

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D.C. 20426

June 23, 2003

OFFICE OF ENERGY PROJECTS

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

Randal Livingston, Lead Director
Power Generation Department
Pacific Gas and Electric Company
P.O Box 770000, N11C
San Francisco, CA 94177

Reference: Additional Information Request

Dear Mr. Livingston:

We have reviewed your license application filed on October 23, 2002, and determined that it conforms with the Federal Energy Regulatory Commission's (Commission's) regulations. However, we need additional information before we can complete our evaluation of your license application for this project. Under Section 4.32 (g) of the Commission's regulations, you have up to 60 days from the date of this letter to provide the information we request in the enclosed Schedule A. Please be aware that further requests for additional information may be sent to you at any time before final action on your application.

If the required information in Schedule A causes any other part of the application to be inaccurate, that part must also be revised and refiled by the due date.

Please file an original and 8 copies of the above information with: Magalie R. Salas, Secretary, Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, DC 20426.

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Please call John Mudre at (202) 502-8902 if you have any questions concerning this request.

Sincerely,

Lon R Crow, Chief
Hydro West Branch 2

cc. Service List
Public Files

SCHEDULE A

ADDITIONAL INFORMATION REQUESTS

1. Project Operations - Expected time required to respond: 30 days.

Exhibit B of your license application states that the dependable capacity of your project is 362.3 MW and defines this value as “based on the Project’s load carrying ability during the critical hydrologic period coincident with the Licensee’s peak system load.” However, in your 2001 FERC Form 1 filing, the sum of the capacities listed under the heading “Net Plant Capability - Under the Most Adverse Oper Conditions” is 357.3 MW. As these definitions appear similar, please clarify these values.

2. Project Operations - Expected time required to respond: 30 days.

Exhibit B of your license application states that the Oak Flat powerhouse is equipped with one 667kVa transformer, while the turbine and generator for this project are rated at about twice this value. Please confirm the quantity and rating of the turbine(s), generator(s), and transformer(s) at this powerhouse.

3. General Information - Expected time required to respond: 30 days.

Exhibit H of your license application states that project energy, capacity, and ancillary benefits values are to be added together to determine the power value for this project, and changes in annual generation reduce the power benefit of this project. However, you also state in the license application that the dependable capacity of this project is unaffected by the proposed operational changes. Therefore, the capacity benefit provided by the project should be unchanged as operations are shifted, and thus changes in annual generation should reduce the power benefit of the project as a function of the energy value only. Please discuss whether or not the capacity benefit is affected by operational changes.

4. General Information - Expected time required to respond: 30 days.

Exhibit H of your license application states that the Fixed Charge Rate used in calculations includes a cost of capital of 9 percent. Please discuss the development of this value, including (a) the debt equity ratio used, and (b) whether the components of this cost of capital are pre- or after- tax.

5. Statement of Costs and Financing - Expected time required to respond: 30 days.

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Exhibit D of the license application provides values of 3.4, 0.34, and 2.3 cents per kWh for energy, ancillary services, and capacity respectively, while Exhibit H of the license application provides values of 3.5, 0.35, and 2.3 cents per kWh respectively for these values. Please clarify this matter.

6. Statement of Costs and Financing - Expected time required to respond: 30 days.

Please note if the annual O&M value of \$4 million provided in the license application is based on a historical average or is a projected value for future operations. Please also note if this value has any relationship with annual generation, installed capacity, or dependable capacity.

7. Water Uses - Expected time required to respond: 30 days.

In section E2.2, Water Use, you provide a general description of water uses throughout the NFFR Basin. Your description addresses both non-consumptive and consumptive uses; however, you do not specify the volume and timing of project waters used for consumptive purposes as required by 18 CFR 451(f)(2)(i). In order to evaluate the effects of the Project on water availability, we will need the volume, timing, and priority dates associated with both non-consumptive and consumptive uses of project waters.

Please provide us with a description of both existing and proposed uses of project waters. Your description should include: the location, purpose, volume, timing, and priority date for all existing and proposed uses of project waters. As part of this description, a summary table detailing senior and junior water rights in the North Fork Feather River basin is also needed to evaluate any impact of project operational changes on existing water rights.

