State Water Resources Control Board

November 27, 2024

Ms. Debbie-Anne Reese, Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, D.C. 20426
Via e-filing

Mokelumne Pumped Storage Project
Federal Energy Regulatory Commission Project No. 14796
Amador and Calaveras Counties
Bear River, Mokelumne River, Lower Bear River Reservoir, and Salt Springs Reservoir

COMMENTS ON DRAFT LICENSE APPLICATION FOR MOKELUMNE PUMPED STORAGE PROJECT

Dear Secretary Reese:

GreenGenStorage, LLC (GreenGen) is proposing to own and operate the Mokelumne Pumped Storage Project (Project), also referred to as Federal Energy Regulatory Commission (FERC) Project No. 14796. On August 30, 2024, GreenGen filed its Draft License Application (DLA) with FERC for an original hydropower license for the Project.

State Water Resources Control Board (State Water Board) staff attended virtual resource topic meetings hosted by GreenGen on October 15, 16, and 23, 2024 to discuss findings from studies, proposed protection, mitigation and enhancement measures, and other information contained in the DLA. GreenGen's distribution of the DLA on August 30, 2024, began a 90-day comment period.

The DLA describes environmental effects on a range of resource areas influenced by the Project's construction and operation. During the October meetings, GreenGen, presented results from all completed studies and a tentative schedule for completion of the remaining technical memos/studies. At the time of the DLA filing the following studies were not completed:

(CUL-1), Cultural Resource Study;
(CUL-2), Built Environment Study;
(TRI-1), Tribal Resource Study;

(WR-1), Hydrologic & Water Temperature Operations Models;
(BR-6), Benthic Macroinvertebrates Study;
(GS-1), Geotechnical Investigation;
(GS-2), Tunnel Spoils Alternatives Analysis;
(RA-1), Recreation Resources and Visitor Use Survey;
(RA-2), Land Use and Visual Resources Study; and
(SO-1), Socioeconomics Study.

GreenGen has stated that it intends to file an Updated Study Report (USR) to present results of the remaining studies required by FERC's study plan determination no later than February 16, 2025. Until the release and review of the USR describing the data and results of the outstanding studies, State Water Board staff will not be able to fully evaluate the Project's environmental effects or GreenGen's proposed Protection, Mitigation, and Enhancement measures. State Water Board staff reserves the right to provide comment on technical memos/studies and results as they become available.

State Water Board staff have reviewed the Project DLA and hereby submits the enclosed comments. The comments are provided in *Attachment A: State Water Board Staff Comments on Draft License Application for Mokelumne Pumped Storage Project.*

If you have questions related to this letter, please contact Eric Bradbury, Project Manager, by email to: Eric.Bradbury@waterboards.ca.gov.

Sincerely,

Eric Bradbury

Eric Bradbury
Environmental Scientist
Water Quality Certification Program
Division of Water Rights

Attachment:

A – State Water Board Staff Comments on Draft License Application for Mokelumne Pumped Storage Project

ATTACHMENT A

STATE WATER BOARD STAFF COMMENTS ON THE DRAFT LICENSE APPLICATION FOR MOKELUMNE PUMPED STORAGE PROJECT

The following comments are provided by State Water Resources Control Board (State Water Board) staff on GreenGenStorage, LLC's (GreenGen) Draft License Application (DLA) for an original hydropower license of the Mokelumne Pumped Storage Project (Project) also referred to as Federal Energy Regulatory Commission (FERC) Project No. 14796.

1. Compliance with the California Environmental Quality Act (CEQA) is required as part of the water quality certification (certification) process. CEQA requires the lead agency to evaluate a project's potential impacts to environmental resources as well as identify mitigation measures and alternatives to reduce project impacts. CEQA also requires public input on identified impacts and mitigation measures. CEQA documentation must analyze and evaluate the Project's impacts to all relevant resources, including aquatic biological resources, special status species, and water quality. Information from studies and data gathering during FERC relicensing informs CEQA document development.

