FEDERAL ENERGY REGULATORY COMMISSION
Washington, DC 20426
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OFFICE OF ENERGY PROJECTS

Project No. 2290-122–California
Kern River No. 3 Hydroelectric Project
Southern California Edison Company

VIA FERC Service

Mr. Wayne Allen
Principle Manager
Southern California Edison Company
1515 Walnut Grove Avenue
Rosemead, California 91770

Reference: Determination on Requests for Study Modifications and New Studies

Mr. Allen:

Pursuant to 18 C.F.R. § 5.15 of the Commission's regulations, this letter contains the determination on requests for new studies and modifications to the approved study plan[1] for the relicensing process of Southern California Edison Company's (SCE) Kern River No. 3 Hydroelectric Project No. 2290 (KR3 Project or project). The KR3 Project is located on the North Fork Kern River and Salmon and Corral Creeks near the town of Kernville in Kern and Tulare Counties, California. The determination is based on the study criteria set forth in sections 5.9(b) and 5.15(d) and (e) of the Commission's regulations, applicable law, Commission policy and practice, and staff's review of the record of information.

Background and Comments

The study plan determination for the project was issued October 12, 2022. SCE filed an Initial Study Report (ISR) on October 10, 2023, summarizing the status of the 20 studies being conducted in support of the KR3 Project's relicensing process. On October 17, 2023, SCE held a public meeting in Kernville, California, with a call-in option for remote participation, to present the ISR results. On October 31, 2023, SCE filed a summary of the ISR meeting.

[1] The approved study plan for the KR3 Project consists of SCE's Revised Study Plan (filed July 5, 2022) as modified by the Commission's study plan determination.

Comments on the ISR and meeting summary were filed by the following: Lester Swanson on November 13, 2023; Neil Nikirk on November 30, 2023; American Whitewater on December 5 and 11, 2023; the Kern River Fly Fishers (KRFF), National Park Service (Park Service), and Kern River Boaters (KRB) separately on December 11, 2023; and James Spring, Anthea Raymond, Chris Brown, Dean Koutzoukis, Chuck Richards, Jose Luis Pino, Amin Nikravan, and Samuel Sparhawk separately on December 12, 2023. Comment letters filed by Neil Nikirk, American Whitewater, KRFF, Park Service, KRB, Anthea Raymond, Chris Brown, and Jose Luis Pino included requests for modifying the approved study plan. KRB also requests additional studies not currently included in the approved study plan. On January 10, 2024, SCE filed a letter responding to comments on the ISR that included a public version of the *OPS-1: Water Conveyance Assessment*, which was previously filed as Critical Energy Infrastructure Information.

Staff's review of the ISR determined it did not adequately summarize study results and variances for *REC-1: Whitewater Boating Study* and *REC-2: Recreation Facilities Use Assessment Study* as required by section 5.15(c)(1). Therefore, on February 1, 2024, we issued a letter requesting that SCE file more information in order for staff, agencies, and stakeholders to evaluate the studies' progress, variances, and the potential need for modifications to the approved study plan. The letter also included a Revised Process Plan and Schedule to provide additional time, until April 1, 2024, for stakeholders to file comments on the information staff requested as well as the public version of the *OPS-1: Water Conveyance Assessment Study* report.

On March 1, 2024, SCE filed the information requested by staff. In the filing, SCE stated that it would also file addendums to the study reports for the *REC-1: Whitewater Boating Study*, *REC-2: Recreation Facilities Use Assessment Study*, and *OPS-1: Water Conveyance Assessment Study* in the first quarter of 2024. SCE filed the addendums on March 29, 2024, and distributed copies of them to stakeholders. Comments on the requested information, the public version of the study report for the *OPS-1: Water Conveyance Assessment Study*, and the study addendums were filed by the Park Service on March 29, 2024; KRB on April 1 and 29, 2024; and American Whitewater on April 2, 2024, which included additional study modification requests. On April 30, 2024, SCE responded to stakeholders' comments.

Some of the comments do not specifically request modifications to the approved study plan, and therefore, are not addressed herein.[2] This determination only addresses comments that are specific requests for modifications to approved studies or requests for

[2] For example, this determination does not address requests regarding recommendations for protection, mitigation, and enhancement measures, or requests that the ISR be amended to include recent revisions to state and federal management plans.

new studies. Additionally, this determination does not address requests for study modifications that SCE has agreed to implement.

Study Plan Determination

Pursuant to section 5.15(d) of the Commission's regulations, any proposal to modify a required study must be accompanied by a showing of good cause and must include a demonstration that: (1) the approved study was not conducted as provided for in the approved study plan, or (2) the study was conducted under anomalous environmental conditions or that environmental conditions have changed in a material way. As specified in section 5.15(e), new study requests must also show good cause and a statement explaining: (1) any material changes in the law or regulations applicable to the information request, (2) why the goals and objectives of any approved study could not be met with the approved study methodology, (3) why the request was not made earlier, (4) significant changes in the project proposal or that significant new information material to the study objectives has become available, and (5) why the new study request satisfies the study criteria in section 5.9(b).

As indicated in Appendix A, the requested modification to the *WR-1: Water Quality Study* is approved. Of the two requested modifications to the *WR-2: Hydrology Study*, one is approved with staff's recommendations, and one is not required. The requested modifications to studies *REC-1: Whitewater Boating, REC-2: Recreation Facilities Assessment, AES-1: Aesthetic Flows,* and *ANG-1: Enjoyable Angling Flows* are approved with staff's recommended modifications. The requested new studies *NRG-1: Voltage Stepping Costs* and *NRG-2: CAISO Bid History* are not required. The specific modifications to the studies and the bases for modifying them are explained in Appendix B. Commission staff considered all study plan criteria in accordance with sections 5.9(b) and 5.15(d) and (e) of the Commission's regulations. However, only the specific study criteria relevant to the determination are referenced in Appendix B.

Please note that 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. If you have any questions, please contact Quinn Emmering at (202) 502-6382 or Quinn.Emmering@ferc.gov.

Sincerely,

TERRY TURPIN

Digitally signed by TERRY TURPIN
Date: 2024.05.30 11:35:54 -04'00'

Terry L. Turpin
Director
Office of Energy Projects

Enclosures: Appendix A – Summary of Determination on Requested Modification to Approved Study
Appendix B – Staff's Recommendation on Requested Modification to Approved Study

APPENDIX A: SUMMARY OF DETERMINATION ON REQUESTED MODIFICATIONS TO THE APPROVED STUDY PLAN

Kern River No. 3 Hydroelectric Project No. 2290

Study	Recommending Entities [a]	Approved	Approved with Modifications	Not Required
Requested Modifications to Approved Studies				
WR-1: Water Quality	KRB	X		
WR-2: Hydrology	KRB		X	
	Nikirk			X
REC-1: Whitewater Boating	KRB, AW, Nikirk, Pino, Raymond, Brown		X	
REC-2: Recreation Facilities Use Assessment	SCE, NPS, KRB		X	
AES-1: Aesthetic Flows	KRB		X	
ANG-1: Enjoyable Angling Flows	KRB, KRFF		X	
Requested New Studies				
NRG-1: Voltage Stepping Costs	KRB			X
NRG-2: CAISO Bid History	KRB			X

[a] Table abbreviations: the Kern River Boaters (KRB), American Whitewater (AW), the U.S. National Park Service (NPS), Neil Nikirk (Nikirk), Anthea Raymond (Raymond), Chris Brown (Brown), Southern California Edison (SCE), Jose Luis Pino (Pino), and the Kern River Fly Fishers (KRFF).

APPENDIX B: STAFF'S RECOMMENDATION ON REQUESTED MODIFICATIONS TO THE APPROVED STUDY PLAN[4]

Kern River No. 3 Hydroelectric Project No. 2290

GENERAL

Request

The Kern River Fly Fishers comment that Southern California Edison's (SCE) Initial Study Report (ISR) Meeting held on October 17, 2023, for the Kern River No. 3 Hydroelectric Project (KR3 Project), did not conform to the Americans with Disabilities Act, and requests an additional public hearing.

Response

Following the ISR Meeting, SCE filed a meeting summary on October 31, 2023. No disagreements concerning the meeting summary were filed.[5] Although SCE's filing did not include a transcript of the meeting, the filing included a list of meeting participants, a copy of the presentation, and a meeting summary on the schedule, status of technical studies, new study requests, and action items.[6] In its meeting summary, SCE also included questions from stakeholders and answers discussed at the meeting. After the meeting, members of the public were able to submit written comments and requests for modifications to the approved study plan by December 11, 2023. Several stakeholders filed comments and study requests. Therefore, an additional public hearing is not necessary because the public was provided adequate opportunities to review and comment on the ISR.

