

State of California
Department of Fish and Wildlife

Memorandum

Date: March 25, 2015

To: Peter Barnes
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Division of Water Rights
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From: Tina Bartlett
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Subject: COMMENTS ON THE NOTICE OF AVAILABILITY FOR PUBLIC COMMENT OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE WATER QUALITY CERTIFICATION OF PACIFIC GAS AND ELECTRIC COMPANY'S UPPER NORTH FORK FEATHER RIVER HYDROELECTRIC PROJECT FEDERAL ENERGY REGULATORY COMMISSION PROJECT NO. 2105 AND UPPER NORTH FORK FEATHER RIVER HYDROELECTRIC PROJECT DRAFT ENVIRONMENTAL IMPACT REPORT, NOVEMBER 2014, FERC PROJECT #2105

Dear Mr. Barnes:

On November 26, 2014, the State Water Resources Control Board, Division of Water Rights (State Water Board), released documents related to the relicensing of the Upper North Fork Feather (UNFFR) Hydroelectric Project. These documents included a Notice of Availability and a Draft Environmental Impact Report (DEIR). The Notice of Availability solicited comments and requested that they be submitted by noon on March 26, 2015. The State Water Board outlines staff recommendations in the Notice of Availability. The California Department of Fish and Wildlife (Department) appreciates the opportunity to comment on the DEIR and on the Water Board staff recommendations and also appreciate the extended comment period. The Department would like to submit the following comments and suggestions for consideration by State Water Board staff:

General Comments:

- The DEIR does not describe the proposed action and has not identified the Environmentally Superior Alternative;
- The staff recommendation is not modeled or analyzed in the document. Therefore the Department is unable to assess the relative benefits and drawbacks of the staff recommendation. Additionally, there is no indication that the staff recommendation is the Environmentally Superior Recommendation; and
- The staff recommendation gives no information regarding a trigger for the installation of a thermal curtain.

More specific comments are discussed below:

The staff recommendation was not evaluated in any of the modeling in the Level 1- 2, or Level 3 reports, or the Draft Environmental Impact Report. State Water Board staff should analyze and model the staff recommendation in further detail.

The Water Board staff recommendation on page 4 of the Notice of Availability states:

"In accordance with the Clean Water Act, the State Water Board staff recommendation is designed to ensure the UNFFR Project will protect water quality and beneficial uses through the term of the new FERC license and any amendments thereto. State Water Board staff developed a preliminary recommendation comprised of the following:

- *implementation of the Proposed UNFFR Project with the alternative minimum flows, as outlined in Chapter 4 of the DEIR;*
- *increased releases of 250 cubic feet per second for purposes of temperature control from the low level outlet at Canyon dam from June 15 to September 15;*
- *monitoring of the Upper North Fork Feather River and Lake Almanor to evaluate temperatures and fisheries effects resulting from implementation of the Proposed UNFFR Project with increased Canyon dam flows; and*
- *adaptive management and a reservation of authority, whereby the State Water Board could require installation of thermal curtains at Lake Almanor and Butt Valley reservoir based on monitoring results, if appropriate."*

This document goes on to state that:

"State Water Board staff believes that adaptive management coupled with the ongoing relicensing efforts of the Poe Hydroelectric Project (FERC Project No. 2107) and the Bucks Creek Hydroelectric Project (FERC Project No. 619) will provide opportunities to further evaluate temperature in the North Fork Feather River."

The screening framework that was contemplated in the original alternative development process is shown in Figure ES-1 of the Level 1 and 2 Report (Stetson 2007). In this process, the Level 1 was designed to “cast a wide net” for alternatives that could potentially meet at preliminary temperature objective. After a coarse-level screening, then detailed analysis/modification in both Levels 1 and 2 analyses, those alternatives would be modified and potentially feasible alternatives would be advanced to Level 3. The Level 3 alternatives that met a refined temperature objective (defined in Figure ES-1 as 20° max mean daily river-wide) would then be further screened for effectiveness, reliability, substantial further study, environmental challenges, cost, logistics, reasonability, and constructability to determine “feasible alternatives to broader CEQA environmental analysis.”

Using the modeling that has been done to date, Department staff understand that, based on the Level 2 results of Alternative 4c and 5a, which include increased Canyon dam releases to 600 and 250 cfs respectively, and reoperation of the Caribou #1 powerhouse preferentially over Caribou #2, using this operational strategy, a temperature benefit of approximately 2-3° of cooling could be realized in July of a dry year through the Seneca Reach. However, in the Level 2 analyses, these operational strategies were combined with additional measures to cool each of the Belden, Rock Creek, Cresta, and Poe Reaches, so the Department does not know how far downstream the benefits of just the Canyon dam releases in Alternative 4c and 5a persist.