   The State Water Board is the public agency with the responsibility of issuing a certification for the Project's original hydropower license and will act as the CEQA lead agency. As the CEQA lead agency, the State Water Board plans to commence the CEQA process prior to GreenGen submitting a certification application and are actively working with GreenGen on a three-party CEQA Memorandum of Understanding.

2. Section 401 of the Clean Water Act requires any applicant for a federal license or permit for an activity that may result in any discharge to navigable waters to obtain certification from the State that the activity will comply with the applicable water quality requirements, including the requirements of section 303 of the Clean Water Act for water quality standards and implementation plans. Clean Water Act section 401 directs that certifications shall prescribe effluent limitations and other conditions necessary to ensure compliance with the Clean Water Act and with any other appropriate requirements of state law. Conditions of certification shall become a condition of any federal license or permit for a project subject to certification. Licensing of the Project will result in a discharge to navigable waters and GreenGen must obtain certification from the State Water Board as part of FERC licensing for Project's construction and operations. The State Water Board is the state agency responsible for issuing certification for hydropower projects in California.

   A certification issued by the State Water Board for Project licensing must ensure compliance with the applicable regional and state water quality control plans. Water quality control plans designate the beneficial uses of water that are to be protected, water quality objectives for the reasonable protection of the beneficial uses and the prevention of nuisance, and a program of implementation to

achieve the water quality objectives. The beneficial uses, together with the water quality objectives contained in the water quality control plans, and applicable antidegradation requirements, constitute California's water quality standards for purposes of the Clean Water Act. In issuing a certification for a project, the State Water Board must ensure consistency with the designated beneficial uses of waters affected by the project, the water quality objectives developed to protect those uses, and antidegradation requirements.

The Project is located on the Mokelumne River. The Central Valley Regional Water Quality Control Board's Water Quality Control Plan for the Sacramento and San Joaquin River Basins (SR/SJR Basin Plan) identifies the Mokelumne River sources to Pardee Reservoir as having the following beneficial uses: municipal and domestic supply, power, water contact recreation, non-contact water recreation, warm freshwater habitat, cold freshwater habitat, warm migration, spawning, and wildlife habitat.

The State Water Board must ensure that any project is consistent with the Statement of Policy with Respect to Maintaining High Quality Waters in California (Antidegradation Policy). The Antidegradation Policy requires that the quality of existing high-quality water be maintained unless any change will be consistent with the maximum benefit to the people of the state, will not unreasonably impact present or anticipated future beneficial uses of such water, and will not result in water quality less than that prescribed in water quality control plans or policies. The Antidegradation Policy further requires best practicable treatment or control of the discharge necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the state will be maintained. The state Antidegradation Policy incorporates the federal Antidegradation Policy, which requires "[e]xisting instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected."

Though the Project will be located in the Central Valley Basin and is subject to requirements of the Central Valley Basin Plan, a future certification for the Project must also ensure compliance with the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan).

3. Operation of a new hydroelectric facility will require GreenGen to obtain water rights or obtain authorization to utilize an existing water right. As of the date of this letter, GreenGen has not provided applicable water rights for the Project. GreenGen states on page E-129 of Exhibit E of the DLA: "*GreenGen is in the process of exploring water rights options that would allow for the operation of the Project as proposed in this DLA. GreenGen has retained legal expertise to assist with identification of water rights options and the processes associated with obtaining the necessary water rights. Updated information pertaining to GreenGen's water rights will be provided in the FLA*".

State Water Board staff are concerned that aspects of the Project may change depending on GreenGen's future water right process (e.g., if GreenGen pursues a new water right or takes over an existing water right). Depending on the amount and priority of a water right, the amount and timing of water use as part of Project operations may change. State Water Board staff suggest that efforts be made to obtain a water right in a timely matter so that a complete Project description can be provided prior to filing of the Final License Application (FLA).

4. DLA Table of Contents does not align with the sections in Exhibit E, specifically section 3. For ease of review, State Water Board staff request that GreenGen ensures this error is corrected in the FLA and checks that other continuity errors are not present.

5. Section 4.2.4. of Exhibit A of the DLA states, "*The tunnels are sized such that if a third unit is added in the future, there is sufficient hydraulic capacity to operate all three units at maximum capacity without exceeding 11 ft/s water velocity in any concrete lined segment.*" State Water Board staff requests that GreenGen elaborate on the decision to include in the Project design the flexibility for a third turbine but not include one in the current license application. Additionally, please elaborate on the specificity of stating that it would not exceed 11 ft/s water velocity in any *concrete lined* tunnel. Please explain if concrete lined segments have a lower pressure rating than bare rock tunnels. If not, what is the effect of a third turbine on bare rock segments of the tunnel?

6. Section 3.4.2.1.6. of Exhibit E and Section 5.1.2. of Attachment E-07 of the DLA describe the water temperature profiles of both Salt Springs Reservoir (SSR) and Lower Bear River Reservoir (LBRR), including the following statement on page E-134 of Exhibit E: "*Thermal stratification was most pronounced in all months in LBRR. LBRR also had the coldest hypolimnion (approximately <7 °C near the dam).*" State Water Board staff request that the FLA include additional discussion on the effect stratification and water transport at different temperatures between reservoirs. Artificial destratification of a reservoir may lead to changes in water chemistry and cold-water supply. Additionally, please include in the discussion a description of how operations might change under different reservoir water surface elevations such as minimum pool and spilling. Please also describe any proposed coordinating plans between PG&E and other water users to ensure that Project operations would not result in impacts to the Mokelumne Hydroelectric Project (FERC Project No. 137) license requirements. Lastly, please clarify if the difference in water temperatures between the two reservoirs was considered when determining the locations and elevations of each reservoir's intake structure.

7. Section 6.6.7.1 of the January 2023 Proposed Study Plan (PSP) states: "*A desktop analysis will be performed to identify BMI [Benthic Macroinvertebrate] species that have potential to occur within the Project watersheds and vicinity*."

Technical Study Report (TSR) BR-6 does not discuss if a desktop analysis for BMIs was performed for the study. The State Water Board requests that GreenGen provide clarification that a desktop analysis was conducted as described in section 6.6.7.1 of the January 2023 PSP.

Sections 5.2.1 and 5.2.2 of TSR BR-6 also states: "*The drawdown zone at Salt Springs Reservoir featured a vertical height of 60 feet and an average horizontal distance of 346 feet"* and *"The drawdown zone at Lower Bear River Reservoir displayed a vertical height of 15 feet and an average horizontal extent of 87 feet". S*ection 6.0 states: *"As water is released from the reservoir throughout the summer and fall, the reduction of the water surface elevation incrementally reduces the available aquatic habitat required for colonization by many BMIs. At Salt Springs, this effect may have been compounded in 2023 as a result of the lowering the water level beyond what is typical to perform dam maintenance. The result is a low overall number of BMIs within the littoral zone and a disproportionate number of taxa that are tolerant of the manipulation within the reservoirs.*" This statement seems to imply that the fluctuating reservoir levels can have impacts on BMI species compositions in the reservoirs. The State Water Board recognizes the Salt Springs Reservoir fluctuation in the study is larger than what is typically performed as part of dam maintenance. However, potential impacts to BMI species composition in Salt Springs Reservoir could have impacts on the fish populations that rely on the BMIs as a food source. The State Water Board requests that GreenGen discuss potential impacts to BMI species compositions in Salt Springs and Lower Bear River Reservoirs as a result of reservoir fluctuations due to Project operations. The State Water Board also requests GreenGen discuss potential impacts to fish populations in the reservoir as a result of the BMIs being impacted. The State Water Board looks forward to seeing these concerns addressed in the Project's FLA.

8. At the time of the DLA, WR-1 *Hydrologic & Water Temperature Operations Models* was not completed, with Phase 2 of the study set to be completed in 2025. State Water Board staff request future modeling efforts consider how the Project would impact the timing of PG&E's releases into Bear River and the Mokelumne. In particular, State Water Board staff is interested in how the Project would impact reservoir elevations, including thermal stratification of the reservoirs, on sub-daily timesteps and any potential changes to water temperatures below Salt Springs and Lower Bear River Reservoirs. State Water Board staff's understanding is the Foothill Yellow-Legged Frog (FYLF) populations occur on the North Fork Mokelumne River below the confluence of Bear River. Changes in thermal regime have the potential to alter reproductive timing of FYLF populations and should be carefully considered as protection, mitigation, and enhancement measures are developed for the Project along with

the start of relicensing proceedings for PG&E's Mokelumne Hydroelectric Project (P-137).

9. Section 3.9.1 of Exhibit E discusses two road improvement sites that are proposed at bridges over the North Fork of the Mokelumne River. Table E.3-9, *Proposed Road Improvement Areas in the Proposed Project Vicinity*, displays 4 bridge crossings (Bridge Crossing on Penstock Cole and 3 Bridge Crossing on Salt Springs). The State Water Board requests GreenGen clarify how many bridges are proposed to be built or improved, if these bridges will be permanent or temporary, as well as the length and width of the bridges.

10. Section 3.3.2.2.4 of Exhibit E under the heading "Hydrothermally Altered Rock Disposal" states: "*Based on surface mapping, significant quantities of hydrothermally altered rock are not anticipated along the tunnel alignment."* The State Water Board recognizes that a subsurface investigation still needs to be completed to fully understand the extent of hydrothermally altered rock along the tunnel alignment. The State Water Board requests that GreenGen clarify the actions to be taken in the event that hydrothermally alerted rock is found along the tunnel alignment and has the potential to impact water quality through construction and operation of the Project.

11. It is the State Water Board's current understanding that the proposed onsite spoil disposal locations, Lower Bear River Reservoir (LBRR) quarry and the Salt Springs Reservoir (SSR) quarry, are located on PG&E property. Section 3.3.2.2.1, "*Study Goals and Objectives*" of the DLA's Exhibit E, discusses the tunnel spoil disposal alternatives for the Project. One of these alternatives is an off-site disposal location within 50 miles of the Project. The February 2024 Initial Study Report, Section 1.0 of the Traffic Study (SO-2) states, "*The tunneling process is expected to create the equivalent of about 100,000 truckloads of spoils."* Section 3.2.1.4 of the February 2024 Initial Study Report states "*The haul distances associated with offsite disposal would significantly increase the environmental impacts and financial costs associated with the Project."* The State Water Board requests clarification on GreenGen's progress towards receiving approval from PG&E to use the LBRR and SSR quarries as spoil disposal sites. The State Water Board also requests GreenGen discuss in detail the "*significant increase in environmental impacts*" associated with the off-site disposal alternative if PG&E does not give permission for its quarries to be used as a part of the Project. Should permission not be granted for either site, then quantitative information on the construction impacts of additional vehicle miles, staging and potential additional infrastructure upgrades would be necessary to inform environmental impacts and the State Water Board's CEQA process.

12. The DLA doesn't appear to have included a list of incomplete studies and their respective schedules for completion. If all studies are not complete by the

release of the FLA, please provide a list of studies that remain and their expected dates for completion.

13. In a response to comments on the technical study report for the Hydrologic and Temperature Operations Model (included as part of attachment E-07 of the DLA) GreenGen states: *"P-14796 moves water between Salt Springs Reservoir and Lower Bear Reservoir and does not generally affect PG&E [Pacific Gas and Electric Company] releases downstream.*" While it is asserted that instream flows for the Mokelumne River Hydroelectric Project would not be affected by the addition of the Mokelumne Pumped Storage Project, it is not clear whether construction of the Project would require variance, amendments, or modifications to operations of the Mokelumne River Hydroelectric Project. State Water Board staff encourage GreenGen to identify potential construction or operation activities that may require modifications to the Mokelumne River Project's operations and consult with PG&E on these activities. Additionally, it remains unclear if the Project would affect the temperature or quality of water being released from the Mokelumne River Hydroelectric Project.