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OFFICE OF ENERGY PROJECTS

Project No. 1390-069 – California
Lundy Hydroelectric Project
Southern California Edison Company

VIA FERC SERVICE

Mr. Wayne Allen
Relicensing Project Manager
Southern California Edison Company
2244 Walnut Grove Avenue
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Reference: Study Plan Determination for the Lundy Hydroelectric Project, P-1390

Mr. Allen:

Pursuant to 18 C.F.R. § 5.13(c) of the Commission's regulations, this letter contains the study plan determination for the Lundy Hydroelectric Project No. 1390 (Lundy Project or project) located on Mill Creek, approximately 7.6 miles northwest of Lee Vining, in Mono County, California. The project is partly located on federal land within the Inyo National Forest managed by the Forest Service and federal land administered by the Bureau of Land Management (BLM). The determination is based on the study criteria set forth in section 5.9(b) of the Commission's regulations, applicable law, Commission policy and practice, and the record of information for the project.

Background

On August 5, 2024, Southern California Edison (SCE) filed a Proposed Study Plan (PSP) that includes 12 studies in support of its intent to relicense the project. The PSP addresses studies on aquatic resources, water quality, terrestrial resources, recreation, land use, and cultural resources.

SCE held an initial study plan meeting to discuss the PSP on September 3, 2024. Comments on the PSP were filed by the California Department of Fish & Wildlife (California DFW), the California State Water Resources Control Board (Water Board), and the Mono Lake Committee (MLC).

SCE filed a Revised Study Plan (RSP) on December 4, 2024. The RSP includes the 12 studies previously included in the PSP, of which 6 have been revised based on comments received on the PSP. Comments on the RSP were filed by California DFW and the Water Board on December 18 and December 19, 2024, respectively.

Study Plan Determination

SCE's RSP is approved with the staff-recommended modifications discussed in Appendix B. As indicated in Appendix A, of the 12 studies proposed, eight are approved as filed, and four are approved with staff-recommended modifications.

The specific modifications to the study plan and bases for the modifications are discussed in Appendix B. Commission staff reviewed all comments and considered all study plan criteria in section 5.9 of the Commission's regulations. However, only the specific study criteria particularly relevant to the determination are referenced in Appendix B.

Studies for which no issues were raised in comments on the RSP are not discussed in this determination. Unless otherwise indicated, all components of the approved studies not modified in this determination must be completed as described in SCE's RSP. Pursuant to section 5.15 (c)(1) of the Commission's regulations, the initial study report (ISR) for all studies in the approved study plan must be filed by January 5, 2026.

Nothing in this study plan determination is intended, in any way, to limit any agency's proper exercise of its independent statutory authority to require additional studies. SCE may choose to conduct any study not specifically required herein that they feel would add pertinent information to the record.

If you have any questions, please contact Jessica Fefer, the Commission's relicensing coordinator for the project, at (202) 502-6631 or jessica.fefer@ferc.gov.

Sincerely,

for
Terry L. Turpin
Director
Office of Energy Projects

Enclosures: Appendix A – Summary of Determinations on Proposed and Requested Studies
Appendix B – Staff's Recommendations on Proposed and Requested Studies

**APPENDIX A: SUMMARY OF DETERMINATIONS
ON PROPOSED AND REQUESTED STUDIES**

Lundy Hydroelectric Project P-1390-069

Study	Recommending Entity	Approved	Approved with Modifications	Not Required
SCE's Revised Study Plan				
WQ 1 – Lundy Lake and Mill Creek Water Quality Monitoring	Southern California Edison (SCE)		X	
WQ 2 – Lundy Lake and Mill Creek Water Temperature Monitoring	SCE		X	
AQ 1 – Fish Community Survey	SCE	X		
AQ 2 – Fish Stranding Study	SCE	X		
TERR 1 – General Botanical Resources Survey	SCE	X		
TERR 2 – General Wildlife Survey	SCE	X		
REC 1 – Recreation Use and Needs Assessment	SCE		X	
REC 2 – Recreation Facilities Condition Assessment	SCE		X	
CUL 1 – Archaeology	SCE	X		
CUL 2 – Built Environment	SCE	X		
TRI 1 – Tribal Resources	SCE	X		
LAND 1 – Project Lands and Roads Study	SCE	X		

APPENDIX B: STAFF'S RECOMMENDATIONS ON PROPOSED AND REQUESTED STUDIES

Lundy Hydroelectric Project No. 1390-069

The following discusses Commission staff's recommendations on studies proposed by Southern California Edison (SCE) for which modification requests were filed by California Department of Fish and Wildlife (California DFW) and California State Water Resources Control Board (Water Board). We base our recommendations on the study criteria outlined in the Commission's regulations [18 C.F.R. section 5.9(b)(1)-(7)].

