ATTACHMENT 1

NORTH UMPQUA PROJECT

Resource Coordination Committee Members

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ATTACHMENT 2

NORTH UMPQUA PROJECT

Overview of the North Umpqua River Basin and Associated Facilities

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2.0 OVERVIEW OF THE UMPQUA RIVER BASIN

The North Umpqua Hydroelectric Project is located in south-central Oregon on the west side of the Cascade mountain range in Douglas County, about 60 miles (97 km) east of Roseburg. The Project is located on the North Umpqua River and two of its tributaries, Clearwater River and Fish Creek.

The headwaters of the North Umpqua River are located at an elevation of over 1,830 m on the western slope of the High Cascade Mountain Range near Maidu Lake. Over 20% of the North Umpqua River watershed lies above 1700 m and the river drains about 470 square miles before joining the South Umpqua River west of Roseburg. Both the North and South Umpqua Rivers have a rugged topography with steep canyons and rapid elevation changes, and both have been heavily influenced by volcanic activity. The drainages of the North and South Umpqua Rivers together make up about 2/3 of the greater Basin drainage, and each river is about 170 km long. The mainstem Umpqua River flows in a northwesterly direction another 180 km to the ocean. Together, the three rivers form one of the longest coastal basins in Oregon, approximately 340 km in length, with a drainage area of over 12,200 sq. km. In 1988 the United States Congress designated approximately 33 miles (53 km) of the North Umpqua River as part of the National Wild and Scenic River program.

2.1 PROJECT DESCRIPTION

The North Umpqua Hydroelectric Project was constructed between 1947 and 1956. It consists of a series of dams and canals that divert water to the following eight developments, each of which has a powerhouse and a dam:

- Lemolo No. 1
- Lemolo No. 2
- Clearwater No. 1
- Clearwater No. 2
- Toketee
- Fish Creek
- Slide Creek
- Soda Springs

The project occupies 3,085 acres, including 2,491 acres administered by the Forest Service, 128 acres administered by BLM, and 466 acres of non-federally-owned land. It encompasses a total waterway length of 37.3 miles (21.7 miles of canal, 9.8 miles of flume, and 5.8 miles of penstock and tunnels). The project includes 117.5 miles of transmission line in seven segments, five of which interconnect project generators and two of which deliver project power to PacifiCorp's bulk transmission grid at the Dixonville substation.

A summary of the project information is provided in Table 2.1-1. Figures 2.1-1 and 2.1-2 provide graphic representations of the project.

Table 2.1-1. Generation and reservoir information for the North Umpqua Project.

Development	Avg. Annual Generation (Mwh)	Reservoir Total Storage (ac-ft)	Reservoir Active Storage (ac-ft)	Normal Full Pool Elv. (feet msl)	Generator Nameplate kW	Turbine
Lemolo No. 1	143,773	11,752	11,079	4,148.5	29,000	Vertical Francis
Lemolo No. 2	170,815	230.6 (forebay)	159.2 (forebay)	3,184.5 (forebay)	33,000	Vertical Francis
Clearwater No. 1	55,166	30.2 (reservoir) 120.8 (forebay)	100.6 (forebay)	3,875 (reservoir) 3,862 (forebay)	15,000	Vertical Francis
Clearwater No. 2	59,495	70.7 (forebay)	49.5 (forebay)	3,179.5 (forebay)	26,000	Vertical Francis
Toketee	231,876	1,051	144	2,430	42,500 (3 units)	Vertical Francis
Fish Creek	55,834	110.3 (forebay)	83.4 (forebay)	3,025.5 (forebay)	11,000	Vertical impulse
Slide Creek	65,370	43	None	1982	18,000	Vertical Francis
Soda Springs	94,246	411.6	307.4	1807	11,000	Vertical Francis
Total	876,575	13,820.2	11,923.1			

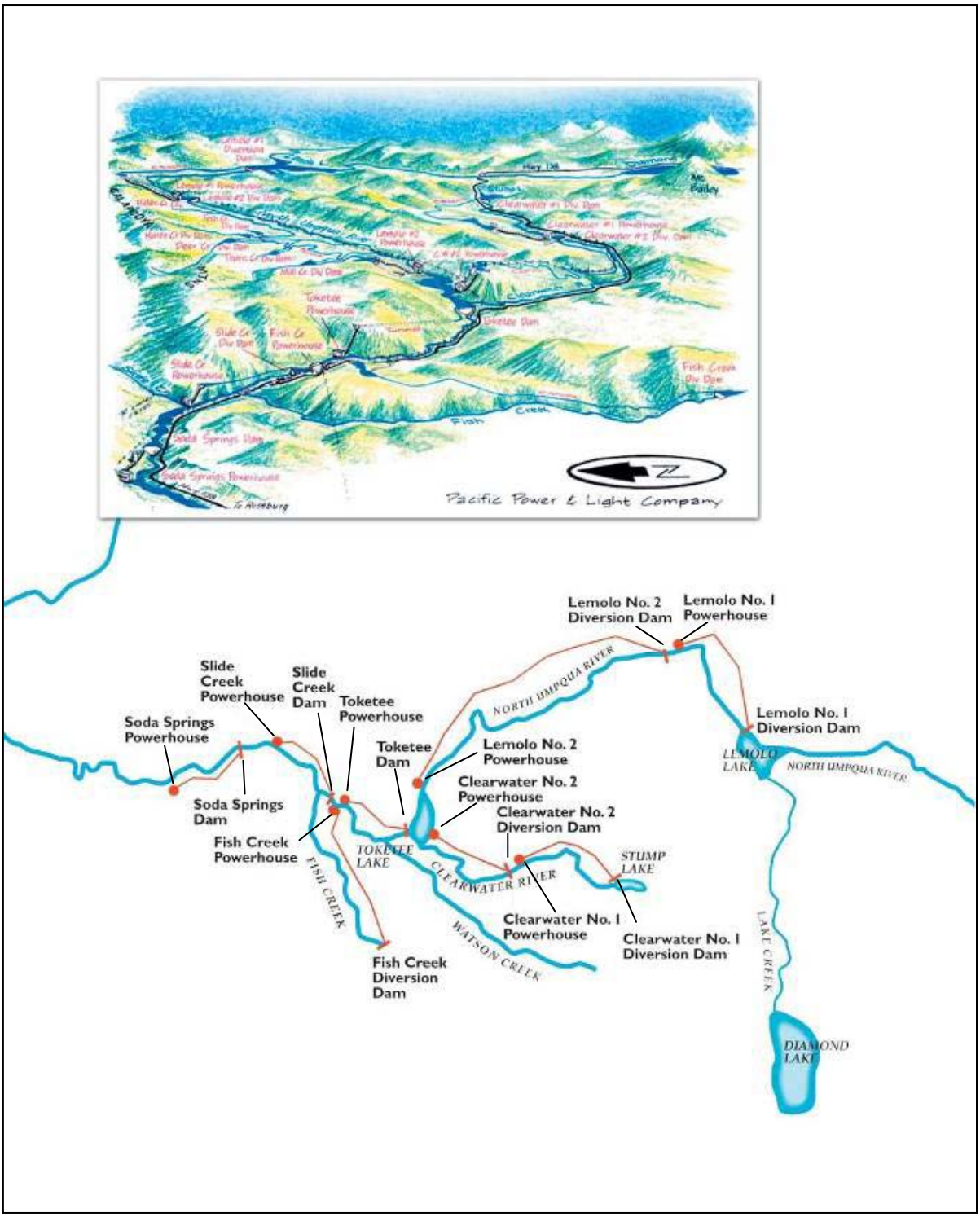

Figure 2.1-1. Map of the North Umpqua Subbasin showing project location

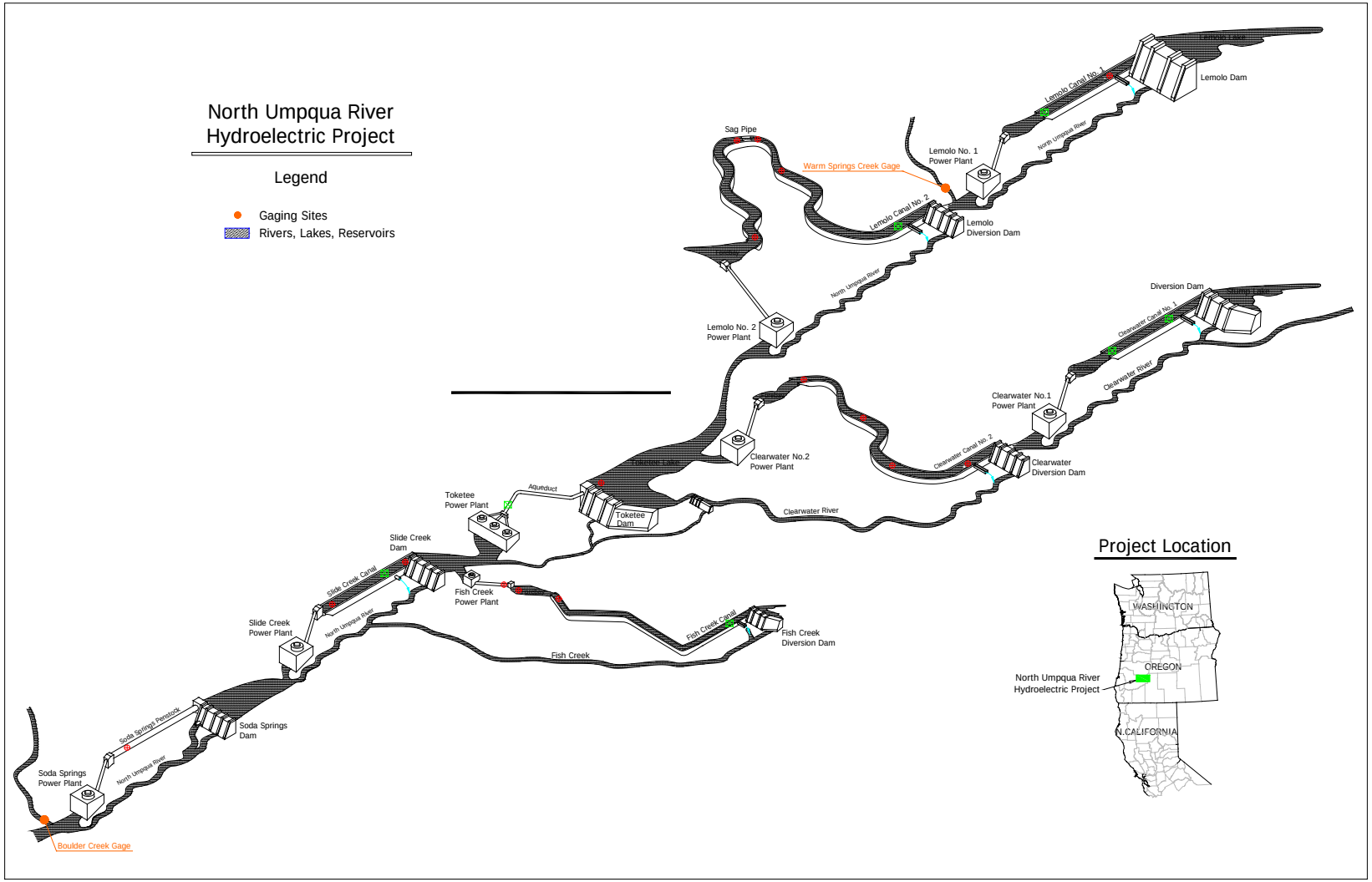

Figure 2.1-2. Map of the North Umpqua Subbasin showing reservoirs and diversions.

2.1.1 Lemolo No. 1 Development

The Lemolo No. 1 Development is the furthest upstream development in the North Umpqua project. Lemolo No. 1 includes a 120-foot-high, 885-foot-long rockfill diversion dam with concrete facing. It has a 33-foot-long gated, ogee-crested spillway section and a 67-foot-long ungated, ogee-crested concrete spillway section equipped with 3-foot-high flashboards. The dam impounds a 419-acre reservoir, known as Lemolo Lake, with a total storage of 11,752 acre-feet. 16,310 feet of gunite lined and concrete canal and flumes extend from the Lemolo dam to the concrete penstock intake and forebay, which has a trashrack and 15.9-foot-wide Taintor gate. The steel penstock is 7,338-feet-long with a diameter ranging from 9.7 to 7.0 feet at the powerhouse. The powerhouse is located on the North Umpqua River at the mouth of Warm Springs Creek, 4.5 miles downstream of the dam at Lemolo Lake. The reinforced concrete powerhouse contains a single vertical shaft Francise-type turbine-generator with a rated capacity of 29,000 kilowatts (kW). Storage in Lemolo Lake is used to control floods, increase power generation when demand is high in the late fall, and augment flows in the river downstream of the eight developments.

2.1.2 Lemolo No. 2 Development

The Lemolo No. 2 diversion dam is approximately 190 feet downstream of the Lemolo No. 1 powerhouse. This concrete gravity dam is 350-feet long, 25-feet-high and is un-gated and ogee-crested with flashboards. It impounds a 1.4-acre pond with no active reservoir storage. Water is drawn through a concrete intake structure equipped with fish screens, fish bypass, trashrack, Taintor gate and side channel spillway. The 69,503 feet of canal and flumes (Figure 2.2-3) extend from the diversion dam to a 24.2-acre earthen forebay. The forebay has a total maximum storage capacity of 230.6 acre-feet. A 3,975-foot-long steel penstock with diameter ranging from 10.5 to 7.3 feet leads to the powerhouse. The reinforced concrete powerhouse contains a single vertical shaft Francis-type turbine-generator with a rated capacity of 33,000 kW. The Lemolo No. 2 powerhouse is approximately 3,500 feet upstream of Toketee Lake (Figure 2.2-2).

2.1.3 Clearwater No. 1 Development

The Clearwater No. 1 Development is the uppermost development on the Clearwater River, which has its confluence with the North Umpqua River near the Toketee dam. The Clearwater No. 1 diversion dam is located approximately 8.1 miles upstream of Toketee Lake. An earthfill dam, the Clearwater No. 1 dam is 17-feet-high, 1,426-feert-long and includes a 102-foot-long, un-gated concrete spillway with flashboards. It impounds 11.8-acre Stump Lake, which has a maximum storage capacity of 30.2 acre-feet. The accompanying concrete intake structure is equipped with a trashrack, timber gate and side channel spillway. The 13,037 miles of canal and flumes extend from Stump Lake dam to a 16.3-acre clay-lined excavated forebay and gated concrete intake structure. The forebay has a total maximum storage capacity of 120.8 acre-feet. A 4,863-foot-long penstock with diameter ranging from 6.7 to 5.0 feet leads to the powerhouse. The reinforced concrete powerhouse contains a single vertical shaft Francis-type turbine-generator with a rated capacity of 15,000 kW. The powerhouse discharges directly into the Clearwater No. 2 diversion.

2.1.4 Clearwater No. 2 Development

Located 140 feet downstream from the Clearwater No. 1 powerhouse on the Clearwater River, the Clearwater No. 2 Development diversion dam is an 18-foot-high, 157-foot-long structure. The Clearwater No. 2 dam is made out of concrete and contains a concrete spillway section and an intake with a trashrack. The dam impounds a 1.2-acre settling pond with no active storage. The 31,235 feet of canal and flumes extend from the diversion dam to an 8.6-acre clay-lined excavated forebay and gated intake structure. The forebay has a total maximum storage capacity of 70.7 acre-feet. A 1,169-foot-long steel penstock with diameter ranging from 7.2 to 6.3 feet carries water to the powerhouse (Figure 2.2-2). The reinforced concrete powerhouse is located on the North Umpqua River at Toketee Lake. It contains a single vertical shaft Francis-type turbine-generator with a rated capacity of 26,000 kW.

2.1.5 Toketee Development

The Toketee Development, located at the confluence of the Clearwater and North Umpqua Rivers, includes a 58-foot-high 1,381 earthfill embankment dam on the North Umpqua River. The dam has a 310-foot-long concrete spillway section and it impounds a 96.9-acre reservoir known as Toketee Lake (Figure 2.2-2). The reservoir has a total maximum storage capacity of 1,051 acre-feet. The 6,994 feet of wood-stave pipe and concrete-lined and unlined tunnel extend from Toketee dam to the penstock. The penstock consists of a 1,067-foot-long steel conduit that splits into three approximately 158-footlong sections near its downstream end. The powerhouse contains three equal sized, vertical shaft Francis-type turbine-generators that have a combined installed capacity of 42,500 kW. The powerhouse is located on the North Umpqua River approximately two miles downstream of Toketee Lake, which serves as the forebay for the development and provides active storage to regulate flow through the powerhouse.

2.2.6 Fish Creek Development

The Fish Creek Development diversion dam is located on Fish Creek, approximately 6 miles upstream of the creek's confluence with the North Umpqua River. The 6.5-foot-high, 133-foot-long concrete dam includes a 30-foot-long, ogee spillway section, a fishway and sluiceway. The dam impounds a 3-acre settling pond with no active storage. The 25,662 feet of canal and flumes extend from the diversion dam to a 9.3-acre clay-lined excavated forebay and gated intake structure. The forebay has a maximum total storage capacity of 110.3 acre-feet and is used to reregulate water from off-peak to peak demand periods. A 2,358-foot-long steel penstock with diameter ranging from 4.5 to 3 feet carries water to the powerhouse. The reinforced concrete powerhouse contains a single vertical shaft impulse-type turbine-generator set with a rated capacity of 11,000 kW. The Fish Creek powerhouse is located on the North Umpqua River between the Toketee powerhouse and the Slide Creek diversion dam.

2.1.7 Slide Creek Development

The Slide Creek Development includes a diversion dam located on the North Umpqua 900 feet downstream of the Toketee powerhouse. The 30-foot-high, 183-foot-long concrete dam includes a 72 –foot-long, gated concrete ogee spillway section and a gated, concrete intake structure with trashrack. The dam impounds a 2-acre reservoir with a maximum total storage capacity of 43 acre-feet. The 9,653 feet of canal and flumes extend from the dam to a concrete penstock intake

structure that includes trashracks and a Taintor gate. The steel penstock that carriers the water to the powerhouse is 374-foot-long and 12 feet in diameter. The reinforced concrete powerhouse contains a single vertical shaft Francis-type turbine-generator with a rated capacity of 18,000 kW. The powerhouse is located on the North Umpqua 1.3 miles upstream of Soda Springs dam (Figure 2.2-1).

2.1.8 Soda Springs Development

The Soda Springs Development includes a diversion dam located on the North Umpqua River about 1.3 miles downstream of the Slide Creek powerhouse. The 309-foot-long, 77-foot-high concrete arch dam includes a 72-foot-long, gated, concrete ogee spillway section. It impounds a 31.5-acre reservoir with a total maximum storage capacity of 411.6 acre-feet. A 2,112-foot-long steel pipe extends from the intake at the diversion dam to an 82-foot-high, 30-foot-diameter surge tank. A 168-foot-long, 12-foot-diameter steel penstock extends from the surge tank to a reinforced concrete powerhouse. The powerhouse has a single vertical shaft Francis-type turbine-generator set with a rated capacity of 11,000 kW. The storage capacity of the Soda Springs reservoir is used to ensure a minimum flow in the North Umpqua downstream of the development.

