STATE OF OREGON
COUNTY OF DOUGLAS
CERTIFICATE OF WATER RIGHT

THIS CERTIFICATE ISSUED TO:

PACIFICORP
825 NE MULTNOMAH SUITE 1500
PORTLAND, OREGON 97204

for the right to use waters of the Clearwater River, Fish Creek, Deer Creek, Fallen Mountain Creek, Miscellaneous Tributaries of the North Umpqua River; and North Umpqua River, tributary of the Umpqua River for the development of 342,035 theoretical horsepower (thp), being 82,030 thp at the Clearwater developments, 21,146 thp at the Fish Creek development, 111,434 thp at the Lemolo developments, 77,891 thp at the Toketee development, 28,807 thp at the Slide Creek development, and 20,727 thp at the Soda Springs developments.

This Certificate reauthorizes the hydroelectric project developed under HE 19, HE 20, HE 21 and HE 23. Water use is allowed in the following Developments for the hydroelectric Project and uses incidental to the hydroelectric Project, such as fish ponds and fish ladders, emergency water use, fire protection, routine facility maintenance activities, incidental single and group domestic expanded and school yard irrigation at individual Project Developments.

CLEARWATER No. 1 *(formerly HE 19)*

FLOW: 150 cfs from Clearwater River
PRIORITY DATE: August 13, 1930
FLOW: 50 cfs from Clearwater River
PRIORITY DATE: March 23, 1951
POINT OF DIVERSION: NW ¼ of SW ¼ Section 6, Township 27 South, Range 5 East, W.M.
STORAGE: 30.2 acre-feet of water in the NW ¼ SW ¼ Section 6, Township 27 South, Range 5 East, W.M. (Stump Lake)
PRIORITY DATE: March 23, 1951
STORAGE: 120 acre-feet in the SW¼ SW ¼ Section 35, Township 26 South, Range 4 East, W.M. (Clearwater Forebay No. 1)
PRIORITY DATE: March 23, 1951
PLACE OF USE: Clearwater No. 1 powerhouse in the SW ¼ NW ¼ Section 3, Township 27 South, Range 4 East, W.M.

APPEAL RIGHTS

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484.

The amount of water to which this right is entitled is limited to any amount beneficially used and shall not exceed 200 cfs from live flow, and storage of 120 acre-feet of water from the Clearwater River in Unit 1 forebay during a 24-hour period of time, provided that the quantity of water used at any time from live flow and storage shall not exceed 407 cfs. Storage in the amount of 30.2 acre feet is allowed in Stump Lake.

CLEARWATER No. 2 *(formerly HE 19)*

FLOW: 440 cfs from Clearwater River
PRIORITY DATE: March 23, 1951
POINT OF DIVERSION: SW ¼ of NW ¼ Section 3, Township 27 South, Range 4 East, W.M.
STORAGE: 60 acre-feet in the SW ¼ NE ¼ Section 36, Township 26 South, Range 3 East, W.M. (Clearwater Forebay No. 2)
PRIORITY DATE: March 23, 1951
PLACE OF USE: Clearwater No. 2 powerhouse in the SE ¼ NW ¼ Section 36, Township 26 South, Range 3 East, W.M.

The amount of water to which this right is entitled is limited to an amount beneficially used and shall not exceed 440 cfs from live flow from the Clearwater River, and storage of 60 acre-feet of water from the Clearwater River during a 24-hour period of time in Unit 2 forebay, provided that the total quantity of water used at any time from live flow and storage shall not exceed 605 cfs.

FISH CREEK *(formerly HE 20)*

FLOW: 50 cfs from Fish Creek
PRIORITY DATE: August 13, 1930
FLOW: 100 cfs from Fish Creek
PRIORITY DATE: June 15, 1950
POINT OF DIVERSION: NW ¼ NE ¼ Section 23, Township 27 South, Range 3 East, W.M.
STORAGE: 60 acre-feet of water in the SW ¼ SW ¼ Section 27, Township 26 South, Range 3 East, W.M. (Fish Creek Forebay)
PRIORITY DATE: June 15, 1950
PLACE OF USE: Fish Creek Powerhouse in the SW ¼ SE ¼ Section 27, Township 26 South, Range 3 East, W.M.

The amount of water to which this right is entitled is limited to an amount beneficially used and shall not exceed 150 cfs from live flow from Fish Creek at the existing point of diversion, and storage of 60 acre-feet of the water of Fish Creek during a 24-hour period of time in the forebay, provided that the quantity of water used at any time from the live flow and storage shall not exceed 180 cfs.

LEMOLO No. 1 *(formerly HE 21)*

FLOW: 400 cfs from North Umpqua River
PRIORITY DATE: August 13, 1930

FLOW: 165 cfs from North Umpqua River
PRIORITY DATE: September 8, 1952
POINT OF DIVERSION: SW ¼ NE ¼ Section 11, Township 26 South, Range 5 East, W.M. into Lemolo Canal No. 1
STORAGE: 13,900 acre-feet in Lemolo Lake in SW ¼ NE ¼ Section 11, Township 26 South, Range 5 East, W.M.
PRIORITY DATE: September 8, 1952
STORAGE: 120 acre-feet in Lemolo No. 1 Forebay in SW ¼ NW ¼ Section 33, Township 25 South, Range 5 East, W.M.
PRIORITY DATE: December 18, 1991
PLACE OF USE: Lemolo Power Plant No.1 in NW ¼ SW ¼ Section 32, Township 25 South, Range 5 East, W.M.

