UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

December 20, 2007

Reply To
Attn Of: ETPA-088 Ref: 04-032-DOE

Magalie R. Salas, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Dear Ms. Salas:

The U.S. Environmental Protection Agency (EPA) has reviewed the final Environmental Impact Statement (EIS) for the **Klamath Hydroelectric Project** (CEQ No. 20070499) located on the Klamath River in Klamath County, Oregon and Siskiyou County, California, between Klamath Falls, Oregon and Yreka, California. Our review has been conducted in accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. This review has been conducted as a cooperative effort between EPA Region 9 and Region 10 and these are the comments of both Regions.

We appreciate the effort that the Federal Energy Regulatory Commission (FERC) has taken to address the concerns we raised in our review of the draft EIS. Clearly, significant progress has been made analyzing the project's impacts and developing a process for mitigating those impacts.

While the final EIS addressed many of our comments, there are a few outstanding issues that we believe still need resolution to better inform decisions about the project. In particular, the final EIS does not evaluate impacts relative to tribal water quality standards, the impacts of peaking operations at the J.C. Boyle powerhouse on downstream water temperatures, or provide requested information about a temperature control structure for the Iron Gate dam. Information is also needed regarding mitigation and monitoring measures to address cyanobacteria and blue-green algae blooms, the development of the project's water quality management plan, the action thresholds that will be developed to determine if one of the dam decommissioning alternatives will be pursued, and the process for developing the decommissioning plan.

We understand the justification for not including the Keno Project as part of the Klamath Hydroelectric Project. While we still have concerns that the Keno reservoir does not meet many water quality standards, we are encouraged that the water quality management plan that will be developed for the Klamath Hydroelectric Project will be coordinated with efforts to address water quality issues at the Keno Project. We support the efforts that will be taken to work with the Bureau of Reclamation and the state of Oregon to assure that the measures implemented at the Keno Project are integrated into the comprehensive water quality management plan for the entire Klamath Project.

This project will present major challenges for Pacificorp during the Clean Water Act (CWA) Section 401 certification process. We are encouraged that PacifiCorp will include Federal, state,

local and tribal representatives in the Clean Water Act (CWA) 401 certification process and water quality management plan development to help address these challenges. Results from many of the analyses presented in the final EIS have significant uncertainties and it is unclear how water quality standards will be met in various project areas. In particular, it is uncertain how temperature and dissolved oxygen standards will be met below the dams and dissolved oxygen and ammonia standards within the reservoirs. Additionally, it is unclear how the project will comply with tribal water quality standards. The goal of the CWA Section 401 processes is to demonstrate that water quality standards will be achieved. In order to assure that these standards are actually met, it is important that monitoring and analysis is adequate to support agency decisions regarding the CWA Section 401 certification and TMDL implementation, and to support adaptive management over time.

We support you and PacifiCorp in your efforts to mitigate project-related impacts and encourage you to work with others to address all anthropogenic impacts in the Klamath River basin in a comprehensive manner. Because of the complexity of jurisdictional authority within the basin, it is not only important that parties address those impacts under their respective authority, but equally important for everyone to work in a collaborative manner and capitalize on each other's efforts to mitigate impacts throughout the basin.

Thank you for the opportunity to review and comment on the final EIS. We have discussed our comments in detail in the enclosed attachment. If you have any questions regarding EPA's comments, please contact Christine Reichgott, Manager, NEPA Review Unit at (206) 553-1601 in our Region 10 office or Nova Blazej, Manager Environmental Review Office at (415) 972-3846 in our Region 9 office.

Sincerely,

/S/

Michelle Pirzadeh, Director
Office of Ecosystems, Tribal and Public Affairs

Enclosure: Detailed Comments

cc: K. Roberts and P. Arroyave, Bureau of Reclamation
L. Adams, California EPA
R. Klamt, California Resources Agency
R. Kanz and J. Watts, California State Water Resources Control Board
D. Diamond, Department of Interior
K. Norton, Hoopa Valley Tribe
L. Dunsmoor, Klamath Tribe
S. Tripp and S. Corum, Karuk Tribe
D. White, NOAA- National Marine Fisheries Service
M. St. John, North Coast Regional Water Quality Control Board
S. Kirk and C. Stine, Oregon Department of Environmental Quality
C. Bowman, Quartz Valley Indian Reservation
P. Smith and N. Gordon, Reseghini Racheria
S. Thompson and K. Mullis, U.S. Fish and Wildlife Service
K. McKernan and K. Fetcho, Yurok Tribe

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Tribal Water Quality Standards

Table 3-25 of the final Environmental Impact Statement (EIS) presents the applicable Oregon and California water quality standards for the Klamath Basin in the hydroelectric project area. While the document discusses the project's impacts relative to these standards it does not discuss applicable tribal water quality standards and the project's impacts relative to those standards.

