Oregon
John A. Kitzhaber, M.D., Governor

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April 12, 2013

Kaylea Foster
PacifiCorp Energy
925 South Grape Street
Medford, Oregon, 97501

Re: Prospect P3 Hydroelectric Project, FERC Project No. 2337
Compliance Monitoring for LIHI Certification

Dear Ms. Foster:

In December 2009, PacifiCorp Energy applied to the Low Impact Hydro Institute (LIHI) for certification pursuant to LIHI's low-impact criteria for their Prospect No.3 Hydroelectric Project (FERC No. 2337). LIHI certification is a voluntary, non-regulatory process which evaluates project impacts in eight areas, including water quality, according to LIHI criteria. LIHI certification requires that operators demonstrate project operations meet certain state water quality criteria. To fulfill this requirement, PacifiCorp requested a concurrence determination from the Oregon Department of Environmental Quality (ODEQ).

In 1989, the Federal Energy Regulatory Commission (FERC) relicensed the project to a 30-year term. ODEQ authorized continued project operation under an existing National Pollution Discharge Elimination System (NPDES) permit and elected to not issue a Section 401 water quality certification. Consequently, project-related effects were not evaluated pursuant to Section 401 of the Clean Water Act (CWA) nor did ODEQ require water quality monitoring as a condition of the new license.

To address the LIHI certification requirements, PacifiCorp consulted with ODEQ to develop and implement a plan to monitor water quality in Project-effected reaches. The plan included continuous and discrete monitoring activities at locations above and below the Project for parameters which may be affected by Project activities. In January 2013, PacifiCorp submitted a report to ODEQ summarizing data collected during the 2012 study season. ODEQ has reviewed the report and provides the following comments.

LIHI Certification Requirements

LIHI certification requirements which pertain to water quality are given in Section B of the LIHI Certification Questionnaire and are presented in Table 1, below.

Table 1. Section B of the LIHI Certification Questionnaire

1) Is the Facility either: a) 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? Or b) In Compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?	YES = Go to B2	NO = Fail
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?	YES = Go to B3 NO = Pass	
3) If the answer to question B.2 is yes, has there been a determination that the Facility does not cause, or contribute to, the violation?	YES = Pass	NO = Fail

Source: LIHI Certification Handbook, August 2011.
http://www.lowimpacthydro.org/assets/files/LIHI%20HandbookDecember%202011(1).pdf

Monitoring Program

PacifiCorp established monitoring stations at four locations: Imnaha Creek above the diversion dam (IMCR); South Fork Rogue above the diversion dam (SFAD); South Fork Rogue below the diversion dam (SFBD); and South Fork Rogue 3.5 miles below the dam near Butte Falls Highway (SFHX).

PacifiCorp recorded hourly temperature measurements at all locations between May 1 and October 31.[1] Dissolved oxygen (DO) was measured at SFBD hourly for 72 hours between June 1 and June 15, once in July, and once in August. Monthly grab samples and/or spot measurement were performed at IMCR, SFAD, and SFBD between May and October for the following parameters: Temperature (calibration check); Bacteria; DO; pH; Total Dissolved Solids (TDS); Toxic Substances[2]; Turbidity.

Results

Monitoring results are summarized below.

Temperature: Continuous temperature measurements were recorded at four locations in 2012. Data recovery was at least 87 percent at SFAD and SFBD during the study period. Data recovery was low (38 percent) at IMCR because of reduced seasonal flows. Data recovery was also low at SFHX (42 percent) because ODEQ did not request deployment of a sensor at this location until August 2012.

The highest 7-day average of the maximum daily temperature (7DAMX) recorded above and below the project (i.e., at SFAD and SFBD, respectively) was 12.28°C which is well below the ODEQ numeric criterion of 18.0°C. Data were collected from May through October which includes the period of highest

[1] Monitoring location SFHX was established on August 17, 2012, as requested by ODEQ.
[2] Arsenic; cadmium; chloride; chromium; copper; iron; lead; mercury; nickel; selenium; silver; zinc.

annual stream temperatures. From these data, ODEQ concludes the numeric temperature criterion is met year round at these locations.

PacifiCorp was unsuccessful in maintaining a submerged thermistor in Imnaha Creek because of receding seasonal flows. The period of record at this location is from May 1 through July 9. The highest 7DAMX temperature of 9.24°C was recorded on July 9. For comparison, continuous measurements at SFBD below the dam indicate the highest 7DAMX temperature at this location occurred on July 12. From this information, it is reasonable to suspect the July 9 7DAMX temperature measurement at IMCR is at or near the seasonal maximum temperature for this location. From these data, ODEQ concludes that the temperature of inflow from Imnaha Creek is well below the numeric criterion.

Temperature monitoring in the lower bypass reach began on August 16 at the request of ODEQ. Stream temperatures were declining at this time and predictably the highest 7DAMX temperature of 10.83°C was collected near the beginning of the period of record.[3] ODEQ concludes that temperature in the lower bypass reach is significantly below the numeric criterion of 18.0°C for the period of record from August 16 through October 31.

Bacteria: PacifiCorp collected monthly grab samples for bacteria analysis at IMCR, SFAD, and SFBD from May through October. E. coli was detected at concentrations up to 9.6 organisms per 100 ml which is well below the ODEQ numeric single-sample maximum of 406 E. coli organisms per 100 ml.[4] Total coliform bacteria were detected at concentrations up to 187.2 organisms per 100 ml. ODEQ has no numeric criterion for total coliform bacteria. The Project does not discharge wastes which may contribute fecal coliform bacteria. From the available data, ODEQ concludes the applicable bacteria water quality standard is met at all locations within the Project area.

