

<u>State of California – Natural Resources Agency</u> DEPARTMENT OF FISH AND WILDLIFE North Central Region/Region 2 1701 Nimbus Road Rancho Cordova, CA 95670 www.wildlife.ca.gov EDMUND G. BROWN JR., Governor CHARLTON H. BONHAM, Director



November 17, 2016

Bradley J. Arnold General Manager/Secretary South Sutter Water District 2464 Pacific Avenue Trowbridge, CA 95659 sswd@hughes.net

### SUBJECT: CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE'S REPONSE TO SOUTH SUTTER WATER DISTRICT'S LETTER DATED OCTOBER 13, 2016, RESPONDING TO COMMENTS ON THE PRE-APPLICATION DOCUMENT, RECOMMENDED MODIFICATIONS TO PROPOSED STUDY PLANS, AND REQUESTS FOR NEW STUDIES FOR THE CAMP FAR WEST HYDROELECTRIC PROJECT, FERC NO. 2997

Dear Mr. Arnold:

By letter dated August 25, 2016, the California Department of Fish and Wildlife (Department) provided comments on the Notice of Intent to File Application for New License (NOI), Pre-Application Document (PAD), and Proposed Study Plans filed by South Sutter Water District (SSWD, Licensee) for the relicensing of the Camp Far West Hydroelectric Project (Project, FERC No. 2997). SSWD received seven comment letters from agencies, tribes, and non-governmental organizations (NGOs). In these letters, SSWD identified 63 individual requests for modification to SSWD's proposed studies, requests for 10 new studies, and 30 general comments. SSWD filed a letter with FERC on October 13, 2016, which provided: (1) rationale for adopting, adopting with modification, or not adopting each requested study modification; (2) rationale for adopting, adopting with modification, or not adopting each requested new study; (3) reply to some general comments in the seven letters; and detailed plans for the 14 studies SSWD has undertaken to support the relicensing of the Project. With this letter, the Department provides a response to SSWD's October 13, 2016, letter and re-submits a study request.

## **AUTHORITIES**

The Department is the appropriate State fish and wildlife agency for resource consultation and Federal Power Act Section 10(j) (16 U.S.C. section 803 (j)) purposes. The fish and wildlife resources of the State of California are held in trust for the people of the State by and through the Department (Fish & G. Code § 711.7). The Department has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species (Fish & G. Code § 1802). The mission of the Department is to manage California's diverse fish, wildlife, and plant resources, and the habitats on which they

Conserving California's Wildlife Since 1870

Mr. Arnold November 17, 2016 Page 2 of 23

depend, for their ecological values and for their use and enjoyment by the public. It is the goal of the Department to preserve, protect, and as needed, to restore habitat necessary to support native fish, wildlife, and plant species within the FERC-designated boundaries of the Project, as well as the areas adjacent to the Project in which resources are affected by ongoing Project operations and maintenance activities and recreational use.

# **GENERAL COMMENTS**

The Department received an email from Licensee's consultant HDR on October 19, 2016, and again on November 1, 2016, providing a notice of Licensee's anticipated monthly fieldwork schedule. The Anticipated Fieldwork Schedule for October 2016 included field work activities for Study 3.1 – Salmonid Redd Monitoring and 3.3 – Instream Flow. The November 2016 Anticipated Field Work Schedule also included field activities for Study 3.1. The Department is confused by the implementation of studies by Licensee, especially Studies 3.1 and 3.3, as the Department and Licensee are not in agreement on all aspects of the studies and have yet to meet to discuss these studies. Licensee and the Department are not in agreement on several other studies as well. The Department is concerned that Licensee may implement studies without including important elements requested by the Department and other Relicensing Participants. The Department may find studies to be inadequate for the purpose of conducting Project affects analyses if study results are missing information or specific data needed by the Department. The Department encourages Licensee to work collaboratively with the Department and other Relicensing Participants.

### DEPARTMENT RESPONSE TO SSWD'S REPLY TO STUDY MODIFICATIONS REQUESTED BY RELICENSING PARTICIPANTS (ATTACHMENT 1 OF SSWD'S OCTOBER 13, 2016 LETTER)

# Study 2.1 – Water Temperature Monitoring

The Department appreciates Licensee adopting the requested study modification for Study 2.1 – Water Temperature Monitoring to collect water temperature data at all stream and reservoir locations through 2017 in order to overlap with the timing of other relicensing studies and accumulate more data for the proposed Study 2.2 – Water Temperature Modeling Study.

# Study 2.2 – Water Temperature Modeling

The Department appreciates Licensee adopting the requested study modification for Study 2.2 – Water Temperature Modeling to use water temperature monitoring and meteorological data collected through the end of 2016 to calibrate the Project's water temperature model.

Mr. Arnold November 17, 2016 Page 3 of 23

## Study 3.1 – Salmonid Redd Monitoring

The Department is agreeable to the following Department-requested study modifications adopted with modification by the Licensee for Study 3.1 – Salmonid Redd Monitoring:

- Include the Department's proposed study objective of (1) assessing spawning of salmonids in the Bear River downstream of the non-Project diversion dam, but not the Department proposed objectives of (2) evaluating how flows affect salmonid spawning and habitat (as this objective will be covered in Study 3.3 – Instream Flow) and (3) evaluating project effects on spawning salmonids, as the purpose of the study is to gather information; effects will be analyzed with the information gathered.
- Conduct redd surveys at a frequency of monthly beginning in October and then increasing to biweekly through the end of March if an anadromous salmonid, carcass, or red is observed during the monthly survey.

The Department recommended Licensee collect physical measurements of redds during surveys and provided a methodology for conducting measurements in the field. Licensee stated in their October 13, 2016, letter that collection of physical measurements of redds is not needed to meet the study goal and thus did not adopt this requested study modification. The Department disagrees with this statement. Physical measurements of redds can be used to: assess the quality and quantity of available spawning habitat (substrate) in a stream, determine if superimposition of redds is occurring, and distinguish between species (i.e., Chinook salmon (Oncorhynchus tshawytscha) vs. steelhead (Oncorhynchus mykiss)). This information is important for Study 3.1 because limited information exists regarding salmonid spawning habitat availability, guality, and its utilization by different species (i.e., salmon and steelhead) and runs of salmon in the lower Bear River. Obtaining accurate information regarding the conditions of salmonid spawning habitat and which species of salmonids are spawning where in the lower Bear River will assist Licensee and Relicensing Participants in determining if the Project has an adverse effect on salmonid spawning habitat and spawning activity.