Request

On January 10, 2024, SCE filed a public version of the *OPS-1: Water Conveyance Assessment Study*, which was previously filed as Critical Energy Infrastructure Information (CEII). On February 1, 2024, Commission staff issued a Revised Process Plan and Schedule. The revised schedule extended the comment period until April 1, 2024, for stakeholders to review and comment on the *Water Conveyance Assessment Study* as well as the *REC-1: Whitewater Boating Study* and *REC-2: Recreation*

[4] The approved study plan for the KR3 Project consists of SCE's Revised Study Plan (filed July 5, 2022) as modified by the Commission's study plan determination issued October 12, 2022.

[5] 18 C.F.R. § 5.15(c)(2) (2023).

[6] *See* ISR Meeting Summary filed by SCE on October 31, 2023.

Facilities Use Assessment Study. Additionally, on March 29, 2024, SCE filed a technical memorandum with additional information on the *Water Conveyance Assessment Study*, including results from phase 2 of the study that were not previously filed.

On March 29 and April 2, 2024, the National Park Service (Park Service) and American Whitewater respectively filed letters requesting an extension of the comment period. Because stakeholder comments were due on April 1, 2024, the Park Service and American Whitewater request more time for stakeholders to review and comment on the additional study results filed by SCE. Additionally, they comment that the results of the *Water Conveyance Assessment Study* will identify potential operational constraints of the conveyance system that will be used to understand potential impacts on whitewater flow releases and inform any necessary comments on the results of the *Whitewater Boating Study*. The Park Service also notes the additional time would allow stakeholders to file comments before SCE files its draft license application (DLA) due on July 3, 2024. Therefore, the Park Service and American Whitewater request an extension of the comment period to review the additional study results and file any necessary comments on the *Water Conveyance Assessment* and *Whitewater Boating Studies*.

Response

Extending the comment period again would further delay the licensing schedule for the project. Although, SCE's March 29 filing provided only 3 days for stakeholders to review the information and file any comments, we note that the licensing schedule provides additional opportunities for stakeholders to file comments on study results, including comment periods following the filing of the DLA, Updated Study Report (USR), and final license application. Therefore, extending the comment period as requested by the Park Service and American Whitewater is not necessary.

REQUESTED MODIFICATIONS TO APPROVED STUDIES

Study WR-1: Water Quality

Background

The goals of the *Water Quality Study* are to characterize temperatures, dissolved oxygen (DO) concentrations, and indicator bacteria concentrations over the course of a year. The study includes: (1) deploying water temperature/DO loggers to collect data in the specified river reaches (10 sites) from June 1, 2022, to May 31, 2023; and (2) collecting 10 surface water grab samples to characterize indicator bacteria concentrations at a subset of the temperature locations (5 sites) to capture a range of flow conditions and two holiday weekends with heavy recreational use. The sampling sites include the North Fork Kern River (NFKR) upstream of the Fairview Diversion impoundment, the NFKR

at Gold Ledge Campground (downstream of Fairview Dam), the NFKR immediately upstream of the KR3 powerhouse, and Corral and Salmon Creeks above each streams' confluence with the NFKR.

SCE installed water temperature loggers at each site from May 2021 to May 2023, and conducted bacterial sampling in September 2022 and August and September 2023.[7] SCE's implementation of the study followed the methods described in the approved study plan with some exceptions. Due to equipment issues (loss of loggers and siltation) some temperature and DO data were lost and SCE is proposing to conduct additional sampling to remedy the data gap, which would include redeploying loggers at the same locations to collect another year of data through summer 2024. Additionally, due to high flows and unsafe access conditions during the 2023 summer (July) recreation season, bacterial sampling was postponed. SCE proposes to conduct additional bacterial sampling in 2024 to include the July 4 weekend.

Requested Study Modification

KRB requests that the study plan be modified to require SCE to conduct additional bacterial monitoring in late summer/early fall 2024. KRB states during the September 2022 sampling period, SCE diverted only approximately 2 cubic feet per second (cfs) for project operations, which it notes constitutes anomalous conditions given the availability of flows for diversion during the times of sampling. KRB adds that measuring bacterial levels during periods of *de minimis* diversion does not capture the project effects as it is not representative of typical project operations.

Reply Comments

In their January 2024 reply comments, SCE states that bacterial monitoring was performed during the fall of 2022 (dry water year) and 2023 (wet water year) and is representative of a range of conditions. SCE adds that preliminary results indicate very low levels of fecal coliform for both years. SCE asserts that the 2023 sampling included 5 samples collected within a 30-day period, as outlined in the *Water Quality Study* and that KRB has not demonstrated that the approved study was not conducted as provided for in the approved study plan or that the study was conducted under anomalous environmental conditions, or that environmental conditions have changed in a material way.

In their April 2024 reply comments, KRB continue to assert that the bacterial sampling was conducted during anomalous environmental conditions. KRB states that

[7] SCE initiated the water temperature and bacterial sampling prior to the issuance of the Commission's study plan determination.

SCE has not shown the diversion rate to be a typical environmental condition for purposes of the study.

In their April 2024 response, SCE continues to disagree with the need for additional sampling, stating that the bacterial samples collected in September 2022 are representative of flow conditions that occur during dry years on the NFKR upstream and downstream of Fairview Dam, regardless of the amount of flow being diverted for project operations.

Discussion and Staff Recommendation

Diversions at the project have the potential to impact bacterial concentrations by altering the flows in the bypassed reach. The approved study plan required September sampling in order to capture Labor Day weekend, a time when heavy recreational use and more potential bacterial introduction to the bypassed reach is expected. While the approved study plan did not specify appropriate diversion and flow rates necessary for sampling, it is important to understand what the water quality in the bypassed reach is during periods when only minimum instream flows are provided because this is when effects are expected to be greatest.

The current license requires that a minimum instream flow of 100 cfs be maintained in the bypassed reach. Additionally, the project has a requirement under the existing license to provide 35 cfs via the conveyance system to the California Department of Fish and Wildlife fish hatchery located downstream of the project tailrace. This hatchery flow takes precedence over minimum instream flows in typical operations. However, the hatchery has not been operational since 2020 and the majority of the diverted flows are unnecessary. In response, SCE requested and was granted a variance in 2022 through September 2024 that suspends the requirement to provide the hatchery flows except for up to 5 cfs, if needed. Up to 5 cfs is used to provide water for fire suppression at the KR3 Powerhouse, and to maintain water in the flowline to protect the water conveyance features and generating equipment by maintaining wet conditions on the equipment seals. The variance specifies that the 30 cfs that isn't being diverted for hatchery purposes be considered additional minimum flows until the expiration of the variance or until the hatchery becomes operational, whichever occurs first.

The four bacterial concentration samples that were collected in September 2022 covered a range of flows in the bypassed reach, during which time the minimum flow requirement is typically 100 cfs. On September 6, 2022, average flows in the bypassed reach were 107 cfs with 1.8 cfs being diverted, on September 12, 2022, the average flows were 190 cfs with 1.8 cfs being diverted, on September 19, 2022, average flows were 136 cfs with 1.6 cfs being diverted and on September 16, 2022, the average flows were 116 cfs with 1.5 cfs being diverted. After examining monthly means of flow, by year, it appears to be extremely rare that diversion rates in September are below 10 cfs, with only

five other documented occurrences in the period of record (excluding the months where the project was offline for reconstruction in water years 2012 and 2013). In four of those occurrences, the monthly mean diversions were 0 cfs and it is suspected these occurred during periods of outages as the flows in the bypassed reach for these periods exceeded minimum instream flows in every case. The only instance where flows were diverted and averaged less than 10 cfs was in 2016 (dry water year), when diversions for the hatchery occurred in only 4 days of the month and minimum flows were not met. It appears that normal operations typically divert available flows that are in excess of the minimum flows and hatchery flows during September.

The 2022 sampling that occurred while bypassed flows were 107 cfs and 116 cfs likely represented bacterial concentrations accurately when considering the 2-cfs diversion rate and required minimum flows of 100 cfs (in absence of the variance). However, during two sampling events in September, diverting 2 cfs when inflows were significantly greater than minimum flows (190 cfs and 136 cfs) likely did not represent potential project effects on bacterial concentrations in the bypassed reach.[8] The diversion rates in comparison to available flows released in the bypassed reach in September 2022 could have resulted in dilution of bacterial concentrations in the bypassed reach when inflows were greater than minimum instream flows and may not accurately represent project effects.

Additionally, the ISR states that samples measured as exceeding 23 most probable number per hundred milliliters (MPN/100 ml) were not analyzed in the fecal coliform standard range and cannot be used to evaluate state objectives. One occurrence was on September 6, 2022, at site 8 and another on September 12, 2022, when all 5 sites exceeded 23 MPN/100 ml. The ISR states that the fecal coliform samples increased at all sites during the September 12 sampling period likely due to a run-off event following heavy rains. As stated above, on September 12, flows in the bypassed reach were 190 cfs and likely further diluted these elevated samples. Regardless, there is a data gap because some of the information is unusable.