The amount of water to which this right is entitled is limited to an amount beneficially used and shall not exceed 565 cfs from live flow from the North Umpqua River, and storage of 13,900 acre-feet, including 12,000 acre-feet of useable storage, of the waters of the North Umpqua River in Unit No. 1 reservoir; and storage of 120 acre-feet, including 100 acre-feet of useable storage, of the waters of the North Umpqua River in Unit No. 1 forebay; provided that the quantity of water used at any time from live flow of the North Umpqua River and from storage shall not exceed 587 cfs.

LEMOLO No. 2 *(formerly HE 21)*
FLOW: 400 cfs from North Umpqua River
PRIORITY DATE: August 13, 1930
FLOW: 255 cfs from North Umpqua River
PRIORITY DATE: September 8, 1952
POINT OF DIVERSION: NW ¼ SW ¼ Section 32, Township 25 South, Range 5 East, W.M. into Lemolo No. 2 Canal
FLOW: 25 cfs from Deer Creek
PRIORITY DATE: September 8, 1952
POINT OF DIVERSION: NW ¼ SE ¼ Section 5, Township 26 South, Range 4 East, W.M.
FLOW: 10 cfs from miscellaneous streams intercepting Lemolo No. 2 Canal
PRIORITY DATE: September 8, 1952
FLOW: 25 cfs from Fallen Mountain Creek
PRIORITY DATE: December 18, 1991
POINT OF DIVERSION: NW ¼ SE ¼ Section 24, Township 26 South, Range 3 East, W.M.
STORAGE: 230 acre-feet of water from the North Umpqua River and miscellaneous streams in Lemolo Forebay No. 2 in NW ¼ SE ¼ Section 24, Township 26 South, Range 3 East, W.M.
PRIORITY DATE: September 8, 1952
PLACE OF USE: Lemolo Power Plant No. 2 in SE ¼ NE ¼ Section 25, Township 26 South, Range 3 East, W.M.

The amount of water to which this right is entitled is limited to an amount beneficially used and shall not exceed 715 cfs being 655 cfs from live flow from the North Umpqua River, 25 cfs from live flow from Deer Creek, 25 cfs from live flow from Fallen Mountain Creek, and 10 cfs from live flow from miscellaneous streams intercepted by the Unit No. 2 canal, provided that the quantity of water used at any time from the live flow from the North Umpqua River and from storage shall not exceed 750 cfs.

TOKETEE *(formerly HE 23)*

FLOW: 600 cfs of water from the North Umpqua River
PRIORITY DATE: August 13, 1930
FLOW: 250 cfs from the North Umpqua River
PRIORITY DATE: January 18, 1945
FLOW: 550 cfs from the North Umpqua River
PRIORITY DATE: March 22, 1947,
FLOW: 25 cfs from the North Umpqua River
PRIORITY DATE: August 31, 1949,
POINT OF DIVERSION: SE ¼ NE ¼ Section 35, Township 26 South, Range 3 East, W.M.
STORAGE: 400 acre-feet from North Umpqua River in Toketee reservoir in SE ¼ NE ¼ Section 35, Township 26 South, Range 3 East, W.M.
PRIORITY DATE: January 18, 1945,
STORAGE: 1040 acre-feet from the North Umpqua River in Toketee reservoir in SE ¼ NE ¼ Section 35, Township 26 South, Range 3 East, W.M.
PRIORITY DATE: March 22, 1947
PLACE OF USE: Toketee power plant in SW ¼ SE ¼ Section 27, Township 26 South, Range 3 East, W.M.

The amount of water to which this right is entitled is limited to an amount beneficially used and shall not exceed 1,425 cfs from live flow from the North Umpqua River and storage of 1,440 acre-feet of water from the North Umpqua River, during a 24-hour period of time, in the Toketee reservoir, provided that the total quantity of water used at any time from live flow and storage shall not exceed 1,530 cfs. It is understood that the Clearwater River is tributary to the North Umpqua River and enters the North Umpqua River in two branches, one that discharges to the North Umpqua above the Toketee Dam and one downstream of the Dam.

SLIDE CREEK *(formerly HE 23)*

FLOW: 1,500 cfs from North Umpqua River
PRIORITY DATE: July 5, 1949
POINT OF DIVERSION: NW ¼ SE ¼ Section 27, Township 26 South, Range 3 East, W.M.
PLACE OF USE: Slide Creek powerhouse in the SE ¼ of NW ¼ Section 21, Township 26 South, Range 3 East, W.M.

The amount of water to which this right is entitled is limited to an amount beneficially used and shall not exceed 1,500 cfs of water, at the existing point of diversion, from the

North Umpqua River, which includes water diverted from Fish Creek and discharged into the North Umpqua River above the Slide Creek diversion dam.

SODA SPRINGS *(formerly HE 23)*

FLOW: 1,600 cfs from North Umpqua River
PRIORITY DATE: July 6, 1949
POINT OF DIVERSION: SW ¼ SW ¼ Section 17, Township 26 South, Range 3 East, W.M.
STORAGE: 660 acre-feet from North Umpqua River in Soda Springs reservoir in SW ¼ SW ¼ Section 17, Township 26 South, Range 3 East, W.M.
PRIORITY DATE: July 6, 1949
PLACE OF USE: Soda Springs power house in the NE ¼ of SE ¼ Section 18, Township 26 South, Range 3 East, W.M.

FLOW: 8 cfs from North Umpqua River
PRIORITY DATE: December 18, 1991
POINT OF DIVERSION: SW ¼ SW ¼ Section 17, Township 26 South, Range 3 East, W.M.
PLACE OF USE: in Oregon Department of Fish and Wildlife salmon holding ponds located adjacent to the Soda Springs power house at NE ¼ SE ¼ Section 18, Township 26 South, Range 3 East, W.M.