2.2 PROJECT PHOTOGRAPHS

Representative photographs of the North Umpqua project are included below. They include the Soda Springs dam, the Clearwater No. 2 penstock and the Lemolo No. 2 Canal. Additional photos of project facilities are provided in Attachment 5.

Figure 2.2-1 Soda Springs dam

Figure 2.2-2 Clearwater No. 2 penstock and Toketee Lake

Figure 2.2-3 Lemolo No. 2 Canal

2.3 PROJECT OPERATIONS

Scheduling of power resources is coordinated daily based on factors such as reservoir storage, snow and groundwater conditions, system load, availability of other resources, and streamflow requirements. Adjustments to this schedule occur as load and resource conditions dictate.

Daily inflows to the North Umpqua River system are used by the hydroelectric project to meet the generation system requirements while maintaining project minimum flows, reservoir levels, and storage requirements.

The project operates in a peaking mode, generating more electricity during high demand periods, typically from 6 A.M. to 10 P.M. Storage capacity is used at each of the reservoirs and forebays for this purpose, but relatively little storage is available at the developments, with the exception of Lemolo Lake, which is the primary source of water storage for shaping flows to daily peaking operations for downstream developments. Clearwater Nos. 1 and 2 and Lemolo No. 2 developments usually are operated on a continuous basis because of the limited storage capacity in these developments. The Lemolo No. 1 development is also operated continuously although at very low generating levels during non-peak times. The Soda Springs Development is used for reregulation of flows from upstream developments and is operated to release a baseflow based on ambient watershed runoff estimates and the goal of maintaining a relatively stable flow to the North Umpqua River below the Soda Springs powerhouse.

2.4 TRANSMISSION FACILITIES

The North Umpqua transmission system includes 117.5 miles of transmission lines and three switching stations. Power from the North Umpqua Project is transferred to the regional electrical grid at the Dixonville substation near Roseburg. Lines 39, 42, and 46 provide a 115-kV loop configuration that interconnects the switching stations located at the Toketee and Clearwater developments with substations at Soda Springs and in Dixonville, Oregon.

Line 39 begins at the Toketee switching station and is 49.1 miles long. Line 46 begins at the Soda Springs switching station and is 42.5 miles long. They both generally follow the North Umpqua River in a westerly direction to the Dixonville substation. Line 39 also provides power to the Glide substation. Line 42 connects the Soda Springs substation and Toketee switching station with radial collector lines 42-1 and 42-2 from the Slide Creek and Fish Creek powerhouse, respectively. In addition to being a collector transmission line for lower project developments, Line 42 is used as a link for power transmission from all the power plants to Dixonville in the event that Line 39 or 46 falls.

All transmission lines associated with the project use predominantly wood pole "H" frame structures. These are generally two pole wood "H" frames with some three pole wood "H" frames at angles and dead-ends.

The project includes the Toketee and Clearwater switching stations and a substation at Soda Springs. The structures at all of the substations are lattice type painted or galvanized steel. The Toketee switching station is a major collection point on the loop transmission system that consists of Lines 39, 42, and 46. The switch yard is located in a small fenced area above the

powerhouse and contains a 115-kV single bus and two circuit breakers for isolating Lines 39 and 42. Line 51 is connected to the common bus through a manual disconnect switch.

The Clearwater switching station, located near the Toketee Ranger Station in a 0.75-acre fenced yard, is the terminus of the collector transmission lines from the upper project developments (i.e., Lemolo No. 1, Lemolo No. 2, Clearwater No. 1, and Clearwater No. 2). Lines 53, 55, 57, and 55-1 are radial collector lines from Lemolo No. 1, Lemolo No. 2, Clearwater No. 1, and Clearwater No. 2, respectively. Line 51 transmits all the power that arrives at the Clearwater switching station on to the one at Toketee. The station consists of two 115-kV single buses and four circuit breakers. The Soda Springs substation separates the Line 42 collector transmission line for the lower project developments from Line 46. The Soda Springs substation consists of a 115-kV single bus with one circuit breaker. The substation is located west of and adjacent to the Soda Springs powerhouse.

ATTACHMENT 3

NORTH UMPQUA PROJECT

Section 401 Water Quality Certification

APPENDIX A

Clean Water Act § 401 Certification Conditions
for the
PacifiCorp
North Umpqua Hydroelectric Project
(FERC No. 1927)
North Umpqua Subbasin,
Douglas County, Oregon

[issued June 28, 2002]

Upon Federal Energy Regulatory Commission (FERC) issuance of a new license for the Project, PacifiCorp shall comply with the following § 401 Certification conditions:

1. Temperature

a. PacifiCorp shall implement the surface water temperature management plan (TMP) approved by the Oregon Department of Environmental Quality (ODEQ) in conjunction with this § 401 Certification (Certification) and attached as Exhibit A. In accordance with OAR 340-041-0026(3)(a)(D), the TMP identifies those measures that PacifiCorp will undertake to reduce the Project's contribution to exceedances of instream water quality criteria for temperature.

b. PacifiCorp shall implement the Stream Temperature Monitoring Plan (STMP) approved by ODEQ in conjunction with this Certification and attached as Exhibit B. The STMP specifies the instream temperature monitoring reasonably needed to determine (a) whether the temperature criteria continue to be exceeded in waters of the North Umpqua Subbasin affected by the Project, (b) the success of the TMP in reducing the Project's contribution to any continued exceedances of the criteria, and (c) any additional measures that may be needed to reduce the Project's contribution to exceedances of the criteria.

c. Upon the U.S. Environmental Protection Agency's (EPA) final approval of a Total Maximum Daily Load (TMDL) for temperature in waters of the North Umpqua Subbasin affected by the Project (or upon any modification to the TMDL that applies to those waters), ODEQ:

(1) Will seek to require, in conjunction with designated management agencies and in accordance with applicable law, other anthropogenic sources within the North Umpqua Subbasin to implement measures to reduce their contributions to exceedances of the temperature criteria; and

(2) May reevaluate PacifiCorp's TMP in light of information acquired since the certification of the Project. If revised temperature reduction measures are feasible and necessary to meet an allocation for the Project under the approved TMDL (or under any modification to the TMDL approved by EPA), ODEQ may modify the TMP to require the revised measures, subject to the limits set forth in Exhibit C attached to this Certification. If the TMDL does not include a specific allocation for the Project, references to the "allocation for the Project" shall refer to the allocation that encompasses Project-related thermal contributions to waters in the North Umpqua Subbasin.

d. At the end of the period determined by ODEQ to be necessary to implement the TMDL for temperature in waters of the North Umpqua Subbasin affected by the Project, ODEQ may:

(1) Determine whether the TMDL and allocations for the Project have been achieved.

(2) If the TMDL and allocations for the Project have been achieved, PacifiCorp shall continue to implement its TMP unless, at PacifiCorp's request, ODEQ approves a modification or termination of the TMP.

(3) If the TMDL or an allocation for the Project has not been achieved, ODEQ may reevaluate PacifiCorp's TMP to determine whether additional measures to reduce the Project's contribution to exceedances of the temperature criteria are necessary and feasible. If additional measures are necessary and feasible, ODEQ may modify the TMP to require the additional measures, subject to the limits set forth in Exhibit C. Any modification of the TMP that would require the Project to reduce instream temperatures beyond what would be required by the allocation for the Project shall be effective only upon modification of the allocation to reflect the reductions.

(4) If (i) additional measures to reduce the Project's contribution to exceedances of the temperature criteria are necessary to achieve the TMDL, but the measures are not feasible, and (ii) the TMDL has not been achieved for waters affected by the Project, ODEQ shall verify whether all feasible measures have been undertaken within the North Umpqua River Subbasin to achieve the TMDL for waters affected by the Project.

(5) If all feasible measures have not been undertaken, DEQ, in conjunction with designated management agencies, shall take steps to ensure that all feasible measures are undertaken.

(6) If all feasible measures have been undertaken, ODEQ shall determine whether designated beneficial uses of waters affected by the Project are adversely affected by the failure to achieve the TMDL.

(7) If the designated beneficial uses are not adversely affected by the failure to achieve the TMDL, PacifiCorp shall continue to implement its TMP unless, at PacifiCorp's request, ODEQ approves modification or termination of the TMP.

(8) If the designated beneficial uses are adversely affected by the failure to achieve the TMDL, ODEQ may modify the TMP to require additional temperature reduction measures, subject to the limits set forth in Exhibit C. Any modification of the TMP that would require the Project to reduce instream temperatures beyond what would be required by the allocation for the Project shall be effective only upon modification of the allocation to reflect the reductions.

e. ODEQ may make reasonable and feasible modifications to the STMP if:

(1) The STMP set forth in Exhibit B proves inadequate to provide the data needed to make determinations described in Paragraph 1.b., or

(2) Modifications to the TMP require modifications to the STMP .

PacifiCorp shall implement modifications to the TMP and STMP made or required by ODEQ in accordance with this certification condition and Exhibits A–C. With the written approval of ODEQ, PacifiCorp may cease implementing the TMP or STMP or may implement a modified TMP or STMP. ODEQ may approve cessation or modification if ODEQ determines that it will not impair the achievement of any TMDL or allocation for the Project for temperature and will not contribute to an exceedance of the applicable temperature criteria in waters affected by the Project.

f. PacifiCorp shall install a fish screen at the Fish Creek Diversion intake in accordance with Section 4.3.2 of the North Umpqua Hydroelectric Settlement Agreement among PacifiCorp, ODEQ, and other state and federal agencies dated June 13, 2001 (North Umpqua Settlement Agreement).

g. PacifiCorp shall conduct scheduled maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6.

2. Hydrogen Ion Concentration (pH)

a. Lemolo No. 2 Full-flow Reach.

To address pH criteria exceedances in the Lemolo No. 2 full-flow reach in the North Umpqua River below the Lemolo No. 2 powerhouse, PacifiCorp shall reroute the Lemolo No. 2 powerhouse discharge to Toketee Reservoir in accordance with the North Umpqua Settlement Agreement Section 5.4.

b. Project Maintenance.

PacifiCorp shall conduct scheduled powerhouse maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6. PacifiCorp shall conduct any ramping associated with Project maintenance in accordance with the requirements of the North Umpqua Settlement Agreement Section 6.6.

c. Lemolo No. 1 Forebay.

(1) When the forebay is expanded as set forth in the North Umpqua Settlement Agreement Section 11.5, PacifiCorp shall design the forebay to allow mechanical removal of macrophyte growth without compromising the forebay's liner integrity.

(2) If aquatic plant growth in the forebay causes a pH criteria exceedance, PacifiCorp shall, at ODEQ's request, develop and submit for ODEQ's approval a plan and schedule to dredge the forebay or to take other measures to address the pH criteria exceedance. Upon ODEQ's approval, PacifiCorp shall implement the plan in accordance with the schedule contained in the plan.

d. Monitoring

Monitoring is required as follows. ODEQ may waive or change the monitoring requirements at the request of PacifiCorp, or ODEQ may change the requirements on its own initiative if the revised requirements are feasible and reasonably necessary to determine whether and to what extent PacifiCorp contributes to an exceedance of applicable pH criteria in waters affected by the Project:

(1) Monitoring Below Soda Springs Powerhouse.

PacifiCorp shall monitor pH on an hourly basis at the permanent monitoring station located below Soda Springs Powerhouse (BLDG), or at another ODEQ-approved location in the North Umpqua River below the Project. PacifiCorp shall report data to ODEQ by December 31 for the preceding water year (October 1 to September 30). If data capture is less than 90 % on a water year basis or less than 95% during the months of June through September, except due to factors beyond the reasonable control of the operator or PacifiCorp, PacifiCorp shall install and operate a redundant pH monitor at BLDG (or at another ODEQ-approved location) for subsequent years of the new FERC License until PacifiCorp can demonstrate to ODEQ that one pH monitor is sufficient to reliably meet minimum data collection requirements.

(2) Lemolo No. 1 Forebay.

Following the expansion of the forebay as set forth in the North Umpqua Settlement Agreement Section 11.5, PacifiCorp shall monitor forebay pH in August by making at least one measurement between 1200 and 1800 hours 3 times per week and include a 24-hour diel sampling in August at the forebay inlet and the Lemolo No. 1 Powerhouse tailrace. PacifiCorp shall monitor annually the first and second year after the forebay expansion is completed, and every five years through the remaining term of the new FERC License. This monitoring requirement may be reviewed after the second year of monitoring and may be discontinued or modified with the approval of ODEQ. PacifiCorp shall report monitoring results to ODEQ by December 31 in years when monitoring occurs.

(3) Lemolo No. 2, Fish Creek, and Clearwater No. 1 Powerhouse Tailraces

PacifiCorp shall monitor pH at LEM2P, FISHP, and CLR1P at the completion of annual maintenance for 30 hours, starting 6 hours before generator restart and continuing until 24 hours after restart. Monitoring is to occur in the first year the maintenance schedule in the North Umpqua Settlement Agreement Section 6.6 is in effect. PacifiCorp shall report monitoring data to ODEQ by December 31. These monitoring requirements may be reviewed after the second year of monitoring and may be discontinued or modified with the approval of ODEQ.

3. Biological Criteria, and Protection of Beneficial Uses of Anadromous Fish Passage, Salmonid Spawning, Salmonid Rearing, and Resident Fish & Aquatic Life Under Other Appropriate Laws

a. Minimum Instream Flows

PacifiCorp shall provide in-stream flow in accordance with the North Umpqua Settlement Agreement Sections 5 and 10.4.

b. Flow Measurement and Reporting

(1) PacifiCorp shall develop a coordinated gauge installation and data reporting plan in accordance with the North Umpqua Settlement Agreement Section 5.5. PacifiCorp shall install and maintain gauge stations as established by the approved gauge installation and data reporting plan.

(2) By December 31 of each year, PacifiCorp shall submit to the ODEQ-Western Region an annual report with average hourly flows passed and diverted at the Project developments for the previous water year (October 1 to September 30).

c. Fish Passage Facilities

PacifiCorp shall implement fish passage measures in accordance with the North Umpqua Settlement Agreement Section 4.

d. Ramping

PacifiCorp shall implement ramping restrictions and measures in accordance with the North Umpqua Settlement Agreement Section 6.

e. Fluvial Geomorphic Processes

PacifiCorp shall implement fiuvial geomorphic restoration measures in accordance with the North Umpqua Settlement Agreement Section 7.

f. Anadromous Fish Spawning Habitat Improvements

PacifiCorp shall implement measures to restore, create, and enhance spawning habitat in accordance with the North Umpqua Settlement Agreement Section 8.1.

g. Lemolo Reservoir Rule Curve

PacifiCorp shall manage the drawdown and reservoir operating level in accordance with the North Umpqua Settlement Agreement Sections 9.3 and 9.4.

h. Reconnecting Aquatic Sites

(1) PacifiCorp shall implement aquatic connectivity measures in accordance with the North Umpqua Settlement Agreement Sections 10.1, 10.2, 10.3, 10.6, and 15.6.

(2) PacifiCorp shall breach or alter diversions for Helen, Spotted Owl, Karen, Thorn, Potter, Deer, White Mule, and Mill Creeks in accordance with the North Umpqua Settlement Agreement Section 10.4.

i. Notification of Erosive Events

PacifiCorp shall notify Oregon Emergency Response System (1-800-452-0311) of erosive events and coordinate remedial measures in accordance with the North Umpqua Settlement Agreement Sections 14.3.2 and 14.3.3.

j. Water Quality Monitoring

PacifiCorp shall fund, operate, and maintain a permanent water quality monitoring station below Soda Springs powerhouse (BLDG). Data will be collected under an ODEQ-approved QA/QC plan, and compilations of data for the water year (October 1–September 30) will be provided electronically to ODEQ by December 31, or as soon as the data can be reasonably verified, whichever is later, in a format approved by ODEQ.

The initial parameters to be monitored at this station are specified elsewhere in this Certification. These parameters may be modified from time to time by ODEQ to reflect new regulations or adverse water quality trends in the North Umpqua River that ODEQ reasonably believes to be caused by the Project. The required detection limits in the QA/QC plan may be modified from time to time by ODEQ to reflect feasible new technology. PacifiCorp will have a minimum of six months after ODEQ

notice of new or changed monitoring requirements to implement the modifications. The QA/QC plan shall be developed within 6 months of the new FERC license.

4. Aesthetic Conditions, Turbidity, and Sediment

a. PacifiCorp shall implement fluvial geomorphic process restoration measures in accordance with the North Umpqua Settlement Agreement Section 7.

b. PacifiCorp shall implement Project bypass ramping restrictions and maintenance measures in accordance with the North Umpqua Settlement Agreement Sections 6.5 and 6.6, respectively.

c. PacifiCorp shall install and maintain gauge stations in accordance with the North Umpqua Settlement Agreement Section 5.5.

d. PacifiCorp shall undertake Project maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6.b.

e. PacifiCorp shall implement erosion and sediment control measures in accordance with the North Umpqua Settlement Agreement Sections 10.6, 12.1, and 14.

f. PacifiCorp shall implement transportation management measures in accordance with the North Umpqua Settlement Agreement Sections 15.1 for bridge maintenance, 15.4 for erosion control and abatement, and 15.6 for fishery improvement or erosion control.

g. PacifiCorp, when conducting ground-disturbing activities greater than one acre, shall comply with applicable provisions of ODEQ's NPDES stormwater permitting program. If the permit program ceases, PacifiCorp shall provide ODEQ with 60 days' written notice and obtain ODEQ approval in advance of ground-disturbing activities greater than one acre, and PacifiCorp shall use Best Management Practices (BMPs) to protect surface water from trace-metals and other toxic constituents, sediment, and turbidity.

h. PacifiCorp shall provide 60 days' written notice and obtain ODEQ approval of dredging or removal of sediments from Project impoundments. PacifiCorp shall employ BMPs to protect surface water from trace-metals and other toxic constituents, sediment, and turbidity.

i. PacifiCorp shall monitor turbidity hourly below the Project at BLDG or another ODEQ-approved location for the duration of the new FERC license unless otherwise

modified by agreement with ODEQ. PacifiCorp shall prepare a QA/QC plan for ODEQ approval within 6 months of the new FERC license that includes equipment reliability or redundancy to accomplish a 90% or better data capture on a water-year basis. Data loss due to reasons beyond the reasonable control of PacifiCorp or the operator will not be included in determining percent data capture.

j. PacifiCorp shall manage Lemolo Reservoir levels in accordance with the North Umpqua Settlement Agreement Section 9.3. Erosion and sediment transport into Lemolo Reservoir will be evaluated through the Erosion Control Plan in accordance with the North Umpqua Settlement Agreement Section 14.

5. Bacteria and Bacteria Pollution

a. PacifiCorp shall verify the proper operation of on-site sewage systems by observing leach fields for signs of surfacing sewage at the time of removal of accumulated sludge from the septic tank at each on-site system.

b. PacifiCorp shall maintain written records of the on-site system septic tank pumping and of any visual observations of the operation and function of the leach field and other parts of the on-site system at the time of pumping.

6. Dissolved Oxygen (DO)

a. Maintenance

PacifiCorp shall schedule powerhouse maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6.

b. Lemolo No. 2 Full-Flow Reach.