The data from the 2023 bacterial sampling has not been made available for Commission staff to assess the usefulness of that data when considering this modification. In addition, due to the lack of project diversions during the September 2022 sampling period, we conclude that the bacterial monitoring during that period occurred under anomalous environmental conditions [section 5.15(d)(2)]. Therefore, we recommend that SCE conduct additional bacterial sampling in September 2024 (including Labor Day weekend) during periods where SCE is providing the lowest allowable

[8] The Fairview Dam bypassed reach is the 16-mile reach of the NFKR between the KR3 Project's Fairview Dam and the powerhouse tailrace.

minimum flows in the bypassed reach.[9] The sampling must be performed in accordance with the methodology specified in the approved study plan. Given the proximity in timing of the September 2024 sampling, a summary of the collected data should be provided in the USR (due October 11, 2024), and the technical study memorandum should be filed with the final license application, which is due November 30, 2024.

Study WR-2: Hydrology

Background

The goal of the *Hydrology Study* is to compile hydrology gage data for use in other resource assessments to analyze the potential project effects on stream hydrology in the NFKR. The study specifically includes: (1) compiling hydrology data for water years 1997 through 2021 from gages located in the NFKR downstream of Fairview Dam (U.S. Geological Survey (USGS) gage no. 11186000), in the conveyance flowline at Adit 6/7 (USGS gage no. 11185500), and the U.S. Army Corps of Engineers (Corps) gage at Kernville; (2) compiling hourly gage data from water years 2022 and 2023; (3) calculating flow travel times along the NFKR between Fairview Dam and Kernville using shifts in flows recorded between USGS gage no. 11186000 and the Corps gage; and (4) calculating natural functional flow ranges for the NFKR upstream of Fairview Dam in wet, moderate, and dry years with existing gage data, consistent with Section A of the California Environmental Flows Framework (CEFF) (California Environmental Flows Working Group (CEFWG) 2021; Grantham et al. 2021).[10]

According to the ISR, study implementation followed the methods described in the approved study plan, with the exception of the completion of flow travel times data collection and analysis, the summary of existing flow data for Salmon and Corral Creeks, and the review and dissemination of hourly gage data for water years 2022 and 2023.

[9] We specify "lowest allowable minimum flows" due to the uncertainty of whether SCE will be required to provide hatchery flows during the sampling period or instead provide those flows to the bypassed reach in addition to the required minimum instream flow of 100 cfs.

[10] Functional flows refer to the distinct aspects of a natural flow regime that sustain ecological, geomorphic, or biogeochemical functions, and that support the specific life history and habitat needs of native aquatic species.

Requested Study Modification

Flow Travel Times

KRB requests that the approved study plan be modified to require SCE to complete the flow travel times analysis consistent with the methodology in the approved study plan. KRB states that the 2023 study season did not experience flow diversion changes due to it being a wet water year, which resulted in flows above 1,400 cfs for the duration of the study, inhibiting its completion. As such, KRB states that these are anomalous environmental conditions that justify modification. KRB requests that the Commission require SCE to accomplish this task as soon as practical but prior to July 31, 2024, to allow stakeholders adequate opportunity to develop relicense recommendations.

Authorized Flows Tables

KRB requests that SCE characterize and summarize project effects that are not confounded by the times the project was offline for repairs and rehabilitation. Although KRB describes this as a new study, we address KRB's request as a modification to the approved *Hydrology Study*. KRB states that the existing hydrology dataset does not accurately portray project effects because the data includes outages which account for 23% of the hours compiled. KRB requests that SCE complete an authorized flows analysis to create a dataset of daily and hourly flows for the diversion and the bypassed reach below Fairview Dam that are authorized by the current license under the gage record of inflows for the current license term (water year 1997-water year 2022). In their reply comments, KRB states that they have developed a methodology and produced the authorized flow dataset for both the daily and hourly datasets. KRB conducted this analysis and provided a link to the information in their reply comments. KRB requests that SCE validate or correct their effort, if needed, and then publish its results in the hydrology dataset.

CEFF Analysis Below Fairview Dam

KRB requests that SCE calculate flow ranges for the NFKR downstream of Fairview Dam with existing gage data consistent with Section A of the CEFF. Although KRB describes this as a new study, we address KRB's request as a modification to the approved *Hydrology Study*. KRB states that SCE has retrieved and provided the natural flow estimates developed by CEFWG's Natural Flows database to estimate natural functional flow metrics above Fairview Dam. KRB requests that the study uses the existing dataset and the eFlows tools provided from the same CEFWG and conduct the same analysis methodology to establish functional flow metrics below Fairview Dam and compare impaired and unimpaired streamflow (CEFWG 2021) (Lane 2023).

Mr. Nikirk requests that SCE provide a more complete characterization of unimpaired flows and flows in the bypassed reach for determining project effects on an appropriate time scale. Mr. Nikirk requests that SCE graph these functional flow metrics alongside the current flow regime in the bypassed reach to show how the project has changed the flow pattern and magnitude from the natural flow regime. Mr. Nikirk also requests that the statistics include the actual dates, rather than the numbered day of the water year.

Reply Comments

Flow Travel Times

In their January 2024 reply comments, SCE states that the study is being conducted as required by the approved study plan. However, SCE states that the flow travel time element of the study was unable to be completed due to high flows in 2023. SCE proposes to conduct additional monitoring in 2024 and include the results in the USR due on October 11, 2024. SCE disagrees with KRB's stated need for the monitoring to occur before July 31, 2024, in order for KRB to develop recommended relicensing measures, as KRB will have sufficient time after the results are presented in the USR to develop those measures.

Authorized Flows Tables

In their January 2024 reply comments, SCE states that the information requested by KRB is not needed to complete an assessment of potential effects of the proposed project compared to current (baseline) conditions. SCE asserts that project outages for maintenance and repair are routine and required for continued operation of any hydropower project and are not unique to the KR3 Project. SCE states that the timing, duration, and frequency of outages are not always known, and are thus necessary to include in the summary of current operating conditions.

In their April 2024 reply comments, KRB reiterates that the calculated outages SCE compiled, exceed what may be expected in the future. KRB asserts that the outages included 16 consecutive months in 2013 and 2014 for rehabilitation of Fairview Dam and would not be considered as "maintenance and unanticipated events" as characterized by SCE. KRB asserts that inclusion of this period in the dataset would suggest that this high rate of outages is typical for the project and grossly understates project effects because no hydrological effects occur during outages. KRB contends that improvements made to the project should make it more reliable in the future license term and that the authorized flows analysis should be conducted to accurately represent project effects.

In their April 2024 reply comments, SCE contends that the omission of the outage data within the period of record would exaggerate the description of hydraulic conditions under current operations and therefore artificially inflate the appearance of potential effects. SCE continues to assert that project outages for maintenance and repair are routine and required for continued operation of any hydropower project and are not unique to the project. SCE restates that the timing, duration, and frequency of outages are not always known, and are thus necessary to include in the summary of current operating conditions.

CEFF Analysis Below Fairview Dam

In their January 2024 reply comments, SCE states that the requested study is not needed to analyze potential project effects. SCE asserts that KRB is incorrect when stating that the *Hydrology Study analysis* was completed for the reach above Fairview Dam; in actuality, the *Hydrology* Study selected the reach immediately downstream of Fairview Dam as the location of interest (LOI) for CEFF analysis. SCE disagrees with KRB that the purpose of this component of the study is to determine functional flow ranges for this river system and compare those ranges to flows impaired by project operations. According to SCE, CEFF Section A analysis does not include this type of comparison. SCE contends that the ecological flow criteria determined in CEFF Section A, Step 2 and included in *Hydrology Study* approximate flow conditions in the absence of all human activity. SCE states that the data are intended to provide information on the timing, magnitude, and ranges of natural flows and are not streamflow release recommendations. SCE states that this data, as provided in the ISR, can be used to assess project-related hydrologic effects downstream of Fairview Dam in the license application and during the development of license conditions.