In the Level 3 analysis, the original alternative screening process “evolved” and the report states that:

“ ... this Level 3 report analyzes the effects of the UNFFR Project-only alternatives, with consideration also given to flow related operational measures for the Rock Creek, Cresta, and Poe Reaches. No detailed screening of water temperature reduction alternatives was conducted in reaches outside (downstream) of the UNFFR boundary in this Level 3 analysis.”

Based on this new approach, the Level 3 analysis only included analysis of one no-curtain option, which was Alternative 4c, where the Canyon dam outlet would be repaired to release up to 600 cfs, and Caribou #1 was preferentially used over Caribou #2. Based on this operational strategy, Department staff note that Figure 2-14 and Figure 2-15 (Stetson, 2009) suggest that in July and August, the 50% temperature exceedance probability could be reduced to below 20° C mean daily through most of the UNFFR down to approximately mile 46, in the Poe reach. The results presented in Figures 2-23a and 2-23b demonstrate that there is a relationship between the amount of cooling from increased releases though the Canyon dam low-level outlet alone, but this analysis only presents results down to a release of 300 cfs, and only for the Belden reach (Stetson, 2009). No further analysis was done to indicate exactly what the temperature benefits would be downstream for lower levels of release from Canyon dam.

Lastly, in the DEIR, State Water Board staff state that they removed the alternatives that required preferential operation of Caribou #1 over Caribou #2 and releases from Canyon dam of over 250 cfs because this would *“likely eliminate the UNFFR Project’s ability to serve on-peak energy loads.”* Using these constraints, the alternative that performed the best at cooling water through the UNFFR was “Combination 1” from the DEIR Additional Modeling (Appendix E-1) that included thermal curtains at both Prattville and Caribou intakes and modified Canyon Dam flows up to 250 cfs from June 16 through September 15 (without removal of submerged levees near Prattville Intake). The staff alternative seems to accept some, but not all of the pieces of Combination 1, choosing to keep the increased Canyon Dam flows, but not include the two thermal curtains. Department staff does not see how to use any of the alternatives analyzed in Level 1, 2, 3 or the Additional October 2012 modeling to allow our staff or the State Water Board staff to make any conclusions about full-river temperature benefits to the UNFFR below Canyon Dam. **The main element of the State Water Board staff recommendations specifying “increased releases of 250 cubic feet per second for purposes of temperature control from the low level outlet at Canyon dam from June 15 to September 15” was not analyzed in isolation in either Level 2, Level 3 or the October 2012 Additional Modeling analyses.**

To determine whether the changes in this staff alternative would produce in-river benefits capable of meeting the temperature objective of 20° mean daily river-wide, Department staff recommend that this staff alternative should be put through the same screening tools that were applied, and the same level of modeling analysis that was applied to other alternatives in the Level 3 report, similar to the modeling analysis of “Combination 1” and “Combination 2” in the UNFFR Appendix E.

Department staff are unable to make a determination about how well this staff recommendation would protect the COLD freshwater beneficial use at this time without completion of these analyses.

Monitoring results do not lead to decision making

The last recommendation in the staff alternative recommends:

- *“adaptive management and a reservation of authority, whereby the State Water Board could require installation of thermal curtains at Lake Almanor and Butt Valley reservoir based on monitoring results, if appropriate.”*

Department staff disagree that this is an appropriate recommendation, given that this alternative has not been modeled, and is unlikely to meet the preliminary temperature objective of 20° C. Department staff see no clear connection showing a methodical decision making process where monitoring results would be used to lead the State Water Board to a determination that installation (or not installation) of thermal curtain(s) is appropriate. Very clear decision making steps including temperature thresholds should be laid out to establish for the public how the Board will make a

determination. Furthermore, based on the limited results of modeling from the Level 1-3 reports and the DEIR analysis, the staff alternative is unlikely to achieve the specified temperature objectives.

The Department recommends that the State Water Board conduct further analysis of their staff alternative, analyze their alternative alongside the other alternatives in a revised CEQA document, and recirculate the DEIR so that the public and other interested parties may comment on a comparable set of alternatives. If the State Water Board staff alternative continues to include a monitoring period, followed by a decision making process, the Department recommends that very clear temperature objectives are established as well as a clear decision making process and that if these objectives are not met in the river by a certain date, the State Water Board would move forward with more protective measures.

Section 6.5 Water Quality

Mitigation Measure WQ-1 on page 6.5-20 should include a requirement for consultation and approval by the Department.