During the first year after the Lemolo No. 2 powerhouse flow is rerouted as set forth in the North Umpqua Settlement Agreement Section 5.4, PacifiCorp shall monitor DO at LEM2FF hourly for a minimum of 72 consecutive hours once between July 15 and August 15. PacifiCorp shall report monitoring data to ODEQ by December 31.

c. Bypass Reaches

PacifiCorp shall monitor DO levels for a minimum of 72 consecutive hours in each bypass reach once during the first July in which the minimum flows set forth in Appendix C, Table 1, of the North Umpqua Settlement Agreement are required. PacifiCorp shall propose sampling locations for ODEQ approval. PacifiCorp shall

report data to ODEQ by December 31 of that year. If the DO levels do not meet the applicable DO criterion in any bypass reach, DEQ may require PacifiCorp to undertake additional DO monitoring in that reach that is reasonably necessary to determine the extent of the DO criterion exceedance, and the Project's contribution to the exceedance.

d. North Umpqua River Below Soda Springs Powerhouse.

PacifiCorp shall monitor DO hourly at BLDG upon issuance of the new FERC License. The minimum acceptable data capture is 95% valid data. Data loss due to reasons beyond the reasonable control of PacifiCorp or the operator will not be included in determining percent data capture.

e. PacifiCorp shall report data to ODEQ by December 31 for the previous water year.

7. Habitat and Flow Modification; Deleterious Conditions; Taste and Odor

a. Potter Creek.

PacifiCorp shall breach the diversion and restore riparian habitat in accordance with the North Umpqua Settlement Agreement Sections 10.4 and 10.5, respectively.

b. Deer Creek.

PacifiCorp shall modify the diversion structure in accordance with the North Umpqua Settlement Agreement Section 10.4 and complete erosion-site remediation to the extent required by, and in accordance with, the North Umpqua Settlement Agreement Section 14.4.

c. Lemolo No. 1 and Lemolo No. 2 Bypass Reaches.

PacifiCorp shall give priority to performing Lemolo No. 2 maintenance in accordance with the North Umpqua Settlement Agreement Section 6.6.b in order to maximize the potential for natural channel-forming events that will enhance fluvial geomorphology processes and promote the distribution of large wood and gravel.

8. Nuisance Algae

a. In accordance with a study plan approved by ODEQ, PacifiCorp shall monitor chlorophyll-a in Lemolo Reservoir as follows:

(1) Sample a minimum of once in each month of July–September in the first, third and fifth year of the new FERC License and every five years thereafter.

(2) Results of the monitoring shall be reported to ODEQ by December 31 of each year that had a sampling event.

(3) The monitoring schedule for chlorophyll-a may be changed after year 5 of the new FERC License by agreement between ODEQ and PacifiCorp to add, change, or delete the monitoring and reporting requirements above.

b. In the event the monitoring demonstrates an exceedance of the average chlorophyll-a action level of 0.015 mg/1 (based on a minimum of three samples collected over any three consecutive months at a representative location and from samples integrated from the surface to a depth equal to twice the secchi depth or the bottom, whichever is less), ODEQ may require PacifiCorp to undertake additional studies as reasonably necessary to describe the effects of the algae on water quality and beneficial uses, to determine the probable causes of the exceedance of the action level, and to develop a proposed control strategy, if warranted by adverse effects on beneficial uses.

9. Total Dissolved Gas

PacifiCorp shall implement the following Total Dissolved Gas Management Plan (TDGMP):

a. Lemolo No. 1 Powerhouse Tailrace

(1) PacifiCorp shall replace the Lemolo No. 1 powerhouse turbine by December 31, 2004, or the issuance of the new FERC License, whichever is later.

(2) Three months after the new turbine is installed and performance testing is complete and satisfactory (or at any later date approved by ODEQ), PacifiCorp shall study total dissolved gas (TDG) saturation levels in the powerhouse tailrace, in the forebay inlet, and in the North Umpqua River approximately one-quarter mile downstream from the powerhouse for a minimum of 72 hours in accordance with a study plan approved by ODEQ. The study shall measure TDG saturation levels at several power generation levels within the turbine's operating range and with the turbine's air admission system open and closed. PacifiCorp shall report the study results to ODEQ within three months of completing the study. If the study shows tailrace TDG saturation levels in excess of 110 percent, PacifiCorp shall, within three months of the submission of the report, submit to ODEQ proposed powerhouse operational procedures. These procedures shall specify

power generation operating levels and associated air admission system operations to eliminate (or, if elimination is not feasible, to minimize) tailrace TDG saturation levels in excess of 110 percent.

(3) If the measures required in the preceding paragraphs do not provide reasonable assurance that TDG saturation levels will meet the applicable TDG criterion, PacifiCorp will include in the expanded Lemolo No. 1 forebay (to be constructed by the fifth anniversary of the new FERC license under Section 11.5 of the North Umpqua Settlement Agreement) a shallow, rough surface at its entrance (or some other equally effective structure with the approval of ODEQ) to dissipate dissolved gases entering the forebay and powerhouse.

(4) If the expanded forebay structure is required to reduce TDG saturation levels in the powerhouse tailrace under the preceding paragraph, PacifiCorp shall, three months after the structure is installed and operational (or at any later date approved by ODEQ), study TDG saturation levels in the powerhouse tailrace, in the forebay inlet, in the penstock inlet, and in the North Umpqua River approximately one-quarter mile downstream from the powerhouse for a minimum of 72 hours in accordance with a study plan approved by ODEQ. The study shall measure TDG saturation levels at several power generation levels within the turbine's operating range and with the turbine's air admission system open and closed. PacifiCorp shall report the study results to ODEQ within three months of completing the study. If the study results do not provide reasonable assurance that the TDG criterion will be met, PacifiCorp shall, within six months of the submission of the report, provide a TDG management and compliance plan to ODEQ for approval. Upon ODEQ approval, PacifiCorp shall implement the TDG management and compliance plan.

b. Lemolo No. 2 Powerhouse Tailrace

(1) PacifiCorp shall reroute flows from the tailrace to Toketee lake in accordance with the North Umpqua Settlement Agreement Section 5.4. The design of the water conveyance system to Toketee lake must dissipate TDG before the tailrace water enters the system and must exclude fish from the tailrace and the system.

(2) PacifiCorp shall, within three months after the discharge is rerouted (or at any later date approved by ODEQ), study TDG saturation levels immediately below the discharge from the new water conveyance system and in the penstock inlet for a minimum of 72 hours in accordance with a study plan approved by ODEQ. The study shall measure TDG saturation levels at several power generation levels within the turbine's operating range and with the turbine's air admission system

open and closed. PacifiCorp shall report the study results to ODEQ within three months of completing the study. If the study results do not provide reasonable assurance that the TDG criterion will be met, PacifiCorp shall, within six months of the submission of the report, submit to ODEQ additional proposals for addressing the TDG criteria exceedances.

(3) As an interim measure, following the issuance of the new FERC License and until the powerhouse discharge is rerouted in accordance with the North Umpqua Settlement Agreement Section 5.4, PacifiCorp will visually assess fish for evidence of gas bubble trauma by examining fish collected in the Lemolo No. 2 full-flow reach. Fish will be collected using a variety of gear types (electrofishing, seining, and angling) to eliminate sampling bias.

Fish sampling will occur during the late summer, but no later than Labor Day, of the first calendar year after the new FERC License is issued for the Project. Sampling will occur during powerhouse operations that, based on previous TDG studies, are likely to cause elevated TDG saturation levels in the tailrace. The sample collection will last until at least 100 fish have been sampled or one week, whichever is shorter.

The visual assessment will follow the same protocols used on the Columbia River to assess gas bubble trauma, or as may be agreed upon by ODEQ and ODFW.

If, based on this monitoring and other available information, TDG saturation levels from the Lemolo No. 2 powerhouse are adversely affecting fish, PacifiCorp shall, following consultation with ODEQ and ODFW, submit a proposal to ODEQ within 3 months of the request to ensure either that the TDG criterion will be met or that adverse TDG effects on fish will be substantially eliminated, and implement measures as approved by ODEQ and ODFW.

c. Clearwater No. 2 Powerhouse Tailrace

(1) After the issuance of the new FERC License, PacifiCorp shall operate the Clearwater No. 2 powerhouse at a power generation level of at least 2 megawatts (MW) (when the powerhouse is operating) and shall operate at power generation levels of 10 MW or below only with the air admission system closed.

(2) PacifiCorp shall, within three months after the new FERC License is issued (or at any later date approved by ODEQ), study TDG saturation levels in the tailrace for a minimum of 72 hours in accordance with a study plan approved by ODEQ. The study shall measure TDG saturation levels at several power generation levels

within the turbine's operating range and with the turbine's air admission system open and closed. PacifiCorp shall report the study results to ODEQ within three months of completing the study. If the study shows tailrace TDG saturation levels in excess of 110 percent at the required operational levels, PacifiCorp shall within 3 months of the submission of the study report submit to ODEQ additional operational measures to eliminate or, if elimination is not feasible, to minimize tailrace TDG saturation levels in excess of 110 percent. If the proposed measures do not provide reasonable assurance that the TDG criterion will be met, PacifiCorp shall, within six months of the submission of the report, provide a TDG management and compliance plan to ODEQ for approval. Upon ODEQ approval, PacifiCorp shall implement the TDG management and compliance plan.

d. Stump Lake

PacifiCorp shall monitor TDG saturation levels at the bottom and surface of Stump Lake at the diversion dam during the first annual maintenance event at the Clearwater No. 1 powerhouse that is subject to North Umpqua Settlement Agreement Section 6.6. PacifiCorp shall collect a minimum of four samples, with a minimum of 30 minutes between each sample. PacifiCorp shall report the sample results to ODEQ within 30 days.

e. Fish Creek Development

During the first year of the new FERC License, while the dam is in spill condition (nominally April–June), PacifiCorp shall take spot measurements of TDG above the diversion dam, below the diversion dam, and in the bypass reach approximately every 500 feet below the dam until readings are within the applicable TDG criteria. PacifiCorp shall report the TDG measurements to ODEQ within 30 days of the measurements. If there are exceedances of the applicable TDG criteria, PacifiCorp shall provide a TDG management and compliance plan to ODEQ for approval within 90 days of the monitoring report. Upon ODEQ approval, PacifiCorp shall implement the TDG management and compliance plan.

10. Objectionable Discoloration; Scum and Oily Sleek; Spill and Waste Management

a. PacifiCorp shall implement its Project-specific Oil Spill Prevention, Control and Countermeasure (SPCC) Plan; Chemical Management System; and Waste Management Guidelines. The SPCC Plan, Chemical Management System, and Waste Management Guidelines shall be kept current.

b. In the event of a spill or release or threatened spill or release to state waters, PacifiCorp shall immediately implement the site's SPCC plan, modified SPCC plan, or other applicable contingency plan and notify the Oregon Emergency Response System (OERS) at 1-800-452-0311.

c. Project maintenance, including bridge maintenance that is PacifiCorp's responsibility under the North Umpqua Settlement Agreement Section 15.5, that could result in accumulations of solid waste or other residues must comply with ODEQ regulations and permit requirements. PacifiCorp employees and its contractors must receive instruction and training sufficient to notify designated PacifiCorp personnel to implement the applicable prevention and emergency response plans and to respond to situations that could result in unauthorized discharges to waters of the State.

d. PacifiCorp shall maintain records for the new license term of instances where the site-specific SPCC plan, Chemical Management System, and/or Waste Management Guidelines (or equivalent) is modified or the emergency response provisions of the plans are invoked. Documentation must include notices and reports of remediation activities and the results of the cleanup efforts or resource damages, if any.

11. Total Dissolved Solids

a. PacifiCorp shall monitor specific conductance hourly below Soda Springs Powerhouse at monitoring location (BLDG).

b. PacifiCorp shall report the results of monitoring for specific conductance for each water year to ODEQ by December 31.

c. PacifiCorp shall consult with ODEQ on the implementation of non-routine measures under the North Umpqua Settlement Agreement and this Certification that may threaten or cause significant short-term turbidity or increased erosion.

12. Toxic Substances

a. PacifiCorp shall follow the manufacturer's label instructions when applying herbicides within the Project. The applicator must have a current Pesticide Applicator License from the Oregon Department of Agriculture.

b. To the extent required by 40 CFR Part 112, PacifiCorp shall have a current Spill Prevention, Control, and Countermeasure Plan in effect at all times that has been prepared in accordance with the requirements of that part.

c. To the extent required by 40 CFR Part 761, PacifiCorp shall have a current and complete PCB Procedure in effect at all times that has been prepared in accordance with the requirements of that part.

13. § 401 Certification Modification

ODEQ, in accordance with OAR Chapter 340, Division 48, and, as applicable, 33 USC 1341, may modify this Certification to add, delete, or alter Certification conditions as necessary and feasible to address:

(a) adverse or potentially adverse Project effects on water quality or designated beneficial uses that did not exist or were not reasonably apparent when this Certification was issued;

(b) TMDLs (not specifically addressed above in these Certification Conditions);

(c) changes in water quality standards;

(d) any failure of Certification conditions to protect water quality or designated beneficial uses as expected when the Certification was issued; or

(e) any change in the Project or its operations that was not contemplated by this Certification that might adversely affect water quality or designated beneficial uses.

In accordance with 33 USC 1341, any added or altered condition shall, so long as it is in effect, become a condition of any federal license or permit that is thereafter issued for the Project; further, ODEQ may seek, in accordance with applicable law and procedures, to have any modified Certification condition incorporated into any existing federal license or permit for the Project.

14. Project Changes

PacifiCorp shall obtain ODEQ review and approval before undertaking any change to the Project that might significantly and adversely affect water quality (other than project changes required by or considered in this Certification), including changes to Project structures, operations, and minimum flows.

15. Project Repair or Maintenance

PacifiCorp shall obtain ODEQ review and approval before undertaking Project repair or maintenance activities that might significantly affect water quality (other than repair or

maintenance activities required by or considered in this Certification). ODEQ may, at PacifiCorp's request, approve specified repair and maintenance activities on a periodic or ongoing basis.

16. Project Inspection

PacifiCorp shall allow ODEQ such access as necessary to inspect the Project area and Project records required by this Certification at reasonable times as necessary to monitor compliance with Certification conditions.

17. Project Specific Fees

In accordance with ORS 543.080, PacifiCorp shall pay a project-specific fee for ODEQ's costs of overseeing implementation of this Certification. The fee shall be $10,000 (2002 dollars) annually, made payable to "State of Oregon, Department of Environmental Quality," and due on July 1 of each year after issuance of this Certification beginning on July 1, 2003. ODEQ shall credit against this amount any fee or other compensation paid or payable to ODEQ, directly or through other agencies of the State of Oregon, during the preceding year (July 1 to June 30) for ODEQ's cost of oversight. The fee shall expire five (5) years after the first July 1 following the issuance of the new FERC License, unless ODEQ terminates it earlier because oversight for purposes of § 401 certification is no longer necessary. One year before the expiration of the fee, or earlier if mutually agreed, ODEQ and PacifiCorp shall review the need, if any, to modify, extend, or terminate the fee, in accordance with ORS 543.080. PacifiCorp will pay any Project-specific fee required after such review, including any administrative or judicial review of the fee in accordance with ORS 543.080(6).

18. Monitoring

In undertaking monitoring required by this Certification, PacifiCorp shall exercise reasonable care in the selection, installation, maintenance, and use of monitoring devices. Providing such care is exercised, PacifiCorp shall not be responsible for missing or inaccurate monitoring data. ODEQ, however, may require PacifiCorp to undertake any additional reasonable monitoring that is needed to address the missing or inaccurate data.

References to monitoring locations in these Certification Conditions are identified at page xvii of the July 2, 2001 § 401 Application and in Exhibit D.

19. Posting of § 401 Certification

PacifiCorp shall post a copy of these certification conditions in a prominent location at the Toketee Control Center.

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Western Region Eugene Office
1102 Lincoln Street, Suite 210
Eugene, OR 97401
(541) 686-7838
FAX (541) 686-7551
TTY (541) 687-5603

June 6, 2005

Mr. James Wazlaw
Program Manager
PacifiCorp
825 NE Multnomah
Portland, OR 97232

Re: North Umpqua Hydroelectric Project (FERC No. 1927)
Revision of Temperature Management Plan and Stream Temperature Monitoring Plan

Dear Mr. Wazlaw:

ODEQ is replying to your letter of February 1, 2005 containing a proposal to modify the Temperature Management Plan and Stream Temperature Monitoring Plan for the North Umpqua Hydroelectric Project (Project). These plans are contained as Exhibit A and Exhibit B in the Clean Water Act Section 401 certification (certification) conditions that ODEQ issued on June 28, 2002.

The basis for your request is the revision to Oregon's water quality numerical criteria for stream temperature (OAR 340-041-0028 effective 12-09-2003). Stream temperatures for salmon and (native) trout rearing and migration now have a single biological criterion of 18.0°C seven-day-average maximum temperature (7DMX) as depicted on Figure 310A for the Umpqua basin.

Instream temperature monitoring data was provided during FERC relicensing and the July 2, 2001 application for certification. Review of this information indicates no exceedences of the 18.0°C criterion for Lemolo No. 1, Lemolo No. 2, Clearwater No. 1 and Toketee reaches during June and July.

PacifiCorp Proposal

The proposed revisions pertain to the Lemolo No. 1, Lemolo No. 2, Clearwater No. 1, and Toketee Project reaches of the North Umpqua River:

- Remove minimum instream flow requirements under the Temperature Management Plan (TMP) that apply to the Lemolo No. 1, Lemolo No. 2, and Clearwater No. 1 reaches for June and July, and the Toketee reach for July.
- Remove instream monitoring requirements under the Stream Temperature Monitoring Plan (STMP) during June and July.
- Remove the adaptive management requirement that addresses post-license exceedences.
- Housekeeping change to Table 1 of the TMP to reflect deletion of the applicable range of minimum instream flow for Lemolo No. 2 reach during June and July.

ODEQ Analysis

In conducting our review of your proposal we considered the following information.

The revised temperature rule at OAR 340-041-0028 that applies to the Umpqua Basin including Project-affected waters. The 18°C biological based criterion for salmon and trout rearing and migration applies to the Project in the four stream reaches: Lemolo No. 1, Lemolo No. 2, Clearwater No. 1 and Toketee contained in your proposal.

The certification permits ODEQ to make changes in the TMP or STMP in accordance with condition 1.e.:

> *"With the written approval of the ODEQ, PacifiCorp may cease implementing the TMP or STMP or may implement a modified TMP or STMP. ODEQ may approve cessation or modification if ODEQ determines that it will not impair the achievement of any TMDL or allocation for the Project for*

temperature and will not contribute to an exceedence of the applicable temperature criteria in waters affected by the Project."

Stream temperature data supporting PacifiCorp's application for certification (July 2, 2001) sufficiently indicates that the Project waters in Lemolo No. 1, Lemolo No. 2, Clearwater No. 1, and Toketee project reaches of the North Umpqua River meet the revised biological temperature criterion of 18°C for salmon and trout rearing and migration during June and July.

