

Wetzel, Jeff@Waterboards

From: Leong, Tristan -FS <tleong@fs.fed.us>
Sent: Thursday, October 15, 2015 1:28 PM
To: Villalobos, Amber@Waterboards
Subject: Comments on Fish Passage Assessment for WBFR - In Response to PG&E's Petition for Reconsideration of WQC for the Desabla Centerville Project
Attachments: Hendricks Fish Passage Letter Signed.pdf

Dear Ms. Villalobos,

Please include the following comments in the project record for the Desabla-Centerville relicensing. Included are Forest Service responses pertaining to subjects raised by PG&E's Petition for Reconsideration.

Thank you,



Tristan Leong
Regional Hydropower Assistance Team
Fisheries Biologist - Detailed

USDA Forest Service
Pacific Southwest Region, Public Services

p: 707-562-9109
c: 530-961-2155
tleong@fs.fed.us



Caring for the land and serving people



File Code: 2770
Date: September 1, 2015

Ms. Neva Geldard
License Coordinator
Pacific Gas and Electric Company
245 Market Street, Mail Code N11C
P.O. Box 770000
San Francisco, CA 94177

Dear Ms. Geldard:

This letter responds to Pacific Gas & Electric Company's (PG&E's) July 13, 2015, request for comments on its October 2012 Assessment of Fish Migration Barriers on the West Branch Feather River (Assessment). PG&E has sought this review in response to a May 8, 2015 Petition for Reconsideration of Clean Water Act Section 401 Water Quality Certification (WQC) for the Desabla-Centerville FERC Project No. 803 pending before the State Water Resource Control Board (SWRCB).

In its Petition, PG&E argues that it is aggrieved by the inclusion of Condition 12 in the WQC¹: Hendricks Fish Diversion Fish Screen and Passage. Condition 12 of the WQC requires PG&E to submit a plan for approval to the SWRCB's Deputy Director to construct a fish screen and ladder at the Hendricks Diversion Dam. This condition mirrors FERC's proposed Measure 77² and the Forest Service's revised 4(e) Condition 19. PG&E objects to Condition 12 claiming that "a fish screen and ladder at HDD serves no purpose whatsoever." To reach this conclusion, PG&E submits that numerous natural barriers downstream of HDD prevent fish from migrating upstream. PG&E cites its 2012 Assessment as justification for this view.

The Forest Service strongly disagrees with PG&E's assertion that a fish screen and ladder at HDD "serves no purpose." PG&E's claims regarding fish passage and screen improvements at HDD completely ignore and mislead the reader into believing that the measure's sole or primary purpose is to mitigate for fish passage at HDD, and that because upstream fish passage may potentially be limited under certain flow conditions the measure is thus rendered ineffectual. A cursory review of the FERC record for the Desabla-Centerville Project reveals an extensive history of resource agency concern over the operation of the HDD and associated canal, which entrains the entire flow of the WBFR under normal operations (i.e. non-spill scenarios). Relicensing entrainment studies for the Project demonstrated that under normal operation, high numbers of fish originating from upstream of the HDD are entrained into the unscreened canal and are lost to Project operations. FERC summarized the concern over HDD operation, the measure's development, and the instream habitat in the WBFR stating³:

¹ PG&E Petition for Reconsideration of WQC May 8, 2015. Page 8.

² FERC Final EA

³ FERC Final EA July 24, 2009. 5-65 thru 5-67.



Minimum Instream Flows, Fish Ladder and Fish Screen at Hendricks Diversion Dam

In the draft EA, we did not recommend Cal Fish & Game's and FWS' recommendation for the installation of a fish screen and ladder at the Hendricks diversion dam. While resident fish populations within project-affected stream reaches are generally healthy and viable, we recognize that the project entrains fish into project works and therefore is likely affecting the overall density of fish populations within project-affected stream reaches. As such, in the draft EA, we recommended increasing the minimum instream flows downstream of each of the project's mainstem diversion dams to provide additional habitat for the enhancement of resident fish populations within the project-affected stream reaches, including the West Branch Feather River downstream of the Hendricks diversion.