I. PROPOSED STUDY WITH REQUESTED MODIFICATIONS

Study WQ-1 Lundy Lake and Mill Creek Water Quality Monitoring

Applicant's Proposed Study

Project operations have the potential to affect water quality conditions in Lundy Lake and Mill Creek downstream of Lundy Dam. The goal of this study is to collect additional information necessary to characterize existing water quality conditions and determine effects of continued project operations on water quality in Lundy Lake and Mill Creek downstream of Lundy Dam. Information obtained under this study will also be used to inform a cumulative effects analysis of Mill Creek between Lundy Lake and Mono Lake and to assess consistency with water quality objectives in the Water Quality Control Plan for the Lahontan Region Basin Plan (Basin Plan) (LRWQCB, 2019), California statewide numeric mercury objectives (SWRCB, 2017), and Office of Environmental Health Hazard Assessment screening values (OEHHA, 2022).

The monitoring study includes three study components: (1) reservoir and stream water quality sampling, (2) bacteriological sampling, and (3) fish tissue mercury sampling. SCE proposes sampling for all three study components in 2025. If 2026 is designated a different water year type than 2025, then SCE proposes to conduct a second year of water quality and bacterial sampling in 2026.¹ Currently, a water year type is considered "wet" when the annual precipitation is in the highest 30 percent of the previous years, dating back to 1966, and a water year is "dry" when the precipitation is in

¹ Commission staff note that water year type in California is projected in May of each year in the California Department of Water Resources Bulletin 120. Therefore, we presume the decision to sample in 2026 would occur soon after the report is issued in May of 2026.

the lowest 30 percent of the previous years, dating back to 1966. A “normal” water year is when it is neither “wet” nor “dry.”

Reservoir and stream water quality sampling would occur at eight sites including one site in Lundy Lake, two in the Mill Creek bypassed reach, one in the Mill Creek return ditch (MRCDD), one in Mill Creek downstream of the MRCDD, two along stream reaches upstream of Lundy Lake (for comparison with the other sites at or downstream of Lundy Lake), and one in Mill Creek between Highway 395 and Mono Lake. Sampling would take place in 2025 during early spring to characterize seasonal runoff, mid-to late summer to characterize low flow and maximum reservoir stratification, and in the fall to characterize reservoir turnover and pre-winter conditions. *In situ* measurements (e.g., water temperature and dissolved oxygen) and grab samples (e.g., minerals, nutrients, metals, and bacteria) would be collected for laboratory analysis at each monitoring station, and a vertical profile of *in situ* parameters would be collected at the reservoir site during each sampling event.²

Bacterial sampling would be conducted at or near all of the project’s recreation sites.³ Surface grab samples would be collected from the nearshore of Lundy Lake immediately adjacent to the recreational facilities and from the bank of Mill Creek downstream of the recreation facilities. Samples would be collected at least once weekly for six consecutive weeks during the peak summer recreation period, including before and after a holiday (e.g., Labor Day), and analyzed for *E. coli*, total coliform, and fecal coliform.⁴

Fish tissue mercury samples would be collected during the gill net sampling conducted under the AQ-1 *Fish Community Survey*. Up to nine fish would be collected for each target species including rainbow trout (*Onchorhynchus mykiss*), brook trout (*Salvelinus fontinalis*), and brown trout (*Salmo trutta*) to be consistent with the Office of Environmental Health Hazard Assessment fish sampling and analysis protocols for the development of fish consumption protocols (OEHHA, 2022), and for comparison to California statewide mercury objectives (SWRCB, 2017). To assess the conditions that increase the methylation and potential bioavailability of mercury in Lundy Lake, the plan includes the following sampling components: (1) dissolved oxygen profiles to assess the potential for anoxia and hypoxia during summer, (2) total and dissolved metal

² See Attachment 2 of SCE’s RSP for a detailed description of water quality parameters that would be conducted under WQ-1.