In lieu of an approved TMDL for the North Umpqua basin, we further conducted a computer analysis of thermal effects within the Project and downstream of the Project to evaluate the Natural Thermal Potential (OAR 340-041-0028(8). This modeling demonstrates implementation of the minimum bypass reach flows of the June 13, 2001 Settlement Agreement will attain the biological temperature criteria in the North Umpqua River upstream of Steamboat Creek and the natural thermal potential downstream of Steamboat Creek. Impoundments were not modeled. The water temperature through the powerhouses were left at their current conditions during all computer simulations.

Under conditions 2.a. and 9.b. of the certification, Lemolo No. 2 tailrace will be rerouted in accordance with the Settlement Agreement Section 5.4. Other tailrace discharges that may exceed the thermal human use allowance will be addressed in the TMDL as provided in OAR 340-041-0028(12)(b)(B).

As you know, PacifiCorp is currently in the early design phase to meet Settlement Agreement Section 5.4 requirements. ODEQ and other state and federal agencies are collaborating with PacifiCorp. Among the considerations being discussed in this forum is the economic and technical feasibility of meeting Section 5.4 without undesirable consequences to existing stillwater habitat, water quality, aquatic resources, existing desirable vegetation, aesthetics, recreational uses and other factors. To the extent that the approved design for Settlement Agreement Section 5.4 affects the TMP and STMP, or is subject to TMDL allocations, ODEQ will make appropriate revisions to the certification.

We also considered other provisions of the temperature rule including but not limited to:

- OAR 340-041-0028(2) Policy. Acceptance of the proposed TMP revisions is consistent with the policy of the Environmental Quality Commission to protect aquatic ecosystems from adverse warming (and cooling) caused by anthropogenic activities.
- OAR 340-041-0028(11) Protecting Cold Water. The Lemolo No. 1, Lemolo No. 2, Clearwater No. 1, and Toketee project reaches are not designated critical habitat under provisions of the Endangered Species Act. Without the ESA designation and other findings required by the rule, the cold water protection narrative criteria is not applicable.

Action

ODEQ is revising Exhibit A – Temperature Management Plan, and Exhibit B – Stream Temperature Monitoring Plan of the June 28, 2002 certification as proposed by PacifiCorp.

The revised Exhibit A and Exhibit B are attached to this letter.

The effective date of the revised Exhibit A and Exhibit B is the date of this letter.

PacifiCorp is to post a copy of the revised Exhibit A and Exhibit B at the Toketee Control Center in accordance with certification condition 19.

Sincerely,

Kerri Nelson, Administrator
Western Region

Attachments

Cc: Resource Coordination Committee
FERC
Service List for FERC Project No. 1927
Kurt Burkholder, Oregon Department of Justice
Marilyn Fonseca, ODEQ
Paul Heberling, ODEQ

EXHIBIT A
(Revised June 2005)

Temperature Management Plan (TMP)

The following TMP has been approved by ODEQ in conjunction with the Certification. Temperature monitoring requirements are in Exhibit B.

1. In accordance with the schedule set forth in Table 1 below, PacifiCorp shall reduce Project diversions to maintain at least the minimum instantaneous instream flows specified in the table within the bypass reaches immediately downstream of the diversion dams:

Table 1, Minimum Bypass Reach Flows, Cubic Feet Per Second (CFS)

	Lemolo No. 1	*Lemolo* No. 2	*Clearwater* No. 1	*Clearwater* No. 2	*Toketee*	Fish Creek	Slide Creek	Soda Springs	Deer Creek
January			30						Full Flow
February			30						Full Flow
March			30						Full Flow
April									Full Flow
May						50/130	80/240		Full Flow
June						80/130	80/240		Full Flow
July						80/130	80/240		Full Flow
August						80/130	80/240		Full Flow
September						80/130	80/240		Full Flow
October			30						Full Flow
November			30						Full Flow
December			30						Full Flow
KEY	x/y means flows before (x) and after (y) anadromous fish passage facilities are provided at Soda Springs Dam.								
	Minimum bypass reach flows are effective December 31, 2005 (if the new FERC License has been issued) or by the first anniversary of the new FERC License, whichever is earlier. Post-passage minimum flows in the Fish Creek and Slide Creek bypass reaches are effective on the seventh anniversary of the new FERC License if fish passage facilities have been provided at Soda Springs Dam in accordance with the North Umpqua Settlement Agreement. No diversion of Deer Creek is allowed after the first anniversary of the new FERC License; except that PacifiCorp may divert water from Deer Creek up to the OWRD water right in Deer Creek in order to aid fish salvage operations in the Lemolo No. 2 power canal when the Lemolo No. 2 powerhouse is shut down, as set forth in the North Umpqua Settlement Agreement Section 9.5.								

2. Requirement deleted by revision approved by ODEQ June 2005.

3. Adaptive Management.

a. Requirement deleted by revision approved by ODEQ June 2005.

b. If the temperature monitoring reports submitted by PacifiCorp to ODEQ pursuant to Exhibit B show exceedences of applicable numeric criteria in the Fish Creek, Slide Creek, or Soda Springs bypass

reach, PacifiCorp shall by the following May 1 prepare and submit to ODEQ a report for the reach that evaluates the additional measures, if any, that PacifiCorp could feasibly implement to achieve the applicable numeric criterion. If, based on the report, ODEQ determines that there are additional, feasible temperature reduction measures that PacifiCorp could implement, PacifiCorp shall, subject to the limits set forth in Exhibit C of this Certification, implement the measures on a feasible schedule approved by ODEQ. After an initial report under this section, PacifiCorp shall submit this report to ODEQ every fifth year thereafter on May 1 until the applicable numeric criteria have been met within the reach for three consecutive years before the date of the report.

EXHIBIT B
(Revised June 2005)

Stream Temperature Monitoring Plan (STMP)

PacifiCorp shall prepare and implement a STMP by no later than six months prior to the effective date of the initial minimum instream flows identified in Exhibit A. The STMP, which PacifiCorp may modify with the written approval of ODEQ, shall be consistent with the following minimum provisions:

a. Quality Assurance/Quality Control (QA/QC) Plan

The STMP shall include a QA/QC plan that is consistent with applicable ODEQ Laboratory Guidance, unless otherwise approved by ODEQ.

b. Temperature Monitoring Devices.

The accuracy of temperature recorders shall be tested before and after field deployment to insure that they are operating within their designated range of accuracy. In addition to pre- and post-deployment checks, the temperature recorders shall be audited monthly during the field measurement period. The pre- and post-deployment and monthly field audit checks shall be made using an NIST (National Institute of Standards and Technology) traceable (calibrated and maintained) thermometer accurate to ± 0.2°C., or better, that has been checked against an NIST traceable thermometer.

c. Frequency

Hourly measurements of temperature shall be recorded each year during the period indicated at the sites listed below.

d. Monitoring Locations

The site codes used here correspond to those described in the Application for Certification Pursuant to Section 401 of the Federal Clean Water Act, Volume I, page xvii (PacifiCorp July 2, 2001).

(1) Requirement deleted by revision approved by ODEQ June 2005.

(2) Requirement deleted by revision approved by ODEQ June 2005.

(3) Requirement deleted by revision approved by ODEQ June 2005.

(4) Clearwater No. 1 bypass reach: CLR1B (December 1-February 28 for the first year of the new FERC license).

(5) Requirement deleted by revision approved by ODEQ June 2005.

(6) Fish Creek bypass reach: FISHT, FISHB (May 1-September 30)

(7) Slide Creek bypass reach: SLIDT, SLIDB (May 1-September 30)

(8) Soda Springs bypass reach: SODAB (May 26-September 30)

(9) Deer Creek mouth: DEERM (June 1-July 31 in the year following modification to the diversion as set forth in the North Umpqua Settlement Agreement Section 10.4).

e. Instream Flow Measurement

Instream flow is to be measured and recorded hourly in accordance with the North Umpqua Settlement Agreement Section 5.5.

f. Temperature Monitoring Reports

PacifiCorp shall provide ODEQ with annual STMP monitoring reports for the preceding water year (October 1-September 30). The annual STMP monitoring reports shall include the required hourly temperature and instream flow data (as applicable), pre- and post-deployment instrument calibration data, and monthly field audit data for the given year. The STMP monitoring reports shall be submitted to ODEQ (Western Region, Medford office) by December 31.

ATTACHMENT 4

NORTH UMPQUA PROJECT

FERC Order Approving Revised Flow Monitoring Plan

UNITED STATES OF AMERICA 123 FERC ¶ 62,191
FEDERAL ENERGY REGULATORY COMMISSION

PacifiCorp Energy Project No. 1927-102

ORDER APPROVING REVISED FLOW MONITORING PLAN UNDER ARTICLE 403

(Issued June 4, 2008)

On February 27, 2008, PacifiCorp Energy, licensee, filed a revised Flow Monitoring Plan (FMP) for the North Umpqua Hydroelectric Project for Commission approval. The project consists of eight developments and is located on the North Umpqua River and two of its tributaries, the Clearwater River and Fish Creek, in Douglas County, in southwestern Oregon.

BACKGROUND

License Article 403 requires the licensee to file, for Commission approval, a plan to monitor instream flows as specified in Settlement Agreement Condition No. 5.5. The plan shall include: (1) a schedule for installing all flow-measuring devices, resuming operation of the existing gage at Boulder Creek, posting real-time flow data on the Internet for the Boulder Creek gage and all other project gages, and providing notice to the public of scheduled maintenance releases at the project developments; (2) the proposed locations of the flow-measuring devices; and (3) the method of flow data collection, and provisions for providing data to the regulatory agencies in a timely manner.

The licensee shall prepare the plan after consultation with the U.S. Geological Survey (USGS), Forest Service (FS), National Marine Fisheries Service (NMFS), U.S. Fish and Wildlife Service (USFWS), Oregon Department of Fish and Wildlife (ODFW), Oregon Department of Environmental Quality (ODEQ), Oregon Water Resources Department (OWRD), and American Whitewater Affiliation (AWA).

The original FMP, pursuant to Article 403 and Settlement Agreement Condition 5.5 of the November 18, 2003, Order Approving Settlement and Issuing New License[1] for

[1] 105 FERC ¶ 61,237 (2003).

the North Umpqua Hydroelectric Project, was approved by a Commission order issued on August 25, 2004.[2]

LICENSEE'S REVISED FMP

This is the first revision of the FMP originally approved by the agencies and the Commission in 2004. Revisions to the FMP reflect the project's operational experience gained, since 2004, of changes and upgrades to gage locations and equipment systems, and the addition of detailed calculation and reporting methods developed to assess and report flow and ramping compliance.

The licensee's revised FMP describes in great detail the following items:

1. Bypass Reach Gages - including station location and installation, data acquisition and rating tables, station maintenance, data management and reporting, and schedule.

2. Other Gages - including long-term gages and short-term gages.

3. Reporting Flow and Ramping Events - including those related to flow and ramping restrictions and planned maintenance.

Overall reporting requirements are summarized for all gage sites in Table 2 in the revised FMP.

CONSULTATION AND DISCUSSION

The filed revised FMP has been developed related to reporting of minimum instream flows and ramp rates to document compliance following installation and automation of gaging stations throughout the project area. Modifications to the FMP procedures and practices were agreed upon in consultation with the resources agencies during technical working group meetings. The revised plan was prepared, based on mutual agreement by the resources agencies.

The revised FMP meets the requirements of license Article 403 to monitor instream flows as specified in Settlement Agreement Condition No. 5.5 of the November 18, 2003, Order Approving Settlement and Issuing New License, and is approved by this order.

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[2] 108 FERC ¶ 62,199 (2004).

The Director orders:

(A) The licensee's revised Flow Monitoring Plan for the North Umpqua Hydroelectric Project filed February 27, 2008, is approved.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of this order, pursuant to 18 C.F.R. § 385.713.

Mohamad Fayyad
Engineering Team Lead
Division of Hydropower Administration
and Compliance

Document Content(s)

ATTACHMENT 5

NORTH UMPQUA PROJECT

Stream Temperature Monitoring Plan Report

NORTH UMPQUA HYDROELECTRIC PROJECT, FERC NO. 1927

STREAM TEMPERATURE MONITORING PLAN REPORT

WATER YEAR 2007

Prepared by
PacifiCorp Energy
Toketee, Oregon

December 29, 2008

Introduction

PacifiCorp's 401 Water Quality Certification (Certification) for the North Umpqua Hydroelectric Project includes a Temperature Management Plan (TMP) which specifies higher instream flow releases by 2005, and a Stream Temperature Monitoring Plan (STMP) beginning in 2006 to describe the temperature regimes resulting from the higher instream flows. The STMP specifies the instream temperature monitoring reasonably needed to determine (a) whether the temperature criteria continue to be exceeded in waters of the North Umpqua Subbasin affected by the Project, (b) the success of the TMP in reducing the Project's contribution to any continued exceedances of the criteria, and (c) any additional measures that may be needed to reduce the Project's contribution to exceedances of the criteria.

The STMP specifies that PacifiCorp will provide ODEQ with annual STMP reports for the preceding Water Year (WY, October 1-September 30). The annual STMP monitoring reports shall include the required hourly temperature and instream flow data (as applicable), pre- and post-deployment instrument calibration data, and monthly field audit data for the given year. The STMP monitoring reports shall be submitted to ODEQ (Western Region, Medford office) by December 31, or 90 days after USGS publishes the relevant flow data (consistent with the Flow Monitoring Plan). Because it takes USGS nearly a year to check, revise, and publish gage station records from the North Umpqua Hydroelectric Project, these STMP reports are typically provided in the year following the actual data collection.

The first STMP report, for WY 2006, was submitted in December 2007. This report documents the results of the second year of STMP monitoring, from December 2006 through September 2007.

Methods

Flow into the upstream end of the study reaches was monitored via the continuous-recording stream gage network in accordance with the Flow Monitoring Plan. Stage was measured every 15-minutes, values converted to flow via the rating table, and these flow values averaged for each hour.

Temperature was measured hourly by Onset StowAway® Tidbit® Model TBI32-05+37 temperature loggers which were calibrated, deployed, and field-audited according to the STMP. Seven locations were monitored during WY 2007, including the same five sites monitored during WY 2006 plus the downstream end of the Clearwater No. 1 bypass reach (CLR1B) during winter, and Deer Creek near its mouth (DEERM) during summer (Table 1).

Table 1. WY 2007 STMP monitoring location codes (consistent with the 401 WQ Certification), descriptions, and monitoring period.

Code	Location description	Start date	End date
FISHB	Fish Creek bypass at downstream end.	May 1	Sep 30
FISHT	Fish Creek bypass at upstream end.	May 1	Sep 30
SLIDB	Slide Creek bypass at downstream end.	May 1	Sep 30
SLIDT	Slide Creek bypass at upstream end.	May 1	Sep 30
SODAB	Soda Springs bypass reach	May 1 (May 26 required)	Sep 30
DEERM	Deer Cr near the mouth	June 1	August 31
CLR1B	Clearwater No. 1 bypass reach, downstream end	Dec 1	Feb 28

Results

The official published flow data for this monitoring period is being reported in the Flow Monitoring Plan Annual Report for WY 2007, in progress. Preliminary data are summarized here. Hourly flow was maintained above the new minimum instream stream flow (ISF) requirements during the study period (Figure 1), with the following exceptions:

In Soda Springs bypass, flow ranged from 272 to 982 cfs, dropping slightly below the 275 cfs ISF during rare short periods. Flow was much higher than normal from June 4 through September because the diversion was shutdown to allow for construction of the tailrace barrier at Soda Springs powerhouse.

In Slide bypass, flow ranged from 67 to 1,140 cfs. Flow less than the 80 cfs ISF occurred several times for several hours due to retroactive rating changes and equipment problems. Flows were higher than normal during June 10 to July 6 when the diversion was shutdown to allow for construction of a new instream flow gate system.

In Fish Cr bypass, flow ranged from 32 to 219 cfs. When natural inflow approached the 80 cfs ISF in mid-July, diversion was ceased. As natural inflows continued to recede, flow in the bypass reach naturally dropped below 80 cfs for the duration of the summer except during occasional brief precipitation events.

In the Clearwater No. 1 bypass reach, flow ranged from 41 to 94 cfs throughout the December 2006 to February 2007 study period, never going below the 40 cfs ISF. The highest flows occurred during a mid-December precipitation event. Deer Creek is not gaged, but since the diversion was permanently shut in October 2006, there has been no diversion from Deer Creek so the 2007 monitoring reflects its natural flow regime.

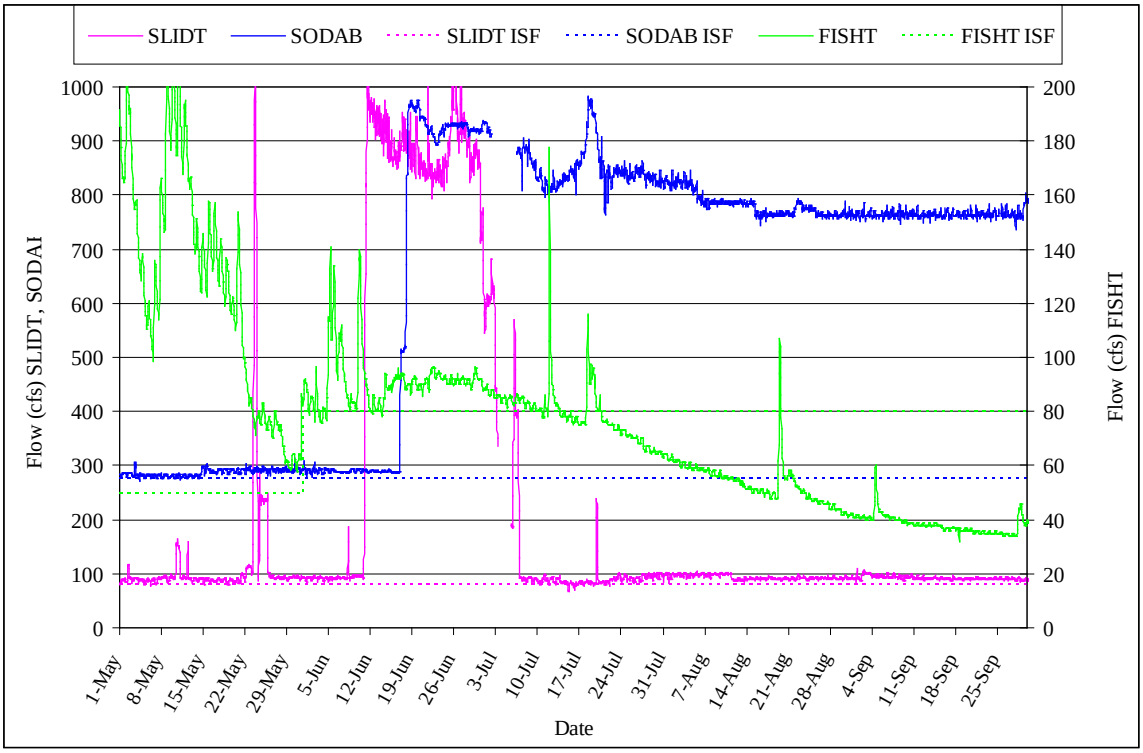


Figure 1. Hourly values of flow measured at the upstream end of each bypass reach (nearest the referenced STMP site) relative to the required instream flow (ISF) during the summer study period.