Impacts to Lake Almanor Cold Water Pool

Section 6.5 Water Quality of the DEIR, Appendix E – Level 3 Report and Appendix E1 – Summary of Supplemental Modeling Results to Support the UNFFR Project EIR discuss the water quality (temperature and dissolved oxygen (DO)) impacts of the Proposed UNFFR Project, Alternative 1 and Alternative 2 on Lake Almanor and Butt Valley hypolimnions. Section 6.5 also lays out the proposed mitigation measures for each of these.

Lake Almanor has some of the best cold water fishing in California. According to the State Water Board's evaluation of impacts to the cold water pool in Lake Almanor, for both Alternative 1 and Alternative 2, the only water year type that could significantly impact the cold water pool (and therefore the fishery) would be Critically Dry years. The Department disagrees. *Section 6.5, Appendix E, and Appendix E1* only analyze reductions to habitat volume in Lake Almanor during Normal and Critically Dry years. Habitat volumes during Dry years are not evaluated. Habitat volumes will be reduced during Dry years, potentially exposing the fish to long-term sub-lethal conditions.

While not immediately lethal, the 21°C criteria, is borderline for most salmonids. As noted in Table 2 of *Appendix F – Evaluation of Biological Performance of Temperature Control Measures*, 21°C is within the inferred range of supra-optimal temperatures and can significantly reduce food conversion efficiency and growth rates, decrease resistance to some diseases, alter behaviors, and increase vulnerability to predation among other things. These deleterious outcomes depend on the length of time the fish is exposed. The condition of the individual fish declines the longer the fish is exposed to the marginal temperature.

To reduce the effects to a less than significant level, the State Board recommends additional stocking as mitigation subsequent to Critically Dry years. The Department feels that this may not adequately protect the fishery and recommends additional stocking (over and above stocking agreed to in the Settlement Agreement) during the fall of both Dry and Critically Dry years with additional reservoir population monitoring and potential additional stocking the year subsequent to a Dry or Critically Dry year. Fall stocking should occur as soon as the lake water is cool enough.

The State Water Board also recommends that PG&E be required to implement a limnological monitoring program including water temperature and DO depth during Critically Dry water years to "reduce the uncertainty associated with summer coldwater habitat estimates for Lake Almanor." For the reasons stated above, the Department recommends that additional water temperature and DO monitoring occur during both Critically Dry and Dry years.

Hooded pipeline

Pages 4-3 and 4-4 of the DEIR discuss the reasons a "hooded pipeline" alternative was eliminated from consideration in this EIR:

"One of the measures involved installing a submerged hooded pipeline at the Prattville intake. PG&E determined that the "hooded pipeline" alternative would not be as effective in reducing water temperatures as a thermal curtain at Prattville, and it therefore concluded that the hooded pipeline would not be a reasonable water temperature control measure (Pacific Gas and Electric Company 2005). This alternative was also eliminated from the FERC Final Environmental Impact Statement for the Upper North Fork Feather River Project (FERC Final EIS) because FERC made a determination that the required dredging of submerged levees would result in adverse effects and would not be feasible from a cost-benefit standpoint (Federal Energy Regulatory Commission 2005). The State Water Board included the "hooded pipeline" alternative during the Level 1 process also determined that it was not a viable alternative to advance."

Given the fact that the Board has determined that the installation of a thermal curtain would have significant and unavoidable aesthetic impacts at the Prattville intake, the Department recommends re-evaluating a long hooded pipeline as an alternative for the Prattville intake in combination with thermal curtains in Butt Valley. Although a hooded pipeline may not be as effective at reducing water temperatures in the river as thermal curtains, physical modeling indicated that it could reduce water temperature significantly and the aesthetic impacts would likely be less than significant. The following graphs are Figures 7-34 and 7-35 from the Lake Almanor Cold Water Feasibility Study: Hydraulic Model (Ettema, et al., 2004). These graphs compare the different variations of a curtain and a long hooded pipeline both with and without the currently existing underwater levees:

