlitz River as requested by the State of Washington Bureau of Fisheries; (5) relocation of the powerhouse was to fit the available foundation conditions and its redesign permitted the accommodation therein of a small horizontal unit; and (6) the construction of the new 69-kv transmission line to the Bonneville Power

Administration transmission network is required to transmit the additional capacity for use by Member Public Utility Districts.

The principal effects of approval of the amendment sought will be reflected in the description of the project works and the authorized increased installed horsepower capacity of the project with the resultant increase in the administrative annual charges payable under the license as amended.

An Assistant Secretary of the Interior, in reporting on the application, has requested that an additional provision be included in any amended license for the project in the interest of fish life, and that Article 27 of the license be revised by removing therefrom the date specified therein within which the Secretary of the Interior may request modification of project structures in the interest of fish and wildlife resources.

The Director of the Washington Department of Games, in reporting on the application, has requested that an additional provision in the interest of fish life, similar to the provision requested by the Assistant Secretary of the Interior, be included in any amended license for the project.

The Secretary of Agriculture, in reporting on the application, has requested the inclusion in any amended license for the project, additional provisions which the Forest Service believes necessary for the protection of the natural resources of the National forest lands involved, including recreation.

The Commission finds:

- (1) Public notice of the filing of the application has been given. No formal protests or petitions to intervene have been received.
- (2) The license, amended as hereinafter ordered, will not interfere or be inconsistent with the purposes for which the Gifford Pinchot National Forest was created or acquired, and is in the public interest.
- (3) The authorized installed horsepower capacity of the project for the purpose of computing the capacity component of the administrative annual charge is increased to 34,800 horsepower, and the increased annual charge for reimbursing the United States for the costs of administration of Part I of the Federal Power Act, based on such capacity, as hereinafter provided, is reasonable.
- (4) The new 69 kv transmission line referred to in item (6) of the second paragraph of this order as extending about 50 miles from the project to the Silver Creek Substation of the Bonneville Power Administration is part of the project within the meaning of Section 3 (11) of the Federal Power Act,

and should be included in the amended license for the project as hereinafter provided.

(5) The following described revised exhibits filed as part of the application for amendment conform to the Commission's rules and regulations and should be approved as part of the license for the project as hereinafter provided:

Superseded
by Inc. 5

~~Exhibit J: (FPC Nos. 2244-41 and 42);~~
~~Exhibit K: (FPC Nos. 2244-43 through 47, 51 and 52, 55 through 64, 72 and 73);~~
~~Exhibit L: (FPC Nos. 2244-64, 69 and 70, and 74 through 75);~~ Drop Error
 Exhibit M: Filed in the Commission December 22, 1960.

(6) The following described exhibits, now part of the license, and which have been superseded by the revised exhibits described in finding (5) above, should be eliminated from the license as hereinafter provided:

- Exhibit J: (FPC Nos. 2244-4 and -5);
- Exhibit K: (FPC Nos. 2244-6 through -9, -11, and -13 through -34);
- Exhibit L: (FPC Nos. 2244-35, -36 and -38); and
- Exhibit M: Filed in the Commission April 20, 1959.

The Commission orders:

(A) The exhibits described in finding (5) above as conforming to the Commission's rules and regulations are approved as part of the license for Project No. 2244 and the exhibits described in finding (6) as being superseded are eliminated from the license.

(B) The license for Project No. 2244 is amended, effective as of February 1, 1962, as follows:

PARAGRAPH I. Subparagraphs (a) and (b) of finding (2) of the license are amended to read as follows:

(2) The proposed project will consist of:

- (a) All lands constituting the project area and enclosed by the project boundary, or the limits of which are otherwise defined, and/or interest in such lands necessary or appropriate for the purposes of the project, whether such lands or interest therein are owned or held by the Applicant or by the United States; such project area and project boundary being more specifically shown and described by certain exhibits which formed part of the application for license and which are designated and described as follows:

~~Exhibit J: Sheet 1 (FPC No. 2244-3) Location Map;
 Sheet 2A (FPC No. 2244-41) General Project Map;
 Sheet 3A (FPC No. 2244-42) Vicinity Transmission System;~~

Exhibit K: Sheets 1A, 4A, 5, 6A, 7 and 8A (FPC Nos. 2244-10, -12 and -43 to -46 incl) Project topography except insofar as a diversion dam is shown on Sheet 8A;

Sheet 11A (FPC No. 2244-47) Packwood Lake;

Sheets 16A, 19A and 20A (FPC Nos. 2244-52, -55 and -56) Pipe Line - Plan and Profile;

Sheets 21A and 22A (FPC Nos. 2244-57 and -58) Penstock - Plan and Profile;

Sheet 23A (FPC No. 2244-59) Penstock, Powerhouse, Yard and Tailrace;

Sheet 24A (FPC No. 2244-60) Tailrace Canal;

Sheets 25A through 28A (FPC Nos. 2244-61 through -64) Access Road;

Sheet 15A (FPC No. 2244-51) Pipeline - Plan and Profile only insofar as it shows the conduit location; and

~~Sheets 17A and 18A (FPC Nos. 2244-72 and -73) Pipeline Plan Profile.~~

Superseded,
see Instr. 5

(b) ~~Project works consisting of:~~

~~A concrete drop structure and intake located on Lake Creek about 450 feet downstream from the outlet of Packwood Lake, providing a maximum operating pool at elevation 2,858.5 feet and creating usable power storage of about 3,500 acre-feet; an excavated approach channel to the intake; a conduit consisting of tunnel and pipeline; a penstock; surge chamber; a semi-buried powerhouse containing a 36,700-horsepower turbine connected to a 26,125-kilowatt generator; a tailrace canal; semiautomatic control equipment; a 69-kv transmission line about two miles long extending to existing facilities of Lewis County PUD No. 1 and a 69 kv transmission line~~

AMENDED
BY ORDER
ISSUED
4/30/80
(Instr. 5)

Deleted
by order
issued
4/30/80

~~extending about 50 miles to the Silver Creek Substation of the Bonneville Power Administration; access roads; and appurtenant electrical and mechanical facilities; the location, nature and character of which are more specifically shown and described by the exhibits herebefore cited and by certain other exhibits which also formed part of the application for license or amendment thereof and which are designated and described as follows:~~

Amended
by Instr. 5

Superseded
by Instr. 5

Exhibit L: Sheet 1A (FPC No. 2244-65) Powerhouse Plan and Elevations;

Sheet 2B (FPC No. 2244-74) Drop Structure and Intake-General Arrangement;

Sheet 3B (FPC No. 2244-75) Intake Area-General Plan, only insofar as it shows Site No. 1;

Sheet 4B (FPC No. 2244-76) Drop Structures & Cutoff Details;

Sheet 5A (FPC No. 2244-69) Pipeline and Penstock, Sections and Details;

Sheet 6A (FPC No. 2244-70) Tailrace Canal Structures, Plans and Sections;

Sheet 3 (FPC No. 2244-37) Geological Plan and Sections - Intake Area;

Sheet 5 (FPC No. 2244-39) Powerhouse Yard and Tailrace, Plans and Sections, only insofar as it shows the tailrace canal sections; and

Exhibit M: General Description and General Specifications of Equipment, filed in the Commission December 22, 1960.