While the final EIS references the Hoopa Valley Tribe's adopted water quality standards for *Microcystis aeruginosa* and microcystins, it does not reference the other objectives adopted by the Tribe. In addition, the Karuk, Yurok, and Resighini Rancheria tribes have adopted water quality standards under tribal laws that are applicable to the project area. The Hoopa Valley tribe also adopted numeric criteria for nutrients, periphytin, dissolved oxygen, pH, and ammonia toxicity, in addition to *Microcystis aeruginosa* and its toxin microcystin for the Klamath River. The Tribe has submitted these water quality standards to EPA for our review and approval under CWA Section 303. EPA anticipates acting on these standards in the immediate future.

Recommendation:
We recommend that an analysis be performed that evaluates the project's impacts relative to all applicable tribal water quality standards, including dissolved oxygen, nutrients, pH, chlorophyll-a, ammonia, *Microcystis aeruginosa* and microcystin and that the comprehensive water quality management plan that will be developed for the project, addresses all state and tribal standards.

Also, the Hoopa Valley Tribal standards referenced on pages 3-152, B-58 and B-67 incorrectly cites Hoopa Valley Tribal criteria for *Microcystis aeruginosa* and microcystins as cell density < 50,000 cells/ml and <10 micrograms/L total microcystins. The Hoopa Valley Tribal criteria for recreational waters are *Microcystis aeruginosa* cell density < 40,000 cells/ml and < 8 micrograms/L total microcystin concentration.

Recommendation:
The correct criteria need to be utilized when evaluating the project's impacts relative to the Hoopa Valley Tribal water quality standards.

Effects of J.C. Boyle Peaking on Maximum Temperatures

Our comments on the draft EIS noted that the impacts of peaking operations at the J.C. Boyle powerhouse on exceedences of the Oregon water quality temperature standards downstream from the dam were not analyzed. While the document discusses how the powerhouse increases the diel range of temperatures observed in the bypass reach, Oregon water quality standards include requirements to restrict human-caused increases to maximum temperatures. EPA's analysis based on information in the draft EIS indicated that peaking may increase the maximum daily temperature downstream of the powerhouse compared to temperatures under steady powerhouse flows.

Recommendation:
We recommend that a thorough evaluation of the effects of peaking at the J.C. Boyle Dam on temperature and the implications for achieving Oregon water quality standards be performed. The results of this evaluation should be addressed in the comprehensive water quality management plan.

Use of Selective Withdrawal Systems for Iron Gate Dam

Our comments on the draft EIS requested additional analyses and information on the use of temperature control structures (TCSs) for Iron Gate dam. In particular, we requested information on the capabilities of a multi-port selective withdrawal structure, the analysis of additional withdrawal scenarios and feedback from the fishery agencies on significance of estimated improvements. The final EIS does not provide the requested information or any new information to support the conclusions that the use of TCSs would have negligible benefits to mitigating temperature impacts. We believe that this information will be needed as PacifiCorp and the agencies work through the CWA Section 401 certification process.

Recommendation:
EPA recommends that the use of a multi-port, selective withdrawal TCS for the Iron Gate dam be further evaluated. As the CWA certification has a limited timeline, we recommend that this evaluation be performed as soon as possible so as not to delay the process for certification.

Cyanobacterial or Blue-Green Algae Blooms

In our comments on the draft EIS, we recommended expanding Measure 6S to include the development of a Cyanobacterial Management Plan that includes monitoring and management measures to address these blooms, such as: (1) monitoring for *Microcystis Aeruginosa (*MSAE) and its toxins in Iron Gate and Copco 1 Reservoirs; (2) monitoring for other species of blue-green algae or cyanobacteria, that are also likely to occur in these reservoirs, and their toxins; (3) analysis and implementation of measures (in conjunction with those developed under Measure 4P as part of a comprehensive water quality management plan) for preventing or minimizing occurrence of blooms, specifically by managing controllable factors that may enable or promote bloom conditions such as increased nutrient loadings, increased temperatures, greater water residence time, increased turbidity, and reduced vertical mixing; (4) analysis and implementation of options for controlling blooms, and minimizing public health exposures, when they do occur; and (5) monitoring for MSAE and other related species downstream of Iron Gate Dam to the mouth of the Pacific Ocean.