In their April 2024 reply comments, KRB states that during the study design process, they proposed using the existing hydrology datasets from immediately above Fairview Dam (unimpaired) and immediately below Fairview Dam (impaired) to calculate and compare the CEFF functional flow metrics for each dataset in an effort to use the best contemporary environmental science to understand and characterize project effects on the 16-mile bypassed reach. KRB asserts that these flow metrics are a set of calculations and characterizations that can be applied to a known hydrograph, like the hydrographs SCE has readily available for both the above and below Fairview Dam. Further, KRB states that calculating the CEFF functional flow metrics on both the unimpaired flow hydrograph and impaired flow hydrograph make it possible to compare the functional flow metric differences for each. KRB agrees that, as part of the *Hydrology Study*, SCE has already retrieved and provided the natural flow estimates developed by the CEFWG's Natural Flows database for the LOI in the reach immediately downstream of Fairview Dam. However, KRB contends that these natural flow estimates represent the unimpaired flow of the river by providing information on the timing,

magnitude, and ranges of natural flows and approximate flow conditions in the absence of all human activity. KRB also states that that under current conditions the natural unimpaired flow of the river is present only above Fairview Dam. Therefore, these flow metrics for unimpaired flows will also provide the current flows metrics above Fairview Dam. KRB requests the functional flow metrics also be calculated for the impaired flows as currently exist below Fairview Dam under baseline current operations and agrees that an assessment of potential effects should include current conditions. Further, KRB suggests that the only way to assess current baseline conditions in the diverted stretch, where flows are impaired by the project diversion, is to also calculate the functional flow metrics on the current, impaired hydrograph. KRB requests that the functional flow metrics on the current, impaired flows be calculated and provided alongside the natural unimpeded functional flow metrics already estimated. KRB states that these functional flow metrics are indicative of important streamflow functionality, and changes are captured in this alteration assessment that are not visible in zoomed out linear or log-scale plots of annualized flows or flow durations.

In their April 2024 reply comments, SCE states that they continue to object to this requested analysis. SCE has completed Section A of CEFF, as required under the approved study plan. SCE asserts that the data collected and summarized in the ISR (including the statistical summary of the data from both U.S. Geological Survey [USGS] gages 11185500 and 11186000 as well as the functional flow metrics from the California Natural Flows Database and other existing operational information) fulfills the requirements of approved study plan and is sufficient to provide data needed to assess potential effects of the proposed project and inform future license conditions.

Discussion and Staff Recommendation

Flow Travel Times

Commission staff will not be soliciting licensing recommendations from stakeholders until after the final license application is filed and the information included within it is deemed adequate to support staff's environmental analysis of the project proposal. As such, providing the monitoring results in the USR, as proposed by SCE, will provide stakeholders sufficient time to develop recommended relicensing measures based on those results. Therefore, we do not recommend KRB's requested modification to provide the results by July 31, 2024.

Authorized Flows Tables

The purpose of the data developed by this component of the study is to provide an understanding of operational effects of the project on flows in the NFKR. The inclusion of the long-term outages in SCE's dataset do not accurately reflect these project effects.

Furthermore, SCE has not demonstrated that future outages are expected to occur at the same frequency or duration in the future, especially when considering the consecutive 16 months that the project was offline during the current dataset period. Consequently, we consider the periods of outages as anomalous conditions that should not be considered in the dataset for this study [section 5.15(d)(2)]. Therefore, to fully demonstrate project effects while the project is operational, we recommend that the approved study plan be modified to require SCE to conduct an independent authorized flows analysis excluding outages or to verify or correct the analysis provided by KRB in their reply comments for the ISR.

CEFF Analysis Below Fairview Dam

The study was conducted as provided by the approved study plan, which required SCE to complete Section A of the CEFF analysis for the NFKR [section 5.15(d)(1)]. SCE completed this analysis for the LOI located just downstream of Fairview Dam. Commission staff conclude that the data collected and summarized in the ISR including the statistical summary of the data from both USGS gages 11185500 and 11186000 as well as the functional flow metrics from the California Natural Flows Database and other existing operational information) is sufficient to assess potential effects of the proposed project and to inform future license conditions. Existing conditions are considered the baseline for the purposes of the Commission staff's analysis and, therefore, the hydrological summaries provided by SCE are sufficient for determining project effects. Therefore, we do not require that SCE complete the additional analysis requested by KRB.

Although modifying the tables to include calendar dates instead of the numbered day of the water year that present the CEFF metrics would require minimal effort and may help readers interpret the data more easily, the approved study plan does not specify its inclusion. Further, the figures presented in the ISR are consistent with generally accepted scientific practice [section 5.9(b)(6)]. Because the study was conducted as required in the approved study plan, including calendar dates is not required [section 5.15(d)(1)].

Study REC-1: Whitewater Boating

Background

The goals of the *Whitewater Boating Study* are to: (1) document the whitewater boating opportunities and the range of whitewater boating flows in the NFKR from the project's Fairview Dam to the powerhouse tailrace, and from the project powerhouse to Kern River Park in Kernville under current license conditions; (2) identify potential

operational constraints on whitewater boating, and (3) evaluate public safety concerns associated with boating flows.

The study has four main objectives: (1) describe the whitewater boating segments in the NFKR from Fairview Dam to Kernville including the length, difficulty, name of rapids, and typical put-in and take-out locations; (2) identify the range of flows (minimum acceptable and optimum) that would provide whitewater boating opportunities in each whitewater segment for watercraft types including kayaks, rafts, packrafts, stand-up paddleboards, and body boards; (3) quantify the annual frequency that minimum acceptable and optimum whitewater flows occur in each whitewater segment with project operations and unimpaired flows for each reach; and (4) document potential conflicts of boating flows with other recreation users and identify strategies to mitigate them.

The approved study plan follows the methods described in Whittaker et al. (2005), which identifies a phased approach to investigate flow dependent recreation opportunities. The progression through each phase deepens the understanding of whitewater recreation opportunity preferences, and the development of each level depends on information gathered in the previous phase. Phases include: (1) a Level 1 Desktop Review of existing information typically including a literature review and structured interviews; (2) a Level 2 Limited Reconnaissance Site Review; and (3) a Level 3 Intensive Study.[11] If enough information is gathered in Level 1, there is no need to progress to Levels 2 and 3, and so on. If flow-dependent recreation exists on a bypassed reach, it is typically agreeable not to delay implementation of Level 3 study on behalf of previous levels. Each phase has several options for implementation based on project details such as availability of current information, control of instream flows, and balancing of power generation or other land use needs relevant to the project location.

As reported in the ISR, SCE conducted the Level 1 Desktop Review and the Level 2 Limited Reconnaissance Site Review as described in the approved study plan. Additionally, SCE started the Level 3 Intensive Study in April 2023 by administering a single flow survey to identify boating flow preferences based on current conditions. In their Recreation Summary filed on March 1, 2024, SCE proposed methods for implementing Level 3, including: (1) providing enhanced flows targeting knowledge gaps in boater experience; (2) deploying a whitewater flow comparison survey; (3) conducting a Level 3 whitewater focus group; and (4) completing a hydrology analysis to

[11] The approved study plan has limited information regarding the methodology for Level 3 because it was unknown at the time if SCE would need to conduct a Level 3 Intensive Study or if a controlled flow study was possible. The approved study plan states that staff will review the ISR, as well as agency and stakeholder comments to it, to determine whether SCE will be required to conduct a controlled flow study.

quantify the annual number of whitewater boating days using flow preference curves from Levels 1, 2, and 3.

SCE provided enhanced flows from April 11 to April 14, 2024, targeting flow levels at 200, 400, 600, and 800 cfs where knowledge gaps were identified during Levels 1 and 2. Based on conditions on those days, users were able to assess flows at 450, 770, 835, and 860 cfs. In their April 30, 2024 letter responding to stakeholder comments, SCE proposes to provide additional enhanced flows in 2024 targeting the 200 to 600 cfs range.

Requested Study Modification

Level 1 Desktop Review

Neil Nikirk and KRB state the Level 1 Desktop Review and analysis is based on outdated information that does not reflect the current desired flows in the NFKR bypassed reach. They request that any stakeholder comments filed on the project record that state a desire for minimum flows lower than those identified in the 1994 study (200-600 cfs) be included in the Desktop Review analysis. Both commenters additionally request that SCE base the summaries of frequency of boating opportunities on a lower flow definition of boating days rather than the 700 cfs flow used in the ISR, and that SCE wait to discuss these data until minimum flows for boating opportunities have been formally defined.

Neil Nikirk requests that SCE accurately reflect the difficulty levels in each reach including how the difficulty changes based on flows.

Level 2 and 3 Focus Groups

Anthea Raymond with the LA Kayak Club, KRB, Neil Nikirk, and Jose Pino state that the Level 2 focus groups used in the study lacked diversity in geographic location and skill level. They request a more inclusive approach to qualitative input to the Level 3 study, such as additional focus groups of 10 to 12 representative of geographic location and skill level.

KRB requests that all panels going forward be established with the opportunity for stakeholder comment and agreement.

Level 3 Intensive Study

American Whitewater, Anthea Raymond, Chris Brown with Whitewater Voyages, KRB, and Neil Nikirk request that SCE provide and analyze optimal flows at lower flow ranges where knowledge gaps exist (200 to 600 cfs) in the 2024 season. American

Whitewater specifically requests that SCE provide as much lead time as possible to recruit participants for enhanced flows and reopen the single flow survey for participants to directly evaluate the lower flows, whereas KRB specifically requests that SCE *not* reopen the single flow survey to evaluate flows. Instead, KRB requests that SCE conduct the controlled flow study as outlined in Whittaker et al., (2005). Neil Nikirk also requests a controlled flow study for the Level 3 portion of the study.