PARAGRAPH II. Article 27 of the license is amended to read as follows:

~~Article 27. The Licensee shall construct, maintain and operate such protective devices and shall comply with such reasonable modifications of the project structures and operation in the interest of fish and wildlife resources, provided that such modifications shall be reasonably consistent with the primary purpose of the project, as may be prescribed hereafter by the Commission upon its own motion or upon recommendation of the Secretary of the Interior or the Washington Departments of Fisheries and Game or the Forest Service, after notice and opportunity for hearing and upon a finding that such modifications are necessary and desirable and consistent with the~~

Amended
by
Instr. 6

~~provisions of the Act: Provided further, That subsequent to approval of the final design drawings prior to commencement of construction no modifications of project structures in the interest of fish and wildlife resources which involve a change in the location, height or main structure of a dam, or the addition of or changes in outlets at or through a dam, or a major change in generating units, or a rearrangement or relocation of a powerhouse, or major changes in a spillway structure shall be required.~~

PARAGRAPH III. Subparagraph (i) of Article 31 of the license is amended to read as follows:

Amended
by Instr. 5

- (i) For the purpose of reimbursing the United States for the costs of administration of the Federal Power Act, a reasonable annual charge in accordance with the provisions of Part 11 of the Commission's regulations. The authorized installed capacity for such purpose is 34,800 horsepower;

PARAGRAPH IV. Article 35 of the license is amended to read as follows:

Satisfied,
see Instr. 5

Article 35. The Licensee shall, within one year following the date of completion of the project, submit for Commission approval Exhibits F and K showing the project area and boundary of the project and Exhibits F and K for the transmission lines, all prepared in accordance with the Commission's rules and regulations.

PARAGRAPH V. The license is amended by adding thereto the following articles:

Satisfied,
see SFRO
22 Oct 62
telegram

Article 36. Prior to the start of construction of any phase of the project occupying national forest land between the surge chamber and Packwood Lake, the Licensee shall submit to the authorized representatives of the Commission and the Forest Service construction plans, procedures, and methods pertaining to control against land sliding and prevention of silt and debris deposition in Packwood Lake and Lake Creek as a result of construction, operation, and subsequent maintenance of project facilities. No construction between the surge chamber and Packwood Lake, including pipeline, pipeline access and drop structures and inlet channel, is to start until the construction details have been approved by the authorized representatives.

Amended
by
Instr. 6

~~Article 37. The Licensee shall operate the project so that the maximum operating pool shall be at elevation 2858.5 and the minimum operating pool shall be elevation 2850.5. During the period each year between May 1 and September 15, the Licensee shall maintain the pool level at elevation 2857, except for conditions which may occur which are beyond the control of the Licensee.~~

Article 38. The Licensee shall, prior to commencing construction of the project access road, submit to and obtain Commission approval of revised Exhibit K maps showing the location of the access road. } Satisfy
see Instr.

Article 39. The Licensee shall participate with the United States Forest Service in a five-year recreation and fishery water flow study to determine the long term minimum flow requirements needed for multiple-use purpose of the National Forest, such study to begin with the completion of construction of the drop structure. The Licensee shall initially maintain a minimum flow of 10 cfs immediately below the drop structure and may adjust the flows between 5 and 15 cfs during the study period as directed by the authorized representative of the Commission upon the advice of the Forest Service: Provided, however, That the minimum water flow in Lake Creek below the Primary State Highway No. 5 bridge crossing of Lake Creek shall not be less than 10 cfs. Within six months after completion of the study, the Forest Service may recommend to the Commission minimum flows in Lake Creek immediately below the drop structure for multiple-use purposes of the National Forest. The Licensee shall comply with such reasonable modification of the minimum flow requirements prescribed herein as the Commission may prescribe hereafter upon its own motion or upon recommendation of the Forest Service, after notice and opportunity for hearing. } Satisfy
see Instr.

} see
Instr. 4
for Art. k
revision.

(C) This amendment in the manner set out above shall not operate to alter or amend the license in any other respect, and shall not in any way constitute a waiver of any other part, provision or condition of the license.

(D) This order shall become final 30 days from the date of its issuance unless application for rehearing shall be filed as provided in Section 313 (a) of the Federal Power Act and failure to file such an application shall constitute acceptance of this amendment of license. In acknowledgment of the acceptance of this amendment of license, it shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this order.

By the Commission.

Joseph H. Gutride,
Secretary.

AMENDMENT OF LICENSE

UNITED STATES OF AMERICA
FEDERAL POWER COMMISSION



Before Commissioners: Richard L. Dunham, Chairman;
John H. Holliman III, and James G. Watt.

Washington Public Power Supply)
System) Project No. 2244

ORDER AMENDING LICENSE
(Issued February 17, 1976)

Washington Public Power Supply System (Applicant) filed an application on November 12, 1970, and supplemented on June 28 and July 19, 1971, for amendment of license for its constructed Packwood Hydroelectric Project No. 2244 located on Lake Creek and Packwood Lake in Lewis County, Washington, affecting lands of the United States within the Gifford Pinchot National Forest.

Packwood Lake, the source of water for the project, is a natural lake having a normal pool elevation of 2,857 feet. The Applicant is required to maintain an adequate release of lake water into Lake Creek, which is the natural outlet of Packwood Lake, to preserve resident stream fish. The license for Project No. 2244 requires that the Applicant maintain the lake level at approximately its natural level during the recreation season from May 1 to September 15.

