

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

<b>WATER QUALITY CERTIFICATION TO:</b>	)	Order No. <b>6215</b>
Lake Chelan Hydroelectric Project	)	401 Certification for
(FERC No. 637)	)	Non-Capacity License Amendment
In accordance with 33 U.S.C. 1341	)	Lake Chelan Hydroelectric Project
FWPCA § 401, RCW 90.48.260	)	Chelan County, Washington
and Chapter 173-201A WAC	)	

TO: Ms. Michelle Smith  
Licensing and Compliance Manager  
Public Utility District No. 1 of Chelan County  
P.O. Box 1231  
Wenatchee, WA 98807-1231

On July 7, 2008, Washington State Department of Ecology (Ecology) received a letter and application from the Public Utility District No. 1 of Chelan County (Chelan PUD) requesting a certification under the provisions of 33 USC 1341 (FWPCA § 401) to certify that certain proposed modifications to the Lake Chelan Hydroelectric Project will comply with applicable provisions of 33 USC 1311, 1312, 1313, 1316, 1317 and with any other appropriate requirement of state law. The proposed modifications are described in Chelan PUD's application, filed July 3, 2008, to the Federal Energy Regulatory Commission (FERC) for a "Non-Capacity" amendment to their license.

**1.0 NATURE OF PROJECT**

The Chelan Dam Hydroelectric Project generates 48 megawatts of hydropower. The project includes a diversion dam at the head of the Chelan River, at the southeast end of Lake Chelan, near the city of Chelan. The diversion dam is 40 feet high and 490 feet long. The dam controls the elevation of Lake Chelan, a 55-mile long natural lake. The dam also controls the flow to the Chelan River, which is 4.1 miles long and empties into the Columbia River. Water for hydropower is conveyed from the intake at the dam to the powerhouse through a 14-foot diameter, 2.2-mile-long power tunnel which transitions to 12 feet in diameter prior to bifurcating to form two penstocks, 90 feet in length. The powerhouse empties into a tailrace, about 1,700 feet from the Columbia River, just south of the mouth of the Chelan River.

Chelan PUD proposes to amend the Project license by replacing two 24 megawatt (MW) turbine generators with two new generators, each with a nameplate rating of 29.6 MW, increasing total generating capacity by 11 MW. A non-capacity amendment to the FERC license is needed because the new turbines will increase the Project's total hydraulic capacity by 192 cubic feet per second (cfs). This is an 8.3 percent increase in hydraulic capacity, which is less than the 15 percent increase that triggers the requirement for a capacity amendment under the FERC regulations. 18 C.F.R. §4.201(b).

According to the Chelan PUD, in their letter requesting a 401 certification, the 8.3 percent increase in hydraulic capacity proposed will not result in significant changes in Project

operations or result in any significant adverse environmental impacts. The PUD stated, in addition, that the environmental requirements included in the FERC license for the Project issued in 2006 will continue to apply under the amendment and will provide further assurance of no significant adverse impacts.

## **2.0 AUTHORITIES**

In exercising authority under 33 U.S.C. 1341 and RCW 90.48.260, Ecology has investigated this application pursuant to the following:

1. Conformance with all applicable water quality-based, technology-based, and toxic or pretreatment effluent limitations as provided under 33 U.S.C. Sections 1311, 1312, 1313, 1316, and 1317 (FWPCA Sections 301, 302, 303, 306, and 307);
2. Conformance with the state water quality standards as provided for in Chapter 173-201A WAC authorized by 33 U.S.C. 1313 and by Chapter 90.48 RCW, and with other appropriate requirements of state law; and,
3. Conformance with any and all applicable provisions of Chapter 90.48 RCW and of using all known, available and reasonable methods to prevent and control pollution of state waters as required by RCW 90.48.010.

## **3.0 WATER QUALITY STANDARDS**

- A. The goals of the State of Washington are to “maintain the highest possible standards to ensure the purity of all waters of the state consistent with public health and public enjoyment thereof, the propagation and protection of wild life, birds, game, fish and other aquatic life, and the industrial development of the state, and to that end require the use of all known available and reasonable methods by industries and others to prevent and control the pollution of the waters of the state of Washington” (RCW 90.48.010).
- B. Under the State’s new water quality standards, approved by the U.S. Environmental Protection Agency in February 2008, the designated uses for the Chelan River still include salmonid spawning, rearing and migration (WAC 173-201A-600(1).) However, the numeric criteria for temperature for the river and tailrace have changed to a 7-DADMax of 17.5°C, where the 7-DADMax is the average of the daily maximum temperatures of seven consecutive days. (WAC 173-201A-200(1)(c).)
- C. The new state standards also include specific options for modifying water quality standards by developing site-specific criteria or performing a use attainability analysis (WAC 173-201A-430 and 440.)