Reply Comments

Level 1 Desktop Review

SCE states that the Level 1 Desktop Review is based on the current license and existing information as required by the approved study plan. SCE refutes requests to include comments on the public record in the literature review citing those comments as anecdotal and inconsistent with the scientific methods describe in the approved study plan. SCE asserts that the boating days frequency analysis based on 700 cfs used existing information and that it will be revised when additional information on flow preferences becomes available in the Level 3 Intensive Study. SCE additionally agrees to make the raw data for the *Whitewater Boating Study* available to stakeholders, which will be filed either with the DLA due on July 3, 2024, or the USR that is due on October 10, 2024.

In response to KRB, SCE states that the analysis requested will be completed as part of the Level 3 Intensive Study as described in the approved study plan and that it is premature to perform that level of analysis in the desktop review.

In response to Neil Nikirk, SCE states that the whitewater difficulty ratings listed in the Level 1 Desktop Review were reported in whitewater guidebooks and online resources, with whitewater difficulty ratings based on the International Scale of Whitewater Difficulty (AW, 2005). SCE reported boater's opinions about whitewater difficulty levels across a range of flows in the Technical Memorandum Addendum for the study (filed March 29, 2024).

Level 2 and 3 Focus Groups

In response to comments that the Level 2 focus groups lacked diversity in geographic location and skill level, SCE states that members of the boating community had the opportunity to nominate themselves to participate, and SCE encourages nominations of different demographic and skill levels. SCE states that the Level 3 Intensive Study will include a focus group in 2024. SCE agrees with the recommendation that the focus group composition include boaters from different geographic areas that visit the NFKR and encourages the commenters to participate.

Responding to KRB, SCE states that the Level 2 site visit and focus group was open to all members of the boating community that volunteered to participate, and that documentation of recruitment is included in the ISR.

Level 3 Intensive Study

In response to requests that SCE alter 2024 operations to provide enhanced flow opportunities where knowledge gaps are identified, SCE states that the results of the Level 1 and Level 2 studies identified a knowledge gap in boater flow preference between 200 to 800 cfs. SCE scheduled enhanced flow boating opportunities from April 11 to April 14, 2024, targeting bypassed reach flows of 200, 400, 600 and 800 cfs, but it was not able to provide flows below 450 cfs for boaters to evaluate. Instead, flows at 450, 770, 835, and 860 cfs were provided based on available conditions. SCE plans to schedule additional enhanced flow opportunities in 2024 when suitable conditions exist to provide 200, 400 and 600 cfs flows in the bypassed reach. The single flow survey will be reopened for additional data collection if quantitative data does not exist for developing flow preference curves.

In its response to Neil Nikirk and KRB's request to conduct a controlled flow study, and KRB's request to not reopen the single flow survey to facilitate comparison, SCE asserts that the single flow and flow comparison surveys are Level 3 Intensive Study approaches, noting them as best practice to encourage participation among boaters with direct experience when it is difficult to both gather a panel and control flows. In its March 29, 2024 filing, SCE proposes to use flow enhancements to target information gaps in boater knowledge of flow preferences by opening the single flow survey for comparison across the range of flows provided. SCE objects to labeling this approach as a controlled flow study because it fails to meet the criteria described by Whittaker et al. (2005).[12]

In response to the request that SCE provide as much lead time as possible for enhanced flows, SCE states that they provided as much lead time as possible for notification to the boating community for enhanced flows in April 2024. SCE states that to provide enhanced boating opportunities within the 200 to 400 cfs range as proposed, river inflows at Fairview Dam must be between 800 and 1,000 cfs, and that SCE will provide as much notice as possible based on weather and flow forecasts.

[12] Controlled flow studies are best suited for short, bypassed reaches where flows can be controlled to provide a range of flows within a 2- to 3-day period to be evaluated by a team of boaters in succession under similar conditions to eliminate external variables (Whittaker et al., 2005).

Discussion and Staff Recommendation

Level 1 Desktop Review

The Level 1 Desktop Review provided in the ISR summarizes existing information including: (1) the 1994 Whitewater Flow Study, from SCE's last project relicensing (SCE 1994), guidebooks and magazines, (2) a table/list of whitewater runs available in the Kern River Basin, (3) detailed information about river segments from Fairview Dam to Riverside Park in Kernville, (4) a summary of commercial and private whitewater boating use using records from Sequoia National Forest and/or provided by local outfitters, (5) a summary of regulatory agency resource management and tribal interests from Fairview Dam to Kern River Park, (6) a hydrology summary, (7) an evaluation of project facilities include Fairview Dam impoundment and gate operations, and (8) results of the structured interview questionnaire.[13]

These data, along with the comments on the public record and the final review that will be filed by SCE with the USR will provide a clear picture of project impacts to flows, fisheries, and whitewater boating opportunities. Because this study is ongoing, the most recent acceptable data that SCE can use for their desktop review is the 1994 Whitewater Flow Study (SCE, 1994). The Desktop Review is not the only source of information to inform license conditions [section 5.9(b)(4)]. Other sources may include, but not be limited to, comments on the public record, SCE's license application to be filed in November 2024, and the USR. Because the results of Level 1 and 2 studies have already identified a data gap for flow preference evaluations at lower flows (200 to 800 cfs), as indicated in the Recreation Summary filed by SCE on March 1, 2024, the requested modification to the Level 1 Desktop Review is unnecessary and therefore, it is not required.

Level 2 and 3 Focus Groups

The general accepted methodology in Whittaker et al. (2005) suggests that the composition of panelists at the Level 2 Limited Reconnaissance phase should represent the diversity of recreation opportunities likely to be at issue on the bypassed reach, and that it should include experienced boaters and agency staff familiar with the river. The homogeneity in level and type of experience among the self-selected group acknowledged by commenters may not be representative of all potential skill levels or recreation types that occur on the bypassed reach, yet this is largely out of SCE's control given the approved self-nomination method used to recruit participants. The approved study plan outlines recruitment and participation requirements for the Level 2

[13] The structured interview questionnaire was filed on March 1, 2024, after the ISR filing on October 10, 2023.

Reconnaissance Focus Group including: (1) it should include up to 12 participants, with no minimum for participation, (2) the boating community should nominate boaters of different skill levels and watercraft types, and (3) interested agency staff should be notified and allowed to participate. As outlined in the ISR, SCE complied with these requirements and held a site visit with the self-selected group on August 15, 2023. All ten participants in the Level 2 Focus Groups were experienced boaters familiar with the river. Two participants were not from the local community (Los Angeles, California, and Rancho Cordova in Northern California, and one represented agency personnel (Sequoia National Forest). Four of the participants were owners or managers of commercial whitewater companies operating in the bypassed reach, while six identified as non-commercial boaters. Based on the ISR, there were reasonably acceptable efforts to communicate about the opportunity, and the panelists were largely representative of users and stakeholders on the bypassed reach. Given the demonstration of effort and a Level 2 focus group that obtained information consistent with the goals and objectives of the approved study plan [section 5.9(b)(1)], the request for stakeholder approval of future panels prior to implementation is unwarranted, and therefore, we do not require the requested modification.

The requests by stakeholders for an additional focus group during the Level 3 Intensive Study is already included in the approved study plan. However, to ensure the Level 3 focus group(s) represent diversity in geographic location and skill level, and obtain information consistent with the goals and objectives of the approved study plan [section 5.9(b)(1)], we recommend that the study plan be modified to specify that SCE: (1) work with the boating community, including participants of the Level 2 Reconnaissance phase, to identify additional members of the community to self-nominate, including advice about strategies to reach users from across California; and (2) provide information about the opportunity on the project website, outfitters' websites, and the Forest Service's website. These notifications should: (1) be encouraging to all experience levels, (2) include contact information to allow for self-nomination, and (3) reach users of the NFKR that are from across California to the best of SCE's ability. If there are too many self-nominations for one focus group, SCE should accommodate up to 20 to 24 self-nominees to participate in up to two focus groups for the Level 3 Intensive Study. If more than 24 people self-select, participants from the most highly represented group(s) should be turned away from participating to encourage diversity among panelists. They should be directed to still participate in enhanced flows and fill out the single flow survey and the flow comparison survey.

Level 3 Intensive Study

In the approved study plan, SCE acknowledges that one of the goals of the *Whitewater Boating Study* is, "[to] identify the range of flows (minimum acceptable and optimum) that would provide whitewater boating opportunities in each whitewater

segment."[14] The results of a Level 3 study could inform potential license conditions on what, if any, whitewater boating flow releases should be required to enhance whitewater boating opportunities [section 5.9(b)(5)]. According to Whittaker et al. (2005), there are several methods for conducting a Level 3 intensive study.