Calibrations indicated that all thermographs performed within accuracy tolerances for Level A data quality (Table 1). Field audits indicated that all thermographs performed within precision tolerances for Level A data quality (Table 2). All hourly data passed verification and validation review, and none were deleted. Consequently, no adjustments were warranted or made to raw thermograph data.

Table 1. Calibration results (temperature, °C) for pre-deployment (top) and post-deployment (bottom) periods, with a high and low temperature during per period.

Date	NIST mean	Logger mean	Diff	NIST mean	Logger mean	Diff	Mean diff	Site
26-Oct-06	13.1	13	0.1	0.1	0.1	0	0.05	CLR1B
30-Apr-07	23.6	23.7	-0.1	5	5.2	-0.2	-0.15	FISHT
30-Apr-07	23.6	23.6	0	5	5.2	-0.2	-0.1	FISHB
30-Apr-07	23.6	23.6	0	5	5.1	-0.1	-0.05	SLIDT
30-Apr-07	23.6	23.6	0	5	5	0	0	SLIDB
30-Apr-07	23.6	23.7	-0.1	5	5.2	-0.2	-0.15	SODAB
30-Apr-07	23.6	23.7	-0.1	5	5.2	-0.2	-0.15	DEERM
4/3/07	0.3	0.5	-0.2	18.1	18.5	-0.4	-0.3	CLR1B
10/9/07	19.6	19.7	-0.1	3.2	3.5	-0.3	-0.2	FISHT
10/9/07	19.6	19.8	-0.2	3.2	3.5	-0.3	-0.25	FISHB
10/9/07	19.6	19.6	0	3.2	3.4	-0.2	-0.1	SLIDT
10/9/07	19.6	19.6	0	3.2	3.4	-0.2	-0.1	SLIDB
10/9/07	19.6	19.7	-0.1	3.2	3.4	-0.2	-0.15	SODAB
10/9/07	19.6	19.7	-0.1	3.2	3.5	-0.3	-0.2	DEERM

Table 2. Difference between temperature (°C) measured by NIST-traceable thermometer vs. thermograph during field audits in 2007 (negative values indicate the thermograph recorded higher values than the NIST thermometer).

Site:	FISHT	FISHB	SLIDT	SLIDB	SODAB	DEERM	CLR1B
Dec							-0.3
Jan							-0.1
Feb							-0.1
May	-0.1	0.0	0.1	0.1	0.0		
Jun	-0.2	0.1	0.0	0.1	0.1	0.1	
Jul	-0.1	-0.2	-0.2	0.0	0.2	0.1	
Aug	0.2	0.0	0.2	0.1	0.1	0.0	
Sep	0.1	0.1	0.1	0.0	0.0		
Average:	0.0	0.0	0.0	0.1	0.1	0.1	-0.2

Maximum unit temperatures were recorded during two broad periods in July (Appendix 2), and ranged from 13.9°C at SLIDT to 19.3°C at FISHB (also 18.2°C at FISHT, 16.7°C at SLIDB, 14.9°C at SODAB, and 17.4°C at DEERM). Minimum temperature at CLR1B was 0.5°C which occurred during two brief cold snaps, one in mid-December and the other in mid-January (Appendix 2).

To compare with applicable numeric criteria, the 7-day moving average of daily maximum temperature (7dAvgMax) was calculated using the ODEQ "date centering" method. For all sites, the 7dAvgMax is plotted with raw hourly temperatures and field audit temperatures in Appendix 2. The maximum 7dAvgMax (Table 3) met the applicable temperature criteria during the entire monitoring period at all sites except FISHB. At FISHB, the 7dAvgMax was >18°C from 7/7-7/15 and 7/24-8/1 (Appendix 2), but never exceeded 18.6°C.

Table 3. Maximum 7dAvgMax temperature (°C) for each site during applicable periods in 2007, and minimum 7dAgvMin temperature (°C) for CLRB1.

Site	May 1 - June 15	June 16 - August 31	September 1-30	Dec 1-Feb 28
FISHT		17.6		
FISHB		18.6		
SLIDT		13.7		
SLIDB		16.2		
SODAB	12.9	14.5	12.9	
DEERM		16.8*		
CLR1B				1.2

* actually calculated for Jun 1-August 31

Discussion

As in 2006, the only reach which exceeded the existing temperature criteria is FISHB. In 2006, there was some water (about 2 cfs) still being diverted when the 7dAvgMax temperature exceeded 18°C, and the proposed measure was to cease diversion. In 2007,

diversion was ceased on July 6, and yet starting July 7 the 7dAvgMax still exceeded 18°C, and for a longer period of time than in 2006 (18 days vs. 2 days). Flow at the upstream end of Fish Creek bypass reach differed each year during these temperature events (80 cfs in 2006, between 60 and 158 cfs in 2007). During 2007, water temperatures warmed during one precipitation event yet cooled for several days during another longer event (Figure 2). This suggests that these water temperature events are driven more by ambient and weather conditions than by flow itself.

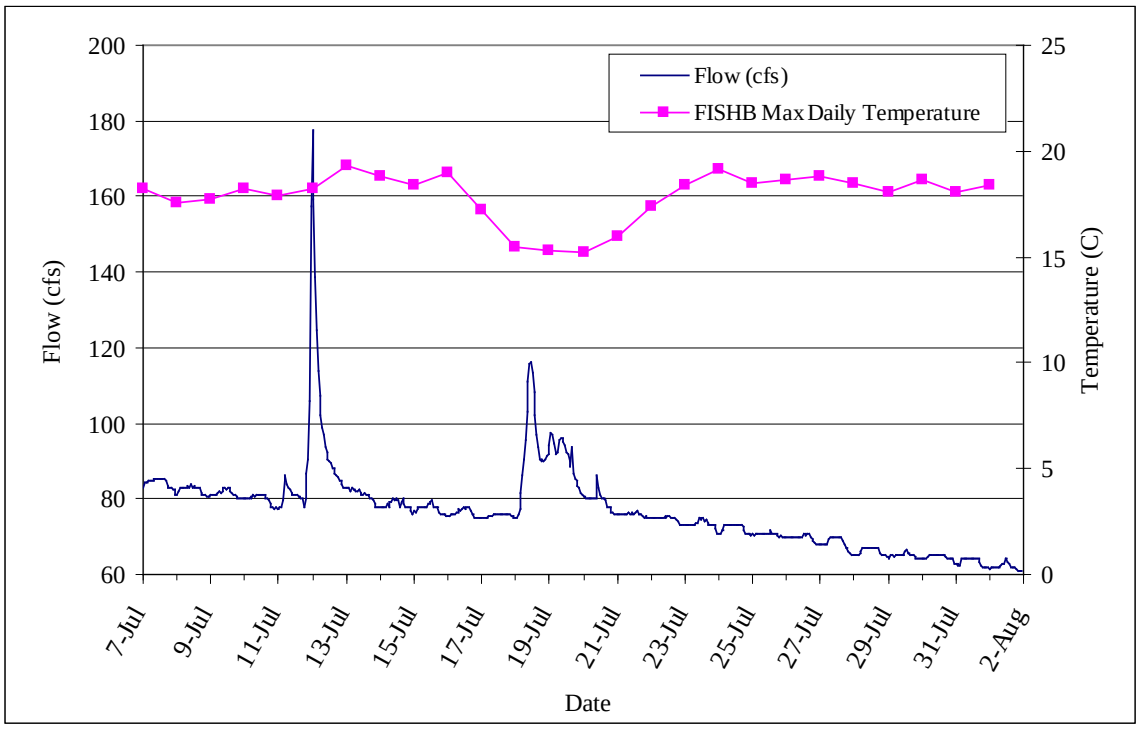


Figure 2. Flow at upstream end of Fish Creek bypass reach and maximum daily water temperature at FISHB during the period when diversion had ceased yet the 7-dAvgMax temperature exceeded 18°C.

The most obvious difference between temperature records at FISHT and FISHB in 2006 and 2007 is that water temperatures tend to cool substantially more each night at FISHT, perhaps moderating daily insolation and producing cooler peak temperatures. Warm summer water temperatures at FISHB may be influenced by the insulation of the deep canyon and canopy, and/or the contributions of the several tributaries that enter Fish Creek between these sites (e.g. Slipper, Camas, Pie creeks).

Further Modifications

As in 2006, the only reach with any indication of temperature exceedance, and hence consideration of further modification, is the Fish Creek bypass reach. During 2007, PacifiCorp had ceased diversion from Fish Creek prior to the temperature exceedances occurring, consequently the reach was unaffected by diversion and the exceedances occurred during natural flow conditions. No further modifications of the hydropower project or its operations are considered useful or feasible.

Conclusion

Overall, this study provides evidence that the TMP and new instream flows are indeed providing water temperature conditions that meet ODEQ criteria. The 2007 monitoring documented compliance in two new reaches: Deer Creek and Clearwater No. 1 bypass reach. Monitoring in these two reaches was indicated for only one year, and will hence be terminated unless directed differently from ODEQ. Among the remaining study reaches, only the downstream end of the Fish Creek bypass reach exceeds numeric criteria, but in 2007 this exceedance occurred even after PacifiCorp had ceased diversion, and so this exceedance is considered an event beyond PacifiCorp's control. PacifiCorp plans to repeat this STMP monitoring within the five primary reaches during 2008 to build a 3-year data set for complete review by ODEQ.

Appendix 1

Stream Temperature Monitoring Plan

North Umpqua Hydroelectric Project

Prepared by
PacifiCorp Energy
Toketee, Oregon

December 2006

PacifiCorp Energy's 401 Water Quality Certification (Certification) for the North Umpqua Hydroelectric Project requires a Stream Temperature Monitoring Plan (STMP) approved by the Oregon Department of Environmental Quality (ODEQ) for implementation during the first year of new instream flow releases (2006). The STMP specifies the instream temperature monitoring reasonably needed to determine (a) whether the temperature criteria continue to be exceeded in waters of the North Umpqua Subasin affected by the Project, (b) the success of the Temperature Management Plan in reducing the Project's contribution to any continued exceedances of the criteria, and (c) any additional measures that may be needed to reduce the Project's contribution to exceedances of the criteria.

To insure consistency and accuracy, this plan is derived from and structured consistently with the guidance and requirements in the Certification, Section 1b, Exhibit B.

1 Quality Assurance/Quality Control (QA/QC)

The goal for data acquisition will be achieving "Level A" data quality (Data Quality Matrix, DEQ04-LAB-0003-GD, Version 3.0), with temperature accuracy <= +/-0.5 °C, and precision <= +/- 1.5 °C (ODEQ 2003). The accuracy of temperature recorders will be tested before and after field deployment to insure that they are operating within their designated range of accuracy. The precision of the temperature recorders will be verified by field-auditing monthly during the field measurement period. The pre- and post-deployment and monthly field audit checks will be made using an NIST (National Institute of Standards and Technology) traceable (calibrated and maintained) thermometer accurate to ± 0.2°C.

Thermograph use and QA/QC procedures will be consistent with those used by ODEQ for similar monitoring throughout Oregon, and described in the "Temperature Loggers" section of the Watershed Assessment Mode of Operations Manual (ODEQ 2003).

2 Temperature Monitoring Devices

Onset StowAway® Tidbit® Model TBI32-05+37 temperature loggers will be deployed *in situ* to record temperature. The manufacturer indicates these loggers have a recording range of -4 to 37 °C, accuracy of 0.23 °C, and resolution of 0.17 °C.

3 Schedule and Frequency

Hourly measurements of temperature will be recorded during the period indicated at the sites listed below (Table 1). Monitoring will occur during the periods and years identified in Table 2. Most monitoring will begin in 2006, the first year during which higher minimum flows will be provided in most bypass reaches, per the Settlement Agreement and Certification.

4 Monitoring Locations

The location codes used here (Table 1) are consistent with those used in the Certification.

Table 1. Water quality monitoring locations and codes.

Code	Location description
CLR1B	Clearwater No. 1 bypass at downstream end.
DEERM	Deer Creek near mouth
FISHB	Fish Creek bypass at downstream end.
FISHT	Fish Creek bypass at upstream end.
SLIDB	Slide Creek bypass at downstream end.
SLIDT	Slide Creek bypass at upstream end.
SODAB	Soda Springs bypass at downstream end.

Table 2. Sites and dates for hourly temperature monitoring.

Location	Start date	End date	Year
CLR1B	Dec 1	Feb 28	2006/7 (first winter after new flows)
DEERM	June 1	July 31	2007 (first summer after diversion removed)
FISHB	May 1	Sep 30	2006*
FISHT	May 1	Sep 30	2006*
SLIDB	May 1	Sep 30	2006*
SLIDT	May 1	Sep 30	2006*
SODAB	May 26	Sep 30	2006*

*consult with DEQ after each report to determine if additional monitoring is warranted

5 Instream Flow Measurements

Hourly measurements of instream flow at bypass reach gaging stations will be provided annually as described in the Flow Monitoring Plan (February 2004). Deer Creek is ungaged, so no flow records are available for that site; instead, flow will be directly measured at the beginning and end of the monitoring period.

6 STMP Reports

PacifiCorp Energy will provide ODEQ with annual STMP reports for the preceding water year (October 1-September 30). The annual STMP monitoring reports will include hourly temperature and instream flow data for the associated bypass reach, pre- and post-deployment instrument calibration data, and monthly field audit data for the given year. Flow data will be USGS-published records to most accurately describe the flow conditions related to temperature effects. The STMP reports will be submitted to ODEQ (Western Region, Medford office) by December 31, or within 90 days of USGS publication of the relevant flow data (consistent with the Flow Monitoring Plan).

If monitoring indicates that water temperature exceeds the applicable numeric criteria in any reach, PacifiCorp Energy will provide by May 1 (or, four months after submission of the STMP report, whichever is later) in the first year (and at 5-year intervals as necessary thereafter) a report that evaluates any additional measures that PacifiCorp Energy could feasibly implement to achieve the numeric criterion, per the TMP.

7 Conclusion of STMP

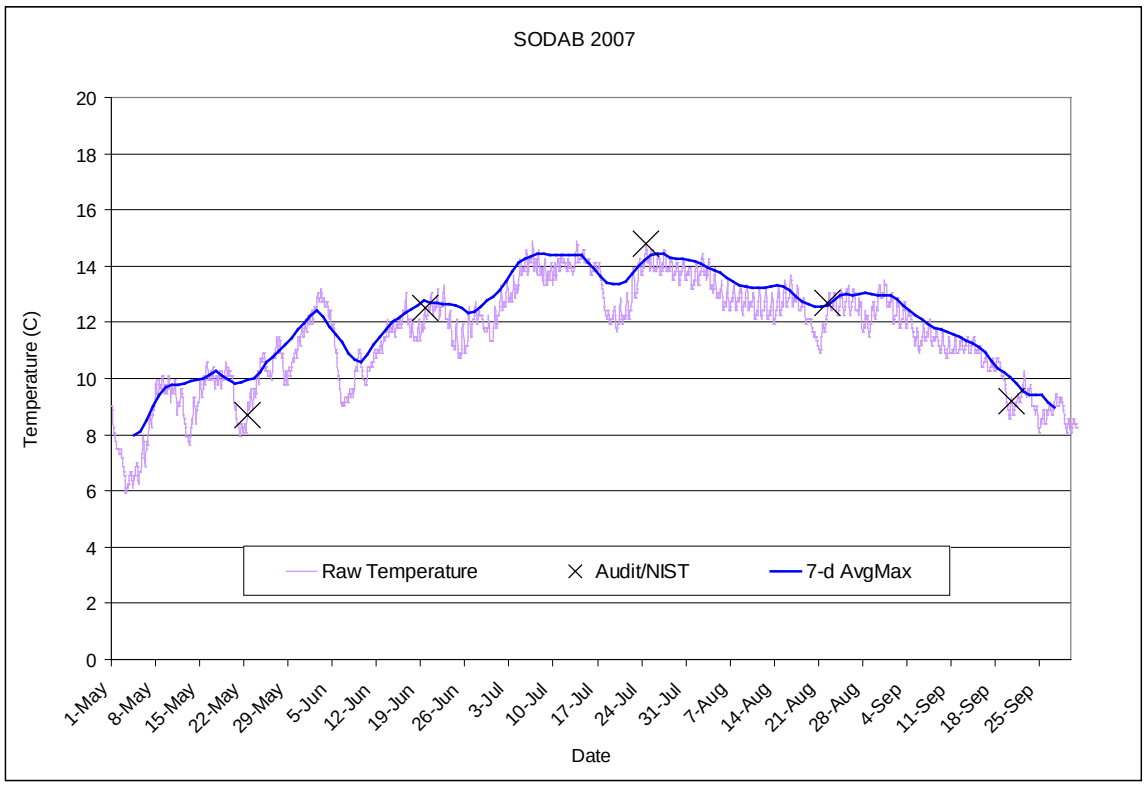
Monitoring and reporting will cease upon agreement of ODEQ and PacifiCorp Energy, subject to the following limits. Monitoring will not be required for any reach beyond the time at which applicable numeric criteria are met for three consecutive years. If the applicable numeric criterion is exceeded in any reach, but there are no additional measures that PacifiCorp Energy can feasibly implement to achieve the criterion (e.g. Fish Creek is at natural flow), additional monitoring in that reach will not be required.