Dissolved Oxygen: ODEQ applies a numeric DO criterion of 11.0 mg/l during spawning periods.[5] However, if intergravel dissolved oxygen (IGDO) measured as a spatial mean is at least 8.0 mg/l, then the water column DO spawning criterion is 9.0 mg/l. The water column DO criterion during non-spawning periods is 8.0 mg/l.

PacifiCorp measured DO at SFBD continuously for 72 hours between June 1 and June 15, once in July, and once in August. All measurements were completed during the non-spawning period when numeric criterion is 8.0 mg/l. The lowest DO concentration recorded during continuous measurements at SFBD was 9.58 mg/l (July). PacifiCorp also recorded monthly instantaneous DO measurements at IMCR, SFAD, and SFBD from May through October. The lowest DO concentration recorded during monthly

[3] PacifiCorp calculated the 7DAMX using a date-centered approach which includes the three days before and after the date. Using this method, the first date which incorporates the minimum interval occurs on the fourth day of the data record, or August 19th at SFHX.

[4] ODEQ applies a numeric criterion of 126 E. coli organisms per 100 ml using a 30-day log mean based on a minimum of 5 samples. Although the minimum sample size was not collected, no single sample contained more than the maximum allowable level.

[5] The spawning period for the Upper Rogue Subbasin is January 1 through May 15.

instantaneous measurements at these locations was 9.14 mg/l (August, SFBD). From these data, ODEQ concludes the numeric criterion of 8.0 mg/l is met during non-spawning periods.

Monitoring data were not collected during the spawning period. However, the lowest DO concentration recorded during continuous measurements from June 7 to June 9, 2012, was 11.07 mg/l which exceeds the numeric spawning DO criterion. Oxygen saturation increases with decreasing temperature. For this reason, it is reasonable to suspect that DO in the Project area is higher than 11.0 mg/l during the spawning period when water temperatures are at seasonally minimum levels. From these data, ODEQ infers that the numeric criterion for DO is likely met during the spawning period.

pH: PacifiCorp recorded monthly pH measurements at IMCR, SFAD, and SFBD between May and October. pH measurements at all locations were within the basin-specific numeric range of 6.5 to 8.5 standard units.

Total Dissolved Solids: PacifiCorp recorded monthly TDS measurements at IMCR, SFAD, and SFBD between May and October. TDS measurements at all locations were below the basin-specific numeric criterion of 500 mg/l.

Toxic Substances: PacifiCorp collected monthly grab samples at IMCR, SFAD, and SFBD between May and October. Monthly samples were analyzed for a broad suite of metals. Concentrations of metals were compared with ODEQ's fresh water acute and chronic aquatic life criteria given in Table 20 of ODEQ's toxic substances water quality standard. Concentrations of all metals were either below applicable acute and chronic aquatic life criteria or were not detected at concentrations exceeding laboratory method reporting limits. Operation of the Project does not discharge metals or toxic substances.

Turbidity: PacifiCorp recorded monthly turbidity measurements at IMCR, SFAD, and SFBD between May and October 2012. Water clarity in the vicinity of the project is very high. Turbidity measurements at all locations ranged from 0.113 NTU to 0.857 NTU. Turbidity levels below the diversion dam ranged up to 0.323 NTU. Although paired turbidity measurements generally suggest lower turbidity levels below the diversion dam, measurements recorded on July 9, 2012, confirm an increase of 0.045 NTU relative to measurements at SFAD. ODEQ attributes this small increase to the normal variation of natural turbidities which occurs spatially throughout the water column rather than the effect of project-related disturbances, such as aggressive ramping, maintenance, or in-water work. ODEQ concludes the monitoring data submitted by PacifiCorp does not violate the ODEQ turbidity water quality standard.

LIHI Determination

ODEQ provides the following responses to the questions pertaining to water quality given in Section B of the LIHI Certification Questionnaire:

B1(a): *Is the Project 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?*

ODEQ Response: Not applicable

B1(b): *Is the Project in compliance with the quantitative water quality standards established by the state that support designated uses pursuant to the federal Clean Water Act in the Facility area and in the downstream reach?*

ODEQ Response: The Project is in compliance with numeric water quality criteria for the periods supported by available monitoring data as described above.

B2. *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?*

ODEQ Response: No

B3: *If the answer to question B.2 is yes, has there been a determination that the Facility does not cause, or contribute to, the violation?*

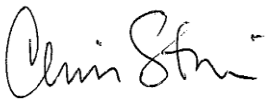
ODEQ Response: Not applicable

Limitations

The preceding evaluation is provided for the express purpose of addressing environmental screening criteria developed pursuant to LIHI's low-impact hydroelectric certification program. Water quality data collected by PacifiCorp in support of this assessment may be used to supplement information necessary to evaluate project impacts pursuant to Section 401 of the Federal Clean Water Act during future FERC relicensing efforts. However, the findings presented herein convey neither an intention nor an obligation by ODEQ to reach similar determinations during future water quality assessments.

If you have any questions, please contact me at 541 686-7810, at stine.chris@deq.state.or.us, or at the address above.

Sincerely,



Christopher Stine, PE
Hydroelectric Specialist

ec: Monte Garrett, PacifiCorp Energy