FLOW: 315 cfs from North Umpqua River
PRIORITY DATE: December 18, 1991
POINT OF DIVERSION: SW ¼ SW ¼ Section 17, Township 26 South, Range 3 East, W.M.
PLACE OF USE: in Soda Springs fish ladder and fish screen facility at SW ¼ SW ¼ Section 17, Township 26 South, Range 3 East, W.M.

The amount of water to which this rights is entitled is limited to an amount beneficially used and shall not exceed 1,923 cfs of water from live flow of the North Umpqua River at the existing point of diversion; and storage of up to a maximum of 660 acre-feet of water, during any 24-hour period, in the Soda Springs Reservoir; provided that the total quantity of water diverted to the power plant from storage and live flow shall not exceed 1,608 cfs and that the total quantity of water diverted to the fish ladder and fish screen facilities from storage and live flow shall not exceed 315 cfs; and a total quantity of up to 8 cfs from storage and live flow shall be provided, as needed to the Oregon Department of Fish and Wildlife salmon holding ponds located adjacent to the Soda Springs bypass reach.

DESCRIPTION OF PROJECT

The word "Project" as used herein means all complete units, improvements, or developments. It includes, among other things, powerhouses, waterwheels, conduits or pipes, dams and appurtenant works and structures, storage, diverting or forebay reservoirs connected therewith, and primary lines transmitting power to the point of junction with a distributing system, or with

an interconnected primary systems, miscellaneous works and structures used in the connection with the unites or any part thereof, rights of way, lands, flowage rights and all other properties, rights and structures necessary or appropriate in the use, operation and maintenance of any such units. The word "Development" as used herein means an individual facility that is part of the overall Project. The word "Unit" as used herein means a sub-part of a Development.

EXHIBITS

The location and character of the Project and the measures to protect, mitigate or enhance environmental resources are more specifically shown and described by the following exhibits filed with the Oregon Water Resources Department (Department):

Exhibit 1	Description of Developments (attached)
Exhibit 2	PacifiCorp's Final License Application for the Project, January 1995
Exhibit 3	Summary of Proposed Modifications, Operations and Resource Enhancements Addendum to the 1995 Application for a New License, February 2000
Exhibit 4	North Umpqua Settlement Agreement, as amended, November 2002,
Exhibit 5	FERC Order Approving Settlement and Issuing New License, (including amendment of June 22, 2005),
Exhibit 6	Amendment to North Umpqua Settlement Agreement, July 2005.

SETTLEMENT AGREEMENT

On June 13, 2001, state and federal agencies participating in the FERC relicensing and state reauthorization proceedings executed a comprehensive Settlement Agreement (Settlement Agreement) resolving all issues relating to the relicensing of the Project. Parties to the Settlement Agreement are Oregon Department of Environmental Quality (DEQ), Oregon Department of Fish and Wildlife (ODFW), OWRD, USDA Forest Service, National Marine Fisheries Service, USDI Fish and Wildlife Service, USDI Bureau of Land Management and PacifiCorp. The Settlement Agreement, including subsequent amendments in November 2002, and July 2005, was negotiated through a process of alternative dispute resolution (ADR) and describes detailed terms and conditions for renewal of federal license P-1927 and reauthorization of state water rights for the Project. Additional details about the ADR process and Settlement Agreement are included in Exhibit 7, OWRD's Final Order Approving the Project, and in Exhibit 5, the FERC Order Approving Settlement and Issuing New license. Exhibits 4 and 6 are copies of the Settlement Agreement, as amended in November 2002 and July 2005, respectively.

The Settlement Agreement includes sections addressing a number of specific resource concerns such as: Fish Passage, In-Stream Flows for Fish and Other Aquatic Species, Ramping, Restoration of Fluvial Geomorphic Processes, Main-Stem North Umpqua Anadromous Fish Spawning Habitat Enhancement, Reservoir and Forebay Management and Mitigation, Aquatic Connectivity, Terrestrial Resources, Vegetation Management, Avian Protection, Erosion and Sediment Control, Transportation Management, Aesthetics, Recreation, Cultural Resources,

Mitigation and Alternative Measures. The Settlement also describes processes and requirements for Coordination as Decision Making and Implementation of the Agreement, including Dispute Resolution, along with the following appendices and schedules:

Appendix A	Implementation Schedule
Appendix B	Standards for Downstream Fish Passage
Appendix C	Flow Regimes
Appendix D	Preferred Timing of Annual Facilities Maintenance for Project Bypass Reaches
Appendix E	ODFW MOU
Appendix F	Authorized Representation of the Parties
Appendix G	Agreement for Management of Birds on Powerlines
Schedule 10.6	Aquatic Site Reconnections
Schedule 14.4	High and Medium Erosion Site Remediation
Schedule 15.2	Road Maintenance Responsibility
Schedule 15.4	Road Decommissioning
Schedule 15.5	Bridge Maintenance Responsibility
Schedule 15.6	ODFW Stream-Road Crossings Standards
Schedule 17.1	Recreation Resource Management Plan Costs to PacifiCorp
Schedule 17.5	License-Developed and Dispersed Recreation Responsibilities by Location and Type
Schedule 19.2.1	Long-Term Monitoring goals and Predator-Control Objectives
Schedule 22.2.1	Calculation of Materially Adverse Effect of 401 Certification.

As noted, the provisions of the Settlement Agreement and subsequent amendments set out proposed terms and conditions for relicensing and state reauthorization which were integral to the Settlement Agreement and intended to be included in the FERC license and to be enforceable by FERC or as otherwise provided in the Settlement Agreement. In the event of any inconsistency between the terms of the FERC License and the Settlement Agreement, the Parties agreed that the terms of the FERC License control. However, pursuant to the Settlement Agreement, any provisions of the Settlement Agreement that are not addressed in the FERC License and are not otherwise inconsistent with the FERC License remain in effect as agreements of the Parties that are enforceable under the Settlement Agreement.

