

These comments are organized as follows: first, we state language for the two conditions we recommend the Commission include in the new license for Project 2105. Second, we summarize CSPA and AW's June 5, 2020 comments in the Project 2105 docket, in which we laid out the rationale for these two conditions; we have attached our June 5, 2020 comments to the present filing.⁴ Third, we respond to PG&E's October 21, 2020 and December 4, 2020 comments.

I. Specific language for recommended Conditions for inclusion in the Project 2105 license.

A. Project 2105 Certification Condition 6(A)

CSPA and AW recommend adoption of Condition 6(A) of the Project 2105 Certification as written. For clarity, we reproduce this language here, modified to delete internal references to other sections of the Project 2105 Certification and with clarifying language to replace such references as needed to create a stand-alone Condition. Added language is shown in brackets.

6(A) Canyon Dam Supplemental Flows

Within 60 days of license issuance, the Licensee shall operate Canyon Dam releases to prevent the mean daily water temperature of the North Fork Feather River from exceeding 20°C, as measured at Gage NF-57 (USGS Gage No. 11403200), from June 16 through September 15. The Licensee shall release supplemental flows up to a total release of 250 cfs from the low-level Canyon Dam outlet to reduce water temperature. The total release includes the supplemental flows for river temperature reduction required in this condition and [is not additive to] the [otherwise required] M[inimum] I[nstream] F[low]s. To the extent feasible, the Licensee shall initiate Canyon Dam releases from the low-level Canyon Dam outlet prior to, and in all cases no later than within 24 hours of an exceedance of 20°C mean daily water temperature at Gage NF-57 (between June 16 – September 15). Releases from the Canyon Dam outlet shall be implemented in compliance with [general] [r]amping [r]ate [requirements]. Temporary modifications of the supplemental flows are subject to the [general] requirements [for temporary flow modifications].⁵

⁴ California Sportfishing Protection Alliance and American Whitewater's Comments and Response in Opposition to Petition for Waiver Determination, (P-2105-089), (P-2105-126) (Jun. 5, 2020), eLibrary no. 20200605-5008 (CSPA and AW's June 5, 2020 comments).

⁵ Project 2105 Certification, p. 31, with modifications as shown in brackets. Note that the State Water Board's Final Certification changed the metric and compliance location from the Draft Certification, replacing MWAT at the NF-70 gage downstream of Belden Dam and the NF-56 gage in the Cresta Reach in the Draft with mean daily temperature measured at NF-57 downstream of Rock Creek Dam in the Final Certification. This change was consistent with recommendations in CSPA and AW's comments on the Draft Certification, filed with the Commission on June 17, 2020, eLibrary no. 20200617-5052, Att. 1, pp. 4-5. PG&E's October 21, 2020 filing effectively comments on a Condition that no longer exists, without acknowledging the change. PG&E's December 4, 2020 filing also does not acknowledge this change, other than to delete it in redline strikethrough on pages 11-12.

B. Oxygenation of Lake Almanor

CSPA and AW recommend the following language for an additional license condition to require construction, operation and maintenance of a Speece Cone or comparable oxygenation facility to oxygenate the hypolimnion of Lake Almanor in the vicinity of Canyon Dam.

Within 2 years of license issuance, licensee will submit to FERC an Oxygenation Plan to construct, operate, and maintain a facility to oxygenate the hypolimnion of Lake Almanor within two miles of Canyon Dam. The Plan shall include design for a facility that targets the maintenance of at least 100,000 acre-feet of water in Lake Almanor throughout each year whose water temperature is less than 20°C with a dissolved oxygen (DO) content of no less than 7.0 mg/l. Licensee shall develop the Plan in consultation with the Forest Service, Plumas County, California Department of Fish and Wildlife (CDFW), State Water Board, and all other signatories to the Project 2105 Settlement Agreement. Prior to PG&E's submittal of the Plan to FERC, the Forest Service, Plumas County, CDFW and the State Water Board shall approve the Plan. The Plan shall include descriptions and associated timelines for environmental review and permitting. Once approved by FERC, licensee shall implement the Plan. Licensee may use the Rock Creek – Cresta Coldwater Habitat and Fishery Enhancement and Mitigation Fund to fund the development of the Plan and its implementation, including permitting, construction, operation and maintenance of the oxygenation facility.⁶

II. Summary of CSPA and AW's June 5, 2020 Comments on Proposed License Conditions.

As mentioned above, on June 5, 2020, CSPA and AW filed with the Commission "California Sportfishing Protection Alliance and American Whitewater's Comments and Response in Opposition to Petition for Waiver Determination, (P-2105-089), (P-2105-126)."⁷ For reference, we have attached that earlier filing to the instant comments, and refer to that filing as CSPA and AW's June 5, 2020 Comments. CSPA and AW's June 5, 2020 Comments explain why the Commission must include conditions to protect water quality such as those described in the instant comments, regardless of the Commission's decision on waiver. This imperative stems from the Commission's responsibilities under the Federal Power Act (FPA), above all

⁶ In the alternative, prior to license issuance, the Commission could issue an Additional Information Request from PG&E to provide a preliminary design of an oxygenation facility within six months. Since FERC's July 16, 2020 waiver of certification cited above has apparently rendered moot a Final Environmental Impact Report from the State Water Board pursuant to the California Environmental Quality Act (CEQA), FERC would likely need to issue a NEPA supplement to analyze any potential impacts of this feature. As CSPA and AW stated in the conclusion of our June 5, 2020 Comments, "If the Commission chooses instead to [waive certification and thus] take back the ball that it handed off to the State Water Board fifteen years ago, the Commission will need to perform and document significant additional work to produce a project license that is supported by substantial evidence."

⁷ California Sportfishing Protection Alliance and American Whitewater's Comments and Response in Opposition to Petition for Waiver Determination, (P-2105-089), (P-2105-126) (Jun. 5, 2020), eLibrary no. 20200605-5008.

from its responsibilities under FPA §§ 10(a)(1) and 10(a)(2) to issue a license consistent with comprehensive plans in the record (primarily the Central Valley Basin Plan)⁸ and more generally with a comprehensive plan for the development of the waterway.

A. Summary of Background as Presented in CSPA and AW’s June 5, 2020 Comments

CSPA and AW’s June 5, 2020 Comments provide factual and procedural background for the Project 2105 relicensing, the relevant aspects of the relicensing of the Rock Creek – Cresta Project (P-1962) immediately downstream of Project 2105, and the relevant filings and documents of the State Water Board in the Project 2105 relicensing and associated water quality certification proceeding. *See* pages 2-13, which include citations to documents and eLibrary numbers.

Relevant highlights of this background include:

- The North Fork Feather River from Lake Almanor downstream to Oroville Reservoir is listed as impaired for temperature under Section 303(d) of the Clean Water Act (CWA).
- The Commission, the State Water Board, and all parties to the Rock Creek – Cresta Settlement Agreement and Project 2105 Settlement Agreement, including PG&E, agreed that 20°C was the appropriate benchmark against which to measure thermal impairment of cold freshwater habitat.
- The design, configuration and operation of Project 2015 substantially heats up water that Project 2105 moves from Lake Almanor, through Butt Valley Reservoir, through the Caribou powerhouses, and into Belden Reservoir, creating “routine exceedances” of the 20°C threshold in the water temperatures in the Belden reach and downstream reaches.
- The water temperatures of the water discharged through the Caribou powerhouses are the primary determinant of the water temperatures in the Belden reach.
- The water temperatures of the water discharged through the Caribou powerhouses are a major determinant of the water temperatures in the Rock Creek and Cresta reaches of the North Fork Feather River.
- Reduction of summer water temperatures in the Rock Creek and Cresta reaches is largely dependent on reduction of the temperature of water released from Belden Reservoir.

B. Summary of Argument as Presented in CSPA and AW’s June 5, 2020 Comments

CSPA and AW’s June 5, 2020 Comments present argument that Canyon Dam Supplemental Flows and Oxygenation of Lake Almanor are necessary for inclusion in the new

⁸ California Regional Water Quality Control Board, Central Valley Region, *The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region, Fifth Edition, Revised May 2018 (with Approved Amendments): The Sacramento River Basin and the San Joaquin River Basin* (“Basin Plan”), p. 2-9. Available at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf.

license for Project 2105 under Federal Power Act § 10(a)(1) and for protection of beneficial uses in project-affected waters pursuant to Central Valley Basin Plan.

- The Basin Plan requires: “At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature.”⁹ Discharges from the Caribou powerhouses back to the North Fork Feather River in Belden Forebay are far more than 5°F warmer than inflows from the Seneca reach of the North Fork Feather River into Belden Forebay, in clear and open violation of the Basin Plan. In fact, the differential in June-September often exceeds 5° *Celsius*. See especially figures summarizing PG&E modeling in CSPA and AW’s June 5, 2020 Comments, Attachment 1 pp. 26-27.
- The Basin Plan requires: "Any segments with both COLD and WARM beneficial use designations will be considered COLD water bodies for the application of water quality objectives."¹⁰ PG&E’s arguments in the relicensing and water quality certification proceedings objecting to impacts of water temperature reduction to warm water species flatly ignore this requirement.
- There are two elements to habitat for cold-water fish in Lake Almanor: cold water and oxygen. Much of the cold water in Lake Almanor, largely located near Canyon Dam, is anoxic. Oxygenation of the cold water near Canyon Dam is necessary to mitigate for existing impacts of Project 2105 operation, which in Critically Dry and Dry years reduces cold water habitat in Lake Almanor to zero or near zero in August. This required mitigation under the Basin Plan will create a condition where it is unnecessary to mitigate for withdrawal of additional cold water from Lake Almanor in the Canyon Dam supplemental flows.
- It is not possible to improve the thermal profiling of Lake Almanor. What is possible and completely feasible is to oxygenate the cold water that is present and will continue to be present in the lake.
- Given the changes in energy markets and reductions in power values over the last fifteen years, the monetary and power impacts to Project 2105 are likely less than those stated in the FEIS and are a required expense to achieve compliance with the Basin Plan.

III. PG&E’s 2020 arguments against Canyon Dam supplemental flows and related water quality mitigations are without merit, as were its previous arguments in opposition to such mitigations.

In its October 21, 2020 and December 4, 2020 filings, PG&E presents a series of arguments in opposition to the supplemental releases from Canyon Dam that Condition 6(A) of the Project 2105 Certification would require. In brief, PG&E argues that the benefits of such supplemental flows do not warrant the expense, that the modeling conducted by the State Water

⁹ Basin Plan, p. 3-13.

¹⁰ *Id.*, Footnote 2 to Table 2-1 (“Surface Water Bodies and Beneficial Uses”), p. 2-15.

Board in support of such flows does not support the Condition, and that adverse impacts to other resources outweigh the benefits of the supplemental flows.¹¹ We address each line of argument below.

A. Canyon Dam Supplemental Flows are legally required for compliance with the Basin Plan.

The Basin Plan clearly states: “Controllable factors are not allowed to cause further degradation of water quality in instances where uncontrollable factors have already resulted in water quality objectives being exceeded.”¹² As described above, the State Water Board has listed the North Fork Feather River as impaired for water temperature pursuant to Section 303(d) of the Clean Water Act. To the degree that water temperature in the North Fork Feather River is controllable by operation of Project 2105, PG&E is required to implement that operation.

PG&E argues that the State Water Board has not adopted a numeric 20°C benchmark for water temperature under the Basin Plan.¹³ PG&E makes this argument disparaging the 20°C benchmark despite the fact that PG&E itself agreed to this benchmark in the Rock Creek – Cresta Settlement Agreement. As cited in CSPA and AW’s June 5, 2020 comments, FERC also adopted the 20°C benchmark in the FEIS as the determinant of protection of cold freshwater beneficial uses.¹⁴ PG&E’s denunciation of this benchmark is close to if not over the line of PG&E’s commitment to support the Rock Creek – Cresta Settlement Agreement. It is also futile for PG&E to dispute the 20°C benchmark, because Canyon Dam supplemental flows are a controllable factor that PG&E can implement to avoid further degradation of the impaired water temperature condition officially recognized under the CWA 303(d) listing, regardless of what any existing or future numeric benchmark might be.¹⁵

The legal standard, then, is not whether the expense is warranted under a balancing requirement, under the FPA or otherwise. The legal standard is the antidegradation standard in the Basin Plan. On point here is the fact that the Commission’s FEIS has explicitly recognized the Basin Plan as a comprehensive plan with which the new license must comply.¹⁶

PG&E also tries to substitute a legal standard based on comparison of the new conditions of operation of Project 2105 to a degraded baseline.¹⁷ PG&E further argues that its Proposed

¹¹ PG&E December 4, 2020 filing, *op. cit.*, p. 3.

¹² Basin Plan, p. 3-2.

¹³ PG&E October 21, 2020 filing, pdf. p. 49.

¹⁴ CSPA and AW’s June 5, 2020 comments, p. 17, citing to FEIS p. C-17.

¹⁵ See Basin Plan, p. 3-2, as cited above.

¹⁶ See CSPA and AW’s June 5, 2020 Comments, p. 17, citing to FEIS, p. 3-54, which stated: “We agree there is a need to document that water quality conditions under any new license issued meet applicable federal and state water quality standards and meet the objectives of applicable management plans. These standards are set to protect the designated beneficial uses of surface waters.”

¹⁷ See PG&E’s October 21, 2020 Comments, pdf p. 12 (“Thus, the Project will *decrease* water temperature in the North Fork Feather River compared to baseline conditions and will not adversely impact water temperature”).

Project under CEQA will incrementally improve the degraded thermal regime, and that therefore the Commission cannot hold the new license to a standard of compliance with the Basin Plan.¹⁸ This argument equally fails. To begin with, a State agency cannot passively approve a “Proposed Project” under CEQA if it is legally deficient. Part of the purpose of CEQA analysis is to assure that the approved Project suffers no such deficiency.¹⁹ PG&E describes the State Water Board’s alternatives to achieve compliance with the Basin Plan as somehow separate from or extra to the Proposed Project, or in PG&E’s words “reframing PG&E’s Project objectives to describe broader watershed objectives unrelated to the [hydropower] Project.”²⁰ PG&E cannot simply write compliance with water quality requirements out of the CEQA document by objecting to CEQA alternatives that analyze such compliance.

PG&E argues that it is “inappropriate” for the State Water Board to adopt broader watershed objectives. These objectives include improving water temperatures in the North Fork Feather River in general, reducing water temperatures in the North Fork Feather River to meet the 20°C benchmark in the North Fork Feather River in particular, and assuring that controllable factors that could reduce water temperature in the North Fork Feather River are not overridden by uncontrollable physical factors.²¹ However, as the State Water Board, PG&E’s own modeling, the FEIS, and CSPA and AW’s June 5, 2020 Comments have all shown, the summer water temperatures in the North Fork Feather River downstream of Lake Almanor are the direct result of the operation of Project 2105 (for the Rock Creek and Cresta reaches, in combination with the operation of Rock Creek – Cresta Project no. 1962). From Belden Forebay downstream, these summer temperatures are thermally impaired. Compliance with the Basin Plan means not allowing controllable factors to worsen this impairment.

Perhaps PG&E’s most egregious obfuscation of the legal standard is PG&E’s argument that Project 2105 does not violate Basin Plan’s prohibition on discharges that increase the temperature of receiving waters by more than 5°F. As cited above from, CSPA and AW’s June 5, 2020 Comments, PG&E’s 2003 modeling shows conclusively that the operation of Project 2105 increases the temperature of water entering Belden Forebay by more than 5°C (9°F) for most of the June-September time period each year.²² However, PG&E seeks to escape this fact by arguing that the Project (apparently in this case referring to the Project under CEQA, *i.e.*, the

¹⁸ See generally PG&E’s October 21, 2020 Comments, pdf pp. 47-51 (“The RDEIR [Revised Draft Environmental Impact Report under CEQA] is Fundamentally Flawed Because It Analyzes a New, De Facto Water Board Plan Rather than Environmental Impacts associated with PG&E’s Project”).

