
State Water Resources Control Board

JUN 19 2014

Ms. Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street, N.E.
Washington, DC 20426

Dear Ms. Bose:

COMMENTS ON THE FINAL LICENSE APPLICATION AND ADDITIONAL STUDY REQUEST
FOR THE LASSEN LODGE HYDROELECTRIC PROJECT, FEDERAL ENERGY
REGULATORY COMMISSION PROJECT NO. 12496

The State Water Resources Control Board (State Water Board) has authority under the federal Clean Water Act (33 U.S.C. § 1251-1357) to restore and maintain the chemical, physical and biological integrity of the Nation's waters. Throughout the licensing process the State Water Board maintains independent regulatory authority to condition the operation of the Project to protect water quality and beneficial uses of stream reaches consistent with section 401 of the federal Clean Water Act, the Water Quality Control Plan (Basin Plan) for the Sacramento River and San Joaquin River Basins, State Water Board regulations, California Environmental Quality Act (CEQA), and any other applicable state laws.

On April 29, 2014, the Federal Energy Regulatory Commission (FERC or Commission) published the notice of application tendered for filing with the Commission and soliciting comments and additional study requests for Rugraw, LLC's (Applicant) Lassen Lodge Hydroelectric Project (Project), FERC Project No. 12496. The State Water Board has an additional study request and comments on the Final License Application (FLA) for the Project.

This letter lists the State Water Board's comments and request for studies pertaining to the proposed Project. The following study request and comments are organized into two sections: A) Study Request and B) General Comments.

A. Study Request:

The study request is organized around the criteria outlined in Code of Federal Regulation (CFR) 18 CFR 4.38(b)(7) (see below), required by FERC under the Traditional Licensing Process.

The criteria in 18 CFR 4.38(b)(7) includes, *"For any such additional study request, the requestor must describe the recommended study and the basis for the request in detail, including who should conduct and participate in the study, its methodology and objectives, whether the recommended study methods are generally accepted in the scientific community, how the study*

FELICIA MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

and information sought will be useful in furthering the resource goals that are affected by the proposed facilities, and approximately how long the study will take to complete, and must explain why the study objectives cannot be achieved using the data already available. In addition, in the case of a study request by a resource agency or Indian tribe that had failed to request the study during the pre-filing consultation process under § 4.38 of this part or § 16.8 of this chapter, the agency or Indian tribe must explain why this request was not made during the pre-filing consultation process and show good cause why its request for the study should be considered by the Commission.”

The following addresses criteria for requesting a study (18 CFR 4.38(b)(7)):

- a. *Describe the recommended study and the basis for the request in detail, including who should conduct and participate in the study, its methodology and objectives.*
- b. *Explain whether the recommended study methods are generally accepted in the scientific community.*
- c. *Explain how the study and information sought will be useful in furthering the resource goals that are affected by the proposed facilities.*
- d. *Describe approximately how long the study will take to complete.*
- e. *Explain why the study objectives cannot be achieved using the data already available.*
- f. *Explain why this request was not made during the pre-filing consultation process and show good cause why its request for the study should be considered by the Commission.*

1. Study Title Requested: Modeling to Predict the Effects of Flow Regime Changes On Water Temperatures

- a. *Describe the recommended study and the basis for the request in detail, including who should conduct and participate in the study, its methodology and objectives:*

The Applicant should model to predict the effects of flow regime changes on water temperatures in the proposed bypass reach. The State Water Board has identified Battle Creek to the California State Legislature as a high priority tributary to the Sacramento River and Delta. The requested study would inform the State Water Board regarding potential Project impacts to beneficial uses and water quality objectives for the South Fork Battle Creek. The Applicant would consult with the State Water Board, California Department of Fish and Wildlife, National Marine Fisheries Service, and United States Fish and Wildlife Service regarding the study's methodology and objectives.

- b. *Explain whether the recommended study methods are generally accepted in the scientific community:*

Methodologies recommended by the State Water Board are generally accepted practices. State Water Board staff in collaboration with other resource agencies, use vetted scientific methodologies in the studies it requests. Current EPA guidelines and peer reviewed studies inform the State Water Board's methodologies.

Using models (such as SNTemp) to predict the effects of flow regime changes on water temperatures is an accepted practice. The State Water Board is willing to work with the Applicant and resource agencies to ensure that the selected model collectively meets the needs of the resource agencies.