CERTIFICATE CONDITIONS

Use of water under this Certificate shall be subject to the following conditions:

1. Compliance with Terms

In consideration of this Certificate and of the benefits and advantages accruing hereunder to the water right holder, it is expressly agreed by the water right holder that the Project, Project area, and Project works located within the State of Oregon as herein designated and described, whether or not upon the lands of the United States, shall be subject to all

protection, mitigation and enhancement measures, terms, and conditions of this Certificate and documents incorporated by reference into this Certificate and the Department's corresponding final order. If the water right holder is prevented from compliance with any provisions of this Certificate or of ORS 543 or ORS 543A, by the operation of any valid Federal law, or the lawful order, rule, or regulation of any federal governmental agency exercising exclusive jurisdiction in the premises, the water right holder shall not be deemed to be in default of any measure, term, or condition of this Certificate or otherwise subject to liability for failure to perform the same during the period of such noncompliance.

The water right holder does not waive, and reserves the right to raise and assert at a later date, the preemptive authority of the Federal Power Act and the FERC license over state-imposed measures, terms, and conditions that are inconsistent with, or are in addition to, the FERC license.

The Department reserves any remedies under applicable law to enforce the protection, mitigation and enhancement measures contained in the Settlement Agreement. (Settlement Agreement 22.3.3 and 22.3.4)

2. Water Quality

The water right holder shall comply with all terms and conditions established in the Clean Water Act Section 401 water quality certificate (401) Certificate) issued by the Oregon Department of Environmental Quality and incorporated into the FERC license.

3. Protection, Mitigation and Enhancement Measures

The water right holder shall comply with all terms and conditions set forth in Sections 4 through 10 and 14, and Appendices B and E, and Amendment #1 of the Settlement Agreement and Appendix D of the FERC License.

4. Flow Monitoring

The water right holder shall comply with all terms and conditions of the "Flow Monitoring Plan" as set forth in Section 5.5 of the Settlement Agreement and Article 403 of the FERC License.

5. Instream Flows

The water right holder shall comply with all terms and conditions for "In-stream Flows for Fish and Other Aquatic Species" as set forth in Section 5, 10.4 and Appendix C of the Settlement Agreement.

6. Ramping

The water right holder shall comply with all terms and conditions for "Ramping" as set forth in Section 6 of the Settlement Agreement.

7. Reservoir and Forebay Management and Mitigation

The water right holder shall comply with all terms and conditions for "Reservoir and Forebay Management and Mitigation" as set forth in Section 9 of the Settlement Agreement.

8. Annual Fees

The water right holder shall pay to the Department in accordance with the provisions of ORS 543.078, on or before the first day of January of each year after issuance of a final order, an annual fee of $0.405 per theoretical horsepower, with adjustments for cost of living as provided in ORS 543.078 and 543.085. The fees shall be based on 342,035 theoretical horsepower. Should the terms and conditions of this water right certificate be extended at its expiration, the water right holder shall pay such annual fees as the Director or its successor having jurisdiction in the matter at the time shall fix.

9. Extent of Water Right

The Department hereby issues this single water right certificate for the entire Project, expiration of which will coincide with the expiration of the new FERC license, issued on November 18, 2003. The FERC license is set to expire on November 1, 2038. This water right certificate covers the facilities and water use allowed under the former water rights HE 19, HE 20, HE 21, and HE 23. Any material inconsistency between this Certificate and the Settlement Agreement shall be resolved as provided in Section 22.3 of the Settlement Agreement.

10. Access

The water right holder shall allow the Department Director and authorized agents and employees free and unrestricted access upon reasonable notice, in, through, and across the Project in the performance of their official duties, and, subject to applicable provisions of the Oregon Public Records Law, to all reports, accounts, records, and other data relating to the Project.

11. Liability

The water right holder may be liable for any damages resulting from the construction, operation, or maintenance of Project facilities to the extent prescribed by Oregon law, allowing and including any defense as may be provided for by Oregon statutes or common law. In no event will the State of Oregon be liable therefore.

12. Project Maps

The Project facilities are more particularly described and shown on the maps filed to accompany the application and designated as Exhibit 2, which is attached hereto and incorporated herein. No substantial change shall be made unless approved by the Director and incorporated into this Certificate by appropriate amendment or special order.

13. Altering Water Right Conditions

The Director reserves the right to reopen this Certificate on a clear showing of a significant threat to the public health, safety, or the environment that was not identified and addressed during the Project reauthorization proceeding, pursuant to ORS 543A.145(5). In addition, the Department may amend conditions or limitations on the water right as needed to reflect any significant changes in the FERC License or Settlement Agreement.

14. Enforcement and Restrictions

a. Failure to comply with any of the provisions of this water right certificate may result in action including, but not limited to, restrictions on the use, civil penalties, or cancellation of the certificate.

b. This Certificate is for the beneficial use of the water without waste.

c. Pursuant to applicable law, the land use associated with this water use must be in compliance with applicable statewide land-use goals and any applicable local acknowledged land-use plan.

d. The water right holder shall notify the Department of any change in ownership of the Project.

e. The right to the use of the water for the above purpose is restricted to beneficial use on the lands or place of use described. The use confirmed herein may be made only when all prior rights in the area issued before this use was initiated, including rights for maintaining instream flows, have been met.

f. For Conditions 2 through 7 of this Certificate, which incorporate requirements of the FERC License or Settlement Agreement, OWRD shall not undertake independent enforcement action unless OWRD determines the action relates to protection of senior water rights, use of water without waste, public health and safety relating to the water right, or other requirements of Oregon water law administered by OWRD. Any other enforcement action, if needed, for Conditions 2 through 7 shall be taken in accordance with the applicable provisions of the FERC License or Settlement Agreement.