8. Area Capacity Curves - **Expected time required to respond: 30 days.**

In Exhibit G of your final License Application, you have provided stage versus capacity and stage versus area curves for Lake Almanor and Butt Valley Reservoir. Please provide the data used to develop these water surface elevation and corresponding storage capacity and surface area curves for both Lake Almanor and Butt Valley Reservoir in tabular format.

9. Hydrologic Analysis - **Expected time required to respond: 30 days.**

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You have provided summaries of flow data in several locations within the Final License Application, including Exhibit B; Section E2.3.1; Appendices E2-D, E2-E, and E2-N; and Report E-9. These locations include:

- Flow in the NFFR at Chester;
- Outflow from Canyon Dam (NFFR near Prattville);
- Flow in the NFFR at Seneca Bridge;
- Flow in the NFFR above the confluence with Butt Creek;
- Flow in the NFFR above the Caribou No. 1 powerhouse;
- Flow in Butt Creek below the ABC tunnel near Prattville;
- Flow in Butt Creek above the Butt Valley Reservoir;
- Flow in Butt Creek near Caribou;
- Flow through the Butt Valley Powerhouse;
- Total outflow from Lake Almanor;
- Flow in the East Branch of the NFFR;
- Flow through Caribou Powerhouses 1 and 2, separately;
- Flow through Oak Valley Powerhouse;
- Flow in the NFFR below Belden;
- Flow through the Belden Diversion Dam;
- Flow through the Belden Powerhouse;
- Flow through the Hamilton Branch Powerhouse; and
- Flow in the Hamilton Branch below Red Bridge.

For all flow data stations listed above, please provide daily flow data for the period of record listed in the final License Application and used to generate summary curves in the final License Application, or the complete period of record if that is longer. In addition, for data related to powerhouse flows (Butt Valley, Caribou 1 and 2, Oak Valley, Belden, and Hamilton Branch), please provide flow data for the period of record at hour intervals, or a shorter interval that reflects operational changes at the powerhouses. For the gages listed above, also please provide the drainage area, latitude and longitude of the gage, and hydrologic summary data including minimum, maximum, and mean annual and monthly flows.

In addition to the above flow data, please provide lake elevation data at hourly intervals for each impoundment in the project including:

- Lake Almanor;
- Butt Valley Reservoir; and
- Belden Forebay,

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For the flow data summarized in Figures B-2 (Canyon Dam outflow) and B-6 (Belden Diversion Dam releases) of Exhibit B of the final License Application, please define and discuss the difference between the average and mean values presented therein.

The final License Application also provides calculations of daily natural inflow for the Lake Almanor and the Butt Creek subbasin. Please provide the calculated daily flows summarized in Figures 14-1 through 14-5 and 15-1 through 15-5 of Appendix E2-E, as well as all data used to develop these calculations, including but not limited to flows, climatology including temperature, wind speed and direction, precipitation, and evaporation, and lake levels. Please also provide a description of the calculation methodology used to develop this data.

Electronic submittal of this data is encouraged.

28. **Water Rights Agreements - Expected time required to respond: 30 days.**

Please provide information related to Pacific Gas and Electric Company's water rights and downstream responsibilities related to the Upper North Fork Feather River Project, including but not limited to:

- The Clifford Deed;
- The Red River Deed; and
- Water Rights Applications and the results of applications 28468 (Plumas County), and 30415, 30257, and 30258 (Pacific Gas and Electric Company).

32. **General Water Quality and Trace Metals: Expected time required to respond: 30 days.**

You provide summaries of general water quality sampling results, sampling results for heavy metals, and descriptions of how these results compare with applicable water quality criteria at numerous locations throughout the final License Application; however, you do not provide a clear assessment of compliance of all sampling results with their corresponding criteria. We understand that your ability to directly compare sampling results with the criteria is limited by the fact that much of your metals sampling was conducted prior to promulgation of the California Toxics Rule, and that your sampling methodology (developed in consultation with the SWRCB) consisted of sampling total metal concentrations (not dissolved metal fractions) and that detection limits were higher than necessary to evaluate compliance with applicable criteria in some cases. We commend you for agreeing to sample cadmium, lead, mercury, and silver concentrations using a modified sampling methodology during the fall of 2002, and the