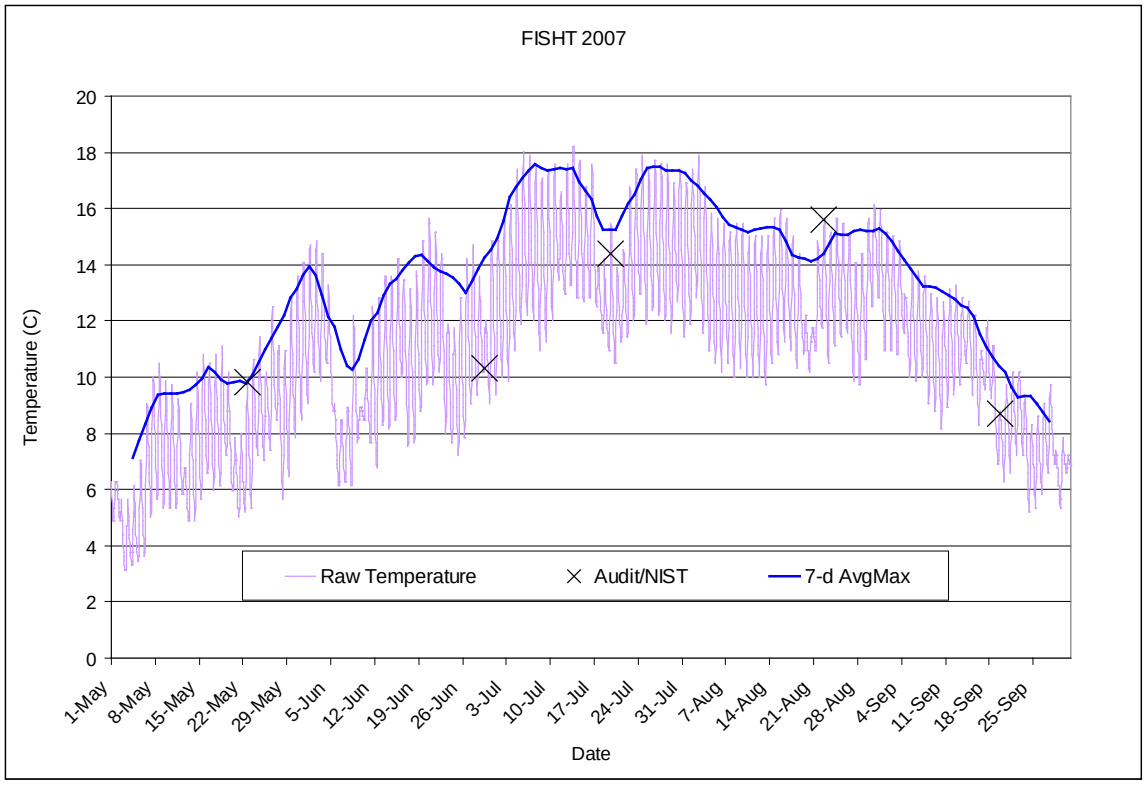
8 References

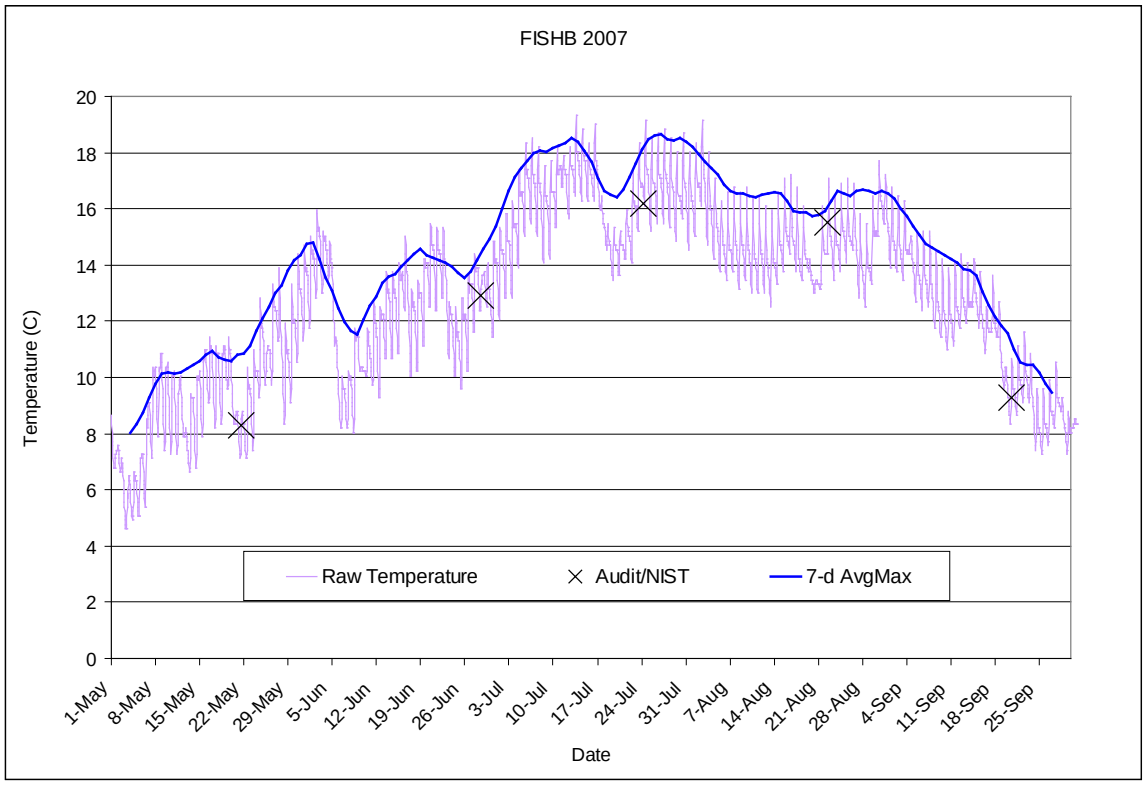
ODEQ, 2003. Watershed Assessment Mode of Operations Manual, Rev 3.1, 03-LAB-0036-SOP; pp 176-190.

Appendix 2

Charts of raw temperature (°C) data, 7-day average maximum temperature (7-d AvgMax), and field audit measurements with an NIST-traceable thermometer (Audit/NIST) for each STMP site.




FISHT 2007
Temperature (C)
20
18
16
14
12
10
8
6
4
2
0
1-May
8-May
15-May
22-May
29-May
5-Jun
12-Jun
19-Jun
26-Jun
3-Jul
10-Jul
17-Jul
24-Jul
31-Jul
7-Aug
14-Aug
21-Aug
28-Aug
4-Sep
11-Sep
18-Sep
25-Sep
Date
Raw Temperature
Audit/NIST
7-d AvgMax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Temperature (C)
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18
16
14
12
10
8
6
4
2
0
1-May
8-May
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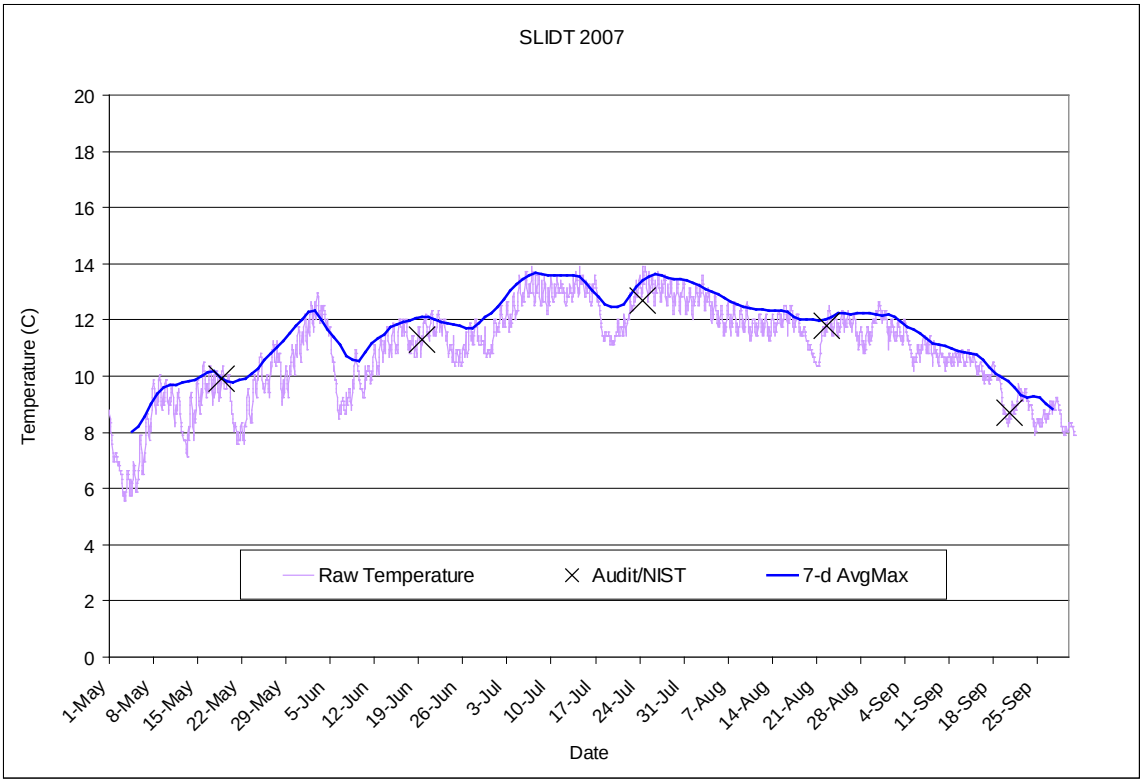
29-May
5-Jun
12-Jun
19-Jun
26-Jun
3-Jul
10-Jul
17-Jul
24-Jul
31-Jul
7-Aug
14-Aug
21-Aug
28-Aug
4-Sep
11-Sep
18-Sep
25-Sep
Date
Raw Temperature
Audit/NIST
7-d AvgMax


SLIDT 2007
Temperature (C)
20
18
16
14
12
10
8
6
4
2
0
Raw Temperature
Audit/NIST
7-d AvgMax
1-May
8-May
15-May
22-May
29-May
5-Jun
12-Jun
19-Jun
26-Jun
3-Jul
10-Jul
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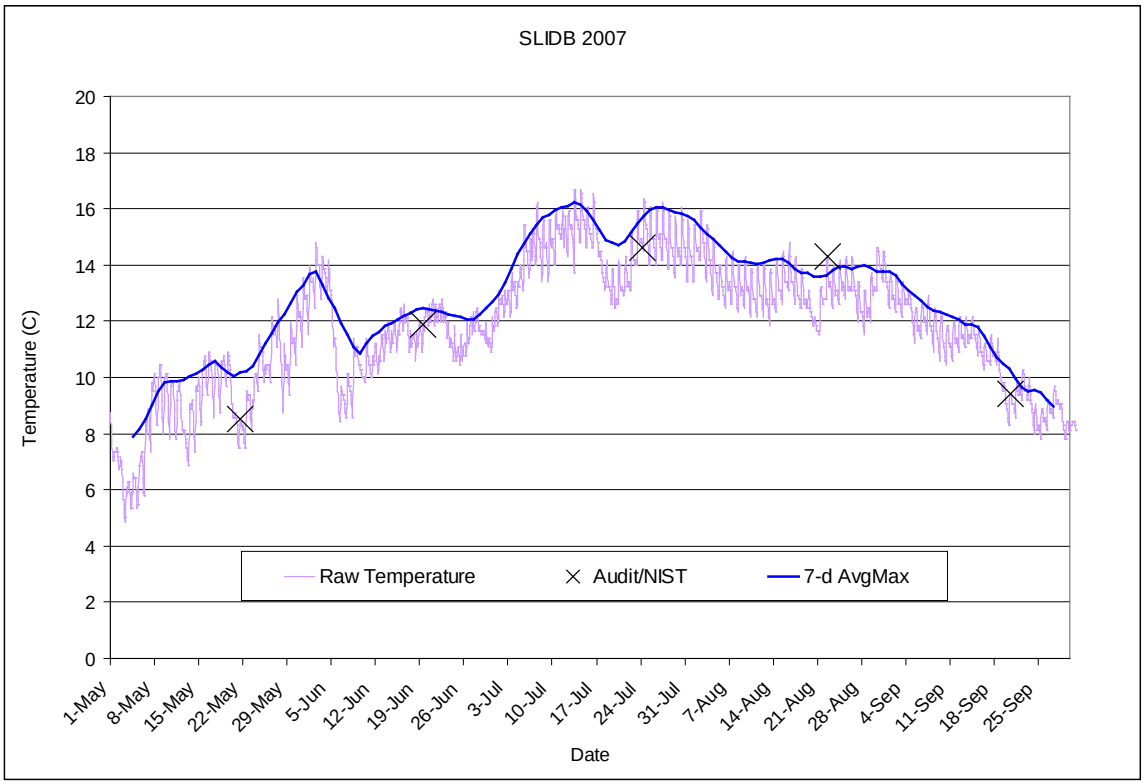
Date


SLIDB 2007
Temperature (C)
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12
10
8
6
4
2
0
Raw Temperature
Audit/NIST
7-d AvgMax
1-May
8-May
15-May
22-May
29-May
5-Jun
12-Jun
19-Jun
26-Jun
3-Jul
10-Jul
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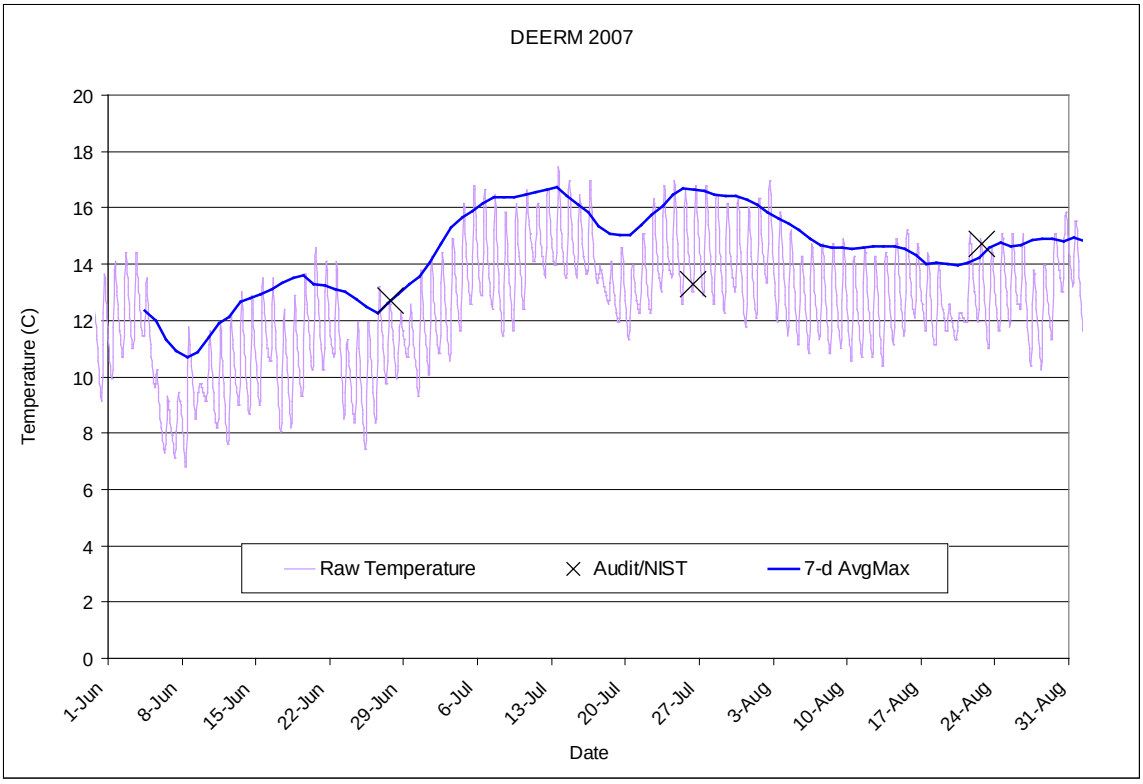
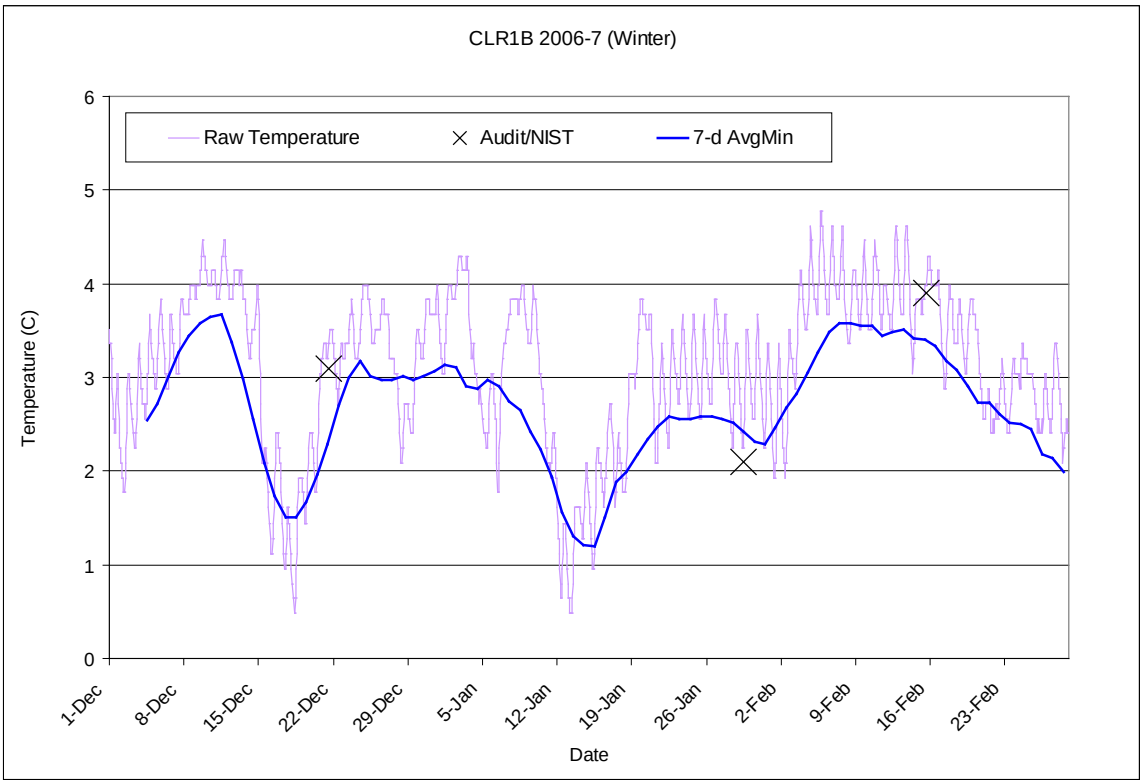
Date





Note: CLR1B is plotted as the 7 day average *minimum* temperature to help describe cold water conditions.

ATTACHMENT 6

NORTH UMPQUA PROJECT

Oregon DEQ Compliance Letter

Oregon
Theodore Kulongoski, Governor

Department of Environmental Quality
Western Region Eugene Office
1102 Lincoln Street, Suite 210
Eugene, OR 97401
(541) 378-7838
FAX (541) 686-7551
TTY (541) 687-5603

August 27, 2009

Richard Grost
Aquatic Scientist
PacifiCorp Energy
825 NE Multnomah, Suite 1500
Portland, OR 97232

Re: North Umpqua Hydroelectric Project, FERC Project No. 1927
Compliance Determination for Low Impact Hydro Institute Certification

Dear Mr. Grost:

This correspondence is submitted in support of PacifiCorp Energy's application to obtain low impact certification from the Low Impact Hydroelectric Institute (LIHI) for their North Umpqua Hydroelectric Project (FERC No. 1927). The information provided in this correspondence addresses questions presented in the Low Impact Hydropower Questionnaire pertaining to water quality.

Question B.1.a: *Is the Facility in Compliance with all conditions issued pursuant to a Clean Water Act Section 401 water quality certification issued for the Facility after December 31, 1986?*
DEQ Response: YES. The Oregon Department of Environmental Quality (DEQ) issued PacifiCorp a Section 401 water quality certification for the project on June 25, 2002. The certification was amended on June 5, 2005. PacifiCorp has met the monitoring and reporting requirements of the 401 certification to date. Monitoring data submitted by PacifiCorp pursuant to the 401 certification indicate operation of the facility currently complies with the conditions of the 401 certification as well as Oregon Water Quality Standards given in Oregon Administrative Rules (OAR) 340-041.

Question B.2: *Is the Facility area or the downstream reach currently identified by the state as not meeting water quality standards (including narrative and numeric criteria and designated uses) pursuant to Section 303(d) of the Clean Water Act?*
DEQ Response: YES. The North Umpqua River is listed as impaired for pH from RM 77 to RM 78 (i.e., above and below the Lemolo 2 Powerhouse) and for temperature below Soda Springs dam. Fish Creek, a tributary to the North Umpqua River, is listed as impaired from the mouth to RM 18.6.