15. Period of Water Right

This water right certificate is effective as of the date of its issuance and will terminate simultaneously with the FERC license for the Project on November 1, 2038. On termination of the final certificate, such a right to the use of water shall revert to the public, unless the Project owner applies to the Department, or its successor having jurisdiction in the matter, to reauthorize the Project.

16. Forfeiture

If the water right holder fails to use or operate the Project facilities for any period of five consecutive years, the Director shall, after due notice and opportunity to rebut the presumption of forfeiture for non-use as allowed by statute and administrative rule, terminate the final certificate by written order.

17. FERC License

The water right holder may not operate the Project under a final Oregon water right certificate unless also authorized to operate the Project by the FERC.

18. Project Specific Fee

PacifiCorp shall comply with Section 19.4.2 of the Settlement Agreement, which is intended to fully satisfy PacifiCorp's obligation to fund oversight by ODFW personnel according to the ODFW Memorandum of Understanding and under the Settlement Agreement.

19. Miscellaneous Conditions

PacifiCorp shall construct any additions or modifications to the Project according to maps, plans, and specifications filed with and approved by the Oregon Water Resources Commission (WRC) (ORS 543.300(2)).

Operations of the Project, so far as they affect the use, storage and discharge from storage of water affected by the water right certificate, shall at all times be controlled by such reasonable rules as the WRC 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 recreation purposes. PacifiCorp shall release water from the Project reservoirs at such rate in cfs, or such volume in acre-feet per specified period of time, as the WRC may prescribe. (ORS 543.300(3)).

PacifiCorp shall maintain the Project, and each part thereof, in good order and repair and in efficient operation, for the development and transmission of electricity to its reasonable capacity; shall make all necessary renewals and replacements as required; and

shall maintain and operate the Project, and all parts thereof, comfortably to the rules of the WRC not inconsistent with ORS 543.010 to 543.610 (ORS 543.300(4)).

For the reasons described in the Final Order Approving the Project and subject to the conditions described herein, the Director finds that the proposed use(s) of water described by this certificate will not impair or be detrimental to the public interest.

THEREFORE, this Certificate is issued reauthorizing a hydroelectric water right for the Project.

WITNESS signature of the Water Resources Director,

Issued July 1, 2008

DWIGHT W. FRENCH, Administrator of Water Rights & Adjudications
{For}
PHILLIP C. WARD, DIRECTOR
Water Resources Department

Recorded in State Record of Water Right Certificates and numbered 84409

EXHIBIT 1

DESCRIPTION OF DEVELOPMENTS

1. CLEARWATER DEVELOPMENTS

CLEARWATER UNIT NO. 1

Dam, Reservoir, and Water Conduits

Clearwater No. 1 Diversion dam is an earth embankment structure on the Clearwater River with upstream riprap face and fixed crest concrete spillway, that is 17 foot in height, 12 feet in width at the crest, and an overall length of 1,426 feet. The Clearwater No. 1 reservoir, also known as Stump Lake, has an area of 11.8 acres and a total capacity of 30.2 acre-feet. The Clearwater No. 1 water conveyance system consists of 13,037 feet of conduit extending from the Clearwater No. 1 diversion dam to the Clearwater No. 1 forebay. The water conveyance system consists of 117 feet of concrete culvert, 342 feet of rectangular concrete flume, and 12,578 feet of trapezoidal gunite-lined canal. The existing capacity of the water conveyance system is 228 cfs. The Clearwater No. 1 forebay has a capacity of 130 acre-feet. Water entering the Clearwater No. 1 penstock is controlled by a intake gate located in a concrete intake structure integral to the forebay and fitted with a trash rack. The Clearwater No. 1 penstock extends 4,863 feet and varies in diameter from 6.7 feet at the head gate to 5.0 feet at the powerhouse.

Power Plant

The Clearwater No. 1 powerhouse is a reinforced concrete structure located on the Clearwater River. It houses a single Francis type vertical shaft hydraulic turbine and synchronous generator set rated at 21,000 hp under a net effective head of 616 feet. The generator is rated at 17,647 kVA at 0.85 power factor, 7,200 volts and operates at 514 rpm. The rated capacity of the combined turbine-generator set is 15,000 kW at 350 cfs. The hydraulic turbine is equipped with a valve that operates as a synchronous bypass during turbine load rejections. The Clearwater No.1 plant includes two single-phase 6.9/76.2 kV transformers rated at 5,888 kVA each, and one single-phase 6.9/76.2-kV transformer rated at 5,555 kVA. The theoretical horsepower for this unit is calculated as 30,571 thp, using a hydraulic capacity of 407 cfs and a static head of 661 feet.

Transmission Lines

A 115 kV transmission line approximately 5.1 miles long delivers power from the Clearwater No.1 powerhouse to the Clearwater switching station.

CLEARWATER UNIT NO. 2

Dam, Reservoir and Water Conduits

Clearwater No. 2 diversion dam is an 18-feet high concrete buttress structure on a concrete slab on the Clearwater River with a fixed crest concrete spillway and an overall length of 157 feet. The Clearwater No. 2 water conveyance system consists of 31,235 feet of conduit extending from the Clearwater No. 2 diversion dam to the Clearwater No.2 forebay. The water conveyance system consists of 88 feet of concrete culvert, 359 feet of unlined rock flume, 473 feet of steel flume, 2,852 feet of combination concrete and unlined rock flume, 8,864 feet of rectangular concrete flume, and 18,559 feet of trapezoidal gunite-lined canal. The existing capacity of the water conveyance system is 341 cfs. The Clearwater No.2 forebay has a capacity of 70.7 acre-feet. Water entering the Clearwater No. 2 penstock is controlled by an intake gate located in a concrete intake structure incorporated into the forebay and fitted with a trash rack. The Clearwater No.2 penstock extends 4,863 feet and varies in diameter from 7.2 feet at the headgate to 6.3 feet at the powerhouse.