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spring and summer of 2003, and look forward to including the results of this sampling effort in our analysis. Although your 2002/2003 sampling effort will provide valuable information for evaluating concentrations of heavy metals, it does not eliminate the need for maximizing the use of previously collected data. Therefore, we request that you provide the following:

- Water quality data in tabular and electronic format that indicate the location, date, time, and values for each water quality constituent monitored during 2000-2001, along with other pertinent information such as special release flows and locations. These tables should include the estimated concentration of dissolved trace metal fractions as computed using standard acceptable practices.
- A description of the method(s) used for estimating dissolved trace metal fractions.
- A summary of all water quality sampling results (with the exclusion of thermograph and coliform results) that do not or may not comply with their applicable criteria. The summary should include tables indicating the sample results along with their coinciding criteria (sample-specific criteria where applicable) for all samples that do not meet the criteria. In cases where the applicable criteria are based on the dissolved fraction and only total concentrations were analyzed, estimates of the dissolved fraction should be provided along with the criteria. In cases where the detection limits were too high to evaluate compliance with the criteria, you should provide the detection limit (and estimated dissolved fraction where applicable) along with the applicable criterion.

36. Coliform Bacteria: Expected time to respond: 30 days

Based on your analysis of 30-day studies conducted for Lake Almanor and Butt Valley Reservoir, and independent screening-level surveys conducted by you, Henrici, and DWR, it appears that coliform levels are not problematic in the project area. You provided the sample-specific fecal coliform levels for your screening level and 30-day studies; however, you did not provide the reported values for the Henrici and DWR studies that you referenced in your response to the SWRCB's July 25, 2002 comment letter (Report E-9). In order for us to conduct an independent analysis of fecal coliform levels in the project area, we request that you provide the results of the referenced studies of Lake Almanor coliform levels conducted by Henrici between 1993 and 1996 and the DWR between 1995 and 1999. At a minimum, we request that you provide a map and/or description of each sampling location, along with the date, location, sampling entity,

reported fecal coliform level and any other pertinent information such as total coliform levels for each of the samples.

Additionally, in order for us to better understand the potential for septic systems to increase fecal coliform levels in Lake Almanor, we request that you also provide a description of the management practices applied to lands surrounding the lake. Your description should include setbacks applied during specific years, and whether previously installed systems were required to be updated to the new, more restrictive requirements.

37. Water Temperature Modeling - Expected time to respond: 60 days.

In Exhibit E, Section E2.5.1.4, you describe the objectives and methods used for modeling water temperatures in reaches directly affected by the project. Based on this description, you used a modified version of MITEMP3 (a lake temperature model developed by Massachusetts Institute of Technology) to model temperatures in Lake Almanor and Butt Valley Reservoir; and used SNTMP (a steady-state stream temperature model developed by the U.S. Fish and Wildlife Service) to model temperatures in the Seneca (North Fork Feather River from Canyon Dam to Caribou No. 1 powerhouse), Belden (North Fork Feather River from Belden Dam to Yellow Creek), and Butt (Butt Creek from Butt Valley Dam to the confluence with the North Fork Feather) reaches. However, you do not provide any results of using the SNTMP model to predict water temperatures for the Butt Creek bypassed reach, since “any release from Butt Creek Reservoir would negatively impact the existing temperature regime of lower Butt Creek (page E2-434).” This claim assumes that maintaining cool water temperatures is of highest importance and that other issues such as the potential to enhance the quantity and/or quality (other than temperature) of aquatic habitat in lower Butt Creek is irrelevant.

In Section E2.6.4, you summarize modeled water temperatures in tables in a way that facilitates assessment of potential measures that could be taken to reduce temperatures at several locations in the project area; however, you do not provide a comprehensive set of tables that show the results of all of the scenarios modeled. Without a complete set of the temperature modeling results, we can not conduct a complete evaluation of the various scenarios that were modeled.

In your presentation of the reservoir model results, you indicate that you assumed that increased releases from the Canyon Dam would not be compensated for by reducing flows used to generate power at the Butt Valley powerhouse. Figures E2.6-4 and E2.6-6 display the water surface elevations that were modeled for Canyon Dam releases of 35 and 600 cfs, respectively. Although these figures and others in Appendix E2-F provide

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insight into Lake Almanor water surface elevations that would result under different operational scenarios, they are not adequate for us to fully assess project impacts and the effects of potential enhancement measures.