At the time that the project was completed in June, 1964, Applicant recognized that certain amendments to the license were needed to optimize power production from the project consistent with the original feasibility studies. As a result, on November 12, 1970, Applicant requested that we consider four modifications to its license which would permit a more flexible mode of operation and enhance the recreational use of Packwood Lake.

Public notice of the application was given with June 30, 1971, as the last date for filing protests or petitions to intervene. No protests or petitions to intervene have been received by the Commission.

The proposed license amendments can be summarized as follows:

(1) incorporate a Memorandum of Agreement dated November 2, 1967, signed by the Applicant; the Department of Agriculture, Forest Service; the Bureau of Sport Fisheries and Wildlife and the Bureau of Commerical Fisheries of the Department of the Interior; the Washington Department of Fisheries; and the Washington Game Commission, in accordance with Article 39 of the license, 1/ providing for minimum fishwater releases into Lake Creek and maintenance of stream improvements;

(2) amend Article 37 2/ of the license to establish the minimum operating pool at elevation 2,849 during the period September 16 through

1/ "Article 39. The Licensee shall participate with the United States Forest Service in a five-year recreation and fishery water flow study to determine the long term minimum flow study to determine the long term minimum flow requirements needed for multiple-use purpose of the National Forest, such study to begin with the completion of construction of the drop structure. The Licensee shall initially maintain a minimum flow of 10 cfs immediately below the drop structure and may adjust the flows between 5 and 15 cfs during the study period as directed by the authorized representative of the Commission upon the advice of the Forest Service: Provided, however, that the minimum water flow in Lake Creek below the Primary State Highway No. 5 bridge crossing of Lake Creek shall not be less than 10 cfs. Within six months after completion of the study, the Forest Service may recommend to the Commission minimum flows in Lake Creek immediately below the drop structure for multiple-use purposes of the National Forest. The Licensee shall comply with such reasonable modification of the minimum flow requirements prescribed herein as the Commission may prescribe hereafter upon its own motion or upon recommendation of the Forest Service, after notice and opportunity for hearing."

2/ "Article 37. The Licensee shall operate the project so that the maximum operating pool shall be at elevation 2858.5 and the minimum operating pool shall be elevation 2850.5 During the period each year between May 1 and September 15, the Licensee shall maintain the pool level at elevation 2857, except for conditions which may occur which are beyond the control of the Licensee."

April 30, in lieu of minimum elevation 2,850.5 now prescribed, to allow a full eight-foot drawdown during the winter critical hydro period;

(3) authorize the adoption of a rule curve to permit pool levels ranging from elevations 2,854 to 2,857.0 \pm 0.5 from May 1 to June 18, depending on the prediction of runoff, to minimize hardships in obtaining the prescribed May 1 elevation 2,857 in dry years and enhance operating pool control during peak runoff periods in years of heavy flows; and

(4) discontinue the requirement for duplicated U.S.G.S. gaging facilities below the drop structure.

Pursuant to Article 39 of its license, Applicant conducted studies which included the conditions of Lake Creek at its confluence with the Cowlitz River, the identification of fish population in various portions of Lake Creek, the effect of reduced flows on spawning in the area, contributions to Lake Creek made by other tributaries, and temperature studies in various reaches of Lake Creek between Packwood Lake and the Cowlitz River. As a result of these studies and studies conducted by the Forest Service and various fishery agencies, the abovementioned Memorandum of Agreement was signed which prescribes that discharges into Lake Creek be made to facilitate a flow of 15 c.f.s. near the confluence of Lake Creek with the Cowlitz River.

The Applicant believes that is proposed amendment to Article 37, which would establish a minimum operating lake level at elevation 2,849 feet (msl) between September 16 and April 30, is essential to regain the economic project operation on which the original license was based. This operation would allow the project to deliver energy during an extremely dry, critical hydro period. Presently the critical hydro period, which limits the annual income for sale of firm power from the project, is based upon water conditions of August 1, 1936 to April 15, 1937. Since August 1 falls in the recreation period, the lake level would be at elevation 2857 feet (msl). However, the Applicant believes that it should be allowed to operate at elevation 2,849 feet (msl) as the winter limit to furnish the originally

licensed eight-foot drawdown. According to Applicant's fishery and forestry consultants, operation at the requested level during the non-recreation season will not adversely affect recreational use of Packwood Lake. Applicant asserts that its studies have indicated that fluctuation of the lake level down to elevation 2,849 feet (msl) will have no adverse effects on fish and wildlife resident in the area.

According to the Applicant, the adoption of the proposed rule curve would permit levels to range from elevation 2,854 to 2,857 feet (msl) from May 1 to June 18, depending upon predicted runoff, and would benefit the operation of the project in several ways. Basing its position on the project operating records since the initial startup, Applicant believes that operation on the rule curve during this period would tend to avoid any potential adverse effects on the shoreline of the lake. Applicant also believes that such operation would serve the best interests of recreation use at the lake from the beginning of the recreation season, which in high flow years does not begin until after June 1. The Applicant contends that such operation would minimize the effects of flooding in Lake Creek, and thereby help to protect against adverse effects on stream improvements constructed by it in Lake Creek near the confluence with the Cowlitz River.

From 1965 to 1970 the lake overtopped the drop structure a total of 38 days, but 26 days of overtopping occurred in 1969 during a large flood runoff. Prolonged periods of overtopping could cause shoreline tree damage according to the Applicant, though none was identified due to 1969 lake levels. The Applicant believes that a rule curve allowing elevations 2,854 to 2,857 feet (msl) for May and June, when flow predictions are more than 110 percent of the 50 year average, would reduce the risk of any shoreline effects.

Interested Federal and State agencies were given the opportunity to comment on the proposed license amendment. On August 26, 1974, the Forest Service of the Department of Agriculture, recommended the approval of the Memorandum of Agreement. The Forest Service recommended that items 2 and 3, relating to Article 37 of the license and the rule curve, be denied, because these items are not compatible with the Forest Service's stated management objectives for Packwood Lake. The Forest Service's objectives are to preserve the back-country environment of the lake in a natural,

undisturbed setting and to provide the public with a back country recreation experience. The Forest Service believes that the proposed rule curve would not reduce the major floods which historically occur after June 18. To minimize the flood problem, the Forest Supervisor of the Gifford Pinchot National Forest expressed a willingness to discuss modification of the drop structure to increase its discharge capability. The Forest Service agrees to the removal of the U.S.G.S. gaging station mentioned in item 4, if the Applicant cooperates fully with the District Ranger at Packwood by closely controlling releases through the fishwater by-pass facilities. The Forest Service also recommends that a license article be included to require the Applicant to work closely with, and obtain approval from, the Forest Supervisor on all matters concerning operational changes at Packwood Lake.