## Study 3.2 – Stream Fish

The Department appreciates Licensee adopting the requested study modification for Study 3.2 – Stream Fish to use a Secchi disk to measure turbidity prior to electrofishing.

The Department is agreeable to the following Department-requested study modifications adopted with modification by the Licensee for Study 3.2:

- Reach 1 will be sampled once during a single sampling event in the fall using boat electrofishing. Reaches 2-4 will each be sampled once during the fall and three times during the spring in April, May, and June via snorkel surveys.
- Snorkel surveys will be supplemented with beach seining during each sampling event (fall and spring) in Reaches 2-4.

Mr. Arnold November 17, 2016 Page **4** of **23** 

The Department also requested Licensee modify Study 3.2 to include collection of environmental DNA (eDNA) to assist in determining the occurrence of fish species in the lower Bear River. The Department requested Licensee collaboratively determine the locations, timing, and methodology for eDNA sampling with Licensee and other Relicensing Participants during a study plan meeting. In the October 13, 2016, letter, Licensee proposed to conduct two eDNA sampling events, once in fall after the first winter freshet and once in the spring prior to low flow conditions. Sampling would be conducted at 500 meter (m) intervals for 17 miles on the lower Bear River from the non-Project diversion dam to the confluence with the Feather River (or the obvious start of backwater effects), for a total of 55 samples per sampling event. Licensee is proposing to conduct sampling according to Bergman et al. (2016).

Bergman et al. (2016) is a research paper that discusses the results of a study conducted on the Sacramento River utilizing eDNA to detect adult green sturgeon. Although this paper provides good information regarding the use of eDNA to detect a specific species, it does not provide a full protocol to conduct eDNA sampling, process samples, and analyze results. The Department recommends Licensee supplement the information in Bergman et al. (2016) with the detailed protocols found in Carim et al. (2016).

The Department is agreeable to the timing and frequency (once in fall after the first winter freshet and once in the spring before low flow conditions) Licensee proposed for eDNA sampling, however we do not agree with the spacing of sampling locations (every 500 m). The generally recommended interval for collecting eDNA samples when targeting low abundance species is 100 m. Samples spaced farther apart are less likely to detect target species (Jeff Rodzen, pers. comm. 2016). Limited information exists regarding the frequency of occurrence and population sizes of salmon, steelhead, and sturgeon (Acipenser spp.) in the lower Bear River, however, it is recognized among the local scientific community that the numbers are likely low for all species. Thus, collecting samples at more frequent intervals may increase the chances of detecting these fish via eDNA sampling. The Department recommends Licensee collect eDNA samples every 100 m in sections of stream (length to be determined) within Reaches 2-4 where target species (salmon, steelhead, and sturgeon) have been documented to occur or are likely to occur based on habitat. As requested in our August 25, 2016 letter, the Department requests to meet with Licensee and other Relicensing Participants to further discuss and develop an eDNA protocol for Study 3.2.

### Study 3.3 – Instream Flow

The Department requested Licensee modify proposed Study 3.3 – Instream Flow as follows:

- Select sites in consultation with the Department and other Relicensing Participants.
- Add additional species and life stage habitat modeling based on the results of fisheries studies and develop or modify habitat suitability curves (HSCs) in consultation with the Department and other Relicensing Participants.

Mr. Arnold November 17, 2016 Page **5** of **23** 

> Install stage loggers at no less than four locations in the lower Bear River for one calendar year with the exact locations determined in consultation with the Department and other Relicensing Participants.

Licensee responded to the Department's requested modification of selecting study sites in consultation with the Department by stating that FERC's traditional licensing process (TLP) does not require Licensee to develop study plans in collaboration with interested parties, but they will host a one-day technical workshop to review the Licensee-selected sites. Licensee responded to the Department's HSC-related study modifications by offering to host a one-day technical HSC workshop and again stated that Licensee is not required to develop study plans in collaboration with interested parties. Licensee agreed to install four stage loggers as requested by the Department, but has already selected sites and again stated that collaborating with interested parties during study development was not a TLP requirement.

The Department believes, based on previous experience participating in numerous FERC Project relicensings (e.g., Yuba River Development Project (FERC No. 2246, Yuba Bear Hydroelectric Project (FERC No. 2266), Drum Spaulding Hydroelectric Project (FERC No. 2310), Upper American River Project (FERC No. 2101), etc.), that early coordination between licensees and Relicensing Participants is essential to develop the studies necessary to obtain the scientific information and data needed for developing models, conducting Project affects analyses, and developing beneficial protection, mitigation, and enhancement (PM&E) measures. Licensees and Relicensing Participants working together to understand the Project-specific environmental resource information and input data into hydrology, water balance modeling, and instream flows modeling allows licensees and relicensing participants to move forward in the relicensing process utilizing the same agreed-upon information.

The Department appreciates Licensee's proposal to hold a one day workshop, however the Department does believe one day will provide enough time to discuss and come to agreement on studies and discuss hydrology and modeling. Thus, the Department requests Licensee be open-minded about holding additional workshops as necessary to continue to develop and finalize study plans, hydrologic models, and other information. The Department is concerned that if very little coordination (i.e., only one workshop) between Licensee and Relicensing Participants occurs, the Department and other Relicensing Participants may disagree with study results and modeling and be put in a position in which the Department must go to FERC for assistance in resolving issues. The Department strongly recommends Licensee hold meetings and workshops early in the relicensing process to allow for sufficient review of the hydrology input data and the development and calibration of the operations modeling. Instream flow sites should be selected in consultation with Relicensing Participants. The Department believes this recommended approach will reduce the need for formal disputes and involvement of FERC as well as reduce the volume of comment letters for all parties during the relicensing process.

Mr. Arnold November 17, 2016 Page 6 of 23

## Study 4.1 – Special-Status Plants

The Department requested a modification to Study 4.1 – Special-Status Plants, which included expanding the study area to include the entire FERC Project Boundary plus 100 feet upslope of the reservoir and banks of the Bear River upstream of the reservoir and downstream of the dam, and 100 feet around all project facilities. Licensee did not adopt this modification and provided rationale that included a plant survey that was completed in 2012. The Department reviewed this 2012 report and learned that the survey was conducted over an area comparable to the area requested by the Department utilizing Department-recommend protocols. Thus, the Licensee's original proposal to conduct plant special-status plant surveys at four specific areas within a 100-foot wide buffer around them: (1) North Shore Recreation Area, (2) South Shore Recreation Area, (3) Camp Far West Dam and associated dikes and spillway, and (4) Camp Far West Dam Powerhouse, for a total of 505 acres, is acceptable to the Department.