Power Plant

The Clearwater No. 2 powerhouse is a reinforced concrete structure located on the North Fork of the Umpqua River at Toketee Lake. It houses a single Francis type vertical shaft hydraulic turbine and synchronous generator set rated at 36,000 hp under a net effective head of 722 feet. The generator is rated at 30,588 kVA at 0.85 power factor, 11,500 volts and operates at 450 rpm. The rated capacity of the combined turbine-generator set is 26,000 kW at 485 cfs. The hydraulic turbine is equipped with a valve that operates as a synchronous bypass during turbine load rejections. The Clearwater No.2 plant includes three single-phase 11.5/125 kV transformers rated at 10,196 kVA each. The theoretical horsepower for this unit is calculated as 51,459 thp, using a hydraulic capacity of 605 cfs and a static head of 748.5 feet.

Transmission Lines

A 115 kV transmission line approximately 0.3 miles long delivers power from the Clearwater No. 2 powerhouse to the Clearwater Switching Station.

2. FISH CREEK DEVELOPMENT

Dam, Reservoir, and Water Conduits

Fish Creek diversion dam is a 6.5-feet high concrete gravity structure on Fish Creek with a fixed crest concrete spillway, fish ladder, sluiceway and an overall length of 130 feet. The Fish Creek water conveyance system consists of 15,282 feet of conduit extending from the Fish Creek diversion dam to the Fish Creek forebay. The water conveyance system consists of 178 feet of timber flume, 1,689 feet of steel flume and 15,282 feet of trapezoidal gunite-lined canal. The existing capacity of the water conveyance system is 177 cfs. The Fish Creek forebay has a capacity of 110.3 acre-feet. Water entering the Fish Creek penstock is controlled by a concrete

intake structure incorporated into the forebay. The intake contains an intake gate and is fitted with a trash rack. The Fish Creek penstock extends 2,240 feet and varies in diameter from 4.5 feet at the headgate to 3.0 feet at the powerhouse.

Power Plant

The Fish Creek powerhouse is a reinforced concrete structure located on the North Umpqua River just downstream of the Toketee powerhouse. It houses a single impulse hydraulic turbine and synchronous generator set rated at 15,400 hp under a net effective head of 995 feet. The generator is rated at 12,941 kVA at 0.85 power factor, 6,900 volts and operates at 450 rpm. The rated capacity of the combined turbine-generator set is 11,000 kW at 155 cfs. The hydraulic turbine is equipped with deflectors that operate during turbine load rejections. The plant includes three single-phase 6.9/125 kV transformers rated at 4,333 kVA each. The theoretical horsepower for this unit is calculated as 21,146 thp, using a hydraulic capacity of 180 cfs and a static head of 1033.8 feet.

Transmission Lines

A 115 kV transmission line approximately 0.03 miles long delivers power from the Fish Creek powerhouse to a 3.8 mile long 115 kV transmission line that runs between Toketee Switching Station and the Soda Springs Switching Station.

3. LEMOLO DEVELOPMENTS

LEMOLO UNIT NO. 1

Dam, Reservoir and Water Conduits

Lemolo No. 1 diversion dam is a 120-feet high rock filled embankment structure on the North Umpqua River with an overall length of 885 feet. The structure has a 106-foot spillway consisting of a 33-foot-wide tainter-gated section and two adjacent flashboard sections. The dam also includes low level and power outlet structures. The low level outlet consists of concrete conduit connecting a headgate structure/tower and a low level outlet control structure that houses 60-inch and 12-inch fixed cone dispersion valves, and a minimum flow release structure containing a 24-inch fixed cone dispersion valve. The power outlet consists of a conduit connecting a headgate structure/tower housing a wheel type intake gate and a power outlet control structure that houses two 60-inch fixed cone dispersion valves. The Lemolo No. 1 water conveyance system consists of 16,310 feet of conduit extending from the Lemolo No. 1 power outlet structure to the Lemolo No. 1 penstock intake structure. The water conveyance system consists of 2,042 feet of rectangular concrete flume, and 14,176 feet of trapezoidal gunite-lined canal. The existing capacity of the water conveyance system is 561 cfs. Water entering the Lemolo No. 1 penstock is controlled by a concrete intake structure located at the terminus of the concrete flume. The intake structure includes a fixed crest side channel overflow spillway, trash rack and a radial gate functions as the penstock headgate. The Lemolo No. 1 penstock extends 7,328 feet and varies in diameter from 9.7 feet at the intake to 7.0 feet at the powerhouse.

Construction of an expanded forebay with 120 acre-feet of storage and 100 acre-feet of active storage is planned for this development.

Power Plant

The Lemolo No.1 powerhouse is a reinforced concrete structure located on the North Umpqua River. It houses a single Francis type vertical shaft hydraulic turbine and synchronous generator set rated at 42,880 hp under a net effective head of 742 feet. The generator is rated at 32,780 kVA at 0.85 power factor, 11,500 volts and operates at 400 rpm. The rated capacity of the combined turbine-generator set is 31,990 kW at 565 cfs. The hydraulic turbine is equipped with a valve that operates as a synchronous bypass during turbine load rejections. The Lemolo No.1 plant includes three single-phase 11.4/132 kV transformers rated at 11,373 kVA each. The theoretical horsepower for this unit is calculated as 50,028 thp, using a hydraulic capacity of 587 cfs and a static head of 750 feet.

Transmission Lines

A 115 kV transmission line approximately 12 miles long delivers power from the Lemolo No.1 powerhouse to the Clearwater Switching Station.