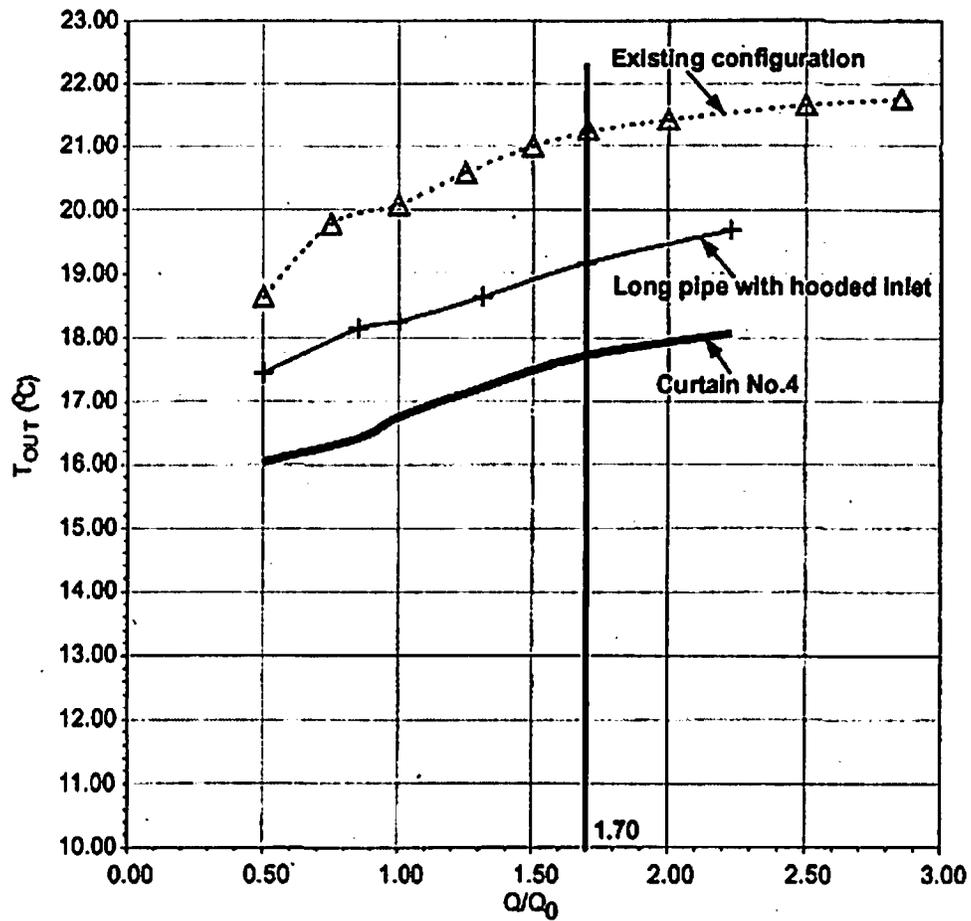


Figure 7-34. Comparison of the performances of the LPHI with levees not removed and Curtain No. 4 for August condition.