The Applicant was given the opportunity to respond to the Forest Service's comments and did so by letter dated March 24, 1975. The Applicant stated that it did not agree to the position of the Forest Service regarding item 2 above. The Applicant did state however that it was willing to meet with the Forest Service to discuss the possibility of modifying the drop structure in return for Forest Service approval of the eight-foot drawdown to elevation 2,849. As to the rule curve, Applicant believed that this would benefit environmental resources but defers to the position of the Forest Service on the matter. Applicant has no objection to the license article regarding operational changes suggested by the Forest Service. Therefore we are incorporating this proposal into a new Article 40 of the license.

The Department of the Interior reported by letter of July 10, 1972, that the proposed amendment would not have any serious impact on fish and wildlife or recreation resources in the area. Interior stated that Applicant's records of discharge, which Interior compared with U.S.G.S. data for 1969, were acceptable for ten of the twelve months. Interior recommended continuing operation of the existing gaging station until Interior can be assured of obtaining accurate records from the Applicant's measurement facilities.

In a letter dated September 27, 1971, the Environmental Protection Agency stated that no adverse water quality impacts are expected from the proposed project operation.

EPA believes that a lower pool level at Packwood Lake in the winter may result in some additional flood control, with an accompanying reduction in downstream erosion and sediment transport.

The Department of Health, Education, and Welfare reported by letter of May 14, 1971, that there does not appear to have been any adverse health effects resulting from project operation. HEW urged adherence to the recommendations of the State and local health departments for improving the general sanitation in the recreation area.

The Washington Department of Game in its letter of May 21, 1971, stated that it concurred in items 1 and 4 of the proposed amendment to the license. The Department of Game objected to the proposed change in minimum pool elevation from 2,850.5 feet to 2,849 on the grounds that it may cause access problems for rainbow trout spawners into spawning tributaries and that it may cause loss of fish food production with the added exposure of littoral areas. The Department of Game also objected to the rule curve because it would change the present fisheries management program which could result in significant losses of fish over the unscreened spillway. If the rule curve is adopted, the Department of Game may request screening of the spillway.

The Applicant responded on July 27, 1971 to the Department of Game comments. Applicant stated that its consultant believes that blockage of spawning access to the tributaries would be highly unlikely. Applicant stated that it has made regular inspections of the tributary streams during the seven years of project operation and it has determined that low water does not block access to spawning trout. Applicant further stated that the additional shoreline exposure has a favorable impact on elk and deer populations. Concerning the loss of fish over the spillway, Applicant believes that implementation of a spring rule curve which would minimize overtopping of the drop structure may reduce the loss of fish due to overtopping.

Commenting letters were also received from the Washington Sierra Club, Federation of Western Outdoor Clubs, Sportmen's Council, Inc., and Northwest Steelheaders Council of Trout Unlimited. These organizations expressed concern over the proposed amendment of license, but stated no specific objections thereto.

We have reviewed the Applicant's proposal and the comments submitted thereon. We believe that the Memorandum of Agreement dated November 2, 1967, accomplishes the provisions intended under Article 39 of the license. We are, therefore, approving paragraph one of the Agreement dealing with minimum fishwater releases. However, we are not approving paragraphs 2, 3, and 4 of said Agreement. We are denying items 2 and 3 of the proposed amendments concerning Article 37 and the rule curve because these proposals are not compatible with Forest Service management objectives for Packwood Lake. As to item 4, the proposed removal of the U.S.G.S. gaging station below the drop structure, we are denying that request pending further investigations as provided in Article 41.

This amendment of license does not constitute a major federal action significantly affecting the quality of the human environment because no construction or further change in project operation is authorized. The releases of up to 15 cfs into Lake Creek would be beneficial and adequate to sustain fish life and multiple-use purposes of the Gifford Pinchot National Forest.

The Commission finds:

(1) It is appropriate and in the public interest that the license for Project No. 2244 be amended to include Articles 40 and 41.

(2) It is appropriate and in the public interest to revise Article 14 of the license to incorporate paragraph one of the Memorandum of Agreement dated November 2, 1967, and described more specifically infra.

(3) Public notice of the application for amendment of license has been given. No protests or petitions to intervene have been received.

(4) This amendment is not a major federal action significantly affecting the quality of the human environment.

(5) It is appropriate and in the public interest to deny at the present time items 2, 3, and 4 of the proposed amendments.

The Commission orders:

(A) Article 14 of the license for Project No. 2244 is hereby revised to read as follows:

Article 14. The operations of the Licensee so far as they affect the use, storage, and discharge from storage of waters affected by the license, shall at all times be controlled by such reasonable rules and regulations as the Commission may prescribe for the protection of life, health, and property, and in the interest of the fullest practicable conservation and utilization of such waters for power purposes and for other beneficial public uses, including recreational purposes; and the Licensee shall release water from the project reservoir at such rate in cubic feet per second, or such volume in acre-feet per specified period of time, as the Commission may prescribe for the purposes hereinbefore mentioned.

~~Further order by the Commission on its own motion or at the request of others, after notice and opportunity for hearing, the Licensee shall:~~ Pending further order by the Commission on its own motion or at the request of others, after notice and opportunity for hearing, the Licensee shall: During the entire year, to enhance the aquatic habitat, release a minimum flow of 3 cfs from Packwood Lake to Lake Creek; during the period May 15 to September 15 each year release up to a maximum of 5 cfs in order to facilitate a flow of 15 cfs at the gaging station identified as "Lake Creek at Mouth".

Wording added

discontinued per Art. 41, see OEPR-HL 20 Oct 80 Hfr

(B) The following articles are hereby added to the license for Project No. 2244:

Article 40. Licensee shall consult and cooperate with the Regional Forester, Gifford Pinchot National Forest, United States Forest Service and the Washington Departments of Fisheries and Game in the study and preparation of a mutually acceptable plan for modification of project operations and establishment of a minimum pool level of Packwood Lake for optimum power output compatible with recreation, forestry, and fishery resources, and shall submit a plan or proposal, within one year from the date of issuance of this order, for Commission approval, after notice and opportunity for hearing.