For the above stated reasons, please provide the MITEMP3 and SNTEMP 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 (5) flows at each location modeled. Modeled scenarios should include all of the reliable model runs conducted to date and the following:

- Baseline condition (project operations that are consistent with current operations). Based on our understanding of your operations, this model run should include using the Canyon Dam low-level outlet to release 35 cfs into the Upper North Fork Feather River, preferentially operating the Caribou No. 2 development over the No. 1 development, providing a minimum instream flow release into the Belden reach of 140 cfs from late April through Labor Day and 60 cfs for the remainder of the year.
- All possible combinations of:
 - Proposed minimum instream flow releases for Canyon Dam and Belden Dam (i.e., releasing 75 cfs into the UNFFR through the Canyon Dam low-level outlet during November 1 - September 14 and using the upper-level outlet during September 15-October 31, and releasing 140 cfs year-round into the Belden reach)
 - Existing generation at Butt Valley and combination of Caribou powerhouses
 - Generation at Butt Valley and combination of Caribou powerhouses reduced by amount of increase in Canyon Dam instream flow release (i.e., typically 40 cfs)
 - Existing Prattville intake
 - Modified Prattville intake
 - Preferential operation of Caribou No. 1 over Caribou No. 2
 - Existing Caribou No. 2 intake
 - Modified Caribou No. 2 intake

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In addition, please clarify whether water temperature was modeled for lower Butt Creek (Butt Valley Dam to the confluence with the NFFR). If it was modeled, please provide model results along with other model results as requested above. Otherwise, please provide the calibrated model input decks along with any pre-processors used to prepare input decks for varied operating regimes and post-processors used for organization of output from the model.

Finally, during the seismic remediation of Canyon Dam there was concern expressed about the ability of the Canyon Dam outlet tower to pass its designed flow of 2,100 cfs and that a study was conducted to evaluate the matter. We are also aware that the outlet did pass up to approximately 1,800 cfs for a month or so during 1997.

Please provide a discussion of the ability of the Canyon Dam outlet tower to pass its full range of design flows.

40. Fish Sampling - Expected time required to respond: 30 days.

In Report E-9 (Agency Consultation) of the Application, you state that a third year of fish population sampling will be performed at the project in 2002. This information was not presented in the final application filed with the FERC. Therefore, please provide the results of this sampling including any related reports, data summaries, and analysis. Also, please utilize the results of all fisheries sampling conducted at the project as part of this relicensing to identify, if possible, the location and extent of natural reproduction of important game fish occurring in the project reservoirs including Lake Almanor, Belden Forebay Reservoir, and Butt Valley Reservoir.

41. Fish Spawning Barrier Surveys - Expected time required to respond: 30 days

In Report E-9 (Agency Consultation) of the Application, you state additional fish spawning barrier surveys were being conducted on Lake Almanor and Butt Valley Reservoir using the U.S. Fish and Wildlife Service's Fish-Xing methodology. Please provide a discussion of the status of this work, including any related reports, data summaries and analysis.

42. Analysis of Fish Disease - Expected time required to respond: 30 days.

Please indicate whether *Ceratomyxa shasta* or whirling disease have been documented in the North Fork Feather River watershed and how current and proposed operation of project facilities could potentially affect the transmission of these diseases.

17. Vegetation Mapping- Expected time required to respond: 30 days

Your license application contains several maps that were prepared to address specific resource issues. However, we are unable to find any cover type maps that show wetland, riparian, and upland vegetation at a matching level of detail or classification, within the project boundary or the study area, that would provide an overview of the existing habitat. We need maps and accompanying acreage tables in order to develop an understanding of baseline vegetation conditions in relation to the project boundary and project facilities. We also need this information in order to evaluate the potential occurrence of threatened, endangered, and sensitive species that are strongly associated with certain types of vegetation, and the potential effects of any changes in project operations or project facilities on botanical and wildlife resources.

Therefore, please provide detailed vegetation cover type maps, at a scale of at least 1" = 1,000', of all lands within the project boundary, showing wetlands, riparian, and upland vegetation. Section E3.3.2 indicates that these maps are available.