Following review of the agencies response to our section 10(j) preliminary determination and comments on the draft EA, while we continue to conclude that the fish populations in the project-affected stream reaches are viable and generally healthy, we outlined a revised recommendation at the 10(j) meetings that provides protection for fish in the West Branch Feather River downstream of the Hendricks diversion at a reasonable cost consistent with the provisions of the purpose and requirements of the FPA or other applicable law. During the 10(j) meetings, it became evident to us that fish protection on the West Branch Feather River was a priority for Cal Fish & Game. Therefore, our revised recommendation includes provisions for a fish screen and ladder at the Hendricks diversion dam in lieu of increasing the minimum instream flows as we recommended in the draft EA.

FWS and Cal Fish & Game filed responses to staff's revised recommendation on June 11, 2009. FWS and Cal Fish & Game agreed with our fish screen and ladder recommendation, but filed an alternative flow regime for minimum instream flows.

Cal Fish & Game and FWS' alternative flow regime for the West Branch Feather River included a 15 cfs minimum instream flow (during dry years) downstream of Hendricks diversion dam to ensure passage connectivity within the West Branch Feather River. FWS noted that PG&E's PHABSIM calibration flows demonstrate that the 7 cfs flow identified in our revised preliminary recommendation during dry years would not support passage through the stream reach immediately downstream of the diversion dam and to the first major tributary at Big Kimshew Creek.

Based on the PHABSIM calibration flows for this reach, we agreed that passage through this stream reach at a 7 cfs minimum instream flow may be questionable. One of the purposes of operating a fish ladder at the Hendricks diversion would be to provide resident fish access to thermal refuge in the upper watershed, of particular importance during dry years. With this in mind, during the June 29, 2009, section 10(j) meeting, we recommended, in lieu of providing dry year flows of 15 cfs below Hendricks diversion dam, that PG&E develop, after consultation with the agencies, a fish passage and screen plan that would address the design and operational criteria for a fish screen and ladder at the Hendricks diversion dam, and would also specify how PG&E would provide migration connectivity through the stream reach immediately downstream of the diversion to the confluence with Big Kimshew Creek. To provide such a migration corridor in the plan, we recommended installation of fish habitat structures or other such means to increase connectivity in dry years. Additionally, we recommended that, if the fish passage and screen plan were to provide migration connectivity via stream flows greater than the minimum instream flow requirement, the additional flow could be reallocated to lower Butte Creek if needed to protect the ESA-listed anadromous fish resources there, as determined by the Operations Group.

As a result of the June 29, 2009, section 10(j) meeting, Cal Fish & Game, FWS, and the Forest Service found our recommendation for a fish passage and screen plan and 7 cfs dry year flow, as described above, to be an acceptable alternative to their recommended 15 cfs dry year flows between September 1 and February 28.

Therefore, as discussed in section 5.2, we now recommend that PG&E provide a year-round minimum instream flow below the Hendricks diversion dam of 15 cfs during normal years and 7 cfs in dry years, and develop, after consultation with FWS, NMFS, Cal Fish & Game and the Forest Service, a fish passage and screen plan for the Hendricks diversion dam. The plan should include: (1) design specifications for a fish ladder providing upstream passage over the Hendricks diversion dam, and for fish screens at the Hendricks canal entrance; (2) provisions for year-round operation of the fish ladder in all water year types; (3) provisions for ensuring migratory connectivity for

rainbow trout within the West Branch Feather River between the Hendricks diversion dam and the confluence with Big Kimsheew Creek; and (4) a schedule for installation of the facilities. To ensure that flows will be provided for migratory connectivity, the plan should also include provisions to allow the Operations Group to limit the flow release to only the recommended minimum instream flow (7 cfs), if any additional flow for migration connectivity is needed in lower Butte Creek to protect the ESA-listed fish and their critical habitat. If, in lieu of additional stream flows, instream habitat structures or other such methods are proposed to ensure migratory connectivity, the plan should include a detailed description of the measures to be implemented.

As a result of the 10(j) meetings, we now consider the inconsistencies associated with Cal Fish & Game and FWS' recommendations for minimum flows below Hendricks diversion dam to be resolved.