## Study 4.2 – Special-Status Raptors

The Department appreciates Licensee adopting the following study modifications requested by the Department for Study 4.2 – Special Status Raptors:

- Clarify text in the study plan to ensure individual surveyors do not conduct surveys concurrently for bald eagle (*Haliaeetus leucocephalus*), golden eagle (*Aquila chrysaetos*), and Swainson's hawk (*Buteo swainsoni*). As the Department mentioned in our August 25, 2016 letter, if survey days for two or three of the raptor species overlap, surveys for each species must be conducted by a different surveyor(s) to ensure surveyors are focused on the specific species being surveyed.
- January winter bald eagle surveys will be conducted concurrent with the nationwide survey during the first two weeks of January.
- Record bald eagle nesting data for the Project on the Department's California Bald Eagle Nesting Territory Survey Form (CDFG 2010).
- Include a fourth "occupancy" survey in addition to the three surveys proposed by Licensee for golden eagle and conduct each survey for a minimum of four hours.
- Golden eagle surveys will be conducted at least 30 days apart and Licensee will utilize Pagel, Whittington, and Allen (2010) and Driscoll (2010) as references during surveys.
- Utilize the Department-recommended protocol SHTAC (2000) for Swainson's hawk surveys instead of the CDFG and CEC (2010) protocol originally proposed by Licensee.

The Department also recommended Study 4.2 be modified to include a study area for all three raptor species that extended 0.25 miles beyond the FERC project boundary. Licensee did not adopt this requested modification and stated that surveyors will most likely conduct surveys from a boat using binoculars and spotting scopes and that the survey viewing field may include up to 0.25 miles beyond the shoreline, but actual viewing distances may vary. The Department acknowledges Licensee's response and Mr. Arnold November 17, 2016 Page 7 of 23

requests that Licensee indicate in the study plan that they will aim to survey 0.25 miles beyond the shoreline, but distances may vary, and any potential nest sightings that cannot be verified by boat will be verified on the ground to the extent it is safe for surveyors to do so.

### Study 4.3 – Special Status Bats

The Department requested several modifications to Licensee's proposed Study 4.3 – Special Status Bats to ensure the study was conducted efficiently, economically, and collected the appropriate data needed to conduct a Project affects analysis and develop appropriate PM&E measures for bats. As stated in their October 13, 2016 letter to FERC, Licensee did not accept any of the Department's request modifications to Study 4.3 and withdrew Study 4.3 from the list of proposed relicensing studies. Specifically, Licensee stated:

SSWD withdraws the proposed Special-Status Bats Study. Upon further consideration, SSWD concluded that data from the reconnaissance surveys of Project buildings will be sufficient for developing a Bat Management Plan, which SSWD will include in its DLA and FLA. Based on the results from bat studies on previous relicensing's (e.g., Yuba River Development Project, Drum-Spaulding Hydroelectric Project, and Don Pedro Project), the additional data from a Special-Status Bat Study would not alter the contents of the Bat Management Plan. Per previous relicensings, the Bat Management Plan will include provisions for the exclusion of bats from Project facilities where they can currently roost on the interior. Exclusionary devices are placed after a sweep of the interiors to ensure that no bats are trapped inside any facility. These measures will not be changed by the data collected during a Special-Status Bats Study. Therefore, the study would not inform license requirements as it will not provide any necessary additional information.

The Department disagrees that the bat reconnaissance surveys conducted by Licensee provided sufficient information to assess Project effects on special status bats and develop PM&E measures such as a bat management plan. Further, the Department does not agree with excluding bats from Project facilities as a solution for protection, enhancing, or mitigating bat populations affected by the Project. Thus, the Department reiterates our comments on bats provided in our August 25, 2016, letter and requests the same modifications are made to Study 4.3 as described below.

Table 3.2.4-5 of Licensee's PAD stated that five special-status bats species may have the potential to occur in the Project area, including: pallid bat (*Antrozous pallidus*), Townsend's big-eared bat (*Corynorhinus townsendii*), spotted bat (*Euderma maculatum*), western mastiff bat (*Eumops perotis*), and western red bat (*Lasiurus blossevillii*). All of these species are California Species of Special Concern and additionally Townsend's big-eared bat is a candidate species for listing under California Endangered Species Act (CESA). Licensee states in the PAD that pallid bat, spotted bat, and western mastiff bat are not known to occur in the Project area, but potentially occur in suitable habitat. Additionally, Licensee states that for Townsend's big-eared bat Mr. Arnold November 17, 2016 Page 8 of 23

and western red bat "neither the species or suitable habitat was observed during BA surveys (Sycamore and Associates 2013a)."

The Department does not agree that the Project area does not contain suitable habitat for Townsend's big-eared bat and western red bat. Further, the Department believes the Project area contains suitable habitat for all five of the special status bat species identified in the PAD and thus all five bat species have the potential to occur in the Project area. Specifically:

- <u>Pallid bats</u> are known to roost in bridges, buildings, and trees, including oaks and deciduous riparian trees (WBWG 2016). Potentially suitable habitat for pallid bats in the Project area includes the bridge over the dam, recreation buildings (bathroom and stores), the powerhouse, other Project buildings, and vegetation types that include oaks and deciduous riparian tree species such as Blue Oak Woodland/Forest Alliance, Interior Live Oak Woodland/Forest Alliance, Foothill Pine Woodland/Forest Alliance, California Buckeye Woodland/Forest Alliance, Fremont Cottonwood Woodland/Forest Alliance, and Red Willow Woodland/Forest Alliance.
- <u>Townsend's big-eared bats</u> are known to roost in buildings and bridges and forage along streams and in a variety of wooded habitats (WBWG 2016). Potentially suitable habitat for Townsend's big-eared bats in the Project area includes the bridge over the dam, recreation buildings, the powerhouse, other Project buildings, streams such as the Bear River upstream of Camp Far West Reservoir and downstream Camp Far West Dam, and wooded vegetation alliances such as Blue Oak Woodland/Forest, Interior Live Oak Woodland/Forest, Foothill Pine Woodland/Forest, California Buckeye Woodland/Forest, Red Willow Woodland/Forest, and Fremont Cottonwood Woodland/Forest.
- <u>Spotted bats</u> have been found in various vegetation types, including riparian areas and fields (WBWG 2016). Potentially suitable habitat for spotted bat in the Project area includes riparian vegetation alliances such as California Buckeye Woodland/Forest Alliance, Fremont Cottonwood Woodland/Forest Alliance, and Red Willow Woodland/Forest Alliance. Additional potentially suitable habitat for spotted bat in the Project area includes fields containing annual and perennial grasslands.
- <u>Western mastiff bats</u> are known to roost in buildings and forage in oak woodland, and grassland (WBWG 2016). Potentially suitable habitat for western mastiff bats in the Project area includes recreation buildings, the powerhouse, other Project buildings, and Blue Oak Woodland/Forest, Interior Live Oak Woodland/Forest, and annual and perennial grassland vegetation alliances.
- <u>Western red bats</u> are known to roost in trees and shrubs adjacent to streams or open fields and in riparian areas (WBWG 2016). Potentially suitable habitat for western red bat in the Project area includes all wooded and riparian vegetation alliances, including Blue Oak Woodland/Forest, Interior Live Oak Woodland/Forest, Foothill Pine Woodland/Forest, California Buckeye

Mr. Arnold November 17, 2016 Page 9 of 23

Woodland/Forest, Fremont Cottonwood Woodland/Forest, and Red Willow Woodland/Forest.