¹⁹ Similarly, for the Commission’s purposes, the approved action under NEPA must analyze the issuance of a legally sufficient license to operate a hydropower project under the requirements of the FPA. In particular, the license must not conflict with the Basin Plan; an unlawful alternative is not a reasonable alternative under NEPA.

²⁰ PG&E’s October 21, 2020 Comments, pdf p. 49.

²¹ *Id.*, pdf p. 48.

²² The exceedance of the 5°F differential is also borne out by PG&E’s monitoring. See *e.g.*, the temperature differentials of June-September monthly averages between discharges from Caribou #2 Powerhouse and the North Fork Feather River above Caribou Powerhouse in the 2015 Rock Creek – Cresta Annual Condition 4.C Report, eLibrary no. 20160524-5131, pp. F-2 and F-3. See also 2018 Annual Condition 4.C Report, eLibrary no. 201905530-5478, pp. D-26 and D-27.

new proposed operation) will not increase the temperature by more than 5°F compared to the previous operation of the hydropower Project. “Thus, the Project will *decrease* water temperature in the North Fork Feather River compared to baseline conditions and will not adversely impact water temperature.”²³ Since PG&E’s operation over the past fifty-plus years in has thermally impaired the North Fork Feather River to the point of listing under CWA Section 303(d), PG&E argues it is acceptable for another license term as long as the impairment does not become worse.

It would be bad enough if PG&E could point fingers at other actors in the watershed and apportion some of the blame or responsibility for thermal impairment elsewhere. However, PG&E is virtually the only actor in the North Fork Feather watershed. Its “stairway of power” dominates the river from Lake Almanor to Oroville Reservoir. Under NEPA, FERC is required “to factor the damage already wrought by the construction of dams into the cumulative impacts analysis” and “how the present impacts of those past actions would combine and interact with the added impacts of the 30-year [or longer] licensing decision.”²⁴ The Commission’s NEPA analysis did more of that than PG&E appears to find warranted, founded on PG&E’s modeling of thermal releases from Project 2015 and their effect on downstream reaches.²⁵ submitted in response to AIR question 13, August 25, 2003. The FEIS looked at thermal effects of releases from Canyon Dam. The State Water Board’s draft EIR further analyzed the cumulative effects of the downstream transit of warm water released through Project 2105 facilities. But PG&E dismisses such analysis, because it does not address Project 2105 alone.²⁶

Finally, CSPA and AW cannot fathom how the Commission can fail to consider and address impacts of Project 2105 to waters immediately downstream. The license Order for Project 1962, the project immediately downstream of Project 2105, explicitly refers to the effect of Project 2105 on downstream water temperatures and the evaluation of changes to Project 2105 to improve water temperatures in the Rock Creek and Cresta reaches of the North Fork Feather River.²⁷ More generally, Section 10(a)(1) of the FPA refers to a comprehensive plan for the development of a waterway, not a series of plans segmented by separate FERC projects.

²³ *Id.*, pdf p. 12.

²⁴ *See Am. Rivers v. FERC*, 895 F.3d 32,55 (D.C. Cir. 2018).

²⁵ *See* PG&E’s August 25, 2003 Response to AIR Question 13, FERC eLibrary no. 20030825-0124.

²⁶ *See* PG&E’s October 21, 2020 Comments, pdf. p. 48. (“Here, the State Water Board’s focus should have been on addressing adverse impacts *of the Proposed Project* rather than on fixing existing environmental problems related to downstream cold water habitat.”)

²⁷ 97 FERC ¶ 61,084, Order Approving Settlement and Issuing New License, Project Nos. 1962-000 and 028. *See, for example*, p. 15: “These monitoring requirements will not provide information or data relating to the effects of Project No. 1962. Rather, the data will be used to determine what action to take at the upstream Project No. 2105 or on the tributaries if flows from Project No. 1962 fail to meet the 20-degree-Celsius objective.”

B. PG&E disparagement of the Water Board’s modeling despite PG&E’s earlier use of the same models and production of similar results is vague, self-serving, and without merit.

PG&E expends many pages criticizing the State Water Board’s modeling analysis of the water temperature benefits of Canyon Dam supplemental flows and the potential impacts of any such releases to cold water and/or dissolved oxygen in Lake Almanor.

In summary, PG&E states:

The studies performed as part of the development of the Revised DEIR used simplified 1-dimensional (MITEMP2) and 2-dimensional (CE-QUAL-W23) models. ...

The State Water Board used the existing models developed earlier by PG&E for different objectives and re-purposed them to support Condition 6. Because the SWRCB used these models in an inappropriate manner, the results are unreliable.²⁸

PG&E explains:

PG&E does not take issue with all studies done in support of the new license, and acknowledges that some of these early studies were also used to evaluate the minimum instream flows (MIFs) defined under Condition 1, which PG&E has accepted as part of the Settlement Agreement. However, these MIFs represent relatively minor changes from the existing conditions, and these models were shown to reliably reproduce existing conditions. Therefore, the use of these models to evaluate MIFs (as presented in the FEIS) is appropriate as the Lake Almanor dynamics would not change significantly with these MIFs. In contrast, the changes required in Condition 6 (supplemental flows and other significant modifications such as thermal curtains) are expected to significantly influence the Lake Almanor dynamics.²⁹

So: as long as modeling supports only “relatively minor changes from existing conditions,” it is “reliabl[e].” However, when modeling supports measures that improve water temperatures in the North Fork Feather River downstream, it is no longer “appropriate.”

PG&E used the models to respond to a 2003 Additional Information Request (AIR) from FERC staff to describe the effects of both changes in Lake Almanor power intake infrastructure (a “thermal curtain” on the Prattville intake that moves water from Lake Almanor through Butt Valley Powerhouse into Butt Valley Reservoir) and increased flow releases from Lake Almanor’s Canyon Dam into the North Fork Feather River. PG&E stated no such qualification about the limited basis of its own modeling in making this response. The AIR requested:

²⁸ See PG&E’s October 21, 2020 Comments, pdf. pp. 17-18.

²⁹ Id., pdf p. 18.

For the above stated reasons, please provide the MITEMP3 and SNTMP output for all reliable model runs made in electronic format along with a description of the modeled scenario. We request that you provide this information in an organized fashion that is consistent for each model set. For each model set, you should provide (1) a description of the assumptions applied, (2) predicted water surface elevations for Lake Almanor and Butt Valley Reservoir, (3) predicted water temperatures for vertical profiles in Lake Almanor and Butt Valley Reservoir, (4) predicted water temperatures for each of the project powerhouses and for all sites in stream reaches modeled, and (S) flows at each location modeled.³⁰

PG&E prefaced its response to Question 13 of the AIR by stating: “A complete set of the temperature modeling results in a comprehensive set of tables is attached.”³¹ The tables include SNTMP modeling results for the release points in Project 2105 (powerhouses and reservoirs) for release scenarios from Canyon Dam of 35, 75, 100, 150, 200, 250, 300, 500 and 600 cfs. (Example shown below). These include model results under existing facilities and under an assumed modification to the Prattville intake (thermal curtain). There is no indication in PG&E’s 351-page filing of any limitations of the modeling that would make it accurate and reliable only “under relatively minor changes from the existing conditions.” Nor has PG&E filed any correction on the record with any purportedly more accurate model results.

PG&E’s critique does not clarify why the models as used by the State Water Board are “inappropriate” other than to object to the State Water Board’s conclusion: “the SWRCB inappropriately used these models to justify major changes to Lake Almanor operations (Condition 6).”³² There is some indication that PG&E doesn’t like the presentation of model results in exceedance graphs,³³ and PG&E takes issue with the labelling of these graphs,³⁴ but there is no clear reason why this underlying data in this presentation is flawed. PG&E says that the modeling “lacks comprehensiveness,”³⁵ but doesn’t say how this changes the outcome or the conclusions.

Perhaps most telling is that PG&E’s own modeling arrived at much the same conclusions. A Canyon Dam supplemental release of 250 cfs cools the Belden reach substantially, particularly in dry years as shown in the two tables below.³⁶ There is some generalization and assumptions in the presentation of this data as well, but the story is very similar.

³⁰ Cited from PG&E’s August 25, 2003 Response to AIR Question 13, *op. cit.*, pdf p. 3.

³¹ *Id.*, pdf p. 4.

³² See PG&E’s October 21, 2020 Comments, pdf. p. 38.

³³ *Id.*, pdf p. 40

³⁴ *Id.*

³⁵ *Id.*, pdf p. 41.

³⁶ Tables from PG&E’s August 25, 2003 Response to AIR Question 13, *op. cit.*, pdf pp. 321-322. Added circles in Table E2.6-14 show values for flows at 35 cfs (existing year-round Canyon Dam release), 75 cfs (closest modeled value to Settlement Agreement required flows), and 250 cfs (maximum Canyon Dam supplemental flow proposed); in Table E2.6-15, circles show for comparison the respective June-September temperature differentials at Belden Dam between Canyon Dam release at 35 cfs and Canyon Dam release at 75 and 250 cfs.

Table E2.6-14 (REVISED)
Belden Dam Monthly Median Release Temperatures Under Various Environmental Scenarios

Belden Dam Release Temperatures Under Various Environmental Scenarios (°C)																		
Canyon Dam Release	Existing Prattville										Modified Prattville							
	35	75	100	150	200	250	300	500	600	35	75	100	150	200	250	300	500	600
Average WY and Normal Meteorology																		
June	17.1	17.0	17.2	17.0	17.0	16.6	16.3	15.5	15.0	13.8	13.9	14.1	14.0	14.2	14.2	14.2	14.0	13.9
July	20.1	20.2	20.2	20.0	20.0	19.8	19.6	19.0	18.8	15.5	15.6	15.8	15.8	15.9	16.0	16.0	16.2	16.2
August	21.1	20.8	20.8	20.6	20.6	20.4	20.3	19.8	19.7	18.6	18.6	18.7	18.6	18.7	18.6	18.8	18.8	18.9
September	18.7	18.7	18.6	18.5	18.3	18.2	18.2	18.2	18.3	18.6	18.6	18.6	18.5	18.5	18.4	18.5	18.6	18.9
Average WY and Warm Meteorology																		
June	17.9	17.7	18.1	17.9	17.8	17.6	17.2	16.3	15.7	13.8	14.0	14.2	14.3	14.4	14.5	14.5	14.5	14.4
July	21.1	21.2	21.2	21.0	20.9	20.8	20.6	20.1	19.8	16.5	16.6	16.7	16.7	16.8	16.9	16.8	17.1	17.2
Aug	22.0	22.1	22.1	21.9	21.8	21.6	21.5	21.0	20.9	19.2	19.2	19.3	19.1	19.4	19.4	19.3	19.5	19.6
Sep	20.7	20.7	20.5	20.4	20.3	20.2	20.1	20.0	20.0	19.5	19.6	19.7	19.5	19.7	19.7	19.6	20.1	20.3
Dry WY and Normal Meteorology																		
June	17.2	16.1	15.6	14.5	13.2	13.3	13.3	13.8	14.1	16.6	15.7	15.3	14.3	13.2	13.3	13.3	13.8	14.1
July	21.6	20.9	20.4	19.5	19.1	18.9	18.3	17.1	17.9	19.3	19.0	18.8	18.3	18.1	18.0	17.6	17.1	17.9
Aug	21.5	20.7	20.3	19.5	19.2	19.1	19.1	19.2	20.4	20.3	19.8	19.5	18.9	18.7	18.8	18.9	19.4	20.6
Sep	19.5	19.2	19.1	19.1	19.0	19.0	19.0	19.9	20.3	19.3	19.1	19.0	18.9	18.9	19.0	19.2	20.0	20.3
Dry WY and Warm Meteorology																		
June	18.1	16.9	16.4	15.1	13.6	13.6	13.8	14.6	15.1	17.3	16.3	15.9	14.8	13.6	13.6	13.8	14.6	15.2
July	22.5	21.9	21.4	20.4	19.8	19.6	18.9	17.7	18.7	20.1	19.7	19.5	18.9	18.7	18.6	18.3	17.7	18.8
Aug	22.8	22.0	21.5	20.5	20.1	20.0	20.0	19.9	21.2	20.8	20.4	20.1	19.5	19.4	19.5	19.6	20.1	21.5
Sep	20.6	20.9	20.7	20.6	20.4	20.3	20.3	20.8	21.4	20.3	20.2	20.1	20.0	20.0	20.1	20.2	20.9	21.5

E2-439
 Upper North Fork Feather River Project, FERC No. 2105
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Table E2.6-15 (REVISED)
Belden dam Monthly Median Release Temperature Change Relative to the Current Scenario

Comparison of Belden Dam Release Temperatures Relative To the Current Scenario, (°C)																		
Canyon Dam Release	Existing Prattville										Modified Prattville							
	35	75	100	150	200	250	300	500	600	35	75	100	150	200	250	300	500	600
Average WY and Normal Meteorology																		
June	0.0	0.1	0.0	0.2	0.1	0.5	0.8	1.6	2.2	3.3	3.3	3.1	3.1	3.0	3.0	2.9	3.1	3.2
July	0.0	-0.2	-0.1	0.0	0.1	0.3	0.5	1.0	1.3	4.6	4.4	4.3	4.3	4.1	4.1	4.1	3.9	3.9
August	0.0	0.3	0.3	0.5	0.5	0.7	0.8	1.2	1.4	2.4	2.5	2.4	2.5	2.4	2.4	2.3	2.3	2.2
September	0.0	0.0	0.1	0.2	0.4	0.4	0.4	0.5	0.4	0.1	0.1	0.1	0.2	0.2	0.3	0.2	0.1	-0.2
Average WY and Warm Meteorology																		
June	0.0	0.2	-0.2	0.0	0.1	0.4	0.7	1.6	2.2	4.1	4.0	3.7	3.7	3.5	3.4	3.4	3.4	3.5
July	0.0	-0.1	-0.1	0.1	0.2	0.3	0.5	1.0	1.3	4.6	4.5	4.3	4.4	4.3	4.2	4.3	4.0	3.9
August	0.0	-0.1	-0.1	0.1	0.2	0.4	0.5	1.0	1.1	2.8	2.8	2.7	2.9	2.6	2.6	2.7	2.5	2.4
September	0.0	0.0	0.1	0.2	0.3	0.4	0.5	0.7	0.6	1.1	1.0	1.0	1.1	1.0	1.0	1.0	0.6	0.4
Dry WY and Normal Meteorology																		
June	0.0	1.1	1.5	2.7	4.0	3.9	3.9	3.3	3.1	0.6	1.5	1.9	2.9	4.0	3.9	3.9	3.4	3.1
July	0.0	0.7	1.2	2.0	2.5	2.7	3.3	4.5	3.7	2.3	2.6	2.8	3.3	3.5	3.6	3.9	4.4	3.7
August	0.0	0.7	1.2	2.0	2.3	2.4	2.4	2.3	1.1	1.2	1.6	2.0	2.6	2.7	2.7	2.6	2.1	0.9
September	0.0	0.2	0.4	0.4	0.5	0.5	0.4	-0.4	-0.9	0.2	0.4	0.5	0.5	0.6	0.5	0.3	-0.5	-0.9
Dry WY and Warm Meteorology																		
June	0.0	1.3	1.7	3.0	4.6	4.5	4.3	3.6	3.0	0.8	1.8	2.2	3.3	4.6	4.5	4.3	3.6	2.9
July	0.0	0.6	1.2	2.2	2.7	3.0	3.6	4.9	3.9	2.4	2.9	3.1	3.7	3.9	3.9	4.3	4.8	3.8
August	0.0	0.8	1.3	2.3	2.7	2.8	2.8	2.9	1.6	2.0	2.4	2.7	3.3	3.4	3.3	3.2	2.6	1.3
September	0.0	-0.3	-0.1	0.0	0.2	0.3	0.3	-0.2	-0.8	0.3	0.5	0.5	0.6	0.6	0.5	0.4	-0.3	-0.9

E2-440
 Upper North Fork Feather River Project, FERC No. 2105
 ©2003, Pacific Gas and Electric Company

PG&E argues that the State Water Board’s modeling may overestimate the amount of cold water available in springs at the bottom of Lake Almanor, but the only explanation it offers that the model does not account for flows through a flood control channel west of the town of Chester, without further analysis or even consideration of when those flows might occur, what their volume is relative to the Lake’s capacity, or how cold these flows are likely to be.