³ The REC-1 study identifies a total of seven project recreation sites: the Lundy Lake boat launch, Lundy Campground, Lundy Dam day-use area, and four day-use areas along Mill Creek. We interpret SCE’s bacterial sampling proposal to include bacterial sampling at all seven of these sites.

⁴ SCE does not specify which holiday sampling would occur around.

concentrations in Lundy Lake water across multiple seasons, and (3) mercury in fish tissue within multiple trophic levels. The fish tissue sampling would occur in summer or fall when the concentration of metals tends to be the highest in fish.

Comments on the Study

California DFW states that water quality and temperature in Mill Creek and Lundy Lake are dependent on how Lundy Lake is managed on an annual basis. California DFW notes that low reservoir levels could result in warmer temperatures and lower dissolved oxygen levels in both Lundy Lake and Mill Creek downstream of the dam which could potentially adversely affect the fishery in both the reservoir and downstream. California DFW requests that SCE conduct a second year of water quality monitoring regardless of water year type to capture any management-related variations in water quality, noting that SCE does not always manage Lundy Lake similarly across similar water year types. In support of its requested modification, California DFW points to historical water surface elevation data for Lundy Lake showing that during two different drought periods (2012–2016 and 2020–2022), when the available snow water equivalent (SWE) levels were similar, the reservoir level management in Lundy Lake was inconsistent. California DFW states that if Commission staff does not require SCE to collect two years of data for this study, it recommends that SCE only use the most recent 30 years of historical data to determine the water year type, instead of the full period of record dating back to 1966.

The Water Board requests that SCE conduct a second year of methylmercury fish tissue sampling. The Water Board states that no available data currently exist to characterize how mining operations have affected water quality within the system and that conducting only one year of sampling may not adequately capture the full range of environmental and ecological factors influencing methylmercury concentrations. The Water Board states that an additional year of sampling would provide a more reliable dataset that is representative of project conditions due to the variability of external factors on bioavailability and transport of metals from year to year.

In the RSP, in response to a similar request from the Water Board on the proposed study plan, SCE stated that one year of fish tissue sampling would be sufficient to inform an evaluation of potential project effects and develop any protection, mitigation, and enhancement measures. SCE noted that the multiple study components would: (1) ensure that study results adequately inform how reservoir conditions may increase the methylation of mercury, (2) facilitate an evaluation of the potential for bioaccumulation of mercury in fish, and (3) allow a comparison of project-affected waters to California statewide mercury water quality objectives.

Discussion and Recommendations

As an initial matter, while the historic reservoir level and SWE data that California DFW provided appears to show a difference in reservoir level management at the project between two separate multi-year drought periods, it does not conclusively show that SCE would be expected to operate the project significantly different between two consecutive years of the same water year type.

A second year of sampling could potentially provide additional information useful in developing license conditions, but only if there would be a difference in water year type between the two years [section 5,9(b)(5)]. Otherwise, the data obtained in year 2 could be redundant to that obtained in year 1. Therefore, SCE's proposal to base the need for a second study year on whether there would be a difference in water year type appears reasonable. For this reason, we do not recommend California DFW's request to conduct the reservoir and stream water quality sampling and bacteriological sampling for a second year regardless of water year type.

Regarding California DFW's request to define the water year type based on the most recent 30-year period of record rather than the entire historical record dating back to 1966, we find that using data from the most recent 30-year period would more accurately capture the water year type in the context of current conditions. Therefore, we recommend SCE modify study WQ-1 to determine water year type using the most recent 30-year record of historical data. This modification to the protocol for determining the water year type would have no additional cost.

As noted previously, water level fluctuations in reservoirs are known to facilitate the methylation of mercury, making it available for bioaccumulation and biomagnification in fish tissue. The U.S. Environmental Protection Agency (EPA) threshold for methylmercury levels in fish tissue for human consumption is 0.3 micrograms per gram of wet fish tissue. If the EPA's threshold is exceeded during the first study year, conducting a second year of study would be needed to understand the extent of project effects on methylmercury levels in the project area, and to inform the need for, and potential development of, license conditions [section 5.9(b)(4) and (5)]. Therefore, we recommend SCE modify the WQ-1 study to conduct an additional year of fish tissue sampling, regardless of water year type, if samples collected during the first year of study contain methylmercury levels that exceed the EPA threshold. We estimate that conducting a second year of fish tissue sampling and methylmercury analysis would cost an additional \$72,500.⁵