The Department reviewed Sycamore and Associates (2013), referenced by Licensee in the PAD as a source of information regarding the presence of special status bat species and their habitat in the Project area. The "BA surveys" referenced by Licensee as documented in *Sycamore and Associates* (2013) consisted of:

An evaluation of biological resources...to determine whether any special-status plant or wildlife species, or their habitat, or sensitive habitats occur in the BSA (Biological Study Area)...Biological surveys consisted of walking through the BSA to determine if any special-status species or their habitat were present. Wildlife species observed, their sign, and potential habitats were recorded.

Focused bat surveys (i.e., roost surveys, acoustic monitoring, mist net surveys, etc.) were not conducted during the "BA surveys". The presence of bat species cannot be determined without conducting appropriate focused surveys. Additionally, bats are nocturnal species and would not have been observed by walking around during the daytime, especially if the interior of Project facilities were not inspected for day roosting bats. Thus, the Department recommends Licensee <u>does not</u> rely on Sycamore and Associates (2013) to determine the presence of special status bat species within the Project area.

Section 3.2.4.4.2 of the PAD provides a summary of an evaluation (described as a "reconnaissance survey" by Licensee in their October 13, 2016 letter) conducted by Licensee in September 2015 at all Project recreation facilities within the Project area for evidence of bat activity. Project recreation facilities that were evaluated included: the store, restrooms 1 through 4, and the storage shed at the South Recreation area (SRA) and the store, restrooms 1-4, and the old snack bar at the North Recreation area (NRA). The Project powerhouse and bridge over the dam were not included in the evaluation. At the evaluated recreation facilities, Licensee surveyed the interior and exterior of the buildings for active bat roosts and signs of historic use via the presence of guano and staining. During the survey, Licensee considered the following types of bat roosts: maternity roosts, day roosts, night roosts, and winter hibernacula. Licensee did not see any bats during the survey of Project recreation facilities, but concluded that some facilities may be suitable for roosting although there was no presence of guano and Licensee believes the staining observed was most likely from birds. Licensee notes that a few of the screens that cover the exterior windows of several facilities were damaged, providing possible points of entry for bats, but no bat exclusionary devices have been installed by the Licensee on any Project facilities.

As stated above, the Department believes the bat activity evaluation conducted by Licensee in September 2015 at recreation facilities was not adequate to determine use of Project facilities by bats and whether bats are present within the Project area. Since the evaluation was conducted in September, it does not provide information regarding the presence of maternity roosts, which bats utilize during their maternity season, generally April through August; or winter hibernacula, which bats utilize during the Mr. Arnold November 17, 2016 Page **10** of **23** 

winter months, generally December through February. Additionally, since the evaluation was conducted during the day, it does not provide any information on the use of recreation facilities by bats as night roosts. Licensee did not provide photos from the evaluation showing the "staining" observed at recreation facilities, so the Department cannot confirm whether bats or birds were the source of the staining. Additionally, the Department does not believe that the absence of guano or staining indicates that bats do not utilize a particular facility. The Department requests that Licensee provide photos of staining from the evaluation. Finally, the evaluation did not include the powerhouse and associated buildings or the bridge over the dam, which provide potentially suitable habitat for pallid bats, Townsend's big-eared bats, and western mastiff bats.

Based on the Department's review of the information provided in the PAD and local bat species life history information, the Department believes the Project area contains suitable habitat for five special-status bats species: pallid bat, Townsend's big-eared bat, spotted bat, western mastiff bat, and western red bat. Thus, the Department believes these species have the potential to occur in the Project area and may be adversely affected by ongoing Project operations, maintenance, and recreational activities.

In proposed Study 4.3, Licensee stated that the information collected during their evaluation ("reconnaissance study") of Project recreation facilities for bat activity would be utilized "to identify and prioritize locations that will be targeted during the Study." Again, the Department does not believe the evaluation conducted by Licensee was adequate to determine use of Project facilities by bats and whether bats are present within the Project area, especially since the powerhouse and associated buildings and the bridge over the dam were not included in the evaluation.

Licensee proposed in Study 4.3 to conduct long-term acoustic monitoring at four sites within the Project area based on potential bat use: the powerhouse, storage shed and Restroom 2 at the SRA, and Restroom 4 at the NRA. Long-term acoustic monitoring would involve the deployment of bat detectors for monitoring bat use over time and then utilize specialized software for analyzing the data recorded by the detectors. Licensee would deploy the detectors in select riparian zones adjacent to Project facilities such as the dam and powerhouse. Licensee would deploy detectors from early April through October in order to capture spring migration, young rearing, periods of peak bat activity, and fall migration. Licensee proposed to visit detectors every two weeks in April and May, thence once every three weeks or once every month through October, to download recorded bat calls and ensure equipment is functioning properly.

The Department has the following comments and recommendations regarding Licensee's long-term acoustic monitoring proposal:

 Based on the species of bats expected to occur and available habitat within the Project area the Department agrees four long-term acoustic monitoring sites should be established. The Department agrees to sites located in suitable bat foraging habitat near the powerhouse, Restroom 4 at the NRA, and Restroom 2 at the SRA, <u>but recommends the fourth site be located near</u> the bridge over the dam rather than the storage shed at the NRA. The bridge Mr. Arnold November 17, 2016 Page 11 of 23

may provide suitable habitat for special-status bats and thus needs to be included in Project bat surveys.