As noted previously, the methodology for the Level 3 Intensive Study was not fully developed when the study was approved because it was unclear whether a Level 3 Intensive Study would be necessary. In the Commission's Study Plan Determination (SPD), staff stated it would review the study results provided in the ISR as well as stakeholder comments to determine whether a controlled flow study is needed.

Accordingly, in its March 29, 2024 filing, SCE fully describes its proposed methods for the Level 3 Intensive Study, which includes a flow comparison survey.[15] The flow comparison survey would involve surveying users of the bypassed reach about preferences under current conditions or enhanced flows, to determine minimum and optimal acceptable flows along the bypassed reach. Another method, as requested by KRB and Neil Nikirk, is a controlled flow study, where specific flows are provided by SCE and evaluated by a panel of users to determine the minimum and optimal acceptable flows in the bypassed reach.

A controlled flow study, as outlined in Whittaker et al. (2005) is best suited for scenarios where the applicant has control of flows through a short, bypassed reach, and the ability to gather a panel of expert boaters to participate over repeat flows provided across multiple days within a short period of time. In the ISR, SCE demonstrates that they do not meet the requirements for a controlled flow study because they do not have control of storage above Fairview Dam and they are unable to control flows beyond approximately 600 cfs.[16] Therefore, enhanced flows at a targeted range are better suited for a flow comparison survey for identifying preferences across a targeted range of flows. As outlined above, SCE has provided enhanced flows as low as 450 cfs and is proposing additional enhanced flows to target ranges between 200 to 600 cfs. While the Whittaker et al. (2005) approach typically uses a panel to compare flows in a Level 3 flow comparison study, SCE's proposal, and American Whitewater's agreement to reopen the single flow survey and disseminate the flow comparison survey to evaluate enhanced flows is consistent with generally accepted practice in the scientific community because it allows for comparability across multiple flows under current and desired conditions [section 5.9(b)(6). For this reason, and because SCE proposes a Level 3 focus group to

[14] *See* Attachment 4, *Study REC-1: Whitewater Boating* plan (page 1) of the Revised Study Plan filed by SCE on July 5, 2022.

[15] *See* the Recreation Summary filed by SCE on March 1, 2024.

[16] The approximate capacity of the water conveyance system.

be conducted during enhanced flow opportunities (focus group addressed above), we do not recommend the controlled flow study requested by KRB and Mr. Nikirk. We recommend that SCE conduct its proposed single flow and flow comparison survey and hold a Level 3 focus group along with the provision of enhanced flow opportunities.

SCE proposes to provide enhanced flows targeting a range of 200 to 600 cfs. To ensure flow conditions are within 200 to 600 cfs, we recommend that SCE provide enhanced flow opportunities on the descending limb of the hydrograph when conditions are likely to be most suitable for the targeted flows (e.g., approximately August and September). This will help to avoid potential conditions that prohibit SCE from providing the required flow levels. If the targeted range is not reached, SCE should reschedule additional enhanced flow opportunities until they are reached.[17] Additionally, we recommend, as requested by American Whitewater, that SCE provide as much lead time as possible to enhanced flow participants based on snowmelt predictions and forecasts. Because SCE has already demonstrated awareness of the potential timing for the best available conditions, SCE should notify potential participants at least 10 days in advance, when possible,[18] to provide sufficient time for participants from across the state to plan for a multi-day enhanced flow opportunity. Lastly, we recommend, reopening the single survey, distributing a flow comparison survey, and conducting a Level 3 focus group as proposed by SCE as described above during the proposed enhanced flows. Because SCE already proposes additional enhanced flows, Level 3 surveys, and a focus group, the level of cost and effort to modify the flows and reopen the single flow survey and flow comparison survey would add little no additional cost [section 5.9(b)(7)].

Study REC-2: Recreation Facilities Use Assessment

Background

The goal of the *Recreation Facilities Use Assessment* is to assess recreation use within the project boundary and along the Farview Dam bypassed reach, as well as those sites included in the approximately 1.9-mile reach above the project boundary to Johnsondale Bridge. The objectives for the study are to: (1) evaluate recreation use at recreation sites within the project boundary and along the Fairview Dam bypassed reach, including assessments of the amount of recreation use at each site (percent capacity) and the recreation activities that occur at each site; (2) collect recreation site visitor perceptions and experiences at recreation sites through user surveys; (3) estimate future recreation demand and need; and (4) evaluate how current recreation opportunities conform to Forest Service policies and regulations. To achieve study objectives, the

[17] If required flows cannot be provided in the 2024 study season, SCE should provide flows as early as possible in the 2025 season.

[18] For both enhanced flows and Level 3 focus group participation.

approved study plan includes a visitor questionnaire distributed using an on-site intercept survey (i.e., in person) and an online survey (hereafter, REC-2 Survey), as well as cameras, spot counts, and calibration counts to estimate types and amounts of visitor use.

SCE implemented the study in accordance with the methods described in the approved study plan with the following variances listed below.

- After receiving a request from the Sequoia National Forest via their concessionaire (Advenco/ExploreUS) to remove all cameras from 11 Sequoia National Forest-owned developed campground sites, SCE removed cameras from all locations, including at river access sites and trailheads. With the cameras removed, SCE modified its methodology to include 2-hour calibration counts and a spot count at each site where cameras were formerly located.[19] SCE proposes to continue the calibration and spot counts throughout the remainder of the study.

- The SPD required SCE to expand data collection and visitor surveys to encompass one full year, from January 2023 to December 2023. SCE did not initiate surveys until April 2023 because of the time it took to update survey questions and the sampling circuit after delayed issuance of the SPD (October 12, 2022); therefore, SCE plans to conduct data collection through March 2024.

- Intercept surveys were conducted during daylight hours (between sunrise and sunset), instead of 7:00 am to 7:00 pm each survey day.

Requested Study Modification

The Park Service and KRB request that SCE carry out the study using trail cameras as described in the approved study plan. The Park Service and KRB note that SCE did not consult with stakeholders regarding the modification, and they assert that SCE should have consulted with the Forest Service and other stakeholders to place cameras at river access sites and parking lots, avoiding campgrounds entirely. They also contend that the data collected from spot counts and calibration counts do not provide sufficient information to analyze the amounts and types of use at existing recreation facilities, specifically use by commercial and non-commercial boaters. Furthermore,

[19] Spot counts are a recording of the date, time, weather conditions, number of vehicles observed in the parking area, license plate state of origin, number of visitors observed at the site, and type of recreation activity observed. The calibration count consists of staying on-site after the spot count for 2 hours to record the number of people observed, observed activities, number of vehicles and trailers, time in, and time out. The purpose of the calibration count is to calculate more accurate use-estimates and turnover rates.

KRB argues that trail cameras would provide a better representation of visitor use above and below Fairview Dam as they are impervious to biases that may be held by human observers and would continuously monitor activity around the clock. KRB also comments that spot counts, by contrast, gather much less available data at a single point in time for only a few times each month. Lastly, KRB comments that SCE was only directed to remove cameras from public campgrounds.

The Park Service also requests that SCE file the results of the REC-2 Survey for stakeholder review.

Reply Comments

In response to the Park Service's and KRB's requests that cameras be re-installed to collect data on recreation use along the NFKR, SCE asserts that the request is untenable because the Forest Service has the right to request removal of cameras on lands it administers. Furthermore, the methods SCE employed following the Forest Service directive to remove the cameras are sufficient to analyze on-river recreation use in the study area. SCE states that the data collected in the structured interview questionnaires, single flow survey, and enhanced flow studies for the *Whitewater Boating Study*; the visitor use questionnaires for the *Recreation Facilities Use Assessment*; and the *Enjoyable Angling Flows Study* provide a robust dataset to satisfy study objectives. Specifically, SCE states the calibration and spot count data are part of a larger dataset that together provide a robust picture of recreation use in the study area. The three studies provide information regarding types and amounts of use, as well as experience preference information. SCE notes that as part of the *Whitewater Boating Study*, commercial and individual boaters of different skill levels and watercraft types provide direct feedback on their preferred flow recommendations, and that the ISR summarizes the annual number of passengers on the NFKR, both commercial and non-commercial, as reported by the Sequoia National Forest and by commercial whitewater outfitters.

SCE provided the REC-2 Survey results for the summer period (Memorial Day 2023 through Labor Day 2023) in their March 29, 2024 filing. SCE states that they will provide the final study results for the full study period (April 2023 through March 2024) with the DLA, and as part of the USR, at which time stakeholders will have additional opportunity for review and comment.

Discussion and Staff Recommendation

SCE acknowledges that one objective of the REC-2 study is to "evaluate recreation use at recreation sites in the study area…including the recreation activities that

occur at each site".[20] The approved study plan requires cameras as the primary methodology to capture use estimates, including type of use, at each recreation site to inform license conditions. SCE's variance to remove cameras and instead use spot and calibration counts[21] may capture some use but may not be successful in accurately determining the type of use that occurs because: (1) differences exist in the amount of time spent at a recreation site depending on type of use (e.g., boaters may spend time on the river, while anglers spend time on the shore); and (2) the protocol filed by SCE only distinguishes watercraft type used, but does not distinguish between commercial and non-commercial boating activities.