In sum, PG&E’s argument against the State Water Board’s modeling has no clear direction or basis of comparison. The only coherent and consistent fault that PG&E finds is that PG&E does not like the Canyon Dam supplemental flows that the State Water Board concludes are warranted.

C. PG&E’s arguments against impacts to beneficial uses other than cold freshwater habitat and to warmwater aquatic resources are without merit.

As discussed above, PG&E is wrong on the law regarding the priority of cold freshwater habitat over warm freshwater habitat. PG&E is also wrong on many of the facts as they relate to conflicts between beneficial uses.

1. Canyon Dam Supplemental Flows Will Improve Recreational Angling.

PG&E states: “[T]he higher flows required by Conditions 6 and 1 are for the exclusive purpose of preserving cold water habitat. ... Focusing exclusively on one beneficial use, and ignoring potential adverse effects on other identified beneficial uses, such as fish habitat in Lake Almanor, water recreation, and hydroelectric power, is inconsistent with Section 10(a) of the FPA.”³⁷

Recreational angling (one of the main forms of “water recreation” in the North Fork Feather River basin) will benefit from, not be diminished by, Canyon Dam supplemental flows. The Rock Creek and Cresta reaches of the North Fork Feather River are designated as catch-and-release only for trout under CDFW angling regulations.³⁸ Pursuant to new angling regulations adopted by the California Fish and Game Commission on November 6, 2020 and filed with the Office of Administrative Law on December 4, 2020, the North Fork Feather River from Belden Bridge downstream to Cresta Powerhouse has, effective January 1, 2021, a 0-trout limit, continuing its catch-and-release status but changing the season during which angling is allowed (under new regulations, from the Saturday preceding Memorial Day through February). In addition, although not required to do so by regulation, many anglers in the Belden reach also practice catch-and-release exclusively.

³⁷ See PG&E’s October 21, 2020 Comments, pdf pp. 1-2.

³⁸ See https://fgc.ca.gov/Regulations/2020-New-and-Proposed#3_00.

The purpose of catch-and-release angling is to preserve the fishery so that it is sustainable without stocking. However, it is well documented that practicing catch-and-release when water temperatures exceed 20°C increases mortality of rainbow trout.³⁹

Equally important is the general perception among catch-and-release anglers that recreational angling in conditions of elevated water temperature increases mortality of released fish. Therefore, regardless of the actual thresholds of mortality, many anglers will not fish in waters when water temperatures are elevated. Fly Fisherman magazine, in a 2020 article entitled “Best Practices for Catch-and-Release Trout Fishing,” advised: “If the water temperature is near or above 70 degrees, catch-and-release trout fishing becomes unethical and impractical, as the mortality rate will be high.”⁴⁰ Thus, prolonged periods where water temperatures exceed 20°C diminish recreational angling. Reducing summer water temperatures in the Belden, Rock Creek and Cresta reaches through the implementation of the Canyon Dam supplemental flows will increase the number of days when portions of the river are acceptable for catch-and-release angling, and will therefore enhance opportunities to exercise the designated recreation beneficial use.

2. PG&E’s arguments that Canyon Dam supplemental flows will adversely affect hardhead and foothill yellow-legged frogs are without merit.

PG&E’s opposition to the State Water Board’s adoption of a 20°C water temperature benchmark undergoes a turnaround in the context of PG&E’s effort to demonstrate adverse impacts to hardhead. What PG&E describes as an “unachievable thermal threshold”⁴¹ is weaponized in PG&E’s comments on the RDEIR so that achievement of the State Water Board’s thermal objective is assumed: “The SWRCB stated objective is to reduce water temperatures, to

³⁹ See, e.g., Boyd JW and Guy, Effects of Catch-and-Release Angling on Salmonids at Elevated Water Temperatures (2010), p. x. (“The primary objective of this study was to measure CR mortality of rainbow trout, brown trout, and mountain whitefish in three water temperature treatments; when daily maximum water temperatures were cool (<20°C), warm (20 to 22.9°C), and hot (23°C). ... Mortality of rainbow trout *Oncorhynchus mykiss* increased [from zero under cool temperatures] to 9% and 16% in warm and hot treatments, respectively.” Available at:

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwigI_o-vjtAhVORKwKHbkLDdAQFjACegQIAhAC&url=http%3A%2F%2Fwww.mtcfru.org%2Fwp-content%2Fuploads%2F2014%2F12%2FBoyd-et-al_2010.pdf&usg=AOvVaw0iWq-8qWNC9zBX5vGC-lFe

See also Giles, Emily, Review of Literature on Catch-and-Release Mortality Rates of Trout, p. 1 (“When taking into consideration all types of gear, current literature suggests that mean catch-and-release mortality rates are between 3 and 4.5% for rainbow trout caught in water temperatures <20°C and between 8 and 16% for water temperatures ≥20°C.”) Available at:

https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjMo7KN_jtAhUYWs0KHV7JCMcQFjAAegQIARAC&url=https%3A%2F%2Fhenrysfork.org%2Ffiles%2FRob%2520Blog%2FC%2526R%2520mortality%2520review.pdf&usg=AOvVaw2j_SU08SH7PRVY23MEIn6Q

⁴⁰ Fly Fisherman magazine, Best Practices for Catch-and-Release Trout Fishing (2020), Available at:

<https://www.flyfisherman.com/editorial/Best-Practices-for-Catch-and-Release-Trout-Fishing/384148>

⁴¹ See PG&E’s October 21, 2020 Comments, pdf p. 34.

less than 20°C through much of the Cresta reach. Achievement of this objective would result in less than suitable habitat for hardhead growth throughout most of the river.”⁴²

For PG&E, all roads lead to no. Supplemental flows would not fully achieve the 20°C temperature objective all the time, so PG&E says the flows would be insufficient. On the other hand, 20°C if fully achieved would reduce habitat for hardhead, so PG&E says the flows would be excessive.

The State Water Board’s modeling shows that Canyon Dam supplemental flows will generally not achieve 20°C water temperatures in the Poe reach in July and August, and will often not achieve or will only barely achieve this objective in the Cresta and Rock Creek reaches or parts of them. The assumed achievement and thus diminution of thermally suitable hardhead habitat assumes a level of success in achieving an objective that PG&E correctly points out will often fall short. Consistent with the Basin Plan, the State Water Board’s proposed Canyon Dam supplemental flow condition that would manage controllable factors to the degree they are controllable. And that is all. The Canyon Dam supplemental flows would achieve exactly that balance of beneficial uses that PG&E says the State Water Board did not consider.

PG&E characterizes the fisheries in the North Fork Feather River downstream of Rock Creek Dam as “transitional,” with some element of warm water fisheries in the lower sections of the Belden reach as well. The historical operation of Project 2105 has reduced reliable cold freshwater habitat during the summer to reaches upstream of Rock Creek Reservoir, and during some years to the Seneca reach upstream of Belden Forebay. The Canyon Dam supplemental flows would restore to a degree some of the historical cold freshwater habitat in the Belden and Rock Creek reaches, and to some degree in the Cresta reach (which is also dependent on the operation of PG&E and the City of Santa Clara’s Bucks Creek Powerhouse). This restoration of cold freshwater habitat would not be perfect, but it would improve cold freshwater habitat in the North Fork Feather River in the summer where its reliable presence has been absent since the 1950’s and where its reliability will diminish in the future with climate change.

Peter Moyle in *Inland Fishes of California* shows optimal temperature range for hardhead as 24-28°C, clearly warmer than water temperatures in Belden, Rock Creek and Cresta reaches of the North Fork Feather River. Moyle states that hardhead have a large population in California’s Pit River drainage, and seek the warmest available temperatures in a general range of 17-21°C.⁴³ The FEIS, citing Moyle, characterizes the “preferred range” for hardhead as 17-28°C,⁴⁴ and notes that the Belden reach under existing flows and those proposed in the Project 2105 Settlement Agreement are at the “lower end of the preferred range.”⁴⁵ In addition, the proposed Canyon Dam supplemental flow condition would allow PG&E to reduce the supplemental flows when the water temperature at the NF-57 gage just downstream of Rock Creek Dam showed an

⁴² *Id.*, p. 139. See also similar statements assuming achievement of the objective on pdf p. 141.

⁴³ Moyle, Peter, *Inland Fishes of California* (2002), University of California Press, p. 152.

⁴⁴ See FEIS, p. 3-111.

⁴⁵ See FEIS, p. 3-113.

average daily temperature of less than 20°C;⁴⁶ thus, the supplemental flows would not push the thermal regime in the Rock Creek and Cresta reaches to the bottom of the preferred thermal range of hardhead.⁴⁷

Hardhead populations in the Rock Creek and Cresta reaches of the North Fork Feather River are variable. There is, further, no clear demarcation why certain habitat or temperature conditions are favorable to hardhead as opposed to competing pikeminnow, Sacramento suckers and riffle sculpins. Overall, rainbow trout, the only consistently present cold-water species, have not varied greatly in their percentage of the total fish composition in these reaches (between about 8 and 22% on the Rock Creek reach; between about 10 and 27% on Cresta, but with highly variable total numbers of fish sampled).⁴⁸

In short, the thermal regime of the North Fork Feather River under both existing conditions and as it would be with the Canyon Dam supplemental flows is well outside the stated optimal range for hardhead. PG&E has presented no evidence that the incremental cooling of the Rock Creek and Cresta reaches under the Canyon Dam supplemental flows are a reason to renege on the 20°C temperature target for these reaches that PG&E agreed to in the Rock Creek – Cresta Settlement Agreement and that FERC has subsequently used as a benchmark for cold freshwater habitat.

PG&E’s arguments that are centered on alleged impacts of the Canyon Dam supplemental flows on foothill yellow-legged frogs (FYLF) in the Cresta reach are equally unavailing.⁴⁹ PG&E cites a 2017 paper that suggests that Sierra foothill streams where “a mean summer maximum 30-day temperature is greater than 20.3°C” have denser FYLF populations than those that do not, and further that “density is reduced in Sierra foothill rivers below hydropower reservoirs where mean summer maximum 30-day temperature is below 20°C.”⁵⁰ However, review of July and August water temperatures on the Cresta reach since 2002 shows that the maximum daily temperature is in July and August (hottest months of each year) is generally at least 1°C warmer than the average daily temperature and is frequently closer to 2°C warmer. Since the Canyon Dam supplemental flows are tied to the average daily temperature and allow reduction of the flows once the average daily temperature on the Rock Creek reach drops below 20°C, the supplemental flows will not bring the 30-day *maximum* temperature below 20°C or 20.3°C.

⁴⁶ See footnote 5 above.

⁴⁷ FEIS Table 3-14 does not show any hardhead sampled in three years in the Belden reach. Pikeminnow, like hardhead a cyprinid and the closest species to hardhead among species sampled, accounted for 1% of the number of fish sampled in two sampling years and were not detected in the third year.

⁴⁸ This data is reported for electrofishing results in PG&E, Rock Creek – Cresta 2019 Fishery Monitoring Report and Summary of 15-Year Test Flow Period Fish Monitoring Results FERC License Condition No. 7, p. 83. The Report does not show comparable data for snorkel surveys. It is not clear to CSPA and AW whether this report distributed to the Forest Service and Rock Creek – Cresta Ecological Resources Committee has been or is intended to be filed with the Commission.

⁴⁹ There are no known FYLF in the Rock Creek or Belden reaches.

⁵⁰ See PG&E’s October 21, 2020 Comments, pdf pp. 34-35.

CSPA and AW note that PG&E's water temperature monitoring and both PG&E and the State Water Board's modeling show that discharges from Bucks Creek Powerhouse, located near the downstream end of the Rock Creek reach, cools the Cresta reach, so that the Cresta reach is not generally warmer in summer than the Rock Creek reach. If PG&E were truly concerned about the negative thermal impacts to FYLF from Canyon Dam supplemental flows, one could reasonably expect PG&E to reduce its discharges from Bucks Creek Powerhouse during July and August to eliminate a roughly equivalent level of cooling in the Cresta reach.

PG&E observes that spring and summer flow fluctuations can have negative effects on FYLF.⁵¹ While this may be of general interest, it has nothing to do with the State Water Board's proposed license conditions, which do not propose and would not create any additional flow fluctuations in Cresta and Poe reaches where FYLF are present.

An even more flagrant example of PG&E's argument to make the facts fit the desired outcome is PG&E's statement: "FYLF populations have not been documented in in the Seneca or Belden reaches; however, potentially suitable habitat exists."⁵² CSPA and AW have been involved in over a dozen FERC proceedings on PG&E's projects, and we do not recall a single instance of where PG&E has proposed to manage a reach of river affected by one of its projects for a species that is not present in the reach. If PG&E proposes to manage for a *potential* population of FYLF, it could start by implementing spill recession requirements on the Rock Creek reach similar to those currently required to protect frogs on the Cresta reach and currently under development for the Poe reach, and which CSPA, AW and State Water Board staff are currently working with PG&E to refine.

In summary, PG&E arguments that Canyon Dam supplemental flows would adversely affect hardhead and FYLF are imprecise, selective, and self-serving. The Commission should disregard them.

3. PG&E's argument that Canyon Dam supplemental flows will adversely affect Lake Almanor fisheries and fishing is without merit.

PG&E's expressed concern for recreational angling in Lake Almanor rings hollow in the face of the fact that PG&E has not proposed a single affirmative measure to improve the cold freshwater habitat in Lake Almanor to benefit that reservoir's trout population and the anglers who fish for them.

PG&E frames mitigations for lack of cold freshwater habitat in Lake Almanor as mitigations for Canyon Dam supplemental flows (effectively, a mitigation of another mitigation).

⁵¹ *Id.*, pdf p. 35.

⁵² *Id.*, pdf p. 34. The Seneca reach of the North Fork Feather River is known to have "potentially suitable habitat" for spring-run Chinook salmon, which once thrived there. We look forward to PG&E's future management for this iconic species.

PG&E argues: “Mitigation for Impacts Caused by the Alternatives Rather than the Proposed Project is Legally Unjustified When the Alternatives Do Not Address Project Impacts.”⁵³

PG&E states:

It should be clarified that the reduction in habitat refers specifically to cold water fish habitat, and the reduction in critical dry years is immaterial as there is no cold water habitat in critical dry years under baseline conditions for portions of the season. ... Thus, there is no significant reduction from the Project on the cold water fish habitat in critical dry years. In dry years, a 13% reduction in cold water habitat during one week (RDEIR Table 5.5-1) by itself would not rise to the level of a significant impact. Therefore, FS-2’s conclusion of significant without mitigation for the Project is incorrect.