- c. *Explain how the study and information sought will be useful in furthering the resource goals that are affected by the proposed facilities:*

The State Water Board is responsible for the protection of beneficial uses of the South Fork Battle Creek and its tributaries. The Project, as described, has the potential to impact multiple beneficial uses and water quality objectives of South Fork Battle Creek. Information provided by the Applicant is not sufficient for the State Water Board to make informed decisions regarding Project impacts to beneficial uses and water quality objectives.

- d. *Describe approximately how long the study will take to complete:*

The State Water Board expects that it may take approximately two months to complete a temperature modeling study.

- e. *Explain why the study objectives cannot be achieved using the data already available:*

The FLA did not include a model to predict the effects of different flow regime changes on water temperatures.

- f. *Explain why this request was not made during the pre-filing consultation process and show good cause why its request for the study should be considered by the Commission:*

The State Water Board expected to receive information regarding the Project and stream flow/water quality analysis during the pre-filing consultation process in order to provide comments to the Applicant. However, the Applicant filed the Final License Application with FERC, without providing the information to the State Water Board beforehand, for comment as planned. The study requested will help inform both the Commission and the State Water Board's environmental documents and decisions regarding the Project.

B. General Comments:

1. Page A-2 of the FLA states that "Debris accumulating on the trash rack will be manually removed when debris impedes flow into the intake structure, and hauled away from the influence of the stream." The FLA should explain how often the trash rack will be inspected for debris.
2. Volume One Exhibit A, on page 2, states "The intake structure will have facilities to flush accumulated sediments. This will be accomplished by manually opening debris valves installed within the intake structure." The FLA should explain where the accumulated sediments will be flushed to. The FLA should explain how the design of the diversion dam would allow sediments to pass through the dam/intake structure to downstream and how often this may occur.
3. The FLA should include all raw data (e.g., water temperature) in an appendix.
4. The State Water Board will require access to any modeling performed for the Project.
5. Page A-14 of Exhibit A - Project Description states that final permits and approvals are expected by September 30, 2014. The proposed construction milestone schedule should be updated to reflect a current schedule.

6. Page E-18 of Exhibit E is missing Figure 1.2-1.
7. Figure 1 of Appendix A includes information for several years. The Applicant should separate the hydrographs by year and include all of the months and days on the x-axis.
8. Figure 2 of Appendix A should include the measured maximum and minimum daily water temperatures. Additionally, the x-axis should be more detailed, specifying the months for each year.
9. Figure 3 of Appendix A is missing the information and a Key for Logger 6.
10. Page 47 of Appendix C - Stream Flows and Potential Production of Spring-Run Chinook Salmon and Steelhead in the Upper South Fork of Battle Creek (Appendix C) states, "It appeared, based on professional judgment of the passage impediment at each location, that modest flows of 30-50 cfs (and possibly less) would be sufficient to enable passage between all channel units within the project reach." Page 48 states that "Occasional higher flows reaching 30-50 cfs would be desirable, based on professional judgment, to ensure that resident trout can move between channel units within the reach." Additionally, page 48 states, "...bypass flows in the range of 30-60 cfs should be sufficient to provide adequate passage opportunities for trout to move about within the reach to position themselves for spawning."

Based upon this information, it is unclear why the Applicant would propose a minimum instream flow of 13 cfs for the proposed Project reach, when higher flows (according to professional opinion) may be needed for fish passage between channel units within the proposed Project reach. It is unclear why the modeling used did not account for movement of fish within the reach. The FLA indicates that 13 cfs is not sufficient for fish passage within the proposed Project reach. The Applicant should not assume that there will be excess flow available in the proposed Project bypass reach for fish passage. The minimum instream flow should include the flows necessary for fish passage/migration, spawning, rearing, and holding, which as referenced above, appears to be higher than 13 cfs.

11. Table 1 of Appendix A - Water Quantity and Quality Technical Study includes estimates of the monthly average flow and median flow for South Fork Battle Creek. The State Water Board prefers that minimum instream flows mimic the natural hydrograph of South Fork Battle Creek rather than using one numeric value to assign flow for six to eight months of each year.

The Applicant should either:

- a) Propose year-round minimum instream flows for each month of the year (with the year beginning in October) and for each of the different water-year types (e.g, Wet, Normal, Below Normal, Dry, Critical); **or**
 - b) Propose minimum instream flows for each month of the different water-year types to span the period when operation is anticipated, including dates when operations will commence and cease each year.
12. The Project proposes to operate approximately six to eight months of the year during the winter and spring. Page 18 of Appendix A states, "The proposed bypass flow for the project is 13 cfs which is sufficient to maintain water quality and temperature conditions in the

bypass reach based on field measurements collected during low flow conditions in July and September 2013. The proposed LLHP operations scenario have been optimized by the applicant in modeling studies to ensure flow and water quality conditions would not be impaired substantially and that all existing beneficial uses are fully maintained.”