The Park Service and KRB note that there is no existing information that accurately captures commercial and non-commercial boating activities on the NFKR. SCE confirms in the Desktop Review for the *Whitewater Boating Study* that "…annual non-commercial whitewater use numbers are not available for the NFKR".[22] Commercial boating use is reported in the ISR as provided by Sequoia National Forest special use permits, SCE's commercial whitewater permits for users of the KR3 powerhouse river access site, and commercial outfitters accounts of their operations on the bypassed reach. SCE's response to stakeholder comments suggests that the *Whitewater Boating Study* and the *Recreation Facilities Use Assessment Study*, together, will help to quantify types of recreation along the bypassed reach. However, after reviewing the results presented in the Desktop Review, structured interviews, and single flow survey for the *Whitewater Boating Study*, and the preliminary results of the visitor questionnaire for the *Recreation Facilities Use Assessment*, staff still do not have the necessary information to inform potential license conditions [section 5.9(b)(5)]. The *Whitewater Boating Study's* Desktop Review includes no information about the amount of non-commercial boating use. The results of the structured interviews and single flow survey for the *Whitewater Boating Study*, and the visitor questionnaire for the *Recreation Facilities Use Assessment* provide information about types of watercrafts used, flow preferences, and the number of boaters represented in the sample, but they do not provide monthly or annual estimates of non-

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[20] *See* ISR, Attachment N, Study *REC-2: Recreation Facilities Use Assessment Interim Technical Memorandum*, page 1.

[21] Spot counts are a recording of the date, time, weather conditions, number of vehicles observed in the parking area, license plate state of origin, number of visitors observed at the site, and type of recreation activity observed. The calibration count consists of staying on-site after the spot count for 2 hours to record the number of people observed, observed activities, number of vehicles and trailers, time in, and time out. The purpose of the calibration count is to calculate more accurate use-estimates and turnover rates.

[22] *See* ISR, Attachment M, Study *REC-1: Whitewater Boating Interim Technical Memorandum*, page 13.

commercial river use in the project area. Additionally, while SCE consulted stakeholders in their initial attempts to install cameras, they did not consult with stakeholders regarding the spot and calibration count variances. For these reasons, we do not approve SCE's study variance.

Instead, SCE should work with Sequoia National Forest to install cameras at all river access locations along the Fairview Dam bypassed reach and above Fairview Dam to Johnsondale Bridge to capture: (1) use-estimates including percent capacity at all river access locations; (2) activity-type estimates, specifically commercial vs. non-commercial boaters, including the type of watercrafts used. The cameras should be deployed for one calendar year and capture use at reasonable intervals to record boating activity, or set to sense motion, depending on camera placement and its ability to detect movement at the river access. Because the spot and calibration counts have been successful at capturing necessary information at other types of recreation sites (e.g., campgrounds and trailheads), the spot and calibration counts should still be reported for all recreation sites in the USR. This reporting procedure is consistent with the approved study plan and with generally accepted practice [section 5.9(b)(6)]. If the Forest Service continues to assert that no cameras should be used, SCE must consult with interested stakeholders to determine any additional variances before implementing them. We estimate that redeploying trail cameras at each river access location in the study area, as recommended, would cost an additional $1,000.

Study AES-1: Aesthetic Flows

Background

The approved study plan follows the methods described in Whittaker et al. (2005), which identifies a phased approach to investigate flow dependent recreation opportunities. The progression through each phase deepens the understanding of aesthetic opportunity preferences, and the development of each level depends on information gathered in the previous phase. Phases include: (1) a Level 1 Desktop Review of existing information including a literature review, structured interviews, and the results of aesthetics-related questions included in the REC-2 Survey; (2) a Level 2 Limited Reconnaissance Site Visit, and (3) a Level 3 Intensive Study. If enough information is gathered in Level 1, there is no need to progress to Levels 2 and 3, and so on.[23]

[23] The approved study plan has limited information about the Level 2 and Level 3 methods because it was unknown at the time if SCE would need to conduct subsequent levels of study. The approved study plan states that staff will review the ISR, as well as agency and stakeholder comments to it, to determine whether SCE will be required to conduct further levels of study.

SCE has started the Level 1 Desktop Review and summarized the results in the ISR, noting that a full report will be filed after data collection of Level 1 is complete. The goals and objectives of the Level 1 Desktop Review are: (1) documenting the aesthetic features and flow characteristics of the Fairview Dam bypassed reach under existing conditions; (2) identifying key observation points along the bypassed reach and providing general descriptions of the aesthetic characteristics and public access associated with key observation points; (3) summarizing the applicable land use management plans relevant to aesthetic features and adjacent landscapes of the bypassed reach; and (4) describing visitor preferences, perceptions, and satisfaction with aesthetics within the bypassed reach using the results from the REC-2 Survey. SCE states it will determine the need to conduct a Level 2 study in the reporting of the Level 1 analysis and results, following completion of the REC-2 Surveys in Spring 2024.

Study implementation followed the methods described in the approved study plan with some exceptions. Because the Level 1 Desktop Review for the *Aesthetics Flows Study* relies on the results of the REC-2 Survey study variances related to the timing of data collection impact this study, which we discuss above under the *Recreation Facilities and Use Assessment* section.

Requested Study Modification

Level 1 Desktop Review

KRB contends that the Level 1 Desktop Review fails to account for facts associated with low flows and visual quality, along with other unspecified stakeholder comments which KRB states are available on the project record. According to KRB, omission of this information is not consistent with the study goal of producing a comprehensive review capable of informing license decisions. KRB requests that SCE include all facts, including comments on the public record in its desktop review.

Level 1 REC-2 Survey

KRB contends that the online method for distributing the REC-2 Survey (part of the *Recreation Facilities Use Assessment*), that informs the Level 1 Desktop Review, fails to include: (1) recreation sites above the Fairview Dam (i.e., the stretch above Fairview Dam through Johnsondale Bridge), and (2) the general public (people who did not visit the project during study dates) in their dissemination of the survey. KRB notes that the online REC-2 Survey was intended to reach a greater number of respondents, who live locally but also who live in other areas of California, which are familiar with the characteristics and flows of the bypassed reach, yet one of the survey questions excludes any participant who did not visit the project location during the study dates from

completing the survey. Therefore, displaced visitors[24] are unable to participate in the survey. KRB contends their concerns regarding location and participants threaten the integrity of the data and should not be used. Therefore, KRB requests that SCE immediately proceed to a Level 2 investigation (reconnaissance visit) for the *Aesthetic Flows Study*, and that SCE report the results by May 1, 2024, to allow time for comment and a Level 3 investigation if needed.

Reply Comments

Level 1 Desktop Review

SCE states that the interim results provided in the Technical Memorandum for the *Aesthetics Flows Study* was presented as a draft and the Level 1 Desktop Review is still in the data collection phase. SCE indicates that only those documents and information sources that were reviewed and summarized to date were included in the ISR. Additional documents, including those specifically requested by KRB,[25] will be included in the USR.

Level 1 REC-2 Survey

SCE states that the REC-2 Survey (both online and on-site) was expressly and intentionally designed to capture input from actual and current visitors to the project area, consistent with the approved study plan and other recreation-related visitor surveys that seek to engage a representative set of the population most familiar with current conditions and opportunities. SCE summarized the data collected during the summer season (Memorial Day 2023 through Labor Day 2023) in the Technical Memorandum for the *Recreation Facilities Use Assessment* filed on March 29, 2024.

In regard to including the reach above Fairview Dam through Johnsondale Bridge in survey design and methods, SCE states that the REC-2 Survey includes both online and on-site survey methods to obtain visitor feedback regarding recreation sites and locations in the project area. The on-site methods include survey routes that visit recreation sites above Fairview Dam. Additionally, the first question on the on-site and online survey lists all 25 sites within the project boundary, including all sites upstream of Fairview Dam (i.e., Johnsondale Bridge River Access, Brush Creek Campground,

[24] A displaced visitor is a person who no longer visits a recreation site due to unfavorable conditions (e.g., crowding, low flow, conflict with other types of uses).

[25] Including the 1994 U.S. Forest Service Wild and Scenic River Final Environmental Impact Statement and the 1994 U.S. Forest Service North and South Forks Kern River Wild and Scenic River Record of Decision and Comprehensive Management Plan.

Limestone Campground, and Willow Point Take-Out) and an option for "other", if needed, for respondents to indicate the "other" location.