WPPSC was unable to obtain agreement with USEC. See Instr. 6

Article 41. Licensee shall consult with the District Engineer, U. S. Geological Survey, Department of the Interior, with respect to possible discontinuation of the gaging station below the drop structure near the outlet of Packwood Lake. Within one year from the date of issuance of this order, Licensee shall report its recommendation to the Commission for consideration.

A
gds - J25
discor.aved
see SEPR
20 Oct 80 Hr
See WPPSS
6 Jul 79 Hr

(C) Items 2, 3, and 4 of the application for amendment of license are hereby denied without prejudice.

(D) This order shall become final 30 days from its issuance unless application for rehearing shall be filed as provided in Section 313(a) of the Act, and failure to file such an application shall constitute acceptance of this order. In acknowledgement of the acceptance of this order, it shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this order.

By the Commission.

(S E A L)

Kenneth F. Plumb,
Secretary.

L. D. Cowley R. Packwood Lake

RECEIVED

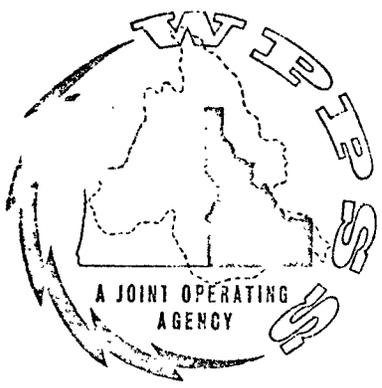
JUL 17 1969

CENTRAL FILES
Washington Public Power Supply System

P. O. BOX 6510 130 VISTA WAY, KENNEWICK, WASH.

OWEN W. HURD, MANAGING DIRECTOR

July 16, 1969



<input checked="" type="checkbox"/>	DIRECTOR	
<input checked="" type="checkbox"/>	ASST. DIRECTOR	
<input checked="" type="checkbox"/>	CHIEF ADM. OFFICER	536-3137
<input type="checkbox"/>	ACCOUNTING	
<input type="checkbox"/>	ATTORNEY GENERAL	
<input type="checkbox"/>	ENGINEERING	
<input type="checkbox"/>	CONTRACT SERVICES	
<input checked="" type="checkbox"/>	RESEARCH	<input checked="" type="checkbox"/>
<input type="checkbox"/>	STATISTICS	
<input checked="" type="checkbox"/>	STREAM IMP.	
<input type="checkbox"/>	HATCHERIES	
<input type="checkbox"/>	PUBLIC RELATIONS	
<input type="checkbox"/>	LIBRARY	
<input type="checkbox"/>	LICENSES	
<input type="checkbox"/>	PATROL	
<input type="checkbox"/>	PAYROLL	
<input type="checkbox"/>	PERS. NNEL	
<input type="checkbox"/>	PURCHASING	

RECEIVED

JUL 17 1969

RESEARCH

Director, Department of Fisheries
State of Washington
General Administration Building
Olympia, Washington 98502

Subject: FPC License 2244 - Article 39
Memorandum of Agreement
Packwood Lake Hydroelectric Project

Gentlemen:

The Memorandum of Agreement dated November 2, 1967 provides for supervision and inspection of the stream improvement at the lower end of Lake Creek will be accomplished by the Washington Department of Fisheries. The licensee is required to carry out the required work.

The Memorandum of Agreement has been submitted to the Secretary, Federal Power Commission, by letter dated June 12, 1969, signed by M. N. Nelson, Deputy Chief, Forest Service. A copy of the Memorandum is enclosed.

By letter dated July 2, 1969 signed by F. Stewart Brown, Chief, Bureau of Power, Federal Power Commission, the licensee is notified that the construction of the stream improvements at the junction of Lake Creek and the Cowlitz River as outlined in the Memorandum of Agreement, may proceed.

If present circumstances permit, we would prefer to accomplish the required work during the dry period of the summer and avoid bad weather and poor working conditions that would be occasioned if this work were attempted in the late fall. Accomplishing the work in the dry period will also allow the work to be accomplished in the minimum amount of time and should limit impact in the area that might result if the work was done during inclement conditions.

Please let us know if a meeting can be arranged in the field to plan and schedule the work required for this stream improvement.

Very truly yours,

S. K. Billingsley
S. K. BILLINGSLEY
Packwood Project Manager

SKB:db

Enclosure

RECEIVED

RECEIVED

Packwood Lake Project
Article 39 FPC License No. 2244

JUN 13 11 45 AM '67
FEDERAL POWER COMMISSION November 2, 1967

This Memorandum of Agreement results from a meeting of parties interested in fishwater releases and improvements on Lake Creek, Packwood Lake Hydroelectric Project, Federal Power Commission Project No. 2244, held at Packwood, Washington on September 25, 1967. At this meeting the parties reviewed the conditions at Lake Creek under various flows of releases from Packwood Lake.

The parties mutually agree on certain operating standards and other measures for the maintenance of Lake Creek flows.

To accomplish the provisions of Article 39 of FPC License 2244 and to set standards for the future operation of the Project, the parties mutually agree as follows:

1. During the entire year the licensee will release a minimum of 3 cfs from Packwood Lake to Lake Creek. During the period from May 15 to September 15 each year the licensee will release up to a maximum of 5 cfs in order to facilitate a flow of 15 cfs at the gaging station identified as "Lake Creek at Mouth."
2. The licensee shall install and annually maintain stream improvement near the mouth of Lake Creek. This stream improvement is illustrated by Attachment No. 1. The location of the improvement is just above its junction with the unnamed slough that connects with the Cowlitz River.
3. In June of each year, the stream improvement will be inspected by the licensee and the Washington Department of Fisheries to determine what repair, if any, is required to maintain the improvement. If repair is required, construction will be accomplished by WPPSS. Washington Department of Fisheries will arrange with property owners for access to the work.
4. WPPSS will maintain the entrance of the unnamed slough which joins the Cowlitz River with Lake Creek so that the combined flow of the slough in Lake Creek approximates 25 cfs below the confluence of Lake Creek and the unnamed slough. In the event that the Cowlitz River floods cause a major change in the topography of the confluence, the interested agencies will meet and agree upon a modification to these construction requirements for stream improvement.