⁵ SCE did not provide separate costs in the RSP for the three study components. Therefore, Commission staff estimated the cost of the additional year of sampling based on the assumption that the three components would cost approximately the same (e.g., the

Study WQ-2: Lundy Lake and Mill Creek Water Temperature Monitoring

Applicant's Proposed Study

Project operations have the potential to affect water temperatures in Lundy Lake and project affected stream reaches. The goal of this study is to collect stream water temperature data and reservoir profile temperature data, and to use the data to characterize current water temperature conditions in Lundy Lake and project-affected stream reaches of Mill Creek. The study data would be used to fill information gaps, determine whether the Basin Plan water quality objectives are being met, assess project-related effects and cumulative effects on water temperature, and inform the need for environmental measures.

Temperature monitoring would occur in the following stream reaches: (1) Mill Creek upstream of Lundy Lake and downstream of the confluence with South Fork Mill Creek, (2) Mill Creek downstream of Lundy Lake, (3) Mill Creek downstream of the confluence with MCRD, (4) Mill Creek upstream of the confluence with MCRD, (5) Mill Creek near Mono City⁶, (6) Mill Creek Near Mono Lake, (7) Lundy powerhouse tailrace, and (8) MCRD upstream of the confluence with Mill Creek. Two continuous data loggers would be installed at each site listed above, using methods adapted from (Heck et al., 2018).⁷ Data loggers would be deployed between spring 2025 and spring 2026, unless stream conditions are unsafe for installation or removal. Data loggers would record water temperature in 15-minute intervals, and data analysis would be used to summarize daily means, maxima, and minima for each site. Data would be downloaded from data loggers at minimum of once during the spring, summer, and fall, with more frequent downloads as allowed by weather, access, and safety.

SCE proposes to conduct one year of monitoring; however, if the subsequent study year is a different water year type than the initial study year, then SCE proposes to conduct a second year of water quality and bacterial sampling.

Comments on the Study

California DFW requests that SCE conduct a second year of water temperature monitoring regardless of water year type to capture any management-related variations in

estimated cost for each component equals one-third of SCE's estimated total cost of the study for conducting all three components for a single year).

⁶ Specific location is not specified in SCE's RSP.

⁷ SCE proposes to install duplicate data loggers at each location for data security in the event a data logger is damaged or stolen.

water quality, alleging that SCE does not always manage Lundy Lake similarly across similar water year types. In support of its requested modification, California DFW points to historical water surface elevation data for Lundy Lake during two different multi-year drought periods (2012–2016 and 2020–2022) where the available snow water equivalent (SWE) levels were similar and states its view that the information shows that the reservoir level management in Lundy Lake was inconsistent despite the similarity in SWE levels. California DFW requests that if Commission staff does not require SCE to collect two years of data for this study, it recommends that SCE only use the most recent 30 years of historical data to determine the water year type, instead of the full period of record dating back to 1966.

Discussion and Recommendations

As we note above for Study WQ-1, we believe that the information provided by California DFW for two different multi-year drought periods does not conclusively demonstrate that SCE operates the project differently between two consecutive years of the same water year type. Therefore, SCE’s proposal to evaluate the need for a second year of study based on water year type under the assumption that operations are consistent between two consecutive water year types, is reasonable.

A second year of sampling could potentially provide additional information useful in developing license conditions but only if year 2 is of a different water year type [section 5,9(b)(5)]. Otherwise, information obtained in year 2 could be redundant to that obtained in year 1. Therefore, we do not recommend California DFW’s request to conduct the water temperature monitoring for a second year regardless of water year type.

Regarding California DFW’s request to define the water year type based on the most recent 30-year period of record rather than the entire historical record dating back to 1966, we agree that doing so would more accurately capture the water year type in the context of current climate and environmental conditions. Therefore, we recommend SCE modify study WQ-2 to determine water year type using the most recent 30-year period record of historical data. This modification to the protocol for determining the water year type would have no additional cost.