Question B.3: *If the answer to question B.2 is yes, has there been a determination that the Facility is not a cause of that violation?*
DEQ Response: In progress. The 401 requires PacifiCorp to undertake several actions to address pH exceedences in the vicinity of the Lemolo 2 Powerhouse. First, PacifiCorp must

physically reroute the powerhouse discharge to Toketee Reservoir in accordance with the North Umpqua Settlement Agreement dated June 21, 2001. This action is scheduled for completion in 2011. Second, PacifiCorp must monitor pH in the Lemolo 2 Powerhouse discharge following the first prolonged idle period associated with project maintenance. The Lemolo 2 unit is currently offline and undergoing maintenance. PacifiCorp will conduct pH monitoring activities at this location upon startup which is anticipated for November 2009. Last, PacifiCorp is currently dredging the Lemolo 2 forebay. This action is expected to reduce aquatic plant growth which can adversely affect pH of waters above the powerhouse. DEQ will assess the impact which these actions have on pH conditions once monitoring activities have been performed.

In October 2006, DEQ released a temperature Total Maximum Daily Load (TMDL) for waters of the Umpqua Basin. The TMDL concluded that Project diversions under the previous license resulted in thermal impacts to the river. TMDL modeling data indicated PacifiCorp will comply with their load allocation by implementing the minimum instream flows stipulated in the North Umpqua Settlement Agreement. Beginning in December 2005, PacifiCorp began providing higher and more stable minimum instream flows to the bypass reaches as prescribed in the Settlement Agreement and 401 certification.[1] Monitoring data confirm that PacifiCorp has maintained compliance with the bypass flows modeled by the TMDL and prescribed by the Settlement Agreement and 401 certification.

Please feel free to contact me should you have any questions.

Christopher Stine, PE
Water Quality Engineer

cc: Monte Garrett

[1] When seasonal base flows decline below prescribed minimum instream flows, PacifiCorp ceases diversions from these reaches.

ATTACHMENT 7

NORTH UMPQUA PROJECT

Dissolved Oxygen Monitoring In Bypass Reaches Report

NORTH UMPQUA HYDROELECTRIC PROJECT, FERC NO. 1927

DISSOLVED OXYGEN MONITORING IN BYPASS REACHES JULY 2006

Prepared for
PacifiCorp Energy
Toketee, Oregon

Prepared by
Land And Water Environmental Services, Inc.
525 SE Main
Roseburg, Oregon 97470

August 2006

1. INTRODUCTION

During July 2006, Land And Water Environmental Services, Inc., of Roseburg, Oregon, completed Dissolved Oxygen (DO) monitoring at eight locations within the North Umpqua Hydroelectric Project operated by PacifiCorp, near Toketee, Oregon. The purpose of the monitoring was to satisfy condition 6(c) of the Project's Section 401 Water Quality Certification, by describing the DO conditions in each bypass reach during the new minimum flow regimes which began in late 2005 as a New License condition.

Fieldwork was completed by Rich Grost of PacifiCorp and Zachary Halstead of Land And Water Environmental Services, Inc. Mr. Rick Young Seidemann, RG, of Land And Water Environmental Services, Inc., assisted with data analyses and report preparation.

2. METHODS

Methods were consistent with the DEQ Watershed Assessment Section Mode of Operations Manual, 2004. The equipment used included eight YSI 6920 multiparameter sondes with temperature/conductivity and DO probes, a YSI 650 Multiparameter Display Unit with Barometer (for measuring local barometric pressure), a certified NIST-traceable thermometer (VWR Precision 0.01 °C platinum, # 23609-228), and HACH Kit for Method 8229: Dissolved Oxygen, Azide Modification of Winkler Method, Buret Titration (1 to greater than 10 mg/L DO), USEPA approved. Method 8229 was adapted from Standard Methods for the Examination of Water and Wastewater.

Sonde probes were serviced and calibrated by the supplier (Fondriest Environmental, Inc., of Beavercreek, Ohio). DO probes on the Sondes were re-calibrated locally at Toketee on the day of deployment using the saturated-chamber method, corrected for local barometric pressure. Calibration was checked following extraction (post-deployment) using the same methods. The NIST-traceable thermometer was calibrated through 3/30/08 by Control Company, via the supplier.

Field audit measurements of DO and temperature were made at each site during Sonde deployment and extraction, using the HACH Method 8229: Dissolved Oxygen and NIST-traceable thermometer. One duplicate audit sample was collected and processed for every four sampling sites for estimation of audit method precision. Audit samples were fixed and titrated in the field to minimize transport time.

The YSI 6920 Sondes were deployed at all eight sample sites for at least 72 hours. The Sondes were deployed on July 7, 2006, and extracted on July 11, 2006 at all sites except CLR2B. Because of abnormally high flows at station CLR2B due to powerhouse maintenance during July 7 to 11, 2006, measurements were instead completed from July 11 to 18, 2006. The Sondes were programmed to measure and record DO (mg/L) and Temperature (°C) hourly. Sample sites were located in representative habitats near the downstream end of each bypass reach. As identified and described in the Section 401 Water Quality Certification Conditions, the eight sample sites were named as follows:

- LEM1B – Lemolo No. 1 bypass at downstream end
- LEM2B – Lemolo No. 2 bypass at downstream end

- CLR1B – Clearwater No. 1 bypass at downstream end
- CLR2B – Clearwater No. 2 bypass at downstream end
- TOKEB – Toketee bypass at downstream end
- FISHB – Fish Creek bypass at downstream end
- SLIDB – Slide Creek bypass at downstream end
- SODAB – Soda Springs bypass at downstream end

Compliance gage sites (Table 1) located at the upstream end of each bypass reach were used to document the flows into each bypass reach during the monitoring period.

Table 1. Gage stations associated with each bypass reach and DO sample site.

DO Sample Site	USGS Gage Number	USGS Gage Name
LEM1B	14313200	North Umpqua River above White Mule Creek, Near Toketee Falls, OR
LEM2B	14313700	North Umpqua River below Warm Springs Creek, Near Toketee Falls, OR
CLR1B	14314500	Clearwater River above Trap Creek, Near Toketee Falls, OR
CLR2B	14314700	Clearwater River below Mowich Creek, Near Toketee Falls, OR
TOKEB	14315500	North Umpqua River at Toketee Falls, OR
SLIDB	14315700	North Umpqua River below Slide Creek Dam, Near Toketee Falls, OR
FISHB	14315950	Fish Creek above Slipper Creek, Near Toketee Falls, OR
SODAB	14316455	North Umpqua River below Soda Springs Reservoir, Near Toketee Falls, OR

3. RESULTS

Sondes successfully recorded hourly measurements for more than 72 consecutive hours at each site. The results represent conditions during new minimum flow releases (Appendix 1). The minimum DO measured at any site by Sonde was 9.09 mg/l at site SLIDB (Appendix 1). The minimum DO measured at any site by field audit was 9.3 mg/L at site FISHB (Appendix 1). The applicable minimum DO criterion was met in all reaches.

Post-deployment calibration checks indicated that all Sondes were recording DO within 3.6 percentage points of the correct value (Table 2), which was derived from standard barometric pressure corrections Appendix 2). Sonde data were compared with audit measurements and evaluated for DEQ data quality level. DEQ data quality levels for Accuracy and Precision were primarily A and B (Tables 3-5). Sonde data was graphed as raw data (no adjustments made) alongside field audit measurements and flow data (Appendix 1).

Table 2. Post-deployment calibration conditions, measurements, and difference.

DO Sample Site	Post-calibration barometric pressure (mmHg)	Table value for pressure-corrected 100% saturation (%)	Post-calibration saturation (%)	Difference in saturation (percentage points)
LEM1B	704	92.6	89.0	-3.6
LEM2B	704	92.6	89.9	-2.7
CLR1B	704	92.6	90.4	-2.2
CLR2B	742	97.6	95.0	-2.6
TOKEB	704	92.6	93.6	+1.0
SLIDB	704	92.6	89.0	-3.6
FISHB	704	92.6	91.3	-1.3
SODAB	704	92.6	94.8	+2.2

Table 3. Difference between DO measured by the Sonde and Field Audits (within the nearest hour), and resulting DEQ data quality levels for Accuracy*.

DO Sample Site	DO Accuracy at Deployment	Deployment Difference (mg/L)	DO Accuracy at Extraction	Extraction Difference (mg/L)
LEM1B	B	+0.4	A	+0.2
LEM2B	A	0.0	A	0.0
CLR1B	B	+0.3	B	+0.6
CLR2B	A	+0.1	A	+0.2
TOKEB	B	+0.6	B	+0.8
SLIDB	A	-0.1	B	+0.3
FISHB	A	+0.1	B	+0.5
SODAB	C	+1.7	C	+1.6

* DEQ DO Accuracy A = ≤+/- 0.2 mg/L, B = ≤+/- 1 mg/L, C = > 1 mg/L

Table 4. Difference between temperature measured by the Sonde and Field Audits (within the nearest hour), and resulting DEQ data quality levels for Accuracy*.

DO Sample Site	Temperature Accuracy at Deployment	Deployment Difference (°C)	Temperature Accuracy at Extraction	Extraction Difference (°C)
LEM1B	A	0.0	A	-0.3
LEM2B	A	-0.1	A	-0.5
CLR1B	B	-0.6	A	-0.1
CLR2B	B	-0.6	NIST Temperature not measured	
TOKEB	A	0.0	A	-0.1
SLIDB	A	0.0	A	-0.4
FISHB	A	+0.1	B	-0.7
SODAB	A	+0.1	A	0.0

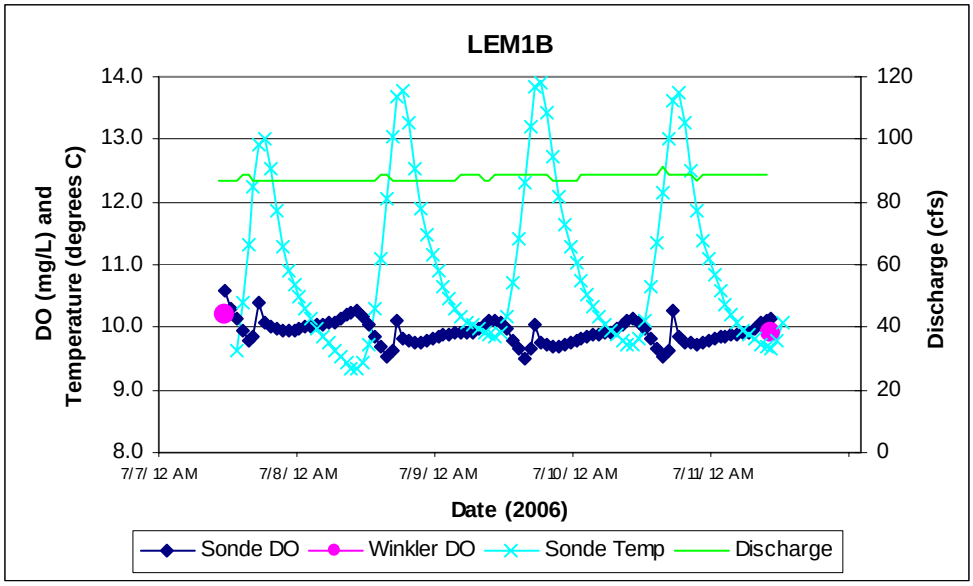
* DEQ Temperature Accuracy A = ≤+/- 0.5 °C, B = ≤+/- 1 °C, C = > 1 °C

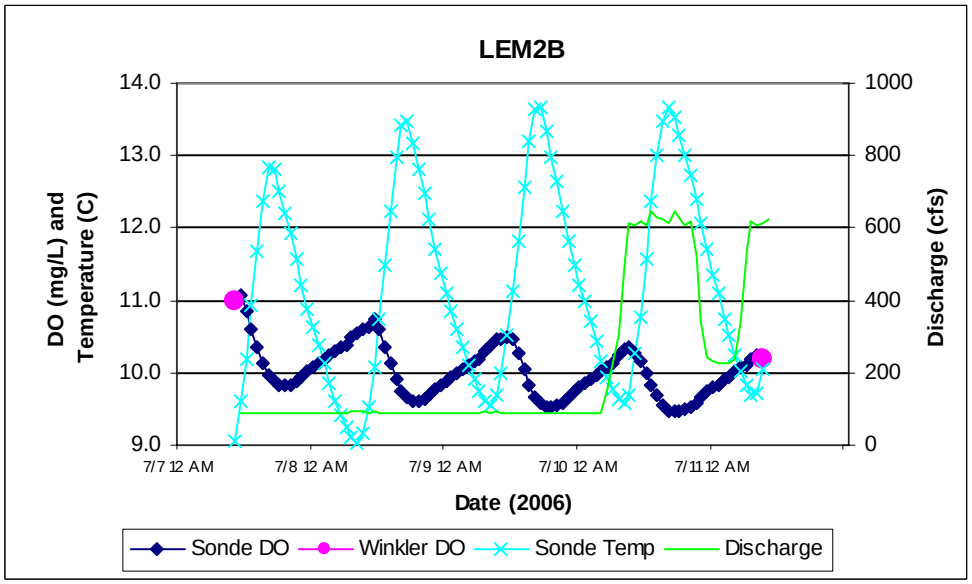
Table 5. Precision* of field audit measurements is A for all duplicated samples.

DO Sample Site	DO Precision at Deployment	Measurement (mg/L)	Measurement (mg/L)	Difference (mg/l)
LEM1B	A	9.9	9.8	0.1
LEM2B	A	11.0	11.0	0.0
SLIDB	A	9.8	9.6	0.2
SODAB	A	9.8	9.8	0.0

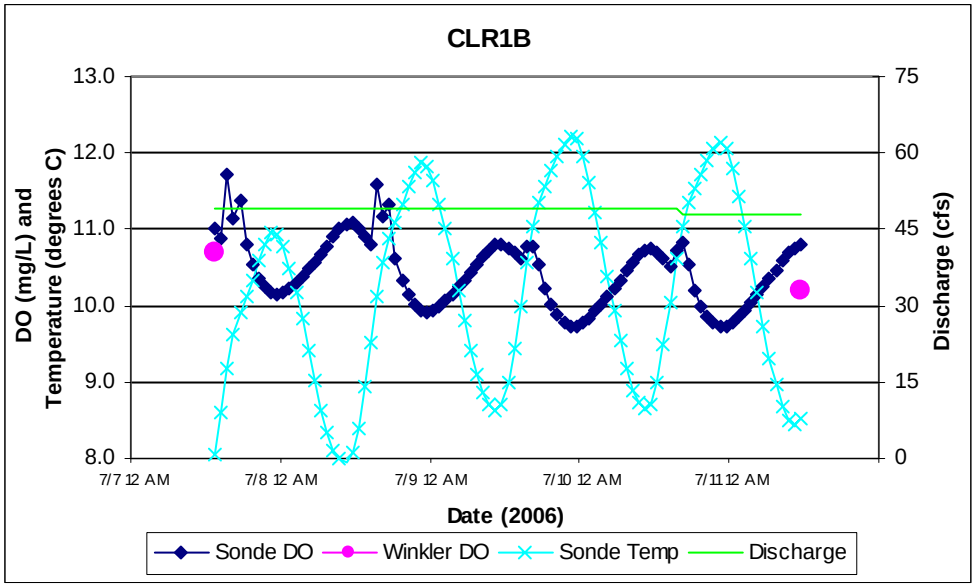
* DEQ DO Precision A = ≤+/- 0.3 mg/L

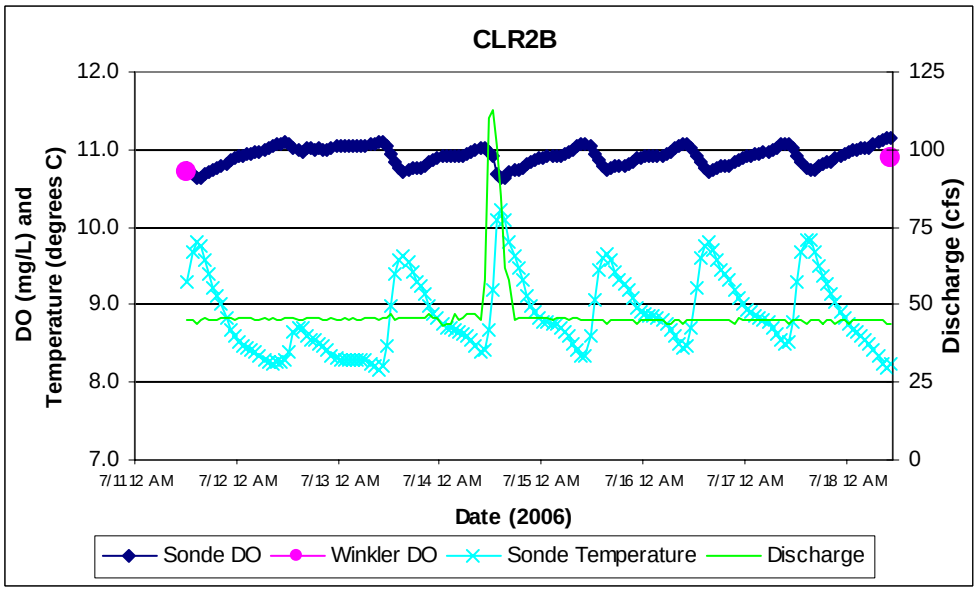
Appendix 1 (4 pages): Graphs of Hourly Measurements of Dissolved Oxygen (DO, mg/l), Water Temperature (°C) , and Discharge (cfs) for Eight Sample Sites





Appendix 1 (continued)





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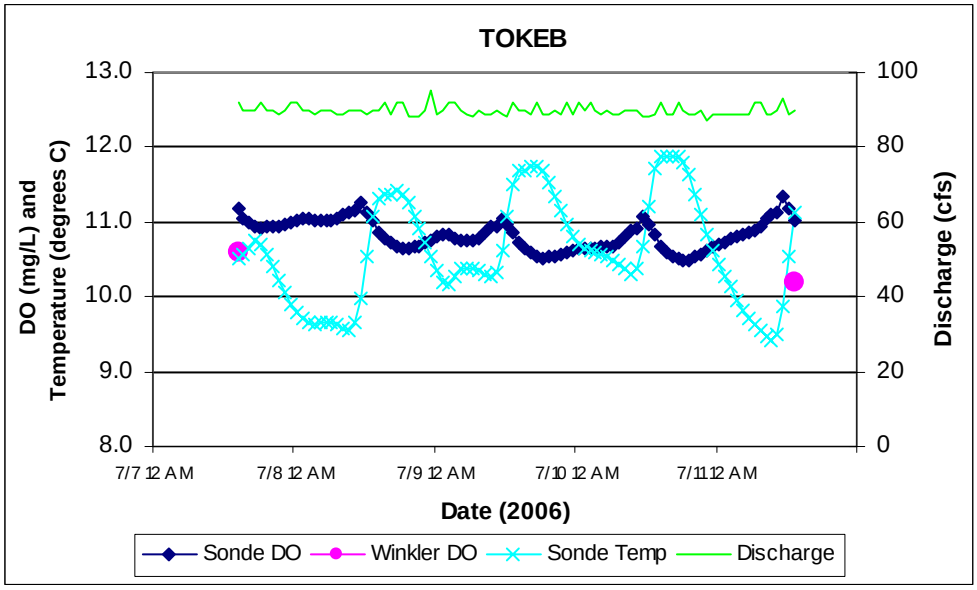