Packwood Lake Project
Article 39 FPC License No. 2244

WASHINGTON PUBLIC POWER SUPPLY SYSTEM

DATE MAY 29 1968

BY:

[Handwritten signature]

WASHINGTON GAME COMMISSION

DATE APR 24 1968

BY:

[Handwritten signature]

WASHINGTON DEPARTMENT OF FISHERIES

DATE April 30, 1968

BY:

[Handwritten signature]

DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF COMMERCIAL FISHERIES

DATE APR 17 1968

BY:

[Handwritten signature]

DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORTS FISHERIES AND WILDLIFE

DATE APR 19 1968

BY:

[Handwritten signature]

DEPARTMENT OF AGRICULTURE
U. S. FOREST SERVICE

DATE June 19, 1968

BY:

[Handwritten signature]
FOREST SUPERVISOR
GIFFORD PINCHOT NATIONAL FOREST

(PRIMARY FLOW FROM COWLITZ RIVER)

GRAVEL SAND OVERBURDEN
W/ BRUSH ISLAND

LAKE CREEK
(FROM FACIOM D LAKE)

Approx. 70'

GRAVEL BAR
W/ BRUSH & OVERBURDEN

WOODED GROUND

FEC No. 2244
Attachment No. 1

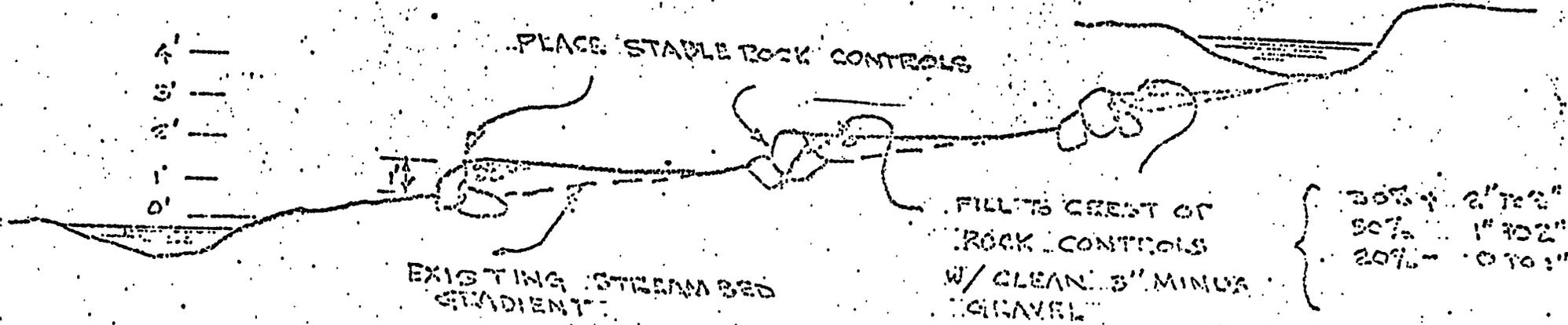
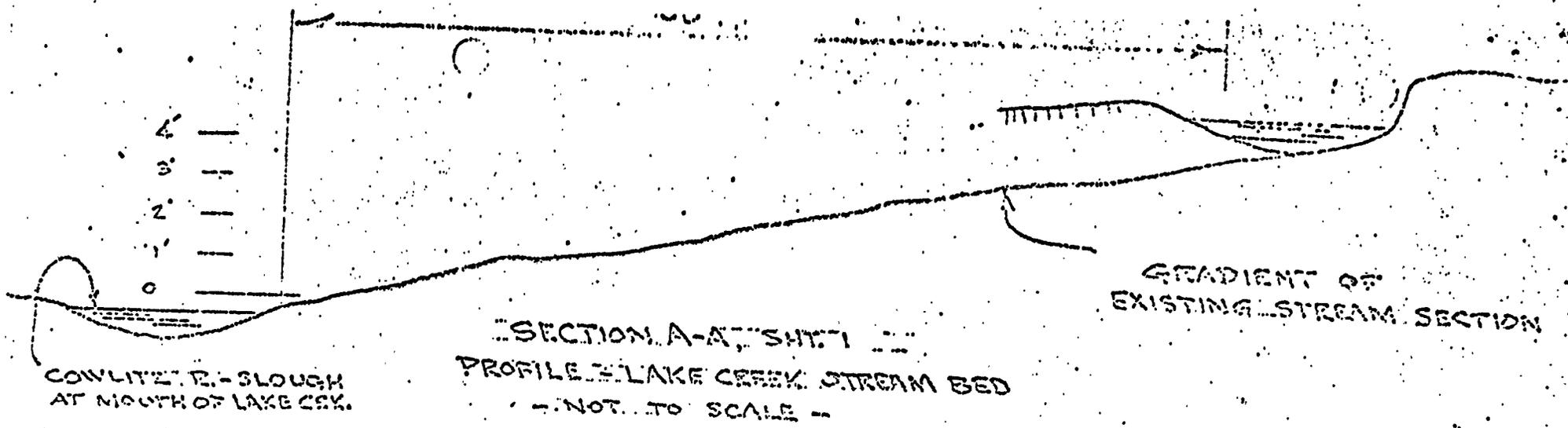
FLOW THROUGH
AT COWLITZ RIVER
W/ BRUSH FLOWS

LOW GRAVEL BAR

PLAN VIEW - MOUTH OF LAKE CREEK

COWLITZ RIVER

STATE OF WASHINGTON	
DEPARTMENT OF FISHERIES	
EXISTING LAYOUT	
MOUTH LAKE CREEK - COWLITZ	
APPROVED _____	
APPROVED _____	
APPROVED _____	
DATE 10/1/87	DRAWN BY [signature]
SCALE 1" = 100'	



SECTION A-A
 W/ STREAM BED CONTROLS ADDED
 - NOT TO SCALE -

ETC No. 2244
 Attachment No. 1d

STATE OF WASHINGTON DEPARTMENT OF FISHERIES	
MOUTH OF LAKE CREEK ENHANCING & CONSERVATION PLAN	
APPROVED _____	DIRECTOR
APPROVED _____	CHIEF
APPROVED _____	SUPV.
DATE 1/1/81	BY [Signature]

UNNAMED
SLOUGH FROM
COWLITZ R. E.