- Long-term acoustic monitoring sites should be located in potential bat foraging habitat adjacent to or downstream of and not directly next to Project facilities that are potential bat roosts. Bats do not always echolocate when they are leaving a roost, however, they echolocate continuously while flying around and hunting for food in the dark.
- The Department requests Licensee select long term acoustic monitoring sites in cooperation with the Department prior to the commencement of surveys.
- The Department recommends long-term acoustic monitoring be conducted monthly for 5 consecutive days (recording from dusk until dawn each day) at each of the four sites from April through October rather than continuously during these months. For example, Long-term acoustic monitoring would occur for 5 consecutive days in April, then 5 consecutive days in May, continuing for 5 consecutive days each month through October. Acoustic detectors are subject to error the longer they are deployed without frequent (once per week) visits to download data and ensure equipment is functioning properly, which can result in a loss of data and study bias. The Department believes deploying long-term acoustic detectors for 5 consecutive days each month April through October will provide the information needed regarding the presence of bats in potential foraging areas near Project facilities and potential Project impacts, as well as reduce the potential for equipment malfunction and subsequent loss of data.
- Detectors at each long-term acoustic monitoring site should be placed in open areas, in areas less visible to the public to avoid vandalism, and in areas where ambient sounds (e.g., wind, insects, moving water, powerlines, etc.) can be avoided to the greatest extent feasible. Microphones should be elevated (the higher the better) and camouflaged in the surrounding environment, but oriented to avoid clutter (i.e., tree branches, dense vegetation).
- The Department requests Licensee provide detailed spectrographs <u>or</u> the original data files for all special-status bat species from the original recordings (pre-scrubbed, raw data) collected by the detectors at each long-term monitoring site.
- The Department recommends Licensee include bat calls below 20 kHz in their analysis of the raw acoustic data as spotted bat, which was identified by Licensee and the Department to have the potential to occur in the Project area, echolocates below 20 kHz.

Long term acoustic monitoring may provide information regarding the presence of bats in foraging habitat adjacent to Project facilities, but it may not provide the information needed to determine whether bats are roosting in the Project area as the detectors will be placed in foraging habitat and not directly next to potential roosts (Project facilities). Thus, in addition to long-term acoustic monitoring, the Department requests Licensee conduct nighttime emergence surveys for two consecutive days in late April or early May <u>and</u> in late July or early August at four locations: the powerhouse, the bridge, Restroom 4 at the NRA, and Restroom 2 at the SRA. Emergence surveys should be Mr. Arnold November 17, 2016 Page **12** of **23** 

conducted one half hour prior to sunset and continue for a minimum of one hour. There should be at least one surveyor per Project facility. The surveyors should be positioned so that emerging bats will be silhouetted against the sky as they exit the facilities. Tallies of emerging bats should be recorded every few minutes or as natural breaks in bat activity allow. Surveyors should be close enough to the facility to observe exiting bats, but not close enough to influence emergence. Surveyors shall not stand in front or underneath the facilities, make noise or carry on a conversation, or shine a light on the facility (the use of lights should be minimized to the greatest extent feasible during the survey). Surveyors should use an infra-red, night vision, or thermal-imaging video camera or spotting scope to assist in emergence counts (USFWS 2013).

The Department requires all persons conducting surveys for special-status bats in the Project area are: 1) able to identify bat species in the field; 2) knowledgeable of the life history, behavior, and habitat requirements of the bat species being surveyed; 3) experienced in bat emergence surveys and using the equipment to conduct surveys; and 4) experienced in setting up and operating acoustic bat detectors and utilizing the specialized software to analyze bat echolocation data.

The Department requests that Licensee reconsider withdrawing Study 4.3 from the list of studies proposed to be conducted for the relicensing of the Project. The study modifications requested by the Department for Study 4.3 are similar to, but require less study effort and are lower in cost than, other bat studies approved by FERC for other projects (see Study 4.2 – Special Status Wildlife – Bats for the relicensing of the Yuba River Development Project, FERC No. 2246 and Study RTE-S4 – Special-Status Bat Species for the relicensing of the Bucks Creek Hydroelectric Project, FERC No. 619). The Department believes the requested modifications to Study 4.3 described above will provide the information needed to determine the presence of special-status bats in the Project Area and how special-status bats may be affected by Project operations and maintenance activities or recreational use and develop appropriate PM&E measures for bats.

### DEPARTMENT RESPONSE TO SSWD'S REPLY TO REQUESTS FOR NEW STUDIES (ATTACHMENT 2 OF SSWD'S OCTOBER 13, 2016 LETTER)

With our August 25, 2016, letter providing comments on the PAD, the Department requested three new studies pursuant to the TLP process as specified in 18 CFR § 4.38(b)(5). These studies included: Vegetation Mapping Study Plan, Sturgeon Study Plan, and Benthic Macroinvertebrate Study Plan. Licensee did not adopt any of the elements from the Department-requested Vegetation Mapping Plan and Benthic Macroinvertebrate Study Plan. However, Licensee incorporated some of the elements of the Department's proposed Sturgeon Study Plan in their revised proposed Study 3.2 – Stream Fish Populations Study.

### Vegetation Mapping Study Plan

The Department requested Licensee develop a Vegetation Mapping Study Plan for the relicensing of the Project for the purpose of assessing the most current and accurate

Mr. Arnold November 17, 2016 Page 13 of 23

vegetation typing information within the FERC Project Boundary and adjacent affected areas. Current and accurate vegetation mapping and classification is important to determine which fish, wildlife, and plant habitats occur within the FERC Project Boundary and adjacent affected areas, and how these habitats and the species that utilize these habitats may be affected by Project operations and maintenance activities and recreational use. It is also important to develop appropriate PM&E measures.

The vegetation mapping and classification provided by Licensee in the PAD is based on data from the Forest Service CalVeg system. The Department is concerned the federal mapping system does not provide the accuracy of the State's Vegetation Classification and Mapping Program (VegCAMP), which develops and maintains California's expression of the National Vegetation Classification System. VegCAMP is the State standard vegetation classification and mapping program implemented by the Department, which is a Trustee Agency under the California Environmental Quality Act (CEQA; Pub Resources Code § 21070) and has jurisdiction over the natural resources (i.e., fish, wildlife, native plants, and habitat for those species) that may be affected by the Project. The Department's VegCAMP worked with the California Native Plant Society (CNPS) to develop a fine-scale vegetation map of the northern foothills of the Sierra Nevada and conducted accuracy assessment field surveys to verify the map. To validate the map, 1,295 accuracy assessment field surveys were conducted by CNPS and Department staff. Camp Far West Reservoir and adjacent areas are included in this map (Klein et al. 2007, CDFW 2016a). The Department believes the utilization of the VegCAMP system for vegetation mapping purposes will provide the information needed to obtain the most current and accurate vegetation typing within the FERC Project Boundary and adjacent affected areas to determine if Project operations and maintenance activities and recreational use have an adverse effect on these vegetation types and corresponding fish, wildlife, and plant habitats and species that utilize these habitats.