As discussed above, PG&E argues that the non-existence of cold-water fish habitat in Lake Almanor at times in August of Critically Dry years, and the near absence of such habitat in Dry years, is not an impact that requires mitigation because PG&E’s proposed operation of Project 2105 won’t make these conditions any worse. CSPA and AW disagree with PG&E’s argument under CEQA. But in terms of compliance with the Basin Plan, this proposal to do nothing is undeniably wrong.

CSPA and AW’s proposed license condition that would require oxygenation of Lake Almanor is needed to address this ongoing project effect. The fact that the State Water Board also missed it does not absolve the Commission from the need to require it.⁵⁴

To meet the requirements of the Basin Plan, the Commission must order a license condition to mitigate for lack of cold freshwater habitat in Lake Almanor (oxygenated cold water). This mitigation is not required *in order to* offset any potential loss of cold freshwater habitat that may occur due to Canyon Dam supplemental flows. This mitigation is required to address the underlying lack of cold freshwater habitat that *already exists* in Lake Almanor due to operation of Project 2105. By mitigating the existing lack of cold freshwater habitat in Lake Almanor, a condition to oxygenate Lake Almanor will render moot any impact to Lake Almanor fisheries that might be associated with Canyon Dam supplemental flows.

⁵³ *Id.*, p. 56.

⁵⁴ CSPA and AW raised the issue in our March 2015 comments on the State Water Board’s first DEIR. See Comments of California Sportfishing Protection Alliance and American Whitewater on the *Draft Environmental Impact Report for the Water Quality Certification of Pacific Gas & Electric Company’s Upper North Fork Feather Hydroelectric Project, Federal Energy Regulatory Commission Project No. 2105* (Mar. 26, 2015), eLibrary no. 20150326-5212, pp. 15-16. CSPA and AW also petitioned the State Water Board for reconsideration of the Certification for Project 2105 on the grounds that the Certification does not require oxygenation of Lake Almanor. See Copy of Petition for Reconsideration of California Sportfishing Protection Alliance and American Whitewater of the Water Quality Certification for the Upper North Fork Feather Project; Filed as Comments on Project No. P-2105-089 (Aug. 14, 2020), eLibrary no. 20200814-5112.

IV. Conclusion

The Commission should dismiss PG&E's arguments. The Commission should include conditions in the new license for Project 2105 that require Canyon Dam supplemental flows and oxygenation of Lake Almanor, as described in these comments.

Dated this 5th day of January, 2021.

Respectfully submitted,



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**BEFORE THE
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION**

Pacific Gas and Electric Company)	Upper North Fork Feather Project
)	Project No. 2105-089
)	

Certificate of Service

I hereby certify that the foregoing *California Sportfishing Protection Alliance and American Whitewater's Comments on Necessary License Conditions Concerning Water Quality (P-2105-089)* in the above-captioned proceeding has this day been filed online with the Federal Energy Regulatory Commission and served via email or surface mail (as required) upon each person designated on the Service List compiled by the Commission Secretary for this Project.

Dated at West Valley City, Utah this 5th day of January, 2021.

Carla Miner

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American Whitewater
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West Valley City, Utah 84119
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Attachment 1

**CALIFORNIA SPORTFISHING PROTECTION ALLIANCE AND AMERICAN
WHITEWATER'S COMMENTS AND RESPONSE IN OPPOSITION TO PETITION
FOR WAIVER DETERMINATION
(P-2105-089)
(P-2105-126)**

June 5, 2020
eLibrary no. 20200605-5008

**BEFORE THE
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION**

Pacific Gas and Electric Company)	
)	Upper North Fork Feather Project
)	Project No. 2105-089
		Project No. 2105-126

**CALIFORNIA SPORTFISHING PROTECTION ALLIANCE AND AMERICAN
WHITEWATER’S COMMENTS AND RESPONSE IN OPPOSITION TO PETITION
FOR WAIVER DETERMINATION
(P-2105-089)
(P-2105-126)**

The California Sportfishing Protection Alliance (CSPA) and American Whitewater (AW) comment and respond in opposition to April 24, 2020 petition of Pacific Gas and Electric Company (PG&E) that the Federal Energy Regulatory Commission (FERC or Commission) issue a declaratory order finding that the State of California, through the State Water Resources Control Board (State Water Board), has waived its authority under Section 401 of the Clean Water Act (CWA), 33 U.S.C. § 1341, to issue water quality certification for the relicensing of the Upper North Fork Feather River Hydroelectric Project (FERC nos. 2105-089 and 2105-126).¹ In this response, CSPA and AW also respond to the Commission’s May 6, 2020 Notice of Petition for Declaratory Order in the same dockets.²

CSPA and AW are parties to the Upper North Fork Feather Project (Project) relicensing.³ Both CSPA and AW are signatories to the Project 2105 Settlement Agreement (2004), as well as to the Rock Creek – Cresta Settlement Agreement (2001) for PG&E’s Rock Creek – Cresta Project immediately downstream of Project 2105.⁴

Over the past 15 years, CSPA and AW have been the only non-governmental conservation organizations consistently engaged with licensee PG&E and resource agencies on the management and operation of PG&E’s hydroelectric projects in the North Fork Feather River

¹ Petition for Declaratory Order Requesting Waiver of Water Quality Certification of Pacific Gas And Electric Company (Apr. 24, 2020), eLibrary no. 20200424-5312 (“Petition for Waiver”).

² FERC, Notice of Petition for Declaratory Order, P-2105-089, P-2105-126 (May 6, 2020), eLibrary no. 20200506-3064.

³ See Motion to Intervene of California Trout, Trout Unlimited and California Sportfishing Protection Alliance (Feb. 24, 2003), eLibrary no. 20030224-5045. See also Additional Study Requests and Motion to Intervene by American Whitewater Affiliation, Chico Paddleheads, and Shasta Paddlers for the Upper North Fork Feather River Hydroelectric Project, FERC No. 2105-089 (Dec. 20, 2002), eLibrary no. 20021220-5087.

⁴ See Project 2105 Relicensing Settlement Agreement (Apr. 22, 2004; “Project 2015 Settlement”), eLibrary no. 20040504-0171, pp. 17-18. See also Rock Creek – Cresta Relicensing Settlement Agreement (Sep. 29, 2000), eLibrary no. 20001002-0373 (“RCC Settlement”). CSPA signed the Rock Creek – Cresta Settlement Agreement after issuance of the new license for Project 1962; the Settlement was amended to reflect CSPA’s addition to the ERC. See Rock Creek – Cresta Annual Report on 2002 Operation and Monitoring License Condition 22, eLibrary no. 20030606-0016, p. 25.

watershed. Both CSPA and AW have been faithful attendees and participants in the Rock Creek – Cresta Ecological Resources Committee (ERC) since its inception in 2002. CSPA has had the same individual representative on the ERC since 2006. AW has had the same representative on the ERC since its inception in 2002, longer than any other individual representative from any other entity, including PG&E.⁵ AW’s representative personally participated in the relicensing of Project 2105 and is a signatory to the Project 2105 settlement on behalf of AW and two paddling clubs. Both CSPA and AW are currently engaged in recreation planning and the development of flow recession rates for the Poe Project, for which the Commission issued a new license in 2019.

Due to the long and consistent history of CSPA and AW’s representatives in pre- and post-licensing processes and decisions for all of PG&E’s North Fork Feather River hydropower projects, and their on-the-ground experience with the watershed and its resources, CSPA and AW’s representatives have developed an extraordinary understanding of water and power operations on the North Fork Feather River. In addition, CSPA and AW’s representatives have provided and continue to provide institutional memory for stakeholders in the watershed.

CSPA and AW oppose waiver of CWA § 401 certification for Project 2105. As we describe below, the Commission punted to certification those issues related to water temperature in the bypassed reaches of the North Fork Feather River in Project 2105 and in the bypassed reaches of the North Fork Feather River in the Rock Creek – Cresta Project immediately downstream of Project 2105. These river reaches are all listed under Section 303(d) of the Clean Water Act as impaired for water temperature.⁶ Waiver of certification would leave the cold freshwater beneficial use⁷ of the Belden, Rock Creek and Cresta reaches of the North Fork Feather River unprotected and impaired. It is essential that the new license for Project 2105 incorporate Condition 6(A) of the Draft Water Quality Certification issued by the State Water Board on May 15, 2020.⁸ It is also essential that the State Water Board retain oversight over the implementation of these conditions in order to protect the cold freshwater beneficial use.

I. Background on Project 2105 Hydrology and Water Temperature

The record for the USGS gauge on the North Fork Feather River near Prattville, located just below Canyon Dam, clearly shows the impact of hydroelectric development on the North Fork Feather River (Figure 1). This record includes the period from 1906 to 1914, before the first incarnation of Canyon Dam was constructed. The record shows that pre-project flows rarely dropped below 800 CFS. After the dam’s construction, flow still remained relatively high until the middle part of the last century. After the final raise of Canyon Dam was completed in 1962,

⁵ Those representatives are Chris Shutes for CSPA and Dave Steindorf for AW, the authors of this letter.

⁶ See 303(d) list at:

https://www.waterboards.ca.gov/water_issues/programs/tmdl/2018state_ir_reports_draft/apx_d_cat_reports/category_5_report.shtml.

⁷ California Regional Water Quality Control Board, Central Valley Region, *The Water Quality Control Plan (Basin Plan) for the California Regional Water Quality Control Board Central Valley Region, Fifth Edition, Revised May 2018 (with Approved Amendments): The Sacramento River Basin and the San Joaquin River Basin* (“Basin Plan”), p. 2-9. Available at: https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/sacsjr_201805.pdf.

⁸ Draft Water Quality Certification for Federal Permit or License, Pacific Gas and Electric Company, Upper North Fork Feather Hydroelectric Project, Federal Energy Regulatory Commission Project No. 2105 (May 15, 2020), eLibrary no. 20200519-5036, p. 33 (“Draft Certification”).

PG&E was diverting over 95% of the flow from the upper reaches of the North Fork Feather River.

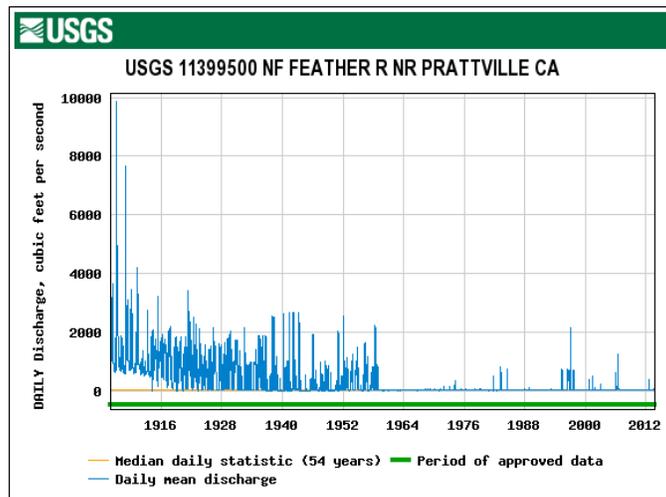


Figure 1: Historical hydrograph of North Fork Feather River at Canyon Dam site/release from Canyon Dam

It is fair to say that Project 2105 and associated PG&E projects in the North Fork Feather River watershed could not have been designed to heat up water more efficiently than they do under their present-day configuration. Project 2105’s storage reservoir, Lake Almanor, is located about 25 miles southeast of Mount Lassen, the southern-most peak in the Cascade Range. Because of the region’s volcanic geology, Lake Almanor is substantially spring-fed, and surface water tributaries to Lake Almanor are also largely spring-fed. Before hydropower development on the Feather River, the “big meadows” that were inundated by Lake Almanor typically discharged 800 cfs or more of cold water. Prior to blockage of fish passage downstream, the North Fork Feather River supported a large run of spring-run Chinook salmon.⁹

Today, at the top of the system,¹⁰ PG&E’s Mountain Meadow Reservoir east of Lake Almanor heats up a substantial portion of Lake Almanor’s inflow, and PG&E’s Hamilton Branch Project further heats water in one of Lake Almanor’s major tributaries.

Lake Almanor, the largest of PG&E’s storage reservoirs at 1.1 million acre-feet, has large surface area for its volume, and substantially heats water throughout the summer.¹¹

⁹ Yoshiyama et al, *Historical and Present Distribution of Chinook Salmon in the Central Valley Drainage of California* (2001), p. 124: “Early correspondence sent to the DFG state that large numbers of spring-run fish (“in the thousands”) entered the North Fork, most of which were stopped by Salmon Falls (about ten feet high) approximately 2 to 2.5 miles above the town of Seneca (DFG letters no. 1, no. 2).” Available at: https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&ved=2ahUKEwiO5sTpq9DpAhUOQK0KHfCaAmgQFjAAegQIAxAB&url=https%3A%2F%2Fnrnm.dfg.ca.gov%2FfileHandler.ashx%3FdocumentID%3D3563&usg=AOvVaw2ymOVkyG-RI_-cfTks5zjF

¹⁰ For maps of the Project 2105 and adjacent PG&E hydropower projects, see Draft Certification, *op. cit.*, pp. 46-47.

¹¹ Final Environmental Impact Statement for the Upper North Fork Feather River Project, Project No. 2105-089 (“FEIS”), (Nov. 10, 2005), eLibrary no. 20051110-4000, p. C-27 (average depth of Lake Almanor is thirty feet).

Under the current flow requirement, PG&E releases about 2-3% of total outflow to Lake Almanor into the Seneca reach of the North Fork Feather River, the river reach immediately downstream of Lake Almanor's Canyon Dam. PG&E routes the vast majority of water from Lake Almanor through its mid-level intake at Prattville, which withdraws water that during the summer mixes cool and hot water in the power tunnel leading to Butt Valley Powerhouse.

From Butt Valley Powerhouse, water is discharged into Butt Valley Reservoir, a large shallow reservoir that further heats up water during summer months.¹²

Water from Butt Valley Reservoir enters the penstocks that lead to the Caribou 1 and Caribou 2 powerhouses located back on the North Fork Feather River. The powerhouses discharge this water into Belden Forebay, where the water thus warmed by the project overwhelms the tiny amount of cold flow from the Seneca reach. The Final Environmental Impact Statement for the Project 2105 relicensing (FEIS) describes the temperatures of discharges from the Caribou powerhouses in the months of July, August and September: "Daily average temperatures exceeded 20.0°C for 35 percent of the days monitored at the Caribou No. 1 powerhouse and 65 percent of the days monitored at the Caribou No. 2 powerhouse."¹³ PG&E operates Caribou 2 Powerhouse preferentially over Caribou 1 Powerhouse.

Water that enters the Belden power tunnel from Belden Forebay is typically slightly warmer than water that is discharged from a lower elevation in Belden Reservoir into the Belden reach of the North Fork Feather River. Temperatures at the Belden power intake are greater than 20°C 52% of the time in June-September, with the greatest frequency in July and August.¹⁴ In the summer, the already-warm water that discharges from Belden Powerhouse enters the North Fork Feather downstream of the confluence with the East Branch Feather River.