LEMOLO UNIT NO. 2

Dam, Reservoir and Water Conduits

Lemolo No.2 diversion dam is a 25-feet high concrete gravity structure on the North Umpqua River with a fixed crest concrete spillway and an overall length of 350 feet. The Lemolo No. 2 water conveyance system consists of 51,120 feet of conduit extending from the Lemolo No. 2 diversion dam to the Lemolo No.2 forebay. The water conveyance system consists of 27,350 feet of steel flume, 51,120 feet of rectangular concrete flume, and 18,559 feet of trapezoidal gunite-lined canal. The existing capacity of the water conveyance system is 341 cfs. The Lemolo No.2 forebay has a capacity of 230 acre-feet. Water entering the Lemolo No. 2 penstock is controlled by a headgate located in a concrete intake structure incorporated into the forebay and fitted with a trash rack. The Lemolo No.2 penstock extends 2,850 feet and varies in diameter from 7.2 feet at the headgate to 6.3 feet at the powerhouse. The conduit intercepts from Fallen Mountain Creek, Deer Creek contribute approximately 25 cfs to the conveyance system and approximately 10 cfs is collected from miscellaneous streams. The plant discharges into the North Umpqua River about one-half mile above the Toketee reservoir.

Power Plant

The Lemolo No.2 powerhouse is a reinforced concrete structure located on the North Umpqua River. It houses a single Francis type vertical shaft hydraulic turbine and synchronous generator set rated at 46,000 hp under a net effective head of 742 feet. The generator is rated at 33,000 kVA at 0.85 power factor, 11,500 volts and operates at 400 rpm. The rated capacity of the combined turbine-generator set is 35,000 kW at 655 cfs. The hydraulic turbine is equipped with a valve that operates as a synchronous bypass during turbine load rejections. The Lemolo No.1

plant includes three single-phase 11.5/132 kV transformers rated at 12,700 kVA each. The theoretical horsepower for this unit is calculated as 61,406 thp, using a hydraulic capacity of 750 cfs and a static head of 720 feet.

Transmission Lines

A 115 kV transmission line approximately 1.4 miles long delivers power from the Lemolo No.2 plant and connects with a 0.3 mile long 115 kV transmission line that connects the Clearwater No.2 plant to the Clearwater Switching Station.

4. TOKETEE DEVELOPMENT

Dam, Reservoir, and Water Conduits

Toketee diversion dam is a 58-feet high zoned earthfill structure on the North Fork of the North Umpqua River at its confluence with the Clearwater River with a fixed crest concrete spillway and an overall length of 1,381 feet. The spillway also includes a 20-foot manually operated leaf gate. The active storage capacity and surface area of the reservoir is 491.7 acre-feet and 96.9 acres respectively at the normal maximum water surface Elevation of 2,430 feet. Toketee water conveyance system consists of 6,694 feet of conduit extending from the intake located just upstream of the diversion dam to a 128-feet high surge tank located above the powerhouse located on the North Umpqua River, with an existing capacity of 1,400 cfs. The water conveyance system consists of 1,664 feet of 12-feet diameter wood stave pipe, 1,250 feet of lined tunnel, 4,080 feet of unlined tunnel and 320 feet of 12-feet diameter steel pipe. Water entering the Toketee water conveyance system is controlled by a wheel type intake gate located in a concrete intake/sluice structure situated in Toketee reservoir immediately upstream of the diversion dam. The intake/sluice structure also contains a sluice gate and is fitted with a trash rack. The Toketee penstock extends approximately 880 feet from the surge tank to the powerhouse, with 393-feet of 11.5-feet pipe and 366-feet of 11-feet steel pipe between the surge tank and a point where the penstock trifurcates three 158 feet long 6.3 feet diameter penstocks that enter the powerhouse. The plant discharges into the North Umpqua River approximately a quarter mile above the Slide Creek diversion dam.

Power Plant

The Toketee powerhouse has a reinforced concrete substructure with a steel superstructure enclosed by metal siding located on the North Umpqua River. It houses three Francis type vertical shaft hydraulic turbine and synchronous generator sets rated at 21,200 hp under a net effective head of 440 feet. The generators are rated at 16,667 kVA at 0.85 power factor, 6,900 volts and operate at 400 rpm. The rated capacity of the combined turbine-generator sets is 42,500 kW at 1,350 cfs. The hydraulic turbines are equipped with 24-inch fixed cone dispersion valves that operate as synchronous bypasses during turbine load rejections. The Toketee plant includes nine single-phase 6.9/132 kV transformers rated at 5,555 kVA each. The theoretical horsepower for these units is calculated as 77,891 thp, using a hydraulic capacity of 1,530 cfs and a static head of 448 feet.

Transmission Lines

A 115 kV transmission line approximately 49.1miles long delivers power from the Toketee Plant and Switching Station to the Dixonville Substation.

5. SLIDE CREEK DEVELOPMENT

Dam, Reservoir, and Water Conduits

Slide Creek diversion dam is an 30-feet high concrete gravity structure on the Clearwater River with an overall length of 183 feet. The dam incorporates two 40-feet wide tainter spillway gates, a 30-feet wide Obermeyer weir, and a 73-feet long concrete intake with trash rack and a 20-foot-wide tainter gate. The Slide Creek water conveyance system consists of 9,563 feet of conduit extending from the intake structure at the diversion dam to the penstock intake structure. The water conveyance system consists of 1,921 feet of combination concrete and unlined rock flume, 3,396 feet of rectangular concrete flume, and 4,336 feet of trapezoidal concrete lined canal. The existing capacity of the water conveyance system is 1,500 cfs. Water entering the Slide Creek penstock is controlled by a concrete intake structure that incorporates a 300-feet long side overflow spillway, trash rack and 20-foot-wide steel tainter gate. The Slide Creek penstock is 12-feet in diameter and extends 374 feet from the intake to the powerhouse.