ORIGINAL STREAM
BANK - DASH LINES

LAKE CREEK
FLOW

PLAN VIEW
LAKE CREEK CHANNEL CHANGE
& CONTROLS

CONSTRUCT NEW CHANNEL
& ADDED BED CONTROLS
(SOLID LINES)

SURFACE SLOPE
OF STREAM BED CONTROLS
AT 2%
3'

FPC No. 2244
Attachment No. 1b

X-SECTION OF STREAM BED CONTROLS

STATE OF WASHINGTON DEPARTMENT OF FISHERIES	
MOUTH OF LAKE CREEK STREAM CHANNEL CHANGE	
APPROVED _____	DIRECTOR
APPROVED _____	CHS. ENG.
APPROVED _____	OPERATOR
DATE 10/11/7	CHKD BY

License

SFR
KOBLET
M. L. KOBLET
M. L. KOBLET

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Amdt. No. 3
Instr. No. 5

Washington Public Power Supply System) Project No. 2244

ORDER APPROVING AS-BUILT EXHIBITS J, K, AND L,
REVISING ANNUAL CHARGES, AND REVISING PROJECT DESCRIPTION

(Issued April 30, 1980)

Washington Public Power Supply System (WPPSS), Licensee for the Packwood Lake Project No. 2244, located on Lake Creek in Lewis County, Washington, submitted on January 21, 1980, revised Exhibits F, J, and K pursuant to Articles 26, 35, and 38 of its license, to show the as-built project boundary. This submittal supersedes all previous submittals. WPPSS also submitted on January 21, 1980, revised as-built Exhibit L drawings showing the recent modifications to the projects tailrace canal necessitated by damage caused by a 1977 flood. 1/

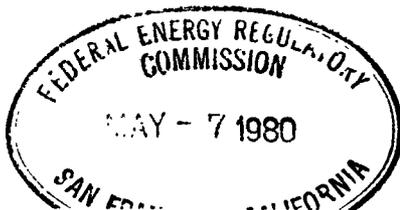
Packwood Lake Project now occupies 503.75 acres of U. S. lands in Gifford Pinchot National Forest. The acreage represents a reduction of approximately 29.50 acres of U. S. lands due to deletion of the project's access road from within the project boundary. The U. S. Forest Service now manages and operates this public road as Forest Service Secondary Route 1320.

The Commission, in the Order Amending License, issued February 28, 1962, included as part of the project, a 50-mile long transmission line extending from Packwood substation to the Salkum and Leonard Road substation, an interconnection with Bonneville Power Administration (BPA), thence to the Silver Creek Substation of the BPA. Increased loads on the transmission facilities are such that energy from BPA's system as well as from the project are required to insure adequate energy for the system in the area. It is concluded that the 50-mile long segment of the 69-kV transmission line is no longer primary within the meaning of Section 3(11) of the Federal Power Act and, therefore, is deleted by this order from the license.

The revised as-built Exhibit L drawings reflect remedial work at the project's tailrace canal. The work, consisting of constructing a concrete outlet structure and providing riprap protection at the junction of the tailrace canal and Cowlitz River, was necessitated

1/ Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation, under Section 375.308 of the Commission's regulations, 45 Fed. Reg. 21216 (1980), amending 44 Fed. Reg. 46449 (1979) and 18 C.F.R. 3.5(g)(1979).

DC-A-1



by damage to the tailrace canal incurred during flooding on the Cowlitz River in December 1977. WPPSS, in a letter dated December 14, 1979, indicated that the work was approved by the Washington State Departments of Game and Fisheries, Corps of Engineers, as well as other appropriate agencies.

The revised exhibits reflect additional modifications that were made to the project that are primarily minor in nature.

Since approval of the application is an administrative matter designed to conform the license exhibits to the constructed project and would not authorize any new construction or change in project operation, staff concludes that it would not be a major Federal action significantly affecting the quality of the human environment. Therefore, preparation of an environmental impact statement is not necessary.

Exhibits F, J, K and L have been examined by the staff and found to be in conformance with the Commission's rules and regulations.

It is ordered that:

(A) The following revised exhibits are approved and made part of the license for Packwood Lake Project No. 2244:

<u>Exhibit</u>	<u>FERC No. 2244 -</u>	<u>Titled</u>
J	100	General Project Map
K - 1	101	Packwood Lake
K - 2	102	Intake and Drop Structure, Pipeline and Tunnel No. 1
K - 3	103	Pipeline and Tunnel No. 2
K - 4	104	Pipeline
K - 5	105	Pipeline, Surge Tank, Penstock, and Powerhouse
K - 6	106	Tailrace and Transmission Line
K - 7	107	Project Profile
L - 1	108	Intake and Drop Structure
L - 2	109	Typical Pipeline, Tunnel, Surge Tank, and Penstock Details
L - 3	110	Powerhouse
L - 4	111	Tailrace Canal
L - 5	112	Tailrace Canal

(B) The following superseded exhibits are removed from the license for Project No. 2244:

<u>Exhibit</u>	<u>FERC No. 2244 -</u>
J	3, 41, and 42
K	10, 12, 43 through 47, 51 and 52, 55 through 64, 72 and 73
L	37, 39, 65, 69 and 70, 74 through 76

(C) Article 31 of the license is amended to read as follows:

The Licensee shall pay to the United States the following annual charges:

- (i) For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable annual charge as determined by the commission in accordance with the provisions of its regulations in effect from time to time. The authorized installed capacity for that purpose is 34,800 horsepower.
- (ii) Effective January 1, 1980, for the purpose of recompensing the United States for the use, occupancy, and enjoyment of 503.25 acres of its land, an amount determined pursuant to the Commission's regulations in effect from time to time.

(D) Paragraph (I)(2)(b) of the Order Amending License (Major), issued February 28, 1962, is revised to read as follows:

Project works consisting of: (1) a concrete drop structure and intake located on Lake Creek about 450 feet downstream from the outlet of Packwood Lake, providing a maximum operating pool at elevation 2,858.5 feet with storage capacity of 3,500 acre-feet; (2) an excavated approach channel to the intake; (3) a 23,000-foot long system of concrete pipe and tunnel with varying diameters; (4) a 5,580-foot long steel penstock with varying diameters; (5) a surge chamber; (6) a semi-buried concrete powerhouse containing one generating unit having a rated capacity of 26,125 kW; (7) a tailrace canal; (8) semi automatic control equipment; (9) a 2-mile long, 69-kV transmission line extending from Packwood Lake Project to Packwood substation; (10) 13.8-kV generator leads, 30 MVA 13.8/69-kV step-up transformer and; (11) other appurtenant electrical and mechanical facilities.

Exhibit M: General Description and General Specifications of Equipment, filed in the Commission December 22, 1960.