The Department utilized the report for the VegCAMP mapping project, Classification of the Vegetation Alliances and Associations of the Northern Sierra Nevada Foothills. California (Klein et al. 2007) along with the vegetation data layers in the Department's Biogeographic Information and Observation System (BIOS) to compare the vegetation results from the VegCAMP map with the results obtained by Licensee utilizing the Forest Service Vegetation mapping system (as reported by Licensee in the PAD). The vegetation types resulting from the VegCAMP report and vegetation layers include: Blue Oak Woodland/Forest Alliance, Interior Live Oak Woodland/Forest Alliance, Foothill Pine Woodland/Forest Alliance, three grassland alliances, and riparian tree alliances, including, California Buckeye Woodland/Forest, Fremont Cottonwood Woodland/Forest, and Red Willow Woodland/Forest (Klein et al. 2007; CDFW 2016b). Some of the vegetation types identified by Licensee in the PAD are the same as those identified by the Department utilizing VegCAMP; however, Licensee's vegetation mapping exercise did not reveal any riparian vegetation in the Project area. VegCAMP identified riparian tree alliances along the southern shoreline of Camp Far West Reservoir and in the Bear River arm of the reservoir. Additionally, the Department observed riparian vegetation including willows (Salix spp.) and California buckeye (Aesculus californica) along the Bear River below Camp Far West Dam and the powerhouse in August 2016.

Mr. Arnold November 17, 2016 Page **14** of **23** 

For the Department's proposed Vegetation Mapping Study Plan, the Department specifically requested Licensee utilize VegCAMP classifications and vegetation layers for the Northern Sierra foothills to classify and map the vegetation types in the Project area. Additionally, the Department requested Licensee ground-truth vegetation types subsequent to mapping and classifying with VegCAMP; and map and describe any riparian vegetation identified during ground-truthing along the shoreline of Camp Far West Reservoir, within any stream, creek, and other drainage inlets to the reservoir, within the Bear River upstream of the reservoir, within the Bear River downstream of Camp Far West Dam (including the channels extending from the spillway, low level outlet, and powerhouse), extending 100 feet from the FERC Project Boundary.

Licensee did not adopt the Department's Vegetation Mapping Study Plan request; however, Licensee requested via email dated October 10, 2016, (and again in their October 13, 2016 letter) for the Department to provide the VegCAMP mapping and results for the Project area and that they would incorporate this information into the Draft License Application (DLA) and Final License Application (FLA). On October 12, 2016, the Department provided Licensee) with ground-truthed VegCAMP vegetation data layers and accompanying reports for the Project area.

The Department is willing to withdraw the Vegetation Mapping Study Plan if Licensee revises Project vegetation maps in the DLA and FLA to include the vegetation classification information from the ground-truthed VegCAMP vegetation layers and accompanying reports for the Project area that were provided to Licensee by the Department.

#### Sturgeon Study Plan

The Department requested Licensee develop a Sturgeon Study Plan for the relicensing of the Project as both green sturgeon (*Acipenser medirostris*) and white sturgeon (*Acipenser transmontanus*) have been documented in the lower Bear River, but little is known regarding their distribution and spawning and rearing activities in the river. The southern distinct population segment (DPS) of North American green sturgeon was listed as threatened under the federal Endangered Species Act (ESA) in 2006. Additionally, both green sturgeon and white sturgeon are California Species of Special Concern. Information regarding the occurrence and behavior of sturgeon in the lower Bear River is necessary to determine whether Project operations and maintenance activities adversely affect sturgeon in the lower Bear River, and develop appropriate PM&E measures.

Specifically, the Department's study request proposed Licensee conduct sturgeon surveys on the lower Bear River from the non-Project diversion dam to the confluence with the Feather River. The goals of this study plan were to: 1) document the occurrence, temporal and spatial distribution, and movement of green and white sturgeon in the lower Bear River; 2) identify changes in the availability of habitat for holding and spawning adult sturgeon under different flow conditions; and 3) determine

Mr. Arnold November 17, 2016 Page **15** of **23** 

whether Project operations and maintenance activities adversely affect sturgeon in the lower Bear River.

To increase the likelihood of detection of sturgeon during data collection, the Department proposed the study would be designed to occur within the known time periods of green and white sturgeon migration, spawning, holding, and rearing. Green sturgeon adults begin their upstream spawning migrations into freshwater during late February, spawn between March and July, with peak spawning believed to occur between April and June (Adams et al. 2002). White sturgeon spawn between mid-February to late May, with peak activity during March and April.

The specific methods recommended by the Department for the study included:

- Conducting deep water surveys to document the occurrence of sturgeon in the lower Bear River downstream of the non-Project Diversion Dam.
- Collecting larval and juvenile sturgeon during early spring through summer utilizing rotary screw traps, artificial substrates, and larval nets deployed at multiple locations (Seesholtz 2003).
- Conducting snorkel surveys.
- Conducting surveys to identify potential spawning habitat.
- Collecting and analyzing eDNA.

Licensee did not adopt the sturgeon sampling methodologies recommended by the Department to conduct deep water surveys, collect larval and juvenile sturgeon utilizing a rotary screw trap, or identify potential spawning habitat. However, as a part of Study 3.2 – Stream Fish Populations Study, Licensee is proposing to conduct snorkel surveys as well as beach seining in Reaches 2-4 (lower Bear River from the non-Project diversion dam to the confluence with the Feather River) during the months of April, May, June, and October.

Additionally, Licensee revised Study 3.2 to include two eDNA sampling events, once in fall after the first winter freshet and once in the spring before low flow conditions. Sampling would be conducted at 500 m intervals for 17 miles on the lower Bear River from the non-Project diversion dam to the confluence with the Feather River (or the obvious start of backwater effects), for a total of 55 samples per sampling event. As discussed earlier in this letter, the Department is agreeable to the timing and frequency (once in fall after the first winter freshet and once in the spring before low flow conditions) Licensee proposed for eDNA sampling, however we do not agree with sampling locations every 500 m. Limited information exists regarding the frequency of occurrence and population sizes of sturgeon in the lower Bear River, however, it is recognized among the local scientific community that the numbers are likely very low and their occurrence in the different reaches of the river may be infrequent. Thus, collecting samples at more frequent intervals may increase the chances of detecting these fish via eDNA sampling. The Department recommends Licensee collect eDNA samples every 100 m in sections of stream (length to be determined) within Reaches 2-4 where target species such as sturgeon (as well as salmon and steelhead) have been documented to occur or are likely to occur based on habitat.