Power Plant

The Slide Creek powerhouse is a reinforced concrete structure located on the North Umpqua River. It houses a single Francis type vertical shaft hydraulic turbine and synchronous generator set rated at 25,000 hp under a net effective head of 169 feet. The generator is rated at 21,176 kVA at 0.85 power factor, 6,900 volts and operates at 200 rpm. The rated capacity of the combined turbine-generator set is 18,000 kW at 1,500 cfs. The Slide Creek plant includes three single-phase 6.9/132 kV transformers rated at 7,060 kVA each. The theoretical horsepower for this unit is calculated as 28,807 thp, using a hydraulic capacity of 1,500 cfs and a static head of 169 feet.

Transmission Lines

A 115 kV transmission line approximately 0.12 miles long delivers power from the Slide Creek Plant and connects to a 3.8 mile long 115 kV transmission line between the Soda Springs and Toketee Switching Stations.

6. SODA SPRINGS DEVELOPMENT

Dam, Reservoir, and Water Conduits

Soda Springs dam is a 77-feet high reinforced concrete thin-arch structure located on the North Umpqua River with an overall length of 309 feet. The structure includes two 36-feet wide overflow type spillways equipped with 13.5-feet tall tainter gates and a 20-feet wide sluiceway equipped with a 7-feet high tainter gate. The dam also includes low level sluice outlet controlled by a 4-feet wide by 5-feet high vertical slide gate and a minimum flow release slide gate 24-inches square. The 41-feet long concrete intake structure is located on right side and integral to the dam and fitted with trash racks. It contains a 12.3-feet by 16.5-feet wheeled head gate. The Soda Springs water conveyance system extends from the intake at the dam to the powerhouse and consists of 2,112 feet of 12-feet diameter steel flowline, a 30-feet diameter by 82-feet tall surge tank and 168 feet of 12-feet diameter penstock. The capacity of the existing water conveyance system is 1,500 cfs. Soda Springs Reservoir has a surface area of 50 acres and 660 acre-feet of active storage.

A fish ladder is planned for construction at the Soda Springs dam. The fish ladder entrance will be located at the base of the dam and the ladder will gain elevation and pass under the spillway and meet the left bank of the river, where it will rise further, penetrate the gravity portion of the dam, and exit into the reservoir. Up to 30 cfs of water will flow from the reservoir through the fish ladder to the base of the dam.

A downstream fish screen facility is planned for the Soda Springs dam to screen downstream migrating fish from the power plant intake. A new intake incorporating the fish screen will be constructed on the left bank of the reservoir. The screened intake will divert a maximum of 1,893 cfs from the reservoir. The 1,893 cfs is comprised of the 1,600 cfs power plant flow, 8 cfs for Oregon Department of Fish and Wildlife salmon holding ponds, and 285 cfs to ensure compliance with the minimum instream flow requirement contained in the FERC license and settlement agreement. Approximately 35 to 70 cfs will be returned from the fish screen facility to the river through a fish bypass pipe and up to 250 cfs of flow will be provided from the fish screen as auxiliary water supply for the fish ladder entrance.

Power Plant

The Soda Springs powerhouse is a reinforced concrete structure located on the North Umpqua River. It houses a single Francis type vertical shaft hydraulic turbine and synchronous generator set rated at 16,000 hp under a net effective head of 107 feet. The generator is rated at 11,250 kVA at 0.85 power factor, 6,900 volts and operates at 164 rpm. The rated capacity of the combined turbine-generator set is 11,000 kW at 1,600 cfs. The hydraulic turbine is equipped with 78-inch butterfly valve that operates as synchronous bypasses during turbine load rejections. The Soda Springs plant includes three single-phase 6.9/132 kV transformers rated at 4,166 kVA each. The theoretical horsepower for this unit is calculated as 20,727 thp, using a hydraulic capacity of 1,600 cfs and a static head of 114 feet.

Transmission Lines

A 115 kV transmission line approximately 3.8 miles long connects the Soda Springs and Toketee Switching Stations. A second 115 kV transmission line approximately 42.5 miles long connects the Soda Springs Switching Station to the Dixonville Substation.

Oregon Department of Fish & Wildlife (ODFW) Holding Ponds

Article 22 of the original FERC license P-1927 required, among other things, that the licensee maintain, in the interest of fish life, a minimum flow of 25 cfs in the river between the Soda Springs diversion dam and Soda Springs powerhouse. On June 12, 1969, an Order Modifying License Article was issued, lowering the minimum flow requirement to 17 cfs and allowing the remaining 8 cfs for use in two experimental salmon-holding ponds adjacent to the Soda Springs bypass reach. Per the agreement, up to 8 cfs would be diverted from the Soda Springs penstock tap for a period of 10 years. These two holding ponds continue to operate and will continue to operate through the duration of the new FERC license, or until the holding ponds are no longer used by ODFW.

TABLE 1
THEORETICAL HORSEPOWER OF PROJECT DEVELOPMENTS

Installed Development	Flow (cfs)	Static Head (ft)	thp*
Clearwater 1	407	661.0	30,571
Clearwater 2	605	748.5	51,459
Fish Creek	180	1.033.8	21,146
Lemolo No. 1.	587	750.0	50,028
Lemolo No. 2	750	720.5	61,406
Toketee	1,530	448.0	77,891
Slide Creek	1,500	169.0	28,807
Soda Springs	1,600	114.0	20,727
			342,035

* Theoretical horsepower (thp) is calculated by multiplying the generation flow measured in cubic feet per second by the static head of the units and dividing by 8.8.