(E) This order is final unless a petition appealing it to the Commission is filed within 30 days from the date of its issuance, as provided in §1.7(d) of the Commission's Regulations, 18 CFR 1.7(d) (1979), as amended, 44 Fed Reg. 46449 (1979). The filing of a petition appealing this order to the Commission or an application for rehearing as provided in Section 313(a) of the Act does not operate as a stay of any date specified in this order, except as specifically ordered by the Commission. The Licensees' failure to file a petition appealing this order to the Commission shall constitute acceptance of this amendment of

license. In acknowledgment of acceptance of this amendment of license and its terms and conditions, it shall be signed for the Licensees and returned to the Commission within 60 days from the date this order is issued.

(S E A L)

A handwritten signature in cursive script, reading "William W. Lindsay".

William W. Lindsay
Director, Office of Electric
Power Regulation

INSTR No. 6

RESERVOIR DRAWDOWN

21 FERC 161,135

Project No. 2244-003

- 2 -

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: C. M. Butler III, Chairman;
Georgiana Sheldon and Oliver G. Richard III.

Washington Public Power)
Supply System) Project No. 2244-003

ORDER AMENDING LICENSE

(Issued November 24, 1982)

Washington Public Power Supply System ("WPPSS") has filed an application to amend the license of its constructed Packwood Lake Hydroelectric Project No. 2244, located in Lewis County, Washington. 1/ WPPSS seeks approval to lower the minimum level of Packwood Lake by 1.5 feet from September 15 to April 30. 2/

The Washington Departments of Ecology ("Ecology") and Game ("Game") have intervened in the proceedings and interested agencies have submitted their comments. The substantive concerns raised in the petitions and comments are addressed below. 3/

- 1/ Article 40 of its license required WPPSS to consult with various federal and state resource agencies in order to establish the minimum water elevation of Packwood Lake that would produce the maximum power output compatible with recreational, fishery, and forestry resources. Unable to obtain a satisfactory agreement concerning the elevation of the lake, WPPSS asks that the Commission approve its plan.
- 2/ This would lower the elevation of the lake from 2850.5 feet to 2849 feet. WPPSS claims that the additional drawdown will produce an additional 985,000 kWh annually.
- 3/ Ecology had no specific comments about the application. The U.S. Army Corps of Engineers indicated that it did not object to the amendment, because the proposal would not affect flood control, navigation, or its own interests. The U.S. Department of the Interior commented that the amendment would have no significant impact on fish, wildlife, recreation, or natural resources.

Agency Comments

Game commented that the proposed change in the minimum water level of Packwood Lake may adversely affect trout production in the lake and downstream areas through increased shoreline erosion and altered stream flow patterns. Consequently, Game recommended that studies be initiated to determine the status of the existing trout population in the lake and to evaluate the potential impact on trout and trout food production if the minimum level of the lake is lowered.

The U.S. Forest Service commented that its approval of the proposed change is contingent upon five conditions being met:

- a) The drawdown of the lake occurring only during "declared brownout periods;"
- b) WPPSS notifying the Forest Service of each drawdown;
- c) WPPSS providing the Forest Service with vertical aerial photographs of the shoals area;
- d) The right of the Forest Service to withdraw its approval of the proposed operational change if any new shoreline failures materially affect the lake's fishery; and
- e) WPPSS modifying the existing drop structures to increase the discharge capacity for flood flows.

Discussion

We have reviewed WPPSS's drawdown proposal and find that it would not likely have a significant effect on the lake fishery. We note that the amount of food production that would be lost by sometimes exposing additional littoral habitat is relatively insignificant when compared to the total food production capability of the lake. Moreover, it would be very difficult and expensive to design and implement fishery studies that could equate this minor loss of food production with any actual reduction in the size of the lake fishery. We therefore decline at this time to order the fishery studies requested by Game. Game may in the future, however, petition the Commission under Article 27 of the license, which we are amending for this purpose, to modify project operations if the lake fishery is being significantly affected.

On the other hand, we agree that drawing the reservoir down an additional 1.5 feet could aggravate slumping and erosion along a small portion of the shoreline, and that this prospect should be closely monitored to see if corrective

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action is necessary. We are therefore ordering WPPSS, for a period of ten years unless directed otherwise, to provide the Forest Service, Game, and the Commission with vertical aerial photographs of the shoals area, which should be taken annually within one month after reaching the maximum drawdown for the year. The aerial photographs will detect and quantify excessive slumping and erosion in the shoals area. Interested agencies can then seek corrective action, if necessary, under amended Article 27.

The Forest Service's recommendation that the additional drawdown be limited only to periods of "declared brownouts" ^{4/} is impracticable and would permit little or no additional energy to be generated at the project. The Forest Service's proposed condition regarding modification of the drop structures is not related to WPPSS's proposed drawdown regime, and therefore need not be addressed in the context of this proceeding. If the drop structures are inadequate and are causing significant environmental damage, the Forest Service should use amended Article 27 to inform the Commission of its recommendations and supporting analyses for modifying the drop structures.

The Commission orders:

(A) WPPSS's proposed minimum water surface elevation of 2,849 feet for Packwood Lake is approved.

(B) For a period of ten years from the issuance of this order, the Licensee shall provide the Forest Supervisor, Gifford Pinchot National Forest, the Washington Department of Game, and the Commission with vertical aerial color photographs of the Packwood Lake shoals area. The photographs shall be taken within one month of reaching the maximum drawdown for the year, and must be large and clear enough to identify possible shoreline erosion and slumping.

(C) Article 27 of the license for Project No. 2244 is amended as follows:

Article 27. The Licensee shall construct, maintain, and operate protective devices and comply with reasonable modifications of the project structures and operations that further the interest of fish, wildlife, recreation, and forestry resources, provided that the above modifications are reasonably consistent with the primary purpose of the project. Modifications of the project for these purposes may be prescribed by the Commission upon its own motion or upon recommendation of the Secretary of the Interior, the Washington Departments of Fisheries and Game, or the United States Forest Service.

^{4/} Brownouts in the past have occurred on average only once in 30 years.

(D) Article 37 of the license for Project No. 2244 is amended as follows:

Article 37. Licensee shall operate the project so that the maximum operating water surface level shall be at elevation 2,858.5 feet and the minimum operating water surface level shall be at elevation 2,849.0 feet. During the period each year between May 1 and September 14, the Licensee shall maintain the water surface level at elevation 2,857 feet, unless conditions prevail that are beyond the control of the Licensee.

By the Commission.

(S E A L)

Lois D. Cashell

Lois D. Cashell,
Acting Secretary.