Measures to address MSAE are divided into at least 3 separate measures in the final EIS. Measure 4P (page 5-2) calls for the development of a comprehensive water quality management plan which would include analysis and implementation of measures to reduce nutrients, enhance temperature and enhance dissolved oxygen conditions. Measure 6S (page 5-7) calls for the development and implementation of a monitoring plan for MSAE and microcystin in the project reservoirs and immediately downstream of Iron Gate Dam; this measure also includes development of protocols for sharing monitoring results and for posting health advisories. Measure 8S (pp. 5-7 and 5-8) is the development and implementation of an integrated fish

passage and disease management program; this program is supposed to include monitoring for MSAE and microcystin at a minimum of six locations in the Klamath River between Iron Gate dam and the mouth of the river (as articulated on page 3-329). However, the language describing Measure 8S on pages 5-7 and 5-8 does not specifically reference MSAE and microcystin monitoring. Further, it is unclear how the information collected under these separate Measures will be synthesized and jointly analyzed, how the monitoring data collected under two distinct monitoring efforts will be used for adaptive management, and how information will be shared among the various parties who are involved in these three separate measures.

We are concerned that the separation of MSAE monitoring from the broader comprehensive water quality management plan will not promote a comprehensive approach to managing cyanobacterial blooms. Ideally, the data collected in both the reservoirs and in the Klamath River downstream will be made available to those who are determining and implementing management measures to control the blooms. There does not appear to be a clear connection between the entities involved in Measures 4P, 6S and 8S.

Recommendation:
We suggest that development of a monitoring plan for MSAE and microcystin and associated protocols under Measure 6S be incorporated under the umbrella of the comprehensive water quality management program under Measure 4P. Additionally, we suggest that FERC consider a mechanism to promote coordination and cross-fertilization between the comprehensive water quality management program (Measure 4P) and the integrated fish passage and disease management program (Measure 8S).

EPA commends FERC for expanding the scope of monitoring for *Microcystis Aeruginosa* and microcystin further downstream in the Klamath River under Measure 8S, and for recognizing in Section 3.3.2.2.2 of the final EIS that the adverse impacts of using the algaecide, copper sulfate, render it infeasible as a control mechanism in the Klamath system. However, we believe that the final EIS recommendations do not address the need for PacifiCorp to monitor for other cyanobacterial species and toxins that are likely to also occur in the reservoirs such as *anabaena* and anatoxin-a. It is important to note that monitoring during the 2007 summer bloom season detected *anabaena* in Iron Gate Reservoir.

Recommendation:
We recommend that the monitoring plan developed for cyanobacteria be expanded to include other species that may result in toxic conditions in the project area.

Development of the Comprehensive Water Quality Management Plan

The final EIS discusses the development of a comprehensive water quality management plan and lists the parties that will be involved in the development of that plan. In one citation (Page 3-156) the plan is referred to as a "comprehensive reservoir management plan," in another (page 3-159) it is referred to as a "comprehensive water quality resources management plan," and in the response to comments (page 5-36) and Measure 4P it is referred to as a "comprehensive water quality management plan." In addition, the document is inconsistent when listing the parties that will be involved in the plan's development.

Recommendation:

The Record of Decision and Measure 4P need to be clear on the scope of the comprehensive water quality management plan, the parties that will be involved in the development of the plan and include a timeframe for the plan's development and implementation. The scope for the plan should identify the various parameters that need to be addressed at each of the project's facilities, and include monitoring and adaptive management requirements. The plan should cover an adequate period of time to account for natural variability and include indicators for baseline, natural variability and targets selected to answer specific management questions. In addition the Record of Decision and Measure 4P should include a commitment to develop an independent science review process to define a basin-wide science plan that identifies research and management needs and priorities as recommended by the National Research Council's Klamath Basin Report (November 28, 2007). The goal would be to develop a comprehensive plan to address anthropogenic impacts throughout the Klamath River basin.

Action Thresholds for Dam Decommissioning

The final EIS states (page 3-160) that if project operation is demonstrated to be responsible for continued non-attainment of applicable water quality objectives after implementation of reasonable measures, FERC would consider it appropriate to consider decommissioning the development.

Recommendation:

The Record of Decision should discuss potential action thresholds to determine when it would be appropriate to move forward on decommissioning the development and define the process and timeline for making that decision. The Record of Decision should also discuss the process for evaluating the adequacy of the implementation measures including benchmarks with timeframes for their evaluation.