Study AQ-1: Fish Community Survey

Applicant’s Proposed Study

Project operations have the potential to affect water quality and water quantity within Lundy Lake and Mill Creek downstream of the project, which can subsequently affect existing recreational fish populations. The goal of this study is to characterize abundance, distribution, and structure of recreational fish populations within Lundy Lake and project-affected stream reaches of Mill Creek. The study components include: (1)

obtaining current information on existing recreational fish populations within Lundy Lake and project-affected stream reaches of Mill Creek, and (2) conducting a literature review to understand how large flow releases in the fall and winter might affect brown trout populations in Mill Creek. Sampling would occur in Lundy Lake, and in Mill Creek from Lundy Dam approximately 3.6 miles downstream to Highway 395 during the summer/fall of one calendar year.

Stream fish surveys would be conducted using procedures described by Reynolds (1996), utilizing backpack electrofishers, where conditions allow. Sampling sites for backpack electrofishing would be selected prior to the actual surveys, with each site being approximately 300-foot long and blocked off using block nets to prevent immigration or emigration. Within Lundy Lake, gill netting would be conducted at three separate locations (including littoral and deepwater habitats), and shoreline boat electrofishing would be conducted (dependent on access) at three sites throughout the lake. Gill netting would include two 4- to 8-hour net-set periods, one at night, and one during the day, over a 24-hour period. The literature review component of the study would synthesize available information on how large (i.e., greater than 60 cubic feet per second (cfs)) releases in the fall or winter could affect brown trout populations in Mill Creek.

Comments on the Study

California DFW requests that SCE conduct a second year of fish population monitoring, stating that multi-year data are necessary to adequately characterize the fish populations and determine any potential project effects on the fishery. California DFW states that its stocking efforts in the project reservoir and stream downstream of the dam have been variable in past years due to numerous factors including hatchery supply, bacterial outbreaks, and challenges related to the COVID-19 pandemic. While California DFW notes that these factors that previously affected stocking variability have largely been resolved, they exemplify the potential for future stocking efforts to also be variable, or even absent. California DFW also notes that environmental conditions affecting fish populations may differ from year to year. California DFW states that a second year of study is needed to capture the potential variability in fish stocking efforts and environmental conditions.

In the RSP, in response to a similar request from California DFW on the proposed study plan, SCE stated that one year of fish population monitoring would be sufficient to inform an evaluation of potential project effects and the development of any protection mitigation, and enhancement measures. SCE notes that because fish populations in the project area are heavily influenced by the put-and-take nature of the fishery, one year of sampling would adequately characterize fish populations and inform the analysis of any project effects.

Discussion and Recommendations

Historically, the Mill Creek watershed and other tributaries to Mono Lake were fishless (Moyle, 2002), but non-native introduced trout species, including brown trout, brook trout, and rainbow trout, are now found in Lundy Lake and Mill Creek downstream of the project. California DFW currently conducts annual stocking of sterile rainbow trout within Lundy Lake and Mill Creek to support a put-and-take fishery.

We estimate that a second year of fish surveys would cost an additional \$153,000. Using prior population data for brown trout in project-affected streams in combination with data obtained from the study as proposed by SCE, would sufficiently characterize the current fishery and allow Commission staff to adequately analyze the potential project effects on the fishery as related to the proposed relicensing action. Therefore, there is no need for a second year of fish surveys to assess short-term changes in the fishery related to California DFW's fishery management and stocking efforts, which are non-project actions. For these reasons, the cost of conducting an additional year of population surveys is not warranted, and we do not recommend it.

Study REC-1: Recreation Use and Needs Study

Applicant's Proposed Study

Project operations may affect recreation use and access within the Lundy project boundary. SCE owns and operates seven project recreation sites including Lundy Lake boat launch, Lundy Campground, four Lundy Lake day-use areas along Mill Creek, and the Lundy Dam day-use area. The data collected through the REC-1 study is proposed to be used to assess the effects of project operations on recreation use and access and inform the development of any protection, mitigation, and enhancement measures.

The first goal of the study is to characterize the existing use of the project recreation sites. Specific objectives related to goal 1 are to: (1) estimate the recreation use at the project recreation sites by day type (i.e., weekday, weekend, or peak weekend) and activity type; and (2) evaluate visitor feedback regarding the perception and experience of visitors at the project recreation sites.

The second goal of the study is to identify current and future needs related to the project's recreation sites. Specific objectives related to goal 2 are to: (1) evaluate whether the capacity of the existing project recreation sites meets current needs; (2) estimate future recreation use of the project recreation sites; and (3) estimate potential future recreation needs and the ability of the existing project recreation sites to meet the future needs over the term of a new license.