Mr. Arnold November 17, 2016 Page **16** of **23** 

The Department is willing to withdraw the Sturgeon Study Plan if Licensee: (1) adopts the Department's revised eDNA sampling interval as a part of Study 3.2 and (2) agrees to meet with the Department and other interested Relicensing Participants in one or more workshops to further discuss and develop an eDNA protocol for Study 3.2.

#### Benthic Macroinvertebrate Study Plan

The Department requested Licensee develop a Benthic Macroinvertebrate Study Plan for the relicensing of the Project as the PAD provides very limited information regarding the benthic macroinvertebrate (BMI) community in the lower Bear River. The BMI study conducted in 2014 referenced in the PAD was not a complete study following standard State protocols and did not include an analysis of stream health utilizing BMI metrics. The 2013 BMI sample was collected in the Bear River upstream of the Project. Thus, the Department does not have enough information from the 2014 BMI study and 2013 BMI sample to determine the current BMI community structure in the lower Bear River downstream of the Project and determine how Project operations and maintenance activities affect this BMI community and develop appropriate PM&E measures.

Specifically, the Department's requested Benthic Macroinvertebrate Study Plan proposes for Licensee to conduct BMI sampling in the lower Bear River from Camp Far West Dam to the confluence with the Bear River utilizing the reach-wide benthos (RWB) method for documenting and describing benthic macroinvertebrate assemblages and physical habitat described by the State Water Resources Control Board (SWRCB) Surface Water Ambient Monitoring Program's (SWAMP) *Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California* (Ode 2007). Physical habitat and water quality would also be characterized at each BMI sampling site utilizing methods described by SWAMP (Ode 2007). Data collected during the study would be scored utilizing the California Stream Condition Index (CSCI) to translate BMI metric data into a measure of overall stream health (see Rehn, Mazor, and Ode 2015).

Licensee did not adopt the Department's Benthic Macroinvertebrate Study Plan request, stating that it was unclear how the data from the study would be utilized to inform new license conditions. BMI are indicators of water quality and overall stream health. BMI are an important part of freshwater food webs as they: increase the rate at which organic matter is decomposed; release nutrients into the stream while feeding, excreting, and burrowing into sediments; control the numbers, locations, and sizes of their prey (e.g., BMI and algae); and provide a food source for fish, turtles, birds, and other aquatic and terrestrial organisms (Covich, Palmer, and Crowl 1999). The purpose of the Department's proposed study is to characterize existing BMI assemblages (including community structure and habitat) within Project-affected reaches in the Bear River and to evaluate Project effects on BMI community composition and distribution of BMI downstream of Camp Far West Dam on the lower Bear River. Using the SWAMP protocol, current conditions of stream health in the lower Bear River will be assessed and a baseline condition will be established which will serve as a tool for use in

Mr. Arnold November 17, 2016 Page **17** of **23** 

monitoring status and trends of BMIs over time. Data obtained from the study will be utilized by the Department along with the results of other aquatic studies to determine how Project affects to BMI communities may be affecting water quality and food availability for aquatic and terrestrial animals within the lower Bear River below Camp Far West Dam. This information is needed to conduct an adequate Project effects analysis and determine appropriate PM&E measures for aquatic resources in the Project area.

The Department's formal study request for a Benthic Macroinvertebrate Study Plan provided in our August 25, 2016, is provided again in this letter under the Requests for New Project Relicensing Studies section in this letter.

DEPARTMENT RESPONSE TO SSWD'S REPLY TO GENERAL COMMENTS RECEIVED BY RELICENSING PARTICIPANTS (ATTACHMENT 3 OF SSWD'S OCTOBER 13, 2016 LETTER)

### **Qualification of Surveyors**

As mentioned in our August 25, 2016, letter, the Department strongly encourages that all persons conducting surveys for special-status species (i.e., those species listed as endangered of threatened or candidates for listing under CESA, fully protected species, California species of special concern, and rare plants) are knowledgeable of the life history, behavior, and habitat requirements of the species being surveyed and are experienced in the survey protocol required by the Project's final study plans. In our letter, we requested that Licensee provide the name and qualifications of all surveyors for study plans involving special-status species for review and approval prior to implementing study plans. Licensee respectfully declined this request. The Department agrees that we do not need to approve surveyors prior to implementing study plans; however we do request that Licensee provide the name and qualifications for surveyors upon request by the Department.

# **REQUESTS FOR NEW PROJECT RELICENSING STUDIES**

New studies requested under the TLP process are subject to guidelines specified in 18 CFR § 4.38(b)(5). Given this requirement and the recommended study request guidelines, the Department submits the following study request in addition to the studies proposed by Licensee.

## **Benthic Macroinvertebrate Study Plan**

Identification of necessary study to be performed or information to be provided by the Licensee: The Department is requesting that the Licensee conduct a benthic macroinvertebrate study on the lower Bear River from Camp Far West Dam to the confluence with the Feather River. The goals of this study plan are to: 1) assess the BMI community structure to evaluate overall stream health in the lower Bear River; and 2) determine whether Project operations and maintenance adversely affects BMI community structure in the lower Bear River. Mr. Arnold November 17, 2016 Page **18** of **23** 

The study area should include the lower Bear River from Camp Far West Dam to the confluence with the Bear River. Sample sites for this study should be collocated with sampling sites for *Study 3.2 – Stream Fish Populations Study*. Specifically, four total sample sites should be included in this study at Reach 1 (Camp Far West Dam downstream to the non-Project diversion dam, Reach 2 (within one mile downstream of the diversion dam), Reach 3 (within 0.5 miles of the Highway 65 Bridge), and Reach 4 (within 0.5-mile of the Highway 70 Bridge). The BMI study sampling site in Reach 1 should be located in the stream portion of the Bear River immediately downstream of Camp Far West Dam and not in the pool located directly upstream of the non-Project diversion dam.

BMI sampling for this study plan should be conducted using the reach-wide benthos (RWB) method for documenting and describing benthic macroinvertebrate assemblages and physical habitat described by the SWRCB SWAMP Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California (Ode 2007).

Physical habitat and water quality should be characterized at each BMI sampling site utilizing methods described by SWAMP (Ode 2007).