From Belden Powerhouse, it is a short distance to Rock Creek Reservoir, a forebay that has substantially silted in and that in the summer further heats water before it enters the Rock Creek power tunnel or the Rock Creek reach of the North Fork Feather River. Thus, toward the bottom of the system, "[w]ater temperature in the Rock Creek and Cresta reaches is primarily a function of the temperature of the water withdrawn from Lake Almanor, flow from the East Branch NFFR, and minimum flows within the project reaches."¹⁵

The license order for the Rock Creek – Cresta Project summarizes the overall effect of hydropower development on the Rock Creek reach of the North Fork Feather River in this way:

Prior to 1950, a sport fishery of "trophy" stature existed on the North Fork Feather River in the area of the Rock Creek development. However, hydroelectric development in the

¹² *Id.* ("In July and August, the Caribou 2 intake can draw water as much as 2 to 3°C warmer than the Lake Almanor outflow into Butt Valley reservoir (WCC, 1986); therefore, warming in Butt Valley reservoir can also play a part in cumulatively affecting water temperatures in the Rock Creek and Cresta reaches.")

¹³ FEIS, p. 3-31.

¹⁴ *Id.*

¹⁵ Environmental Assessment for Hydropower License, Rock Creek-Cresta Hydroelectric Project, FERC Project No. 1962 California (May 31, 2001) eLibrary no. 20010531-0196, p. 35. ("RCC EA").

North Fork Feather River Basin resulted in reduced flows in segments of the river, increased thermal warming of basin waters, and loss of aquatic habitat, shifting river conditions to favor non-game species rather than trout. See Final EA, Section V.C.2.a.iii, Aquatic Resources, Fisheries; and Section VII, Aquatic Resources Environmental Measures.¹⁶

We discuss the summer thermal regime in the North Fork Feather River from Lake Almanor to the Rock Creek and Cresta reaches in more detail below.

II. Procedural Background

A. Upper North Fork Feather River Project Relicensing

On October 28, 1999, PG&E filed its Notice of Intent to relicense Project 2105.¹⁷

On October 23, 2002, PG&E submitted its Final Application for License (FAL) for Project 2105.¹⁸

On October 29, 2002, the Commission issued a Notice of Application Tendered with the Commission, Soliciting Additional Study Requests.¹⁹

On December 26, 2002, the Commission issued its Notice of Acceptance of the License Application and Soliciting Motions to Intervene.²⁰

On April 25, 2003, the Commission issued Scoping Document 1 for the relicensing of Project 2105.²¹

On June 23, 2003, the Commission issued an Additional Information Request (AIR) to PG&E. Item 13 of the AIR requested that PG&E produce “a complete set of water temperature modeling results” of the model runs that supported the FAL.²²

On August 7, 2003, the Commission issued Scoping Document 2 for the relicensing of Project 2105.²³

On August 25, 2003, PG&E provided its response to the AIR, including “[a] complete set of the temperature modeling results in a comprehensive set of tables” in a 350-page stand-alone response to Item 13 of the AIR.²⁴

¹⁶ Order Approving Settlement and Issuing New License, Project Nos. 1962-000 and 028 (Oct. 24, 2001), 97 FERC ¶ 61,084, fn. 15.

¹⁷ See eLibrary no. 19991101-0393.

¹⁸ See eLibrary nos. 20021023-0168 through 20021023-0175; 20021030-0031, 20021030-0032, 20021030-0035, 20021107-0071, 20021107-0077, and 20021107-0078.

¹⁹ See eLibrary no. 20021029-3010.

²⁰ See eLibrary no. 20021226-3080.

²¹ See eLibrary no. 20030425-3002.

²² See eLibrary no. 20030623-3008.

²³ See eLibrary no. 20030807-3015.

On August 25, 2003, the Commission issued the Notice of Ready for Environmental Analysis for Project 2105.²⁵

On April 30, 2004, PG&E filed the Final Project 2105 Relicensing Settlement Agreement.²⁶ The Settlement left several unresolved issues, including water temperature.²⁷

On September 13, 2004, FERC issued the Draft Environment Impact Statement for the relicensing of Project 2105.²⁸

On September 15, 2004, FERC issued public notice of the Project 2105 Settlement Agreement, soliciting comments on the Settlement.²⁹

On October 19 and 20, 2004, the Commission held meetings in Chester and Chico respectively to take oral comments on the DEIS.³⁰ During the meetings, FERC staff explained:

PG&E agreed to study and to potentially implement measures to provide cooler water to the Rock Creek and Cresta reaches of the North Fork Feather River. In its licensing order, the Commission said: Well, you can agree to do that in your Settlement Agreement, but we're not going to include it in the Rock Creek-Cresta license, because some of the measures that they were talking about ... affect another FERC project. So the Commission didn't include that in the Rock Creek-Cresta license. ... In fact, what the Commission said was that any modifications to the Upper North Fork Feather River Project must be considered in the context of that project.³¹

FERC staff also described aspects of the procedural and substantive relationship between the relicensing and the State Water Board's water quality certification, explaining that the State Water Board often had to conduct its own environmental analysis under the California Environmental Quality Act (CEQA), which often did not occur until after FERC had issued an FEIS.³²

²⁴ See eLibrary no. 20030825-0124 and supporting Excel files.

²⁵ See eLibrary no. 20030825-3053.

²⁶ See eLibrary no. 20040504-0171.

²⁷ *Id.*, p. 6. (“2.3 Unresolved Subjects. This Settlement leaves unresolved specific subjects related to the Resolved Subjects. ... Table 2 Subjects Not Resolved by this Settlement ... b) Water Temperature: Feasibility studies are currently underway to determine Project 2105 controllable factors associated with attainment and protection of cold freshwater habitat, a designated Beneficial Use of the North Fork Feather River. All Parties await additional information in early 2004 from on-going modeling efforts related to the potential Prattville Intake Modifications, re-operation, or other structural changes (Canyon Dam Intake structure modification, modification to Caribou 2, etc.) to inform PM&E development and agreement on appropriate water temperature conditions. CSPA has unresolved issues with temperature impacts on aquatic resources resulting from the continued operation of the Hamilton Branch and Project 2105 features including the Prattville outlet, Butt Valley Powerhouse, Butt Valley Reservoir, the Caribou 2 Powerhouse and Belden Reservoir in the Project vicinity and in downstream reaches of the North Fork Feather River to Oroville Reservoir.”)

²⁸ See eLibrary no. 20040913-0296.

²⁹ See eLibrary no. 20040915-3027.

³⁰ See meeting transcripts, eLibrary nos. 20041019-4006 (Oct. 19, 2004) and 20041020-4042 (Oct. 20, 2004).

³¹ See October 19 meeting transcript, p. 9.

³² *Id.*, p. 8.

On December 17, 2004, the Commission issued an AIR requesting that PG&E supply study reports it had developed on different potential solutions for improving water temperatures in the North Fork Feather River.³³

On January 13, 2005, PG&E filed the requested study reports in response to the Commission's AIR.³⁴

On November 10, 2005, the Commission issued the Final EIS for the Project 2105 relicensing.³⁵ The FEIS affirmed: "We agree there is a need to document that water quality conditions under any new license issued meet applicable federal and state water quality standards and meet the objectives of applicable management plans. These standards are set to protect the designated beneficial uses of surface waters."³⁶ In Appendix C, Response to Comments, FERC staff stated: "We agree with CDFG [California Department of Fish and Game] and continue to base our evaluation of water temperatures for the Seneca, Belden, and Butt Creek bypassed reaches on an upper limit of 20°C and changes from the existing condition."³⁷ Nonetheless, FERC staff declined to recommend increasing summer releases from Lake Almanor through Canyon Dam to decrease water temperatures in the North Fork Feather River, opining:

Providing releases from Canyon dam higher than the proposed MIFs, while reducing withdrawals through the Prattville intake, would further reduce temperatures in the NFFR, although the incremental benefit would be smaller as flow releases are increased. In addition, reducing discharges from the Butt Valley powerhouse would increase Butt Valley reservoir temperatures and thus degrade its coldwater fishery. We estimate that these releases (200-cfs to 400-cfs releases from the Canyon dam outlet lowlevel gates through Canyon dam instead of the Butt Valley powerhouse) would have an average annual cost in lost generation to the project of approximately \$1,800,000 more than implementation of PG&E's proposed MIFs. For these reasons, along with the incremental decrease in the net annual benefit of the project, which would result from reduced generation at the Butt Valley and Caribou powerhouses, we do not recommend MIFs higher than those proposed by PG&E in the SA.³⁸

However, staff did recommend for "further evaluation" a measure that would increase releases from Canyon Dam to 200 cfs in July and 400 cfs in August, with offsetting reductions in powerhouse flows through Butt Valley and Caribou 1 and 2.³⁹

³³ See eLibrary no. 20041217-3018.

³⁴ See eLibrary no. 20050114-0198; p. 2 of the AIR cover letter contains a list of the study reports filed under separate cover.

³⁵ FEIS, *op. cit.*

³⁶ FEIS, p. 3-54.

³⁷ *Id.*, p. C-17.

³⁸ *Id.*, p. 5-30. Staff's conclusion about the "coldwater fishery" in Butt Valley Reservoir is overstated. "By mid-July and August, the volume of cold water is typically at its minimum and the reservoir is weakly stratified." The Butt Valley trout fishery exists in summer almost exclusively at the head of the reservoir where Butt Creek enters it, sustained in part by wakasagi entrained from Lake Almanor through Butt Valley Powerhouse. See FEIS, p. 3-96 ff.

³⁹ *Id.*, p. D-3.

B. Rock Creek – Cresta Relicensing (Relevant to Project 2015 Facilities and Operations)

PG&E has briefly summarized the relicensing of the Rock Creek – Cresta Project as follows:

The original license for Rock Creek-Cresta was issued in 1947, and expired in 1982. PG&E filed a Relicensing application in 1979; between 1979 and 1993 PG&E amended its application a number of times. ... A draft Environmental Assessment for Rock Creek-Cresta was issued on November 1, 1996. Subsequently, PG&E, and nine of the eleven interveners negotiated and signed a settlement agreement (Settlement) which resolves various issues in the proceeding.⁴⁰

On September 29, 2000, PG&E filed with the Commission the Rock Creek – Cresta Relicensing Settlement Agreement.⁴¹ Section I(1) of Appendix A of RCC Settlement provided for measures to improve water temperature in the Rock Creek and Cresta reaches of the North Fork Feather River:

1. Water Temperature Requirement. In order to reasonably protect cold freshwater habitat, Licensee shall maintain mean daily water temperatures of 20 degrees Celsius or less in the Rock Creek and Cresta Reaches, to the extent that Licensee can reasonably control such temperatures. Reasonable Control Measures are: the flow schedules stated in Section II, Table A below and implementation of the measures stated in this Section I.

Section I of Appendix A further required PG&E to:

- Study modification of Lake Almanor’s Prattville intake to Butt Valley Powerhouse (§ I(2));
- Perform water temperature monitoring in the Rock Creek and Cresta reaches and to monitor water temperature profiles in Lake Almanor and Butt Valley Reservoir, and to monitor ambient meteorology in one location each in the Rock Creek – Cresta Project and Project 2105 (§ I(3));
- Prepare a report to evaluate “additional reasonable control measures” to maintain water temperature in the Rock Creek and Cresta reaches at or below 20°C, to implement such measures for which no additional regulatory approval is required, and to seek required approvals of such measures where necessary (§ I(4));
- Create a “Coldwater Habitat and Fishery Enhancement and Mitigation Fund ... for expenditure on water temperature control measures.” This fund, initially \$5 million and subject to an addition of \$2 million, would be the limit for expenditures to improve water temperatures in the Rock Creek – Cresta Project, but “[f]unding under this paragraph may be used in conjunction with funds that may be available from

⁴⁰ PG&E, Water Temperature Monitoring 5-Year Summary Report 2002-2007 (June 2008), eLibrary no. 20080801-400, pp. 1-1 and 1-2.

⁴¹ See eLibrary no. 20001002-0373 (“RCC Settlement”).

- other sources, including but not limited to Licensee’s other relicensing proceedings on the NFFR.” (¶ I(5)); and
- Recommend that FERC reserve its authority to “reopen for cause the New Project License to protect Beneficial Uses of the NFFR through coordinated operations of this Project, North Fork Feather Project (No. 2105) and Poe Project (No. 2107). Such reopener may occur in conjunction with the relicensing proceedings for Nos. 2105 and 2107.” (¶ I(6))

On May 31, 2001, the Commission issued the Final Environmental Assessment for the relicensing of the Rock Creek – Cresta Project.⁴² The Assessment supported adoption of the RCC Settlement Agreement’s 20°C water temperature objective in new Rock Creek – Cresta Project license.⁴³ However, the Assessment cautioned that “the Commission cannot impose conditions in one project’s license upon project works of a different project.”⁴⁴

On October 24, 2001, the Commission issued the Order Approving Settlement and Issuing New License for the Rock Creek – Cresta Project.⁴⁵ The Order adopted the 20°C temperature objective stated in the RCC Settlement (“Settlement Agreement condition 4”), including the language from the RCC Settlement.

On May 1, 2012, PG&E submitted, with the approval of the Rock Creek – Cresta ERC, a list of “Interim Temperature Control Measures” for improving water temperatures in the Rock Creek and Cresta reaches, deferring a final determination on temperature control measures until the issuance of the Environmental Impact Report for the § 401 water quality certification for the Upper North Fork Feather Project relicensing.⁴⁶

C. Documents of the California State Water Resources Control Board in the Project 2105 Relicensing and Documents in the Board’s Proceeding for Water Quality Certification

On October 9, 2002, PG&E applied to the State Water Board for a § 401 water quality certification.⁴⁷ From 2003 to 2006, there was an ongoing disagreement between the State Water Board and PG&E about the information needed to inform certification.⁴⁸ During this time period, PG&E withdrew and resubmitted its application for certification each year prior to the passage of one year following the previous year’s application.

⁴² RCC EA, *op. cit.*

⁴³ *Id.*, p. 34 (“PG&E’s proposed 20°C water temperature objective would benefit trout in the Rock Creek and Cresta reaches by maintaining water temperatures that would, on average, be optimal or near optimal and nonstressful, allowing trout to better compete with nongame fishes. Therefore, we recommend that any license issued for the project contain this condition.”)

⁴⁴ *Id.*, p. 37, fn. 16.

⁴⁵ 97 FERC 61,084 (Oct. 24, 2001).

⁴⁶ See eLibrary no. 20120501-5095, p. 6.

⁴⁷ Copies of PG&E’s applications for certification are included as Attachment A to PG&E’s Petition for Waiver.

⁴⁸ See description of State Water Board September 1, 2006 letter, *infra*.

On June 19, 2003, State Water Board staff commented on Scoping Document 1 for the relicensing of Project 2105.⁴⁹ Board staff commented that the new license must assure protection of the cold freshwater beneficial uses in the Upper North Fork Feather, Rock Creek – Cresta and Poe projects.⁵⁰ Board staff further commented that the FEIS must consider the Central Valley Basin Plan as a comprehensive plan, and that the Commission must assure compliance with the Basin Plan.⁵¹

On October 1, 2003, State Water Board staff filed in the Project 2105 docket its response to an application by PG&E for water quality certification.⁵² Board staff stated: “Previous written correspondence from SWRCB staff (letter dated August 14, 2003) has identified various resource data that have not been previously supplied by PG&E. Additional information to satisfy these concerns must be provided for the SWRCB to carry out its CEQA mandate and its certification decision for the project.”⁵³ Board staff further stated: “As long as the federal document meets CEQA requirements, the final FERC NEPA document may be used to satisfy our CEQA needs. In the event that the NEPA document is not adequate for CEQA compliance, a separate effort will be required to meet the requirements of CEQA.”⁵⁴

On October 27, 2004, State Water Board staff filed comments on the DEIS.⁵⁵ These comments stated described the thermal effects of the operation of Project 2105:

In its dEIS, the Commission acknowledges that operations at the UNFFR Project affect not only this project, but that the impoundment and re-regulation of NFFR flows also influences downstream project flows and generation (pages 3 and 87). Direct effects of the UNFFR Project are seen as changes to the thermal regimes of the Belden, Rock Creek, Cresta, and Poe reaches of the NFFR. Table 3-7 of the dEIS summarizes temperature data for project waters, and demonstrates exceedances of a 20° Celsius (C) mean daily value in the diverted reach below Belden dam (NF5) 29% of the time during the months of July and September. (This statistic is significantly higher when evaluated through July and August only.) Daily average temperatures reported for the Belden stream segment reached 22.9° C, and tended to increase in a downstream direction. Annual Reports submitted to the Commission for ongoing water temperature monitoring in the Rock Creek and Cresta reaches (2002 and 2003) continue to document the routine June through August exceedances of the 20° C threshold established for protection of the cold freshwater habitat in these two reaches of the NFFR.⁵⁶

In comments on the DEIS, Board staff further stated:

⁴⁹ See eLibrary no. 20030619-5036.