It is clear from the above description that despite FERC staff's preference to address fishery issues in the WBFR through flow releases, releases alone would do nothing to resolve entrainment at HDD, which "*entrains fish into project works and therefore is likely affecting the overall density of fish populations within project-affected stream reaches.*" In their attempt to balance water issues, aquatic resource protection, and project operations for the WBFR, FERC staff recommended Measure 77 for inclusion in a new License. Despite the Measure's improvement over existing conditions, FERC staff acknowledged that during dry water year's conditions may limit migratory connectivity between the HDD and Big Kimsheew Creek. It is unclear if FERC's "in lieu of" discussion refers to just the WBFR or both the WBFR and Butte Creek, when FERC directs the licensee to investigate potential habitat structures or other methods to ensure migratory connectivity in lieu of additional stream flows during dry water years. FERC envisions that this investigation should be developed into an implementation plan during the new license.

FERC requires PG&E to provide one of two alternatives for ensuring migratory connectivity in the WBFR during dry years: if available provide additional flow above the minimum 7 cfs, or provide instream structures to establish migratory connectivity under all flow conditions. The Assessment provided by PG&E meets neither requirement. Providing additional flow becomes infeasible during dry conditions, as Philbrook Reservoir storage and additional water sources limit the volume of water that can be provided to the WBFR. As such, the only other option to satisfy FERC's Measure 77 is to identify locations of migration barriers at low flows and provide potential instream flow structures to address migration connectivity throughout the reach. Unfortunately, the Assessment provides neither a means to increase flow, nor designs of instream flow structures at potential barrier locations.

Irrespective of whether PG&E intended the Assessment to answer these directives, the investigation suffers from two major failings that limit the scope of inquiry and thus the conclusions drawn regarding potential migration barriers in the WBFR. The first limitation relates to the narrow hydrologic conditions for which PG&E assessed migration barriers. PG&E assessed the geomorphic characteristics of potential fish passage barriers at flows equal to or less than 24 cfs. While these flows typify the reach from July through November, on average, review of the hydrologic records demonstrates that flows in the WBFR vary tremendously both seasonally and year to year – indeed, the flows routinely exceed these levels, even during the driest years. Thus, the Assessment is not able to resolve whether these barriers remain or become passable when flows exceed 24 cfs, since it did not model or observe different flow scenarios. At higher flows it is expected that the hydraulic and geomorphic characteristics of these potential barriers will change, likely becoming passable. The Assessment even acknowledges this point, stating, "*in reference to the most likely potential barriers at RM 24.4 & 27.5: as flows increase, the vertical drop has the potential for reduction, which may allow passage.*" Secondly, the Assessment's analysis of swimming performance and jumping capability limits the size class of fish only to that observed in the WBFR downstream of HDD. This restriction ignores those fish entrained in the canal or washed over the HDD that have ranged in size greater than 480mm. These larger fish, which would be bypassed

downstream of the HDD with a screen, have greater swimming and jumping potential and could potentially navigate the barriers identified in the Assessment. The combination of the singular flow characterization and navigability calculations for a small range of fish sizes makes conclusions about potential fish migration barriers unduly limited in scope and thus inconclusive.

Ultimately, however, the Assessment's findings are irrelevant to the directive to reduce entrainment loss at the HDD, and to ensure that any screened fish have the ability to return upstream to more thermally-suitable habitat. Although a secondary benefit to constructing and operating the screen and passage facility at HDD will be to provide additional passage opportunities for resident fish below HDD, the inclusion of screen and passage facilities at HDD was not solely formulated to mitigate for the loss of fish passage at HDD. Again, as referenced in FERC's record for the DeSabra-Centerville project, the primary purpose and need for these facilities will be to address the entrainment and loss of fish emanating from upstream of the HDD. This need will continue for the life of the Project regardless of whether potential barriers downstream may limit the upstream mobility of fish below the HDD. FERC Measure 77, the Forest Service revised Final 4(e) Condition 19, and the SWRCB's WQC Condition 12 were extensively vetted during the relicensing process for this Project, and PG&E agreed to this measure during the FERC mediated negotiations over aquatic issues. The Forest Service does not consider PG&E's Assessment to contain information that warrants revisiting these requirements.

If you have any questions regarding this correspondence, please contact Regional Hydropower Assistance Team Fisheries Biologist (Detailed) & Lassen Zone Hydropower Coordinator Tristan Leong at (530) 961 – 2155 or tleong@fs.fed.us.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Hays", written in a cursive style.

RUSSELL HAYS
Forest Supervisor

cc: alind@fs.fed.us, tleong@fs.fed.us