To complete the stated goals and objectives, specific components of the study include: (1) spot counts at project recreation sites on two days per month (one weekday and one weekend day) from April 15, to November 15, 2025, and one day of each holiday weekend⁸ for a total of 20 days throughout the study period (sampling dates and times would be randomly selected for the parking areas at the project recreation sites); and (2) recreation use visitor intercept surveys, sampled on the same days as the spot counts as described above. Two field technicians would be administering surveys and conducting spot counts on each survey day and would stay at each sampling location for approximately one hour to complete the counts and intercepts.

Comments on the Study

California DFW requests that SCE collect specific data regarding visitor satisfaction related to the fishing opportunities within the project boundary. Based on its stated position that the project has adversely affected the fishery and associated project recreation it provides within the project area, California DFW asserts that a creel sampling survey should be conducted based on published protocols (Zale et al., 2013). California DFW requests that SCE identify common fishing access locations around Lundy Lake and along Mill Creek and provide a field data sheet for anglers to fill out their personal characteristics, timing, effort, harvest, harvest composition, and success, and estimate catch-per-unit effort by species. California DFW suggests that creel surveys be conducted during peak season (Memorial Day – Labor Day), with the intention of sampling two 4-hour blocks in the morning and evening of each sampling day. For each sampling day, California DFW recommends that study sites and times be randomly generated to ensure representative sampling. California DFW also recommends that survey technicians be professional and field trained, and all necessary information be provided to them prior to field data collection.

Discussion and Staff Recommendation

The RSP includes the proposed recreation use visitor intercept survey questionnaire, which is intended to characterize use and identify current and future needs at the project. While the questions do help to identify the type of use at existing project recreation sites, they do not investigate experiences as they relate to specific types of recreation (e.g., angling, boating). Because angling is a popular recreation activity at the project, and because project operations have the potential to impact recreation on Lundy Lake, further understanding angling experience conditions and satisfaction is necessary to inform the development of license requirements [section 5.9(b)(5)].

⁸ Holiday weekends include May 24-26, 2025 (Memorial Day weekend); June 20-22, 2025 (Juneteenth weekend); July 4-6, 2025 (Fourth of July weekend); and August 30-September 1, 2025 (Labor Day weekend).

Because SCE is already proposing to conduct a recreation use visitor intercept survey as part of this study, we recommend that SCE add an angling component to the existing survey. As such, SCE should identify any additional existing angling location (as appropriate) on Lundy Lake and along Mill Creek to ensure that the sampling method captures both designated and undesignated angling locations at the project. Additionally, SCE should build their survey using a branching method, where those who respond that they are angling would receive angling specific questions (e.g., demographics, angling timing, effort, harvest, composition, and success, and estimates of catch-per-unit effort by species, as recommended by California DFW), and those doing all other activities would receive the more general survey questions as proposed by SCE (Appendix B in the RSP) and modified by FERC staff (see REC-2 study discussion).

The RSP indicates that SCE proposes to broadly intercept all visitors for a total of 20 days throughout the study season, spending a total of one hour at each recreation site on each sampling day to conduct both intercept and vehicle counts but with no sampling days or techniques being dedicated to angling. Twenty days of total recreation sampling time would likely not be enough time to ensure angling use is adequately captured. Therefore, we recommend that SCE sample on two weekdays and two weekend days from April 15 – November 15, and one day of each holiday weekend, for a total of 37 sampling days. All sampling days within the angling season (Memorial Day – Labor Day) should include any angling-specific locations that may be identified to ensure that anglers' experiences are captured during the fishing season. The additional data is needed for Commission staff to adequately analyze any project effects on recreation resources in the project area and to inform the need for, and potential development of, license conditions [section 5.9(b)(4) and (5)]. We estimate that conducting in-person surveys and vehicle counts for an additional 17 days of the recreation season, as recommended, would cost an additional \$3,000.

Study REC-2: Recreation Facility Condition Assessment

Applicant's Proposed Study

Project operations may affect project recreation facilities and public access within the project boundary (e.g., impoundment fluctuations, maintenance drawdowns, and downstream releases may impact the boating, fishing, and aesthetic value of the impoundment). Data collected through this study would be used to assess the effects of project operations on recreation facilities and public access, and would inform the development of any necessary protection, mitigation, and enhancement measures.