⁵⁰ *Id.*, p. 6.

⁵¹ *Id.*, p. 8.

⁵² See eLibrary no. 20031002-5073.

⁵³ *Id.*, p. 1.

⁵⁴ *Id.*, p. 1.

⁵⁵ See eLibrary no. 20041027-5044.

⁵⁶ *Id.*, p. 5.

The dEIS proposes no PM&Es to reduce seasonal water temperatures that typically climb above conditions suitable for cold freshwater biota in waters of the NFFR affected by the UNFFR. Appropriate measures to mitigate thermal impacts in Belden Reservoir, the Belden bypassed reach, and all downstream reaches of the NFFR affected by operations in the UNFFR Project must be presented and analyzed in a final EIS that can be judged to be accurate and complete. Compliance with CEQA and the subsequent development of a conditioned 401 water quality certification for licensing of the UNFFR Project will require the appropriate assurances that the Basin Plan water temperature standard for the NFFR can be protected with continued operation.⁵⁷

In comments on the DEIS Board staff also stated:

SWRCB staff requests that the Commission explore alternatives for increasing DO concentrations in the hypolimnion layer of large water bodies, then provide NEPA analysis of feasible measures with potential to increase DO in Lake Almanor and Butt Valley Reservoir. Investigation of potential mitigation measures should include but not be limited to aeration devices that may be strategically located in the hypolimnion layers of Lake Almanor (near Canyon Dam and other sites) and Butt Valley Reservoir. If NEPA analysis supports the reasonable mitigation of seasonal DO impairments in these water bodies, a PM&E for implementation should be considered along with an ongoing monitoring program designed to demonstrate the effectiveness of the measure and compliance with the Basin Plan.⁵⁸

On September 8, 2005, the State Water Board issued a Notice of Preparation of a Draft Environmental Impact Report (NOP).⁵⁹ The NOP stated that the Board had determined that an EIR was necessary. It further stated:

Data indicates that summer water temperatures in the Belden reach often exceed thresholds protective of cold freshwater habitat necessary to support a healthy, reproducing population of rainbow trout. The partial Settlement Agreement provides for a comprehensive revised flow-release schedule, but does not include measures that fully address seasonal water temperature concerns.⁶⁰

The NOP proposed to evaluate opportunities to reduce water temperatures in the North Fork Feather River:

A wide range of alternative measures have been suggested to the State Water Board that may address the water quality impacts associated with the UNFFR Project features and operation. Through the CEQA scoping process, the State Water Board seeks additional data and input on project alternatives from responsible agencies, trustee agencies, Tribes, and the interested public. Some of the alternative measures that have been discussed to date include: ... Reoperation of the Caribou No. 2 powerhouse to deliver reduced flows

⁵⁷ *Id.*, p. 6.

⁵⁸ *Id.*, pp. 7-8.

⁵⁹ See eLibrary no. 20050909-0173.

⁶⁰ *Id.*, p. 5.

to the North Fork Feather River in coordination with an equivalent increase in flows from the lowlevel outlet at Canyon dam⁶¹

On January 11, 2006, State Water Board staff commented on the FEIS.⁶² Board staff stated:

A flow regime consistent with Table A-2 [of the Project 2105 Settlement] was not designed to moderate water temperatures in the Belden reach and will likely result in exacerbation of the thermal conditions of that diverted reach as summer flows are reduced by up to 46% from the existing condition (140 cfs) in Critically Dry and Dry water year types. State Water Board staff respectfully disagrees with analysis and conclusions described (EIS, pages 3-111 through 3-113) on water temperature response expected in the Belden diverted reach with implementation of minimum flows described above. ... State Water Board staff supports the Commission's conclusions regarding potential thermal relief that may be recognized with increased releases from the Canyon Dam low-level outlet in July and August (EIS page 3-78). This measure in combination with other measures may have the potential to improve cold freshwater habitat downstream while maintaining habitat conditions in Lake Almanor.⁶³

On September 1, 2006, State Water Board staff sent a letter to PG&E requesting cooperation in collecting information necessary to complete CEQA and recounting PG&E's deficiencies in response to previous such requests.⁶⁴

Over the course of 2007-2018, PG&E withdrew and resubmitted its application each year prior to the passage of one year following the previous year's application.⁶⁵

On November 26, 2014, the State Water Board released a Draft Environmental Impact Report in response to PG&E's application for a water quality certification for the relicensing of Project 2105, and an associated Notice of Availability.⁶⁶ The DEIR did not identify a Proposed Project or a Preferred Alternative, but included a thermal curtain at PG&E's Prattville intake in Lake Almanor as one of the alternatives for consideration. The State Water Board held a public meeting in Chester, California (directly adjacent to Lake Almanor) on February 11, 2015, which was attended by hundreds of members of the public (including CSPA and AW). The State Water Board also provided a 120-day period for written comments; hundreds provided written comments. No public comments supported a thermal curtain at Lake Almanor. The DEIR contained substantial analysis of temperature modeling and additional information about water temperatures and releases from Canyon Dam, but did not present modeling or analysis of a stand-alone proposal to release 250 cfs from Canyon Dam in summer months.⁶⁷

⁶¹ *Id.*, p. 6.

⁶² See eLibrary no. 20060111-5208.

⁶³ *Id.*, p. 3.

⁶⁴ See eLibrary no. 20060901-5095, p. 2.

⁶⁵ Petition for Waiver, Attachment A, *op. cit.*

⁶⁶ See eLibrary nos. 20141128-5023 and 20141128-5025.

⁶⁷ CSPA and AW called out failure to model a 250 cfs summer release from Canyon Dam on a stand-alone basis. See comments of CSPA and AW on the DEIR (Mar. 26, 2015) for analysis of this and additional deficiencies,

On February 22, 2019, the State Water Board denied without prejudice PG&E's application for certification.⁶⁸

On March 6, 2019, PG&E filed a request for certification of Project 2105 with the State Water Board.⁶⁹

On March 4, 2020, the State Water Board denied without prejudice PG&E's application for certification.⁷⁰

On April 24, 2020, PG&E filed the instant Petition for Waiver of certification.

On May 15, 2020, the State Water Board issued a Revised Draft Environmental Impact Report (RDEIR)⁷¹ and a Draft Water Quality Certification for the relicensing of Project 2105,⁷² with comment periods ending June 15, 2020 and July 9, 2020 respectively. Condition 6(A) of the Draft Certification would require a release of up to 250 cfs from Canyon Dam during the period from June 16 to September 15 of each year whenever the maximum value of seven-day running averages of mean daily water temperatures at gages in the Belden and Cresta reaches exceeds 20°C. The RDEIR analyzes Condition 6(A) as the centerpiece of Alternative 3. While two alternatives in the RDEIR include analysis of a thermal curtain at PG&E's Prattville intake in Lake Almanor, the Draft Certification proposes no thermal curtain. Regrettably, and despite the 2004 comments of Board staff on the DEIS and comments by Plumas County, CSPA and AW, and others on the 2014 DEIR, the Draft Certification does not require augmentation of oxygen in Lake Almanor, and the RDEIR does not analyze it.

III. Argument

A. The North Fork Feather River Desperately Needs the Protection of the Clean Water Act.

Project 2105 is the extreme case of why Clean Water Act § 401 water quality certification is necessary to protect the beneficial uses of waters affected by hydropower projects. Project 2105 has never been relicensed with the Clean Water Act (1972) in force. The Project takes cold water and turns it warm. Condition 6(A) in the State Water Board's Draft Certification that would require a June 16 to September 15 release of up to 250 cfs from Canyon Dam is a reasonable measure to mitigate the thermal impacts of Project 2105's operation on the North Fork Feather River. The Commission should allow the water quality certification to stand.

eLibrary no. 21050327-5212. Plumas County and PG&E similarly pointed out the need to model a 250 cfs summer release from Canyon Dam on a stand-alone basis.

⁶⁸ See eLibrary no. 20190228-0019.

⁶⁹ See eLibrary no. 20190313-5170.

⁷⁰ See eLibrary no. 20200323-0010.

⁷¹ See eLibrary nos. 20200519-5033 (RDEIR) and 20200519-5034 (RDEIR appendices).

⁷² See eLibrary no. 20200519-5036.

1. Project 2105 thermally impairs the North Fork Feather River.

The Basin Plan requires: “At no time or place shall the temperature of COLD or WARM intrastate waters be increased more than 5°F above natural receiving water temperature.”⁷³ Discharges from the Caribou powerhouses back to the North Fork Feather River in Belden Forebay are far more than 5°F warmer than inflows from the Seneca reach of the North Fork Feather River into Belden Forebay, in clear and open violation of the Basin Plan.

PG&E’s temperature modeling, reported in response to AIR request 13 on August 25, 2003 shows that the discharges from the Caribou powerhouses are on average greater than 5° Celsius warmer than the water in the Seneca reach.⁷⁴ See Figures 4-11 in Attachment 1 to this Response in Opposition. Water discharged from the preferentially-used Caribou 2 powerhouse is warmer than 20°C in July and August two thirds of the time. Appendix E3 of the RDEIR, pp. 9 ff., graphically depicts the huge leap in water temperature between water in the bottom of the Seneca reach and water in Belden Forebay that is discharged from the Caribou powerhouses. Water temperature monitoring performed by PG&E confirms both PG&E and the State Water Board’s modeling. For example, in 2018, mean monthly discharges from Caribou 2 Powerhouse were 17.9°C in June, 20.7°C in July, 20.9°C in August, and 19.3°C in September.⁷⁵

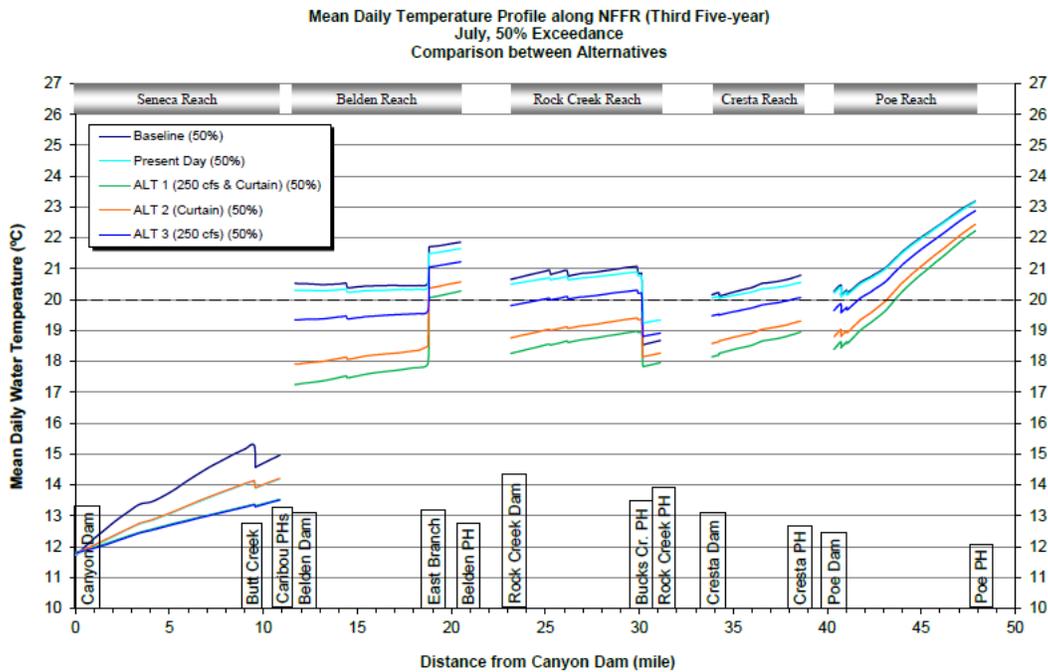


Figure 2: Median modeled average daily water temperature (°C) in July for the North Fork Feather River from Canyon Dam through the Poe reach. Note dramatic increase at left from bottom of Seneca reach to discharge from Caribou PH under all scenarios. Medium blue line (Alt 3) shows reduction of ~1°C in Belden and Rock Creek reaches, keeping temperature close to or less than 20°C. Figure is from RDEIR, Appendix E3, p. 9.

⁷³ Basin Plan, p. 3-13.

⁷⁴ PG&E Response to AIR Request 13 (Aug. 25, 2003), eLibrary no. 20030825-0124.

⁷⁵ Rock Creek – Cresta 2018 Annual Report, eLibrary no. 20190530-4578, p. D-27.

The temperatures of the discharges from the Caribou powerhouses are the primary determinant of the water temperatures in the Rock Creek reach. For the month of July in 2018, the average daily temperature at the top of the Rock Creek reach (gage NF-57) was 20.6°C, and further down the reach above Bucks Creek was 21.2°C (NF12).⁷⁶ Of even greater concern are the spikes within any given month that are not captured in reporting monthly averages. PG&E's weekly temperature reporting to the ERC for the week of July 16-22, 2018 reported that the weekly average of the average daily temperatures at NF-57 was 21.8°C, despite flows greater than 440 cfs.

As described *supra*, the Commission, Commission staff and PG&E have all acknowledged the thermal impairment of the North Fork Feather River from Lake Almanor through the Rock Creek – Cresta Project that results from the configuration and operation of Project 2105. All have acknowledged the deferral of addressing water temperature issues in the North Fork Feather River, first from the Rock Creek – Cresta relicensing to the Project 2105 relicensing, and then to the § 401 certification.

2. The Commission should reject PG&E's arguments regarding the potential impacts to Lake Almanor of a summer release of 250 cfs from Canyon Dam.

After drawing out a decision on thermal improvements to the North Fork Feather River for decades, PG&E has arrived at the conclusion it started with: there is just nothing to be done.

a. Impacts to Lake Almanor from a 250 cfs summer release from Canyon Dam are not the same as impacts from a thermal curtain.

As noted *supra*, not one party in 2014 wrote or spoke to the State Water Board in support of a thermal curtain in Lake Almanor. While the 2020 RDEIR retains analysis of alternatives that would require a thermal curtain, the Draft Certification contains no measure to require one.

Over the years, PG&E played up a thermal curtain alternative, knowing that if confronted with the binary choice of a thermal curtain at Lake Almanor or nothing, the residents and regular visitors to Plumas County will choose nothing. An effort by PG&E to cloak increased flows from Canyon Dam behind the legitimate fear of a thermal curtain was clearly evident in the DEIS meeting held in Chester, California, where PG&E's licensing lead Tom Jereb played to an angry audience in saying:

We're also looking at and evaluating with the Lake Almanor alternative is a high Seneca flow release, large flows out of the Canyon Dam, which we can get cold water and looking at that, blending it with the Caribou flows. It does bypass Butt Valley and Caribou Powerhouses. But we're experiencing there the same situation that we would experience with the curtain. It would be mining cold water out of the lake. We can do it rather effectively with that. And so it would probably have the same impacts on the lake and the lake ecology as the curtain would.⁷⁷

⁷⁶ *Id.*, p. D-28. 2018 was classified as a "Normal" water year under the Rock Creek – Cresta license.