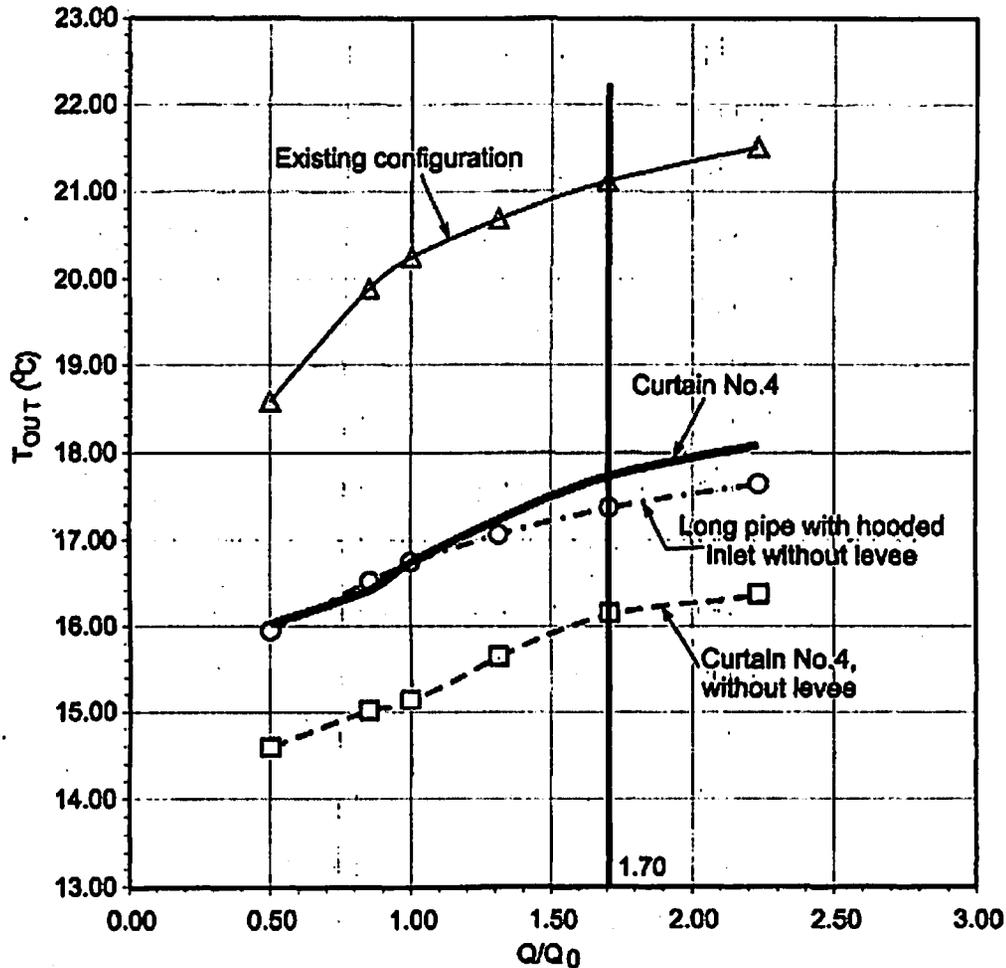


Figure 7-35. Comparison of the performances of LPHI with levees removed and Curtain No. 4 (with and without levees); August condition.

The long pipe with hooded inlet option may have the benefit of reducing temperatures in the river to more acceptable levels for cold water species, with less depletion of the cold water pool in Lake Almanor.

Section 6.6 Fisheries

Table 6.6-1 on page 6.6-4, – *tahoensis* should be spelled *tahoensis*.

On pages 6.6-10 and 6.6-14, the DEIR discusses the Gansner Bar fish barrier. The Department recommends updating these discussions to reflect the fact that the Gansner Bar fish barrier has been removed.

Mitigation Measure FS-1 on page 6.6-16 should include a requirement for consultation and approval by the Department.

Section 6.7 Vegetation, Wildlife, and Sensitive Biological Resources

The use of the term "Absent" is inappropriate as this would mean that the species is not present, which is not the case for Bald Eagle, Golden Eagle, California spotted owl and Ringtail cat. These species are known to occur in or within proximity to both the Biological Study Area and the Activity Area. The Department recommends changing the term "Absent" to instead address the likelihood of the species to be present (Low, Moderate, High) and provide a greater discussion on the potential for species to be impacted by activities. Please also include appropriate avoidance or minimization measures, and the requirement to consult with the Department, to ensure appropriate protection of species and their habitat.

Mitigation Measure BR-1b on page 6.7-27 states: *"If a population cannot be fully avoided, PG&E will retain a qualified botanist to: (1) determine appropriate salvage and relocation measures; and (2) implement these measures in coordination with USFWS, CDFW, or USFS staff, as appropriate."* If the project cannot avoid impacts, then a requirement for consultation and incidental take coverage should be required.

Foothill Yellow-legged Frog

While suitable habitat for the foothill yellow-legged frogs (*Rana boylei*) is not present in the UNFFR Project area, populations of this state-listed Species of Special Concern exist in the Cresta and Poe reaches downstream of the UNFFR Project. Foothill yellow-legged frogs require temperatures above 17° during July and August for rearing and metamorphosis. Because the entire river between Canyon Dam and Lake Oroville is 303(d) listed for temperature, the Department suggests that the Board re-evaluate their alternatives as they relate to foothill yellow-legged frog populations, and in particular, analyze the cumulative impact of your alternative to the special status species within this watershed.

Conclusions:

Given the information presented in the DEIR and associated appendices, thermal curtains at the Prattville Intake in Lake Almanor and at the Caribou intakes in Butt Valley appear to be the best option for reducing temperatures throughout much of the North Fork Feather River and bringing the North Fork Feather River into compliance with the CWA Section 303(d) listing.

Unfortunately, the Department is only able to give superficial comments without a thorough evaluation of the actual proposal contained in the DEIR. The Department recommend that the Water Board evaluate the staff recommendation, determine whether it is the Environmentally Superior Alternative, and re-circulate the DEIR.

Mr. Barnes
March 17, 2015
Page 10

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References:

Stetson Engineers, Inc. 2007. Level 1 and 2 Report: Development and Screening of Potentially Effective and Feasible Alternatives to Achieve the Basin Plan Objective for Water Temperature and Protect Cold Freshwater Habitat Beneficial Use along the North Fork Feather River. Prepared for the State Water Resources Control Board. Stetson Engineers, Inc., San Rafael, California. October.

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R. Ettema, M. Muste, A.J. Odgaard, and Y. Lai. July, 2004. *Lake Almanor Cold-Water Feasibility Study: Hydraulic Model*.