The goal of the study is to inventory and assess the project's recreation sites, including locations, facilities, amenities, general condition, ownership, and management responsibilities. To accomplish this goal, the specific objectives of the study are to: (1)

field verify, map, and document project recreation facilities and amenities; (2) document the general condition of recreation facilities and amenities, including the potential for universal accessibility where feasible; and (3) identify who owns, operates, and maintains each of the project recreation sites.

To accomplish the stated objectives, SCE proposes to perform a field inventory to document the existing recreation facilities and amenities at the project. Field technicians would visit each recreation site and collect facility and amenity data on a handheld device. Data collected would include the location of the facilities in relation to project works, the type and number of amenities at each site, the condition of the facilities and amenities at each site, the entities responsible for the operation and maintenance of each facility, hours/seasons of operation, and site photographs. Field technicians would document areas, if any, that have signs of erosion, slumping, or other forms of ground instability.

Comments on the Study

California DFW requests that Lundy Lake be considered a recreational component of the project and the study assesses how project operations affect Lundy Lake levels, specifically during the peak summer recreation season between Memorial Day and Labor Day. California DFW states that the analysis should identify potential recreational impacts at various lake levels as well as identify how normal project operations cause changes in lake levels and associated potential impacts on recreational facilities at a daily timestep.

Discussion and Staff Recommendation

Project operations that may include impoundment fluctuations and maintenance drawdowns have the potential to affect recreation on Lundy Lake including at Lundy Lake boat launch and Lundy Dam day-use area. Additionally, as the PAD identifies, boating and angling are the major recreation activities that occur on Lundy Lake and would be most likely impacted by fluctuations in lake levels. Given that Lundy Lake supports recreation at the project, understanding how lake levels impact project recreation is important for informing the development of potential protection, mitigation, and enhancement measures at the project.

We recommend that SCE add questions specific to lake-level preferences in the general REC-1 visitor survey. This ‘lake-level’ section should use the scientific method developed by Manning (2011) and adapted by others, to understand normative levels of acceptability of a range of recreation conditions (e.g., lake levels). Using real or manipulated photographs, depending on what is available, SCE should show photographs of the typical range of lake levels and ask participants to rate the level of acceptability

(generally using a 5 or 7-point Likert-type scale⁹) of each pictured condition. SCE should then analyze the data to understand the most (and least) acceptable lake level for a range of recreation activities (e.g., boating, angling) as captured in the survey. This addition to the recreation use survey would help Commission staff to better understand the impact of lake levels on all recreational use at the project. Adding these questions to the survey would not require any additional changes to the sampling strategy (outside of what is recommended by staff as part of the REC-1 study), nor would it require additional survey technicians. The additional data is needed for Commission staff to adequately analyze any project effects on recreation resources in the project area and to inform the need for, and potential development of, license conditions [section 5.9(b)(4) and (5)]. We estimate that adding a series of questions using real or manipulated photographs, as recommended, would cost an additional \$0-1,000, depending on the need to create manipulated photographs.

California DFW's recommendation that SCE analyze and provide lake-levels at a daily time-step is appropriate given the recreation provided at Lundy Lake and the potential impacts that project operation may have on recreation opportunities. SCE currently measures water-levels in Lundy Lake using one reservoir gage that is located near the dam. For the data to reflect impacts to recreation most accurately, we need to understand how lake levels differ between the east side of Lundy Lake where the dam and the water-level gage operates, and the west side of Lundy Lake where the only project boat launch on Lundy Lake exists. Therefore, we recommend that SCE install a temporary staff gage located near the project boat launch on the west side of Lundy Lake. The gage should be deployed during the high-use season (Memorial Day – Labor Day) for the two proposed study seasons. Data should be collected at intervals comparable to the USGS-approved gage located near the dam to determine the difference in lake levels across the lake. The additional data is needed for Commission staff to adequately analyze any project effects on recreation resources in the project area and to inform the need for, and potential development of, license conditions [section 5.9(b)(4) and (5)]. We estimate that measuring water levels on the West side of Lundy Lake using a staff gage, for two recreation seasons, as recommended, would cost an additional \$1,000 for equipment purchase and maintenance.

⁹ We recommend a 5 or 7-point Likert-type scale of acceptability (-3 = very unacceptable, -2 = unacceptable, -1 = slightly unacceptable, 0 = neutral, 1 = slightly acceptable, 2 = acceptable, 3 = very acceptable).

II. LITERATURE CITED

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