## **4.0 FINDINGS**

- A. On June 1, 2004, Ecology issued a 401 certification for the Lake Chelan Hydroelectric Project, under Ecology Order No. 1233. This certification was based on the results of a Washington State Pollution Control Hearings Board decision. On

November 6, 2006, FERC issued a 50-year license for the Project, under FERC Order 117 FERC ¶62,129 (Project license).

- B. On July 3, 2008, Chelan PUD filed an application to the Federal Energy Regulatory Commission (FERC) for a “Non-Capacity” amendment to their Project license. On July 7, 2008, Ecology received a letter and application from Chelan PUD requesting a water quality certification for the proposed license amendment.
- C. For over 80 years, the Chelan dam has diverted water from most of the 4.1 miles of the Chelan River. Because of that, it is not known what level of support for fish, and water temperature for such use, can reasonably be achieved in the river. To make that determination, the 401 Certification for the Project license contains conditions for a ten-year adaptive management plan, which will allow time to determine what level of fish support and water temperature is reasonable and feasible to achieve.
- D. The adaptive measures are contained in the Chelan River Biological Evaluation and Implementation Plan (CRBEIP, revised April 18, 2003). (See Chapter 7 of the Comprehensive Plan, Attachment B of the Lake Chelan Settlement Agreement dated October 8, 2003.) The CRBEIP includes biological objectives to be achieved in the Chelan River.
- E. The minimum instream flows for fish were identified in the 401 certification and CRBEIP as follows:

Reach	Dates	Dry year (cfs)	Average year (cfs)	Wet year (cfs)
1, 2 & 3 <sup>1</sup>	July 16- May 14	80 all months	80	80
	May 14		Ramp up to 200	Ramp up to 320
	May 15- July 15		200	320
	July 16		Ramp down to 80	Ramp down to 80
4 <sup>2</sup> Spawning flow	March 15 - May 15; <i>and</i> Oct. 15 – Nov. 30	80 + 240 pumped (320)	320 by combination of spill & pumping  Incubation flow, as needed	320 by combination of spill & pumping  Incubation flow, as needed

<sup>1</sup> Flows measured at the dam by calibrated gate rating.

<sup>2</sup> Flows measured at the dam or through calibrated pump discharge curves.

- i) The minimum instream flow requirements set forth in the 401 certification are considered minimum values.
- ii) Higher flows may be determined to be needed by the Chelan River Fish Forum (CRFF) or by Ecology, as a result of studies performed as part of the CRBEIP.
- iii) Ecology retains the right to amend the instream flow requirements specified in this certification to provide adequate habitat and to meet the biological

objectives for cutthroat in Reaches 1, 2 and 3 of the Chelan River, or for fall Chinook or steelhead in Reach 4 of the Chelan River, or any species included in the future on a state or federal listing of endangered or threatened species.

- iv) With respect to instream flows for spawning in Reach 4, incubation flows are added as needed in all years, including dry years, per Washington State Pollution Control Hearings Board (PCHB) Order dated April 21, 2004 (Confederated Tribes v. Ecology, PCHB No. 03-075).
- F. Under the 401 certification for the Project license, following modifications to the Chelan River channel, Chelan PUD is to collect data on temperatures in the Chelan River and, if appropriate, model temperature, to evaluate its ability to comply with the temperature standards.
- G. Under the 401 certification for the Project license, by or before the end of the ten-year adaptive management schedule, Chelan PUD is to provide Ecology with the information necessary to make a determination on whether the biological objectives in the 401 certification (and CRBEIP) and the state water quality standards have been achieved. Ecology has agreed to review the degree of attainment of the biological objectives and water quality standards and the application of all known, reasonable and feasible measures, and based on the results of the review, initiate a process to modify the applicable standards through rulemaking or such alternative process as may otherwise be authorized under applicable state and federal law.
- H. Ecology reserved the authority to require new or modified measures<sup>1</sup> beyond those otherwise provided for in the 401 certification and the CRBEIP as may be reasonable and necessary to meet applicable water quality standards and other appropriate requirements<sup>1</sup> of state law. Such new or modified measures may include, but are not limited to, changes to minimum flows and ramping rates.
- I. Under the 401 certification for the Project license, in the event of changes to the state water quality standards, such new standards shall apply. As described above (Section 3.0 B), standards for temperature have changed and therefore apply.
- J. According to Chelan PUD's application for a non-capacity amendment to the Project license, Exhibit E, flow through the powerhouse will increase mostly in the fall and winter, but may be extended, depending on forecasts, when there is early runoff with average or greater flows. During the spring and summer, generation will continue to be intermittent. Maximum flows through the powerhouse will change from 2,308 to 2,500 cfs, an increase of 192 cfs.
- K. Also according to Exhibit E, the increases in powerhouse flows will slightly improve velocities to levels closer to preferred mid-range for spawning habitat in the tailrace. For both average and low flow years, the increased flow will likely increase the depth over the spawning beds at low tailwater flows, also a benefit to spawning.