The FLA seems to assume that a bypass flow of 13 cfs is “sufficient to maintain water quality and temperature conditions in the bypass reach” because flows have been 13 cfs in the proposed bypass reach during the low flow season. The FLA should explain how the existing water quality and temperature conditions in the bypass reach will be protected when the Project is in operation during the winter and spring. According to the FLA, South Fork Battle Creek is considered to have “high water quality” and the average and median flows during the winter and spring are much higher than 13 cfs.

13. Exhibit E, page E-56, explains that water temperature would be monitored at six locations: 1) the diversion/intake structure; 2) the bridge at State Route 36; 3) within the bypass reach above the tailrace; 4) within the bypass reach below the tailrace; 5) within the tailrace; and 6) the wooden bridge at Ponderosa (downstream of Panther Grade). Water temperature should also be monitored above the bypass reach (above the diversion dam pool/above the influence of the Project) for comparison.
14. The FLA explains qualitatively that the temperature of water that would flow through the penstock and powerhouse would not increase and therefore, when water returns to the South Fork Battle Creek the water temperature of the creek would not increase. The State Water Board has identified Battle Creek to the California State Legislature as a high priority tributary to the Sacramento River and Delta. The State Water Board will require the Applicant to explain further why temperature downstream will be unaffected by the proposed Project. If data exists, additional analysis is needed to verify that the Applicant’s assumption is correct. If data does not exist, additional analysis and monitoring would be needed.
15. The FLA should describe the type of construction equipment that would be used in the bed and banks of South Fork Battle Creek.
16. The FLA did not discuss how the proposed minimum instream flows would affect benthic macroinvertebrate communities. The FLA should discuss how the proposed flows would affect benthic macroinvertebrates.
17. The FLA should discuss if potential impacts to the stream channel are expected due to vegetation encroachment resulting from an absence of flows.
18. The State Water Board will require the Applicant to model potential Project effects on the South Fork Battle Creek channel due to Project operations altering existing flow and sediment regimes. Specifically, any 3D model should address Project operation impacts to: 1) bank stability; 2) sediment transport; and 3) riparian and invasive vegetation.

The information obtained would inform the State Water Board’s CEQA document and water quality certification conditions regarding minimum instream flow requirements for the Project. Therefore, State Water Board staff considers the information necessary prior to issuing a water quality certification.

19. Page 18 of the Water Quantity and Quality Technical Study (Appendix A) states “The proposed LLHP operations scenario have been optimized by the applicant in modeling

studies to ensure flow and water quality conditions would not be impaired substantially and that all existing beneficial uses are fully maintained. The proposed diversion of streamflows to generate power during high flow events and on the tails of these peaking events is not expected to substantially impair water quality conditions and associated beneficial uses due to the very high water quality characteristics of SF and that diversions would not occur during the low flow season."

Regarding the statement, "The proposed LLHP operations scenario have been optimized by the applicant in modeling studies to ensure flow and water quality conditions would not be impaired substantially..." State Water Board staff recommends that the Applicant revise the proposed operations scenario in modeling studies to ensure that flow and water quality conditions will not be impaired. The State Water Board requires a copy of any operational model for the Project, so that State Water Board staff can use the model to compare the different operating scenarios for the Project.

Regarding the statement, "The proposed diversion of streamflows to generate power during high flow events and on the tails of these peaking events is not expected to substantially impair water quality conditions and associated beneficial uses...", the Applicant needs to explain: 1) How the proposed diversion is expected to impair water quality conditions and beneficial uses; and 2) What criteria are being used to discern the level of significance with respect to these impacts.

The Basin Plan's water quality objectives for inland surface waters states, "The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses." The FLA should address potential effects of the Project on the sediment distribution in the channel above and below the diversion dam. This information will inform the State Water Board staff, so that a determination can be made on how the proposed Project can avoid adversely affecting water quality and the beneficial uses of the South Fork Battle Creek.

If you have any questions regarding this letter, please contact Michelle Lobo, Project Manager, at (916) 327-3117 or by email at Michelle.Lobo@waterboards.ca.gov. Written correspondence should be addressed as follows:

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Sincerely,



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