⁷⁷ DEIS meeting transcript October 19, 2004, *op. cit.*, p. 33.

Ten years later, in comments on the 2014 DEIR, a member of the new generation of PG&E managers recorded a similar same refrain: “In general, it is PG&E’s opinion that the DEIR and Staff recommendation over emphasize the cold freshwater habitat uses in the river reaches and under emphasize the uses in Lake Almanor.”⁷⁸ “Releasing 250 cfs from Canyon Dam during critically dry years will significantly reduce Lake Almanor’s coldwater habitat and negatively affect an already stressed coldwater fish population. PG&E urges the State Water Board to adopt the Settlement Agreement flows.”⁷⁹

Figure 9 (Normal year), Figure 10 (Dry year) and Figure 11 (Critically Dry year) in Appendix E3 of the RDEIR show that the thermocline in Lake Almanor is consistently higher in elevation under Alternative 3 (250 cfs summer release from Canyon Dam) than under Alternative 2 (thermal curtain alone).⁸⁰ In addition, additional withdrawals from Canyon Dam can be mitigated by oxygenating the water in the vicinity, creating *more* coldwater habitat for fish than exists both under existing conditions and the FERC staff alternative. See discussion of oxygenation facilities, *infra*.

b. PG&E’s arguments about downstream impacts of increased summer releases from Canyon Dam are without merit.

In addition to raising upstream lake habitat as an obstacle to water temperature improvements in the North Fork Feather River, PG&E managers in 2015 alleged impacts to downstream river reaches from cold water releases:

Releasing up to 250 cfs of cold epilimnion water into this [the Seneca] reach will most likely result in slower growth rates for trout, other fish species, and potentially other aquatic organisms (e.g., benthic macroinvertebrates) during the three-month summer period proposed and would have a negative effect on this reach. This results in negative impacts to this reach that are not beneficial. For the above reasons, PG&E urges the State Water Board to adopt the Settlement Agreement flows.⁸¹

This sudden concern for the Seneca reach, from which PG&E has removed 97-98% of the water for a century, is not persuasive.

In 2015, PG&E’s new managers also took exception to the statement in the DEIR: “Any segments with both COLD and WARM beneficial use designations will be considered COLD water bodies for the application of water quality objectives.” Of course, the offending quote cited *was simply a recitation from the Basin Plan*,⁸² but PG&E took umbrage nonetheless:

⁷⁸ PG&E comments on 2014 DEIR (Mar. 25, 2015), eLibrary no. 20150402-5099, cover letter p. 1.

⁷⁹ *Id.*, “Specific Comments” p. 14.

⁸⁰ RDEIR, Appendix E3, pages 29, 31 and 33. For purposes of analyzing impacts, the RDEIR appears to assume that Alternative 3 will require a 250 cfs release on all days from June 16 through September 15 of each year. The instant comments also adopt that approach. However, Condition 6(A) requires a release of “up to 250 cfs.”

⁸¹ *Id.*, p. 15.

⁸² It remains in the 2018 Basin Plan, *op. cit.*, Footnote 2 to Table 2-1 (“Surface Water Bodies and Beneficial Uses”), p. 2-15.

“There is no ecological justification for this statement in footnote 2 of Table 2-2. Consideration should be given as to how colder water would negatively impact the hardhead ... The statement in footnote 2 is outdated, over emphasizes the importance of coldwater habitat, and does not recognize that native non-game fish like the ones listed above have their role in the ecosystem of the riverine system and provide a food source for aquatic and terrestrial species.” As old as the dewatering of river reaches are the arguments that propose managing for those species with higher thermal tolerances or preferences. These species provide the desired answer for the water diverter that less water in rivers is better.

In its petition for waiver, PG&E suggests that the legal standards for the State Water Board’s review of the impacts of project operations should be those of NEPA and CEQA: “[T]he Board requested a comparison of pre-project conditions to proposed Project operation to determine Project effects, which is inconsistent with NEPA and CEQA. Under both NEPA and CEQA, FERC and the Board are required to determine the effects caused by a proposed Project by comparing *existing conditions* to the proposed Project’s operations.”⁸³ The standard under the Clean Water Act is not whether the proposed action or project will make conditions worse compared existing conditions, but ***whether the license or permit sought will if granted protect beneficial uses***. This standard places the impacts of ongoing (not simply proposed new) operations of the project squarely within the purview of the State Water Board’s regulation under the Clean Water Act.

The protection of beneficial uses is a standard that Commission staff, moreover, acknowledged in this proceeding. As we cited *supra*, the FEIS affirmed: “We agree there is a need to document that water quality conditions under any new license issued meet applicable federal and state water quality standards and meet the objectives of applicable management plans. These standards are set to protect the designated beneficial uses of surface waters.”⁸⁴ More broadly, the need to protect existing beneficial uses is also consistent with the comprehensive planning requirement in § 10(a)(1) of the Federal Power Act that the license issued “will be best adapted to a comprehensive plan for improving or developing a waterway or waterways.” In this regard, it is important to recall that the “waterways” in question in the instant license include entire the North Fork Feather River downstream of Lake Almanor, and that twenty years ago FERC performed some of the comprehensive planning analysis for the waterway in the Environmental Assessment for the relicensing of the Rock Creek – Cresta Project and deferred part of that planning to the license for Project 2015.

There is no shortage of warm water habitat in the North Fork Feather River watershed. There is, however, only a vestige of once-great coldwater habitat. After 70 years of operation of the Rock Creek – Cresta Project, fifty years of operation of Belden Powerhouse, and forty-one years of waiting since the initiation of the Rock Creek – Cresta relicensing, it is time for the Commission to allow the State Water Board to complete its work to improve water temperatures in the North Fork Feather River.

⁸³ Petition for Waiver, p. 9.

⁸⁴ FEIS, p. 3-54.

3. Augmentation of oxygen in Lake Almanor in the vicinity of Canyon Dam can mitigate both for the existing impacts of project operation on Lake Almanor's coldwater habitat and for any impacts that might otherwise result from additional summer flow releases from Canyon Dam.

There is a straightforward solution to any potential habitat loss that might come from releasing additional water from Canyon Dam. It starts with recalling that there are two elements to habitat for coldwater fish in Lake Almanor: cold water and oxygen. Much of the cold water in Lake Almanor is anoxic, largely located near Canyon Dam. Oxygenation of this cold water near Canyon Dam represents an opportunity to mitigate for withdrawal of additional cold water from Canyon Dam, and, even more, to mitigate for existing impacts of project operation and thus enhance the Lake Almanor's existing trout fishery. CSPA and AW recommended oxygenation of Lake Almanor in comments on the 2014 DEIR,⁸⁵ as did Plumas County.⁸⁶ As we stated in 2015, it is not possible to improve the thermal profiling of the lake. What is possible is to oxygenate the cold water that is present and will continue to be present in the lake.

State Water Board staff and the Plumas County Flood Control and Conservation District recommended evaluation of oxygenation in 2004 in comments on the DEIS, with Board staff recommending, as cited *supra*, that FERC "analyze feasible measures with potential to increase DO in Lake Almanor and Butt Valley reservoir," FERC staff declined, stating:

Although DO concentrations are low in the hypolimnion of Lake Almanor and Butt Valley reservoir under existing conditions, they are typical of stratified deep reservoirs and natural lakes. Our review of table 3-8 indicates that the low DO levels in these reservoirs are typically not propagated downstream to the project bypassed reaches. Under existing conditions, Lake Almanor supports a coldwater and warmwater fishery, and Butt Valley reservoir supports a trophy rainbow and brown trout fishery. Therefore, we conclude that there is not sufficient evidence to warrant augmentation of DO in the hypolimnion of either Lake Almanor or Butt Valley reservoir.⁸⁷

The fact that *other* reservoirs and lakes are often stratified and have low DO concentrations at some levels does not absolve the Commission or PG&E from mitigating the oxygen impairment caused by the specific operation of its Lake Almanor facilities in combination with the lake's stratification. Ample evidence compiled by both FERC staff and PG&E demonstrate that even under existing conditions, the operation of the Prattville intake removes most of the coldwater habitat from the lake in summer, and almost all of the habitat in dry years. The RDEIR (Appendix E3, p. 27 ff.) further supports and graphically depicts this finding. The lake and its fishery resources are a major economic driver in rural and generally economically limited Plumas County. The cost of oxygenation is relatively small, and CSPA

⁸⁵ See CSPA and AW, comments on DEIR (Mar. 26, 2016), eLibrary no. 20150327-5212, p. 16.

⁸⁶ Comments of Plumas County on DEIR (Mar. 26, 2015), available at:

https://www.waterboards.ca.gov/waterrights/water_issues/programs/water_quality_cert/docs/ferc2105/unffr_plumas_county.pdf. See *esp.* Attachment 1, Comments of Gina Johnston, PhD, pdf pp. 37-50 (on oxygen in project reservoirs generally and the need to oxygenate Lake Almanor specifically), and Attachment 2, Comments of Alice Rich, PhD., *esp.* pdf p. 70 (on use of a Speece Cone).

⁸⁷ FEIS, p. C-21.

and AW will propose that the Rock Creek – Cresta ERC devote the Rock Creek – Cresta Cold Water Enhancement Fund to constructing and operating an oxygenation facility, which could then be done at no additional cost to PG&E. We concur that there is no DO problem downstream of Canyon Dam; however, that is a distraction.

PG&E argues that adding infrastructure is outside the authority the State Water Board:

The Board’s request for evaluations of modifications to physical Project works and proposed Project operations is beyond the scope of the Board’s authority to issue certification because the Board is required to assess the water quality impacts of PG&E’s proposal; its role is not to assess modifications to Project works that were not proposed by the licensee.⁸⁸

PG&E is incorrect. The role of the State Water Board is to assure that the issuance of a federal license or permit requires the protection of beneficial uses. Under CEQA, the Board must evaluate mitigation measures that would protect those beneficial uses. Under the Clean Water act, the Board is not limited to approving or disapproving the applicant’s proposal. The Board may place conditions on the license or permit that protect the affected beneficial uses. 33 U.S.C. §§ 1341(b),(d).

An oxygenation facility near Canyon Dam is an opportunity to directly improve the water quality in Lake Almanor and to indirectly improve the water quality in the North Fork Feather River. It would help bring both water bodies into greater compliance with the Basin Plan and with the 20°C water temperature benchmark that PG&E and FERC have agreed is an appropriate water quality goal. There is more than sufficient reason to analyze and require an oxygenation facility for Lake Almanor to be located near Canyon Dam.

4. The impacts to generation and project revenues of a summer release of 250 from Canyon Dam are reasonable and less than stated in the 2005 FEIS.

The Developmental Analysis in the 2005 FEIS lacked the detail needed to assess the true value of the power produced by the Upper North Fork Feather River Project.⁸⁹ This analysis has not improved with age.

PG&E’s “Stairway of Power” on the North Fork Feather River provides a remarkable 729.3 MW of peaking power. About half of that total comes from Project 2105. In 2005, the project was already a very important peaking resource. With the development in wind and solar power over the last decade, the flexibility of this hydropower system to provide variable renewable energy (VRE) resources has become even more important.

The Developmental Analysis in the FEIS makes no mention of the peaking capabilities of this system. Instead, it bases its economic analysis on a single average power value, \$63.84/MWh.⁹⁰ That simplistic analysis was inaccurate in 2005. Today, in an energy landscape

⁸⁸ Petition for Waiver, pp. 8-9.

⁸⁹ See FEIS, Chapter 4, *esp.* pp. 4-1 through 4-4.

⁹⁰ *Id.*, p. 4-1.

where prices can swing from triple digits per MWh to negative in a single day, it is without foundation. CSPA and AW have commented repeatedly that the Commission needs to develop a more robust methodology for determining power values for hydro projects.⁹¹ At the very least, the Commission’s economic analysis needs to reflect current power values. In the recent past, staff has been receptive on this point and has revised analyses in NEPA documents to more accurately reflect current market conditions.⁹²

Correcting the average power price used in the FEIS’s Developmental Analysis would be more sufficient if Project 2105 were a run-of-river facility in which the powerhouses were scheduled in a “must run” mode and generated around the clock regardless of energy market prices. However, this is not the operational model for Project 2105. Project 2105 generally operates only during the highest value hours out of each day, providing electricity to the grid when it is needed most. The revenue impact of additional summer flows, and the foregone generation associated with those river flows, will only be valued at the next-least-valuable hour(s) of generation. Figure 3 shows an example of how the PG&E might be likely to operate the Caribou 2 Powerhouse by allocating generation into the most valuable hours in the day. The green line in the figure shows the average power prices for the month of August, based on 2017 pricing data. The table to the right shows hourly pricing data ranging from a low of \$29.03 MWh at 4:00 AM to a high of \$113.56 MWh at 7:00 PM.⁹³ This daily price curve is indicative of typical “Duck Curve” pricing patterns in California energy markets.

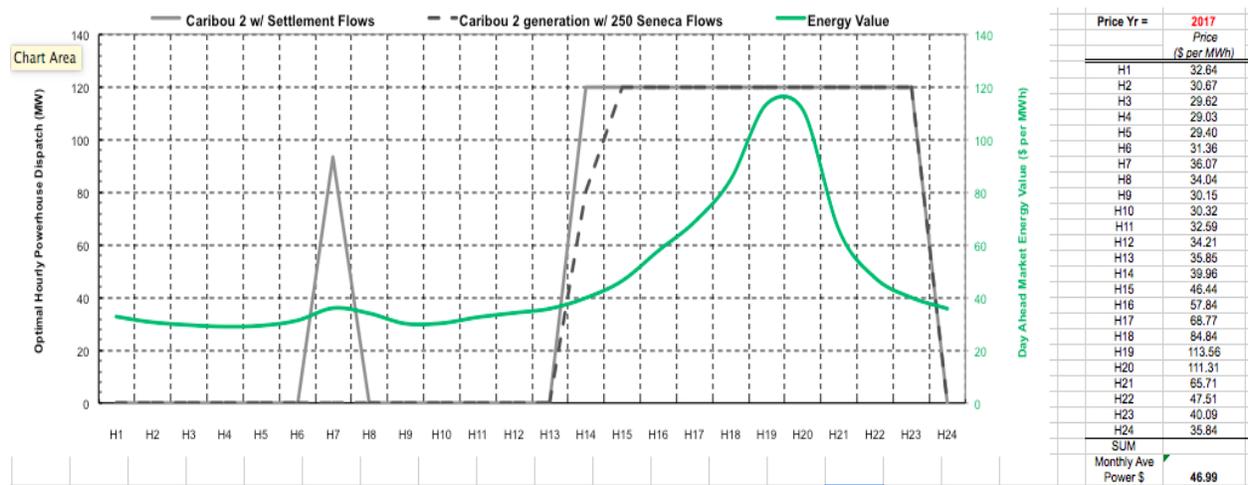


Figure 3: Hypothetical generation hours under Project 2105 Settlement flows (solid line) and with Settlement flows combined with release of 250 cfs from Canyon Dam (dotted line). (Adapted from working model developed in 2020 by PG&E for analysis of flows on the Poe reach)

⁹¹ See e.g., Comments of Foothills Water Network on Ready for Environmental Analysis, Yuba River Development Project P-2246 (Aug. 25, 2017), eLibrary no. 20170825-5257, pp. 78-82; Comments of Conservation Groups on DEIS for relicensing of Don Pedro and La Grange projects (Apr. 12, 2019), eLibrary no. 20190412-5156, pp. 71-74; Comments of AW and CSPA on DEIS for relicensing of Bucks Creek Project, P-619 (Aug. 7, 2019), eLibrary no. 20190807-5119, pp. 2-8.