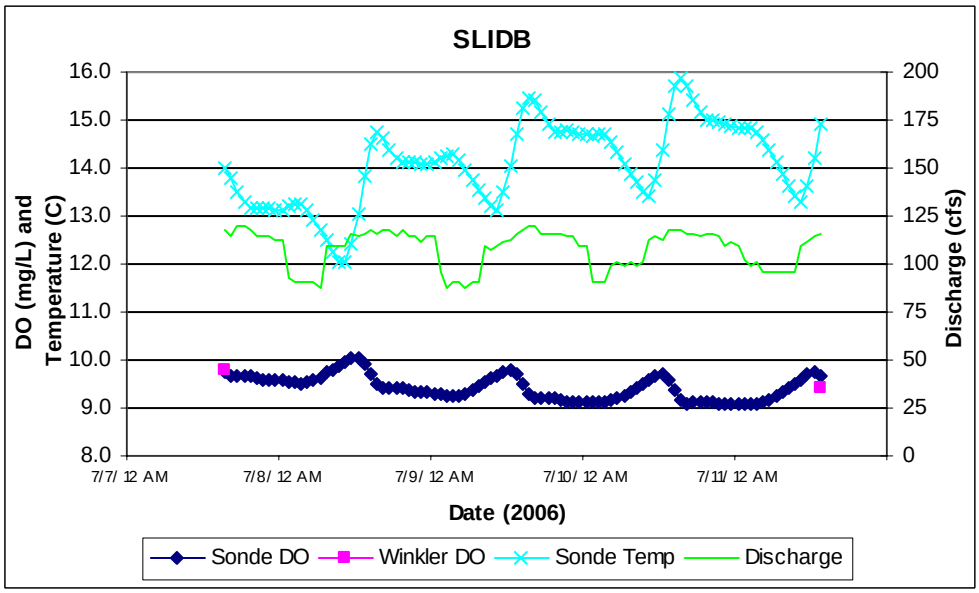

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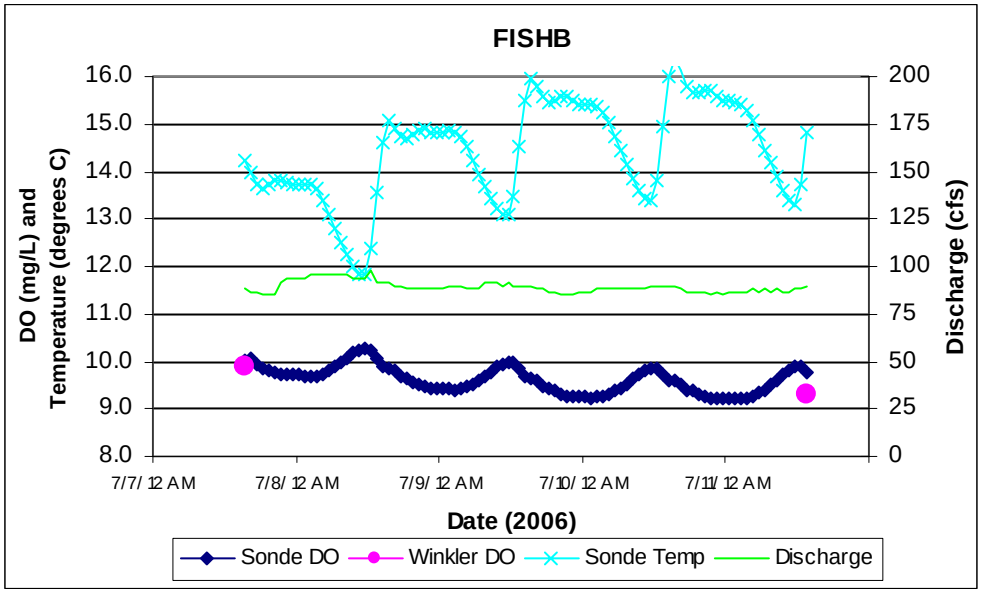

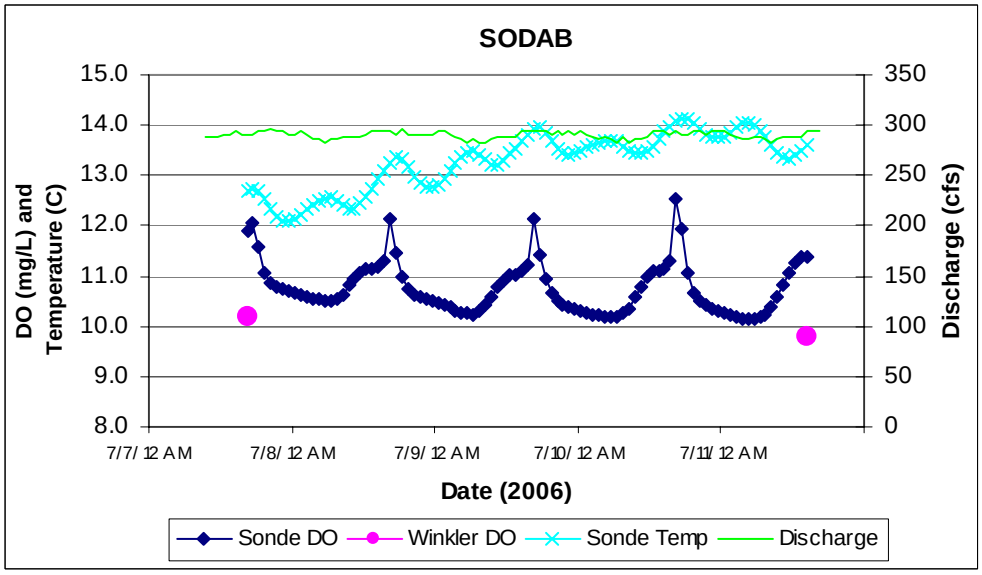

Appendix 2 (1 page)

YSI Table of Calibration Values for Various Atmospheric Pressures and Altitudes

APPENDIX D CALIBRATION TABLES

Calibration values for various atmospheric pressures and altitudes.

PRESSURE			ALTITUDE		CALIBRATION
inches Hg	mm Hg	kPa	Feet	m	VALUE
30.23	768	102.3	-276	-84	101
29.92	760	101.3	0	0	100
29.61	752	100.3	278	85	99
29.33	745	99.3	558	170	98
29.02	737	98.3	841	256	97
28.74	730	97.3	1126	343	96
28.43	722	96.3	1413	431	95
28.11	714	95.2	1703	519	94
27.83	707	94.2	1995	608	93
27.52	699	93.2	2290	698	92
27.24	692	92.2	2587	789	91
26.93	684	91.2	2887	880	90
26.61	676	90.2	3190	972	89
26.34	669	89.2	3496	1066	88
26.02	661	88.2	3804	1160	87
25.75	654	87.1	4115	1254	86
25.43	646	86.1	4430	1350	85
25.12	638	85.1	4747	1447	84
24.84	631	84.1	5067	1544	83
24.53	623	83.1	5391	1643	82
24.25	616	82.1	5717	1743	81
23.94	608	81.1	6047	1843	80
23.62	600	80.0	6381	1945	79
23.35	593	79.0	6717	2047	78
23.03	585	78.0	7058	2151	77
22.76	578	77.0	7401	2256	76
22.44	570	76.0	7749	2362	75
22.13	562	75.0	8100	2469	74
21.85	555	74.0	8455	2577	73
21.54	547	73.0	8815	2687	72
21.26	540	71.9	9178	2797	71
20.94	532	70.9	9545	2909	70
20.63	524	69.9	9917	3023	69
20.35	517	68.9	10293	3137	68
20.04	509	67.9	10673	3253	67
19.76	502	66.9	11058	3371	66

ATTACHMENT 8

NORTH UMPQUA PROJECT

FERC Order Accepting
Threatened and Endangered Species Report

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

PacifiCorp Project No. 1927-118

ORDER MODIFYING FILING DATE FOR ANNUAL THREATENED AND ENDANGERD SPECIES REPORT UNDER ARTICLE 411

(Issued June 18, 2009)

1. On February 26, 2009, PacifiCorp, licensee for the North Umpqua Project (FERC No. 1927), filed a request to change the filing date for the annual threatened and endangered species report required under article 411 of the license.[1] The licensee also filed its threatened and endangered species monitoring report for 2008. The North Umpqua Project consists of eight developments and is located on the North Umpqua River and two of its tributaries, in Douglas County, Oregon. The project partially occupies lands administered by the U.S. Forest Service and the U.S. Department of the Interior, Bureau of Land Management.

2. According to article 411, the licensee is required to file an annual report of all actions likely to adversely affect federally-listed species and its progress on activities addressed in the U.S. Fish and Wildlife Service's (FWS) biological opinion by January 31 of each year. The licensee filed a request to change the annual due date to March 31 to allow time to for the Umpqua National Forest Level 1 Team review of the data and draft report. The FWS approved moving the reporting deadline in an e-mail dated February 25, 2009.

3. Modifying the due date for the annual threatened and endangered species report from January 31 to March 31 would allow additional time to coordinate with the agencies and analyze the monitoring data. The proposed change is in the interest of the affected parties, and it would enhance the licensee's oversight of actions affecting listed species.

4. The licensee also filed their threatened and endangered species monitoring report for 2008. The report includes a summary of maintenance and construction activities with the potential to impact the northern spotted owl. The report indicates that during 2008,

[1] Order Approving Settlement Offer and Issuing New License issued November 18, 2003 (105 FERC ¶ 61,237).

all actions were within the limits of the Incidental Take Statement. The 2008 annual threatened and endangered species report fulfills the reporting requirements of article 411. The next annual report is due by March 31, 2010.

The Director orders:

(A) Article 411 of the license for the North Umpqua Project is modified so that the required threatened and endangered species report is due to the Commission by March 31 of each year.

(B) This order constitutes final agency action. Requests for rehearing by the Commission may be filed within 30 days of the date of this order, pursuant to 18 C.F.R. §385.713.

Robert J. Fletcher
Chief, Land Resources Branch
Division of Hydropower
Administration and Compliance

ATTACHMENT 9

NORTH UMPQUA PROJECT

Terms and Conditions of the National Marine Fisheries Service Incidental Take Statement

Table 2-3. Terms and conditions of National Marine Fisheries Service's incidental take statement (NMFS 2002).

Terms and conditions	Settlement Agreement Sections
9.4.1 Instream Flows, Flow Fluctuations, Riparian Vegetation, Erosion and Sediment Control—Implement NMFS reasonable and prudent measure no. 1 with the following provisions:	
a. Implement the minimum instream flow measures.	5.1–5.9 and tables 1 and 2 of Appendix C
b. Implement the ramping measures.	6.1–6.9
c. Ensure that ramping criteria for the Wild and Scenic River reach are maintained during emergency shutdowns. In accordance with section 6.8 of the Settlement Agreement, this is to happen via necessary measures to achieve this requirement, including, but not limited to, installing a new bypass valve or improving the existing valve at Soda Springs powerhouse by the date the new license becomes final or 2004, whichever is earlier.	6.4 and 6.8
d. Develop and implement a vegetation management plan, including measures set forth in Section 9.4.2(n) – (q) of these terms and conditions.	12.1
e. Implement noxious-weed control measures.	12.2
f. Implement erosion- and sediment-control measures.	14.1–14.8
g. Perform road and bridge decommissioning.	15.1–15.5.1
9.4.2 Construction Activities In or Near Watercourses—Implement NMFS reasonable and prudent measure no. 2 with the following provisions:	
a. Complete all in-water work occurring on the downstream side of Soda Springs dam within the work period of July 1 and September 15.	NA[a]
b. Conduct no in-water work on the downstream side of Soda Springs dam outside this work period without prior written authorization from NMFS, in consultation with ODFW.	NA
c. Ensure that construction activities associated with habitat enhancement and erosion control measures meet or exceed best management practices and other performance standards contained in the ODEQ for the National Pollutant Discharge Elimination System ("NPDES") 1200-CA permit (General NPDES Stormwater Discharge Permit).	NA
d. Inspect all erosion control devices weekly, at a minimum, during construction to ensure that they are working adequately.	NA
e. Ensure that erosion control materials (e.g., silt fence, straw bales, aggregate) in excess of those installed are available on site for immediate use during emergency erosion control needs.	NA
f. Ensure that vehicles operated within 150 ft of the waterway are free of fluid leaks; conduct daily examination of vehicles for fluid leaks during periods operated within or above the waterway.	NA

Table 2.3. (continued).

Terms and conditions	Settlement Agreement Sections
g. During completion of habitat enhancement activities, allow no pollutants of any kind (sewage, waste spoils, petroleum products, etc.) to come in contact with the water body or wetlands nor their substrate below the mean high-high water elevation or 10-year flood elevation, whichever is greater.	NA
h. Evacuate any areas used for staging, access roads, or storage and remove all materials, equipment, and fuel if flooding of the area is expected to occur within 24 hours.	NA
i. Conduct vehicle maintenance, re-fueling of vehicles and storage of fuel at least 150 ft from the waterway.	NA
j. At the end of each work shift, ensure that no vehicles are stored within or over the waterway.	NA
k. Prior to operating within the waterway, clean all equipment of external oil, grease, dirt or caked mud; conduct any washing of equipment in a location that would not contribute untreated wastewater to any flowing stream or drainage area.	NA
l. Use temporary erosion and sediment controls on all exposed slopes during any hiatus in work exceeding 7 days.	NA
m. Place material removed during excavation only in locations where it cannot enter sensitive aquatic resources; store and reuse any topsoil removed on-site to the greatest extent possible.	NA
n. Minimize alteration or disturbance of the stream banks and existing riparian vegetation to the greatest extent possible.	NA
o. Apply no herbicide as part of this action; mechanical removal of undesired vegetation and root nodes is permitted.	NA
p. Identify and mark clearing limits; begin no construction activity or movement of equipment into existing vegetated areas until clearing limits are marked.	NA
q. Retain all existing vegetation within 150 ft of the edge of bank, downstream from Soda Springs dam to the greatest extent possible.	NA
*9.4.3 **Fish Passage***— Implement NMFS reasonable and prudent measure no. 3 with the following provisions:	
a. Provide upstream fish passage at Soda Springs dam.	4.1.1
b. Provide fish screens at Soda Springs dam for downstream fish passage.	4.1.2
c. Implement changes to Soda Springs dam operations or facilities if performance standards listed in Appendix B, Part 1, Table 1 of the Settlement Agreement are not met during a post-construction evaluation period; such changes may include: (i) improved hydraulic balancing of screens or structural modifications; (ii) construction of additional screening facilities; (iii) seasonal shutdowns of turbines; or (iv)reductions in flow diversions.	4.1.2(e)
d. Install a fish screen at the Fish Creek intake which meets ODFW's March 2001 screen design criteria.	4.3.2(a) and Appendix B, Part 2

Table 2.3. (continued).

Terms and conditions	Settlement Agreement Sections
9.4.4 Fluvial Geomorphic Processes, Spawning Habitat, Aquatic Connectivity, Tributary Enhancement, and Other Mitigation Measures—Implement NMFS reasonable and prudent measure no. 4 with the following provisions:	
a. Implement gravel augmentation, woody debris and sediment passage measures.	7.1–7.4
b. Reconnect the Clearwater River to the Toketee bypass reach.	7.5
c. Perform spawning habitat enhancement measures.	8.1–8.3.5
d. Improve aquatic connectivity.	10.1–10.7
e. Perform culvert upgrades.	15.6
f. Fund tributary enhancement, long-term monitoring and predator control plans, a mitigation fund and an early implementation fund.	19.1–19.5.4
9.4.5 Monitoring—Implement NMFS reasonable and prudent measure no. 5 with the following provisions:	
a. Monitor the effectiveness of the proposed protection, minimization and enhancement measures in accordance with the scope and schedules of the Settlement Agreement, and provide results of such monitoring to NMFS as required in those sections.	4.1.1(b) and (d); 4.1.2(b); 4.3.1(c) and (d); 4.3.2(b); 6.2.1; 8.2.2; 8.3.3; 14.5; and 19.4.1
b. Provide NMFS with post-construction monitoring reports of erosion control measures required by terms and conditions set forth in Section 9.4.2, above, and include: (i) a narrative describing the nature of best management practices implemented to reduce erosion for habitat enhancement actions, and (ii) a narrative describing any failures experienced with erosion control measures and efforts made to correct them.	NA

[a]NA = not specifically identified in the Settlement Agreement.

ATTACHMENT 10

NORTH UMPQUA PROJECT

FERC Correspondence Approving Historic Properties Management Plan Annual Report

FEB 20, 200

FEB 2 0 2009

FEDERAL ENERGY REGULATORY COMMISSION
Washington, D. C. 20426

OFFICE OF ENERGY PROJECTS

Project No. 1927-115 – Oregon
North Umpqua Hydroelectric Project
PacifiCorp

Mr. R.A. Landolt
Managing Director, Hydro Resources
PacifiCorp
825 NE Multnomah, Suite1500
Portland, OR 97232

Subject: Annual Report on Historic Properties Management Plan; Article 414

Dear Mr. Landolt:

This letter refers to your annual report on cultural and historic resources filed December 16, 2008, for the North Umpqua Hydroelectric Project (FERC No. 1927).[1] The filing is pursuant to article 414 of the license, the Programmatic Agreement (PA),[2] and the Historic Properties Management Plan (HPMP) for the project.[3]

Your annual report states that the HPMP requires the development of an action plan with at a three-year schedule. Included in your filing is such an action plan, encompassing years 2007-2011, which schedules activities for 2009-2011 and reviews activities performed in 2007 and 2008. You state that a copy of the action plan, including all 2008 activities, was submitted to the Bureau of Land Management (BLM), Umpqua National Forest (UNF), and SHPO for review in fall 2007. Documentation of approval for the plan from BLM, UNF, and SHPO is provided in your filing.

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[1] See Order Approving Settlement Offer and Issuing New License, issued November 18, 2003 (105 FERC ¶ 61,237).

[2] The PA was executed between the Commission and the Oregon State Historic Preservation Officer (SHPO) on January 3, 2003.

[3] The HPMP was approved by letter dated October 16, 2007.

A copy of the annual report on cultural and historic resources was also sent to the BLM, UNF, SHPO, and Tribes, as required by Stipulation I, B of the PA.[4] No comments were filed by any of the consulting parties at the time of the December 16 filing.

The filed material fulfills the annual filing requirements of article 414, the PA, and the HPMP for the project for 2008. Your next filing is due on or before December 18, 2009. Thank you for your cooperation and if you have any questions on this matter, please contact me at (202) 502-6864.

Sincerely,

Jade N. Alvey
Environmental Biologist
Division of Hydropower
Administration and Compliance

[4] The Tribes include the Confederated Tribes of Grande Ronde, the Confederated Tribes of the Siletz Indians, and the Cow Creek Band of Umpqua Tribe of Indians.