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<sup>1</sup> According to the PCHB, Ecology has the authority to require new or modified "requirements," as opposed to merely "measures", and the term "requirements" includes "new or modified biological objectives" (PCHB Order dated April 21, 2004 (Confederated Tribes v. Ecology, PCHB No. 03-075).)

- L. According to Chelan PUD's letter requesting the 401 certification for the license non-capacity amendment, the minor increase in flow capabilities of the powerhouse would have no negative effect on water quality in the tailrace and would have little effect on any of the conclusions contained in Ecology's existing certification. Specifically, changes in operation that might result by increasing flow through the penstock at certain times of the year are not expected to negatively affect temperature, existing levels of turbidity, dissolved oxygen and total dissolved gas in the Chelan River (bypass reach.) Increasing the capacity of the turbines may decrease the amount of excess inflow spilled into the Chelan River (bypass reach) during the late fall, winter and periods of high spring and summer runoff, but that does not change Chelan PUD's obligations to address temperature and fish uses under the existing license and associated 401 certification. Chelan PUD's obligation to manage the lake level pursuant to the existing license will be unchanged.
- M. Additionally, as 2004 401 Section II. C. states, where it is not feasible to fully meet water quality standards Clean Water Act regulations allow Ecology to take action to remove or modify a designated use or to modify the criteria assigned to protect that designated use if other criteria would sufficiently protect that use. The process may involve a use attainable analysis and/or standard modification. However, the Chelan River has been dewatered for over 76 years and it is not currently known what level of support for fish and water temperature for such use can reasonably be achieved in the river. To make that determination, Ecology believes that the best approach is to proceed with a ten-year adaptive management plan, which will allow a sufficiently lengthy period of time to determine what level of fish support and water temperature is reasonable and feasible to achieve.

## **5.0 WATER QUALITY CERTIFICATION CONDITIONS**

In view of the foregoing and in accordance with Section 401 of the Clean Water Act (33 USC 1341), RCW 90.48.260 and Chapter 173-201A, Ecology finds reasonable assurance that the proposed license amendment will comply with state and federal water quality standards and other appropriate requirements of state law provided the following conditions are met.

- A. The conditions in the 401 certification dated June 1, 2004 and issued as Washington State Order No. 1233, issued for the current Project license of November 6, 2006, and including any amendments thereto shall be complied with.
- B. The change in hydraulic capacity under the proposed hydraulic capacity increase shall not negatively affect temperature, turbidity, dissolved oxygen, total dissolved gas, or designated uses in the Chelan River (bypass reach) or hydropower tailrace. Increasing the capacity of the turbines does not change Chelan PUD's obligations to address temperature and fish uses under the existing license and the associated 401 certification. Also, Chelan PUD's obligation to manage the lake level pursuant to the existing license shall remain unchanged.

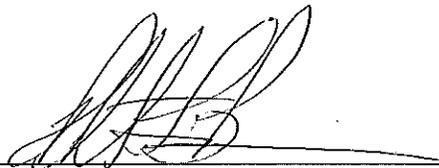
- C. Ecology retains the right to require additional monitoring or studies if necessary to provide reasonable assurance of compliance with water quality standards.
- D. Ecology reserves the right to amend this Certification by further order if it determines that the provisions hereof no longer provide reasonable assurance that the proposed FERC license will comply with water quality standards or other appropriate requirements of state law. Any such amended certification shall take effect immediately upon issuance of such order, unless otherwise provided in the order, and may be appealed to the PCHB under RCW 43.21B.
- E. In the event that two or more conditions of this certification may give arise to potentially conflicting requirements with respect to an action covered by this certification, Ecology will determine by order which condition should be applied.

#### **6.0 PENALTIES AND APPEALS**

Any person who fails to comply with any provision of this Certification shall be liable for criminal and civil penalties as provided for under state and/or federal law.

This Certification/Order may be appealed. The appeal must be filed with the Pollution Control Hearings Board, P.O. Box 40903, Olympia, Washington 98504-0903 within thirty (30) days of receipt of this Order. At the same time, the appeal must also be sent to the Department of Ecology, Central Regional Office, 15 W. Yakima Ave., Suite 200, Yakima, Washington 98902. An appeal alone will not stay the effectiveness of this Certification. Stay requests must be submitted in accordance with RCW 43.21B.320. These procedures are consistent with Chapter 43.21B RCW.

Dated this 19th day of November, 2008, at Yakima, Washington.



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Robert F. Barwin  
Acting Section Manager  
Water Quality Program  
Central Regional Office  
Department of Ecology