⁹² In response to the Lassen Lodge DEIS (FERC Project No. 12496), CSPA and AW commented that the cost of alternative power used in the DEIS, \$88/MWh, was not in line with actual market conditions. In its response in the FEIS, staff agreed and lowered the cost of replacement power used in the Developmental Analysis to a more realistic \$30.35/MWh. See Lassen Lodge FEIS, eLibrary no. 20180725-3000, p. A-7.

⁹³ PG&E staff informed stakeholders that it downloaded pricing information from CAISO.

The generation component of Figure 3 provides an example of how releasing supplemental flows in the Seneca reach could impact generation at the Caribou 2 powerhouse. Increasing river flows in the Seneca reach from the required 70 cfs flow in the Settlement to the 250 cfs flow in Condition 6(A) of the Draft Certification would reduce morning generation by about an hour and would also reduce generation by a small amount during the afternoon ramp-up. The August 2017 value of power in those two hours, H7 and H14, was \$36.07/MWh and \$39.96/MWh respectively. This is significantly less than the \$46.99/MWh average power value for the month.

This example using 2017 power prices shows that additional flows that do not cut into the prime revenue hours in the late afternoon and early evening would create a relatively small revenue impact. A more complete analysis would include more water years and pricing data from additional recent years. However, the pricing data must reflect modern market conditions. The State Water Board's analysis in RDEIR Appendix J1 improves on the FEIS because it evaluates hourly prices within the day. However, the RDEIR's analysis lacks accuracy because it uses historical daily generation patterns from 2002-2004.⁹⁴ The development of renewables has greatly changed daily market conditions and generation patterns since 2004.

It is clear that the value of Project 2105 lies in the flexible capacity that it brings to the grid. It is a mistake to assume that any foregone generation, in terms of water to restore temperature or other beneficial uses, must be made up elsewhere. As long as the project's capacity to bring power on line is not diminished, particularly in the late afternoon as solar resources are declining, additional energy resources should not have to be developed. The important lesson here is that generators need to have appropriate price signals that encourage them to limit generation when other less dispatchable resources are available. Conditions in the new project license can both restore beneficial uses to the North Fork Feather River and meet current and future generation needs.

5. The Commission should not waive certification for Project 2105 and should instead allow the requirement for a summer release of up to 250 cfs from Canyon Dam to stand.

Both PG&E and FERC staff have made thermal perfection the enemy of the good. PG&E's own modeling shows that a summer release of 250 cfs from Canyon can reduce average daily water temperatures at the bottom of the Belden reach (upstream of confluence with the East Branch) by between 2°C and 3°C in July and August of dry water years.⁹⁵ The State Water Board's modeling shows less improvement, but still shows an improvement of 1°C to as much as 1.5°C average daily, with a greater reduction in the maximum temperatures, in both the Belden and Rock Creek reaches.⁹⁶

A release of up to 250 cfs from June 16 through September 15 is a reasonable condition to improve water temperatures in the North Fork Feather River. The Commission should not waive certification and brush aside a forty-year wait at the moment of completion.

⁹⁴ RDEIR, Appendix J1, p. 4.

⁹⁵ PG&E Response to AIR Request 13, *op. cit.*, p. 322.

⁹⁶ RDEIR, App. E3, pp. 11-12.

B. Neither statute nor court precedent require the Commission to waive CWA § 401 water quality certification for Project 2105.

Since the issuance of the Court opinion in *Hoop Valley Tribe v. FERC*, 913 F.3d 1099 (D.C. Cir. 2019), the Commission has serially extended and broadened the scope and effect of a ruling that addressed a written agreement to delay certification to the detriment of an injured third party.⁹⁷

PG&E's Petition for Waiver asks that the Commission find equivalence between a written agreement to delay certification in the Klamath licensing proceeding contemplated in *Hoop Valley Tribe* and a situation in two licensing proceedings on the North Fork Feather River in which both applicant and the Commission utterly ceded an intractable water quality issue to the State Water Board without offering even a glimmer of a solution. On Klamath, the State Water Board and its Oregon counterpart indefinitely and explicitly stepped aside from a water quality certification. On the North Fork Feather, the State Water Board was buried in one.

PG&E argues in its Petition for Waiver that “[t]he Board’s reason for delay was immaterial.”⁹⁸ In fact, the reasons for delay could scarcely have been more material. Water temperature and dissolved oxygen are quintessential water quality issues. But the Petition’s language does not address the specifics of substantial issues that confronted the State Water Board. Instead, it repeats the language used by the Commission in previous orders⁹⁹ and relies on the Commission’s snowballing establishment of “precedent” in a succession of orders with no external referents.

As CSPA, AW and colleagues have argued in the Foothills Water Network’s *Request for Rehearing of Order on Waiver of Water Quality Certification* for Nevada Irrigation District’s Yuba-Bear Project, the Commission’s recent establishment of “precedent” in finding waiver based on the practice of a licensee’s withdrawal and resubmittal is grounded neither in statute nor in court opinion.¹⁰⁰ Rather, it is an expression of Commission policy that the Commission had adopted on its own motion.¹⁰¹ The Commission’s declaration of precedent based on an implied but not specific agreement to delay has become tautology: there was delay because there was a “functional” agreement to delay, and since there was delay, there was functional agreement.

⁹⁷ See e.g., FERC orders on waiver of certification for Placer County Water Agency 167 FERC ¶ 61,056 (Apr. 18, 2019), Southern California Edison 170 FERC ¶ 61,135 (Feb. 20, 2020), PG&E (Kilarc-Cow) 170 FERC ¶ 61,232 (Mar. 19, 2020), Nevada Irrigation District 171 FERC ¶ 61,029 (Apr. 16, 2020), and Yuba County Water Agency 171 FERC ¶ 61,139 (May 21, 2020).

⁹⁸ Petition for Waiver, p. 6.

⁹⁹ Placer County Water Agency, Order Denying Rehearing 169 FERC ¶ 61,046 (Oct. 17, 2019) at ¶ 28 (reason for delay is “immaterial”); Constitution Pipeline Company, LLC 168 FERC ¶ 61,129 (Aug. 28, 2019) (“A state’s reason for delay is not material”), etc.

¹⁰⁰ Foothills Water Network’s Request for Rehearing of Order on Waiver of Water Quality Certification, Nevada Irrigation District, Yuba-Bear Hydroelectric Project P-2266-102 (May 15, 2020), eLibrary no. 20200518-5026, p. 26. (“FWN Rehearing Request, Nevada Irrigation District”)

¹⁰¹ See also State Water Resources Control Board’s Request for Rehearing of April 16, 2020 Declaratory Order on Waiver of Water Quality Certification (171 FERC ¶ 61,029) (May 15, 2020), eLibrary no. 20200515-5331, p. 11.

The language and intent of the Clean Water Act also require that the Commission's change in policy from its longstanding actual, practical acceptance prior to *Hoopa Valley Tribe* of an applicant's withdrawal and resubmittal of an application for certification be equitably tolled.¹⁰² The State Water Board diligently followed the rules as the Commission applied them. The State Water Board should not be faulted when the Commission changed its policy on how it applies the rules. Retroactive application of the policy usurps the Clean Water Act and deprives states of the right to require conditions in a hydropower license that assure compliance and conformity with federal and state water quality law.

PG&E's repeated withdrawal and resubmittal of applications for certification took place in a context where the State Water Board had to protect the beneficial uses of one of the largest watersheds in California in a way that did not anger every stakeholder in Plumas County and much of the rest of rural California. The State Water Board's proposed water temperature management condition in Draft Certification Condition 6(A) sets forth a physical solution that would improve the water temperatures in a river that is listed as impaired for water temperature on the state's CWA § 303(d) list. Condition 6(A) works within the physical constraints of the existing system to balance the competing beneficial uses in Lake Almanor and the North Fork Feather River downstream.

Additionally, the Draft Certification if applied would have impacts to generation that fall well within the Commission's requirements to balance beneficial uses under FPA § 10(a). The RDEIR shows an average annual generation loss to PG&E of 37.89 GWh of generation from Condition 6(A) supplemental flows, compared to an average annual generation loss of 61.7 GWh from other relicensing requirements. This is roughly proportional to the relative losses from minimum instream flows and potential supplemental flows to improve water temperature as analyzed in the FEIS.¹⁰³ However, the FEIS calculated the dollar value of lost generation according to an average price of \$63.84/MWh, as discussed *supra*. Our analysis suggests a more realistic valuation would likely be closer to \$40.00/MWh. This discrepancy alone would substantially reduce the costs of both the Settlement flow measures and the Supplemental flows.

The State Water Board got a lot right in its Draft Certification. It tore up the thermal curtain and threw it in the trash. Based on the FERC record and the Board's own record (now also part of the FERC record), the State Water Board's Draft Certification found an answer that would get as much benefit as can be gained for the entire summer by releasing more water from Canyon Dam without draining Lake Almanor's cold water pool. The Draft Certification does not contain a plan to oxygenate Lake Almanor, but that error is correctable without extensive process and without additional expense.

C. With the State Water Board's work largely complete, issuance of a new project license with certification is the most expeditious approach for license issuance.

In its Petition for Waiver, PG&E requests that the Commission "promptly" issue a new license for Project 2015. The fact is that the most expeditious way for the Commission to issue a

¹⁰² See FWN Rehearing Request, Nevada Irrigation District, *op. cit.*, pp. 25-27.

¹⁰³ FEIS, p. 5-31.

new project license at this point in time is to include the water quality certification in the new project license. If the Commission chooses instead to take back the ball that it handed off to the State Water Board fifteen years ago, the Commission will need to perform and document significant additional work to produce a project license that is supported by substantial evidence. The record for the Commission's proceeding, including the record developed by the State Water Board for certification, shows that staff's proposed alternative would be inconsistent with the Basin Plan and would not protect the cold freshwater beneficial uses of the North Fork Feather River. Moreover, the balancing performed by FERC staff in the FEIS is based on an analysis of project economics that was flawed in 2005 and that has become even more obviously inadequate in today's energy markets.

IV. Conclusion

The new license for Project 2105 must include supplemental summer releases from Canyon Dam to improve water temperatures and protect cold freshwater beneficial uses in the North Fork Feather River from Belden Forebay downstream through the Rock Creek and Cresta reaches. The new license must also include an oxygenation facility near Canyon Dam to mitigate for project effects on dissolved oxygen and fish habitat in Lake Almanor.

The Commission should deny the petition for waiver and issue the new project license with a water quality certification.

Dated this 5th day of June, 2020.

Respectfully submitted,



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Attachment 1

Figures 4-11

PG&E Water Temperature Modeling Results 2003

Figures 4-11: PG&E Water Temperature Model Reporting (2003)

(Source: Response to AIR question 13, August 25, 2003, FERC eLibrary no. 20030825-0124)

- All page numbers in pdf pagination.
- All tables here report modeling with existing facilities.
- All tables report temperature in degrees Celsius.
- Temperatures for North Fork Feather River above Caribou Powerhouse show “monthly median.”
- Temperatures for releases from Caribou 1 and Caribou 2 powerhouses show “50%” exceedance.
- All model runs shown report for preferential use of Caribou 2 Powerhouse over Caribou 1 Powerhouse.
- For model run naming convention keys, see pp. 33-34 and 100-105.

Fig. 4. Model run ANEA(21) Average Water Year, Normal Meteorology (pages 36 and 116)

Month	NFFR upstream of Belden Forebay	Caribou 2 Discharge	Caribou 1 Discharge	Canyon Dam Release (cfs)
June	13.5	17.6	16.3	35
July	15.1	20.5	19.7	35
August	13.8	21.5	21.0	35
September	13.2	19.0	18.6	35

Fig. 5. Model run AWEA(21) Average Water Year, Warm Meteorology (pages 42 and 116)

Month	NFFR upstream of Belden Forebay	Caribou 2 Discharge	Caribou 1 Discharge	Canyon Dam Release (cfs)
June	13.5	17.6	16.4	35
July	14.8	20.2	19.2	35
August	15.0	22.0	21.5	35
September	13.6	19.4	19.2	35

Fig. 6. Model run DNEA(21) Dry Water Year, Normal Meteorology (pages 48 and 116)

Month	NFFR upstream of Belden Forebay	Caribou 2 Discharge	Caribou 1 Discharge	Canyon Dam Release
June	14.5	19.1	17.2	35
July	16.1	22.4	21.0	35
August	14.5	22.8	22.4	35
September	13.6	19.9	19.9	35

Fig. 7. Model run DWEA(21) Dry Water Year, Warm Meteorology (pages 54 and 116)

Month	NFFR upstream of Belden Forebay	Caribou 2 Discharge	Caribou 1 Discharge	Canyon Dam Release
June	14.5	19.3	17.6	35
July	15.7	22.1	20.7	35
August	15.8	23.3	22.4	35
September	14.0	20.3	20.2	35

Fig. 8. Model run ANEH(21) Average Water Year, Normal Meteorology (pages 37 and 116)

Month	NFFR upstream of Belden Forebay	Caribou 2 Discharge	Caribou 1 Discharge	Canyon Dam Release (cfs)
June	11.1	18.2	17.0	250
July	12.9	21.1	20.4	250
August	13.5	21.6	21.3	250
September	14.0	19.2	19.0	250

Fig. 9. Model run AWEH(21) Average Water Year, Warm Meteorology (pages 43 and 116)

Month	NFFR upstream of Belden Forebay	Caribou 2 Discharge	Caribou 1 Discharge	Canyon Dam Release (cfs)
June	11.4	18.0	17.0	250
July	13.2	20.8	19.7	250
August	13.9	22.4	22.0	250
September	14.4	19.8	19.6	250

Fig. 10. Model run DNEH(21) Dry Water Year, Normal Meteorology (pages 49 and 116)

Month	NFFR upstream of Belden Forebay	Caribou 2 Discharge	Caribou 1 Discharge	Canyon Dam Release
June	13.3	19.3	17.3	250
July	15.5	22.9	21.4	250
August	16.4	23.0	22.5	250
September	16.7	20.0	20.0	250

Fig. 11 Model run DWEH(21) Dry Water Year, Warm Meteorology (pages 55 and 116)

Month	NFFR upstream of Belden Forebay	Caribou 2 Discharge	Caribou 1 Discharge	Canyon Dam Release
June	13.6	19.6	17.8	250
July	15.7	22.8	21.2	250
August	16.8	24.1	23.0	250
September	16.8	20.6	20.5	250

Note that the difference in water temperature between North Fork Feather River just upstream of Belden Forebay and discharge from Caribou powerhouses is greater than or equal to 5°C in most months under all scenarios.

**BEFORE THE
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION**

Pacific Gas and Electric Company)	Upper North Fork Feather Project
)	Project No. 2105-089
)	Project No. 2105-126

Certificate of Service

I hereby certify that the foregoing *California Sportfishing Protection Alliance and American Whitewater's Comments and Response in Opposition to Petition for Waiver Determination (P-2105-089),(P-2105-126)* of California Sportfishing Protection Alliance and American Whitewater in the above-captioned proceedings has this day been filed online with the Federal Energy Regulatory Commission and served via email or surface mail (as required) upon each person designated on the Service List compiled by the Commission Secretary for this Project.

Dated at West Valley City, Utah this 5th day of June, 2020.

Carla Miner

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