In regard to reaching people from other areas of California, the REC-2 Survey is intended to capture the broader population of the actual project area visitors including those who may not have been present during the on-site intercept surveys. SCE contends that the survey questions related to aesthetics and angling preferences aim to collect information about "local knowledge" to help inform the Level 1 study results. Accordingly, in the summer results presented in the March 29, 2024 filing, 97% of the survey participants live in California, with 67% of those indicating they had travelled over 100 miles to reach the site. This demonstrates a broad range of locations represented among survey respondents. According to the phased approach outlined by Whittaker & Shelby (2017), only if data gaps remain after completing the Level 1 Desktop Review, would Levels 2 and 3 be initiated. Therefore, SCE objects to the request to move immediately to a Level 2 or 3 phase stating it is unfounded and inconsistent with best practices and the approved study plan.

Discussion and Staff Recommendation

Level 1 Desktop Review

The Level 1 Desktop Review for the *Aesthetics Flows Study* includes a review of existing relevant information to provide general characteristics of the NFKR watershed and the Fairview Dam bypassed reach primary aesthetic features. The assessment uses published viewshed descriptions and analysis included in the Pre-Application Document,[26] visitor brochures, magazines, online publications, and guidebooks. It also relies on relevant study plans and technical memorandum completed for this relicensing including the interim technical memorandum for the *Hydrology Study*, and the technical memorandum and approved study plan for the *BIO-6: Stream Habitat Typing Study*. SCE identified 15 Key Observation Points within the study area to document and characterize aesthetic features of the land and water from each site and develop an aesthetic inventory of the project. SCE's ISR acknowledges that data collection for this phase is ongoing and therefore, because the study is being conducted as provided for in the approved study plan, we do not recommend a modification to the Level 1 Desktop Review to include them [section 5.15(d)(1)].

Level 1 Rec-2 Survey

The preliminary results indicate that the REC-2 Survey reaches people that travel from across California to the project site, contrary to KRB's claim that the survey design

[26] The Pre-Application Document was filed by SCE on September 22, 2021.

disqualifies them from participating. SCE's study design sampled visitors to the project area with opportunities to fill out the survey both on-site and online. The on-site opportunities were provided on a randomized sampling schedule from April 2023 through March 2024 at sites above and below Fairview Dam, as described in the approved study plan. Quick-response codes (i.e., QR codes)[27] for the online surveys were placed at all the same sites, providing opportunity for users to self-select to participate online.

KRB comments that the REC-2 Survey incorrectly excludes participants who did not visit the bypassed reach within the study period. However, it is unlikely that people who have not recreated recently in the Fairview Dam bypassed reach, or the 1.9-mile reach from Fairview Dam to Johnsondale Bridge, are familiar with or thinking about conditions related to that location. Best practice in survey design is to sample participants as soon as possible after an experience [section 5.9(b)(6)]. Indeed, most recreation research samples users as 'exit-surveys' to capture visitors immediately after their experience. For this reason, if the survey was open to people who have not visited the project area since before the study period, the validity of the survey could suffer due to inaccurate memories of the experience. Because SCE sampled visitors to the Fairview Dam bypassed reach and above Fairview Dam to Johnsondale Bridge and followed the approved study plan in their development and dissemination of the REC-2 Survey, we do not recommend the requested modification that SCE proceed immediately to a Level 2.

Instead, consistent with the phased approach recommended by Whittaker et al. (2005 & 2017) and approved in the study plan, SCE should file the full results of the REC-2 Survey with the DLA by July 3, 2023. The filing should include an analysis specific to aesthetic preferences and a recommendation regarding the necessity to move a Level 2 Limited Reconnaissance Site Visit. As a modification to the approved study plan, this reporting should be completed with enough time, if possible, to develop methods and recruit aesthetic flow participants for a Level 3 Intensive Study to align with the enhanced flows required as part of the Whitewater Boating Study's Level 3 Intensive Study. If the results of the REC-2 Survey and Level 2 Limited Reconnaissance Site Visit identify flow gaps that could be addressed by the enhanced flows required, this study would be timed to utilize enhanced flows to capture aesthetic flow preferences at flows between 200 to 600 cfs. We estimate that a Level 3 focus group would cost an additional $1,000 [section 5.9(b)(7)], and if deemed necessary by Levels 1 and 2, inform license conditions related to aesthetic conditions.

[27] QR codes are a machine-readable code consisting of an array of black-and-white squares, typically used for storing links to internet websites or other information for reading by cameras on smartphones.

Study ANG-1: Enjoyable Angling Flows

Background

The approved study plan follows the methods described in Whittaker et al. (2005), which identifies a phased approach to investigate flow dependent recreation opportunities. The progression through each phase deepens the understanding of angling opportunity preferences, and the development of each level depends on information gathered in the previous phase. Phases include: (1) a Level 1 Desktop Review of existing information including a literature review, structured interviews, and the results of angling-related questions included in the REC-2 Survey; (2) a Level 2 Limited Reconnaissance Site Visit, and (3) a Level 3 Intensive Study. If enough information is gathered in Level 1, there is no need to progress to Levels 2 and 3, and so on.

To date, SCE has started the Level 1 Desktop Review and reported a draft in the ISR, noting a full report after Level 1 data collection is complete. The information obtained in the *Enjoyable Angling Flows Study* will inform discussions of suitable flows for angling opportunities in the Fairview Dam bypassed reach. The goals and objectives associated with the a Level 1 Desktop Review include: (1) document types of angling use and patterns of use in the Fairview Dam bypassed reach under current flow conditions; (2) collect information on angler's perception of comfortable flows in the Fairview Dam bypassed reach for spin fishing, bait fishing, and fly fishing; and (3) describe angler preferences, perceptions, and satisfaction with angling within the bypassed reach using the results from the REC-2 Survey. SCE states it will determine the need to conduct a Level 2 study in the reporting of the Level 1 analysis and results following completion of the REC-2 Surveys in Spring 2024.

Study implementation followed the methods identified in the approved study plan with some exceptions. Because the Level 1 Desktop Review for the *Enjoyable Angling Flows Study* relies on the results of the REC-2 Survey, as described in the approved study plan, study variances related to the timing of data collection impact this study and are discussed above under *Recreation Facilities and Use Assessment.*

Requested Study Modification

General

The Kern River Fly Fishers (KRFF) request modifying the approved study plan to move to a Level 3 Intensive Study and skipping Levels 1 and 2. KRFF asserts that SCE has paid little attention to how the project potentially affects angling, and that their comments were not included in any Level 1 Desktop Review completed by SCE.

Level 1 Desktop Review

KRB contends that the Level 1 Desktop Review in the ISR fails to account for facts associated with low flows and angling quality, along with other unspecified stakeholder comments available on the project record. According to KRB, omission of this information is inconsistent with the study goal of producing a comprehensive review capable of informing license conditions. KRB requests that SCE include all facts, including comments on the public record for the project in the Level 1 Desktop Review.

Level 1 REC-2 Survey

For the *Enjoyable Angling Flows Study*, KRB reiterates the same comments related to the REC-2 Survey that it provided on the *Aesthetic Flows Study* (see *AES-1 Level 1 REC-2 Survey* above).

Reply Comments

General

In response to KRFF's request to move immediately to a Level 3 intensive angling study, SCE states the study is being conducted in accordance with the approved study plan. The design of the study calls for a phased approach to data collection that requires the completion of a Level 1 Desktop Review to identify data gaps before proceeding to the Level 2 and Level 3 study phases. If data gaps are identified after the Level 1 Desktop Review is complete, SCE will proceed to the Level 2 study and consider a Level 3 study based on Level 2 results. SCE states it is premature to move to a Level 2 or Level 3 study phase until the Level 1 Desktop Review is complete and any data gaps are identified.

Level 1 Desktop Review

SCE states that the interim Technical Memorandum for the Enjoyable Angling Flows Study included in the ISR was presented as a draft and the Level 1 study is still in the data collection phase. SCE indicates that only those documents and information sources that were reviewed and summarized to date were included in the ISR. Additional documents, including those specifically requested by KRB,[28] will be included in the USR.

[28] Including the 1994 U.S. Forest Service Wild and Scenic River Final Environmental Impact Statement and the 1994 U.S. Forest Service North and South Forks Kern River Wild and Scenic River Record of Decision and Comprehensive Management Plan.

Level 1 REC-2 Survey

SCE's response to KRB's comments related to the REC-2 Survey on the *Enjoyable Angling Flows Study* is the same as it's response to comments on the *Aesthetic Flows Study*. See *AES-1 Reply Comments* for details above.

Discussion and Staff Recommendation

General

As outlined in the approved study plan, the study approach follows best practices in using the sequential framework described in *Flows and Recreation: A Guide to Studies for River Professionals* (Whittaker, 2005) to investigate flows and angling opportunities using tools across three progressive levels of study with phased efforts for increasing resolution. The Level 1 Desktop Review for the *Enjoyable Angling Flows Study* includes a literature review and interviews to obtain information from people familiar with the angling opportunities and flows of the river. The Level 1 assessment also includes the results of the REC-2 