The following list of quantitative measures of chemical and physical/habitat characteristics should be collected at each site:

- Reach-Wide Parameters
  - > GPS coordinates at each site.
  - > Water temperature, specific conductance, pH, and dissolved oxygen using approved standardized procedures and instruments.
- Transect-Specific Parameters
  - Aquatic habitat characterization including average depth, wetted width, bankfull dimensions, percent slope, sinuosity, and average canopy cover.
  - A pebble count using the approach described by Wolman (1954) as adapted for use in the SWAMP protocol (Ode 2007).
  - Evaluation of embeddedness and course particulate organic matter evaluation. Estimates should be obtained while collecting BMI samples by noting whether substrate is loosely, moderately, or tightly cemented and whether substrate is lightly, moderately, or heavily surrounded by fine sediment.
  - If field or analytical methods deviate from SWAMP protocols, reasons for the deviation and alternate methods will be explained and documented.

Data collected during the study should be scored utilizing the California Stream Condition Index (CSCI) to translate BMI metric data into a measure of overall stream health (see Rehn, Mazor, and Ode 2015).

Basis for the Department's determination the study is necessary: The PAD provides very limited information regarding BMI community in the lower Bear River in

Mr. Arnold November 17, 2016 Page **19** of **23** 

the PAD. The BMI study conducted in 2014 referenced in the PAD was not a complete study following standard State protocols and did not include an analysis of stream health utilizing BMI metrics. The 2013 BMI sample was collected in the Bear River upstream of the Project. Thus, the Department does not have enough information from the 2014 BMI study and 2013 BMI sample to determine the current BMI community structure in the lower Bear River downstream of the Project and determine how Project operations and maintenance activities affect this BMI community.

Department's understanding of the Resource Issues involved and its goals and objectives for these resources: BMI are indicators of water quality and overall stream health. BMI are an important part of freshwater food webs as they: increase the rate at which organic matter is decomposed; release nutrients into the stream while feeding, excreting, and burrowing into sediments; control the numbers, locations, and sizes of their prey (e.g., BMI and algae); and provide a food source for fish, turtles, birds, and other aquatic and terrestrial organisms (Covich, Palmer, and Crowl 1999). The purpose of this study is to characterize existing BMI assemblages (including community structure and habitat) within Project-affected reaches in the Bear River and to evaluate Project effects on BMI community composition and distribution of BMI downstream of Camp Far West Dam on the lower Bear River. Using the SWAMP protocol, current conditions of stream health in the lower Bear River will be assessed and a baseline condition will be established which will serve as a tool for use in monitoring status and trends of BMIs over time.

The Department is a trustee agency for the State's fish and wildlife resources and has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and the habitat necessary for biologically sustainable populations of those species (Fish and G. Code § 1802). Among others, the Department's resource objectives as related to BMI communities for this Project are:

- 1. Avoid and minimize existing and future Project impacts to fish and wildlife species and the habitats they depend on.
- 2. Protect, strengthen, and rely more on natural processes for the production and sustainability of fish and wildlife species and the habitats they depend on.
- 3. Implement adaptive management of resource actions so as to maximize benefits for fish and wildlife species.
- 4. Improve conditions for fish, wildlife, and their habitats and improving habitat availability.
- 5. Design and implement instream flow regimes below Project facilities that are sufficient to keep aquatic resources, including planted or native fish, in good condition, in accordance with Fish and Game Code §5937.
- 6. Ensure fish and wildlife species fully utilize available habitat in a manner that benefits all life stages, thereby maximizing natural production and full use of the ecosystem's carrying capacity.
- 7. Maintain and restore spatial and temporal connectivity for aquatic and riparian species within and between watersheds to provide physically, chemically and biologically unobstructed movement for their survival, migration and reproduction.

Mr. Arnold November 17, 2016 Page **20** of **23** 

**Justification of recommended study methodology:** The methodology recommended by the Department for this study, Ode (2007), is the State standard protocol for conducting BMI assessments for California streams.

**Documentation that use of the recommended study method is generally accepted practice:** As stated above, the study methodology proposed by the Department for this study is the State standard protocol for conducting BMI assessments for California streams. This protocol has been utilized for other FERC Project relicensing studies (see *Study 3.1 – Aquatic Macroinvertebrates Upstream of Englebright Reservoir* and *Study 3.2 – Aquatic Macroinvertebrates Downstream of Englebright Reservoir* for the relicensing of the Yuba River Development Project (FERC No. 2246) and *Study Description FA-S3 – Benthic Macroinvertebrate Study*.

Explanation of how the requested study and information will be useful to the Department and other stakeholders to further resource goals and objectives as related to the proposed Project: The specific information obtained during this study will provide information to the Department, Licensee, and other Relicensing Participants needed to understand the BMI community structure and overall stream health in the lower Bear River. This information will assist the Department, Licensee, and other Relicensee, and other Relicensing Participants in determining how Project operations and maintenance activities affect BMI in the lower Bear River. The results of this study and other Project relicensing studies will assist the Department, Licensee, and other Relicensing Participants in the collaborative development of PM&Es for BMI for the new FERC license.

The Department appreciates Licensee's attention to this letter and looks forward to working collaboratively with Licensee and other Relicensing Participants to develop and finalize study plans for the relicensing of the Project.

If you have questions regarding our comments or study request or would like to discuss the contents of this letter further, please contact Anna Milloy at Anna.Milloy@wildlife.ca.gov or (916) 358-2384.

Sincerely,

Ju Dunge

Fina Bartlett Regional Manager

cc (by e-file): Kimberly D. Bose, Secretary Federal Energy Regulatory Commission 888 First Street, NE Washington, DC 20426

ec's: page 21

Mr. Arnold November 17, 2016 Page **21** of **23** 

ec: Jim Lynch, HDR, jim.lynch@hdrinc.com HDR, Incorporated

> Meiling Roddam, SWRCB, meiling.roddam@waterboards.ca.gov State Water Resources Control Board

Tom Holley, NMFS, thomas.holley@noaa.gov National Marine Fisheries Service

Alison Willy, USFWS, alison\_willy@fws.gov Leigh Bartoo, USFWS, aondrea\_bartoo@fws.gov Beth Campbell, USFWS, elizabeth\_campbell@fws.gov US Fish and Wildlife Service

Jeff Drongesen, CDFW, jeff.drongesen@wildlife.ca.gov Laurie Hatton, CDFW, laurie.hatton@wildlife.ca.gov Anna Milloy, CDFW, anna.milloy@wildlife.ca.gov Beth Lawson, CDFW, beth.lawson@wildlife.ca.gov Sean Hoobler, CDFW, sean.hoobler@wildlife.ca.gov Department of Fish and Wildlife Mr. Arnold November 17, 2016 Page **22** of **23** 

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Mr. Arnold November 17, 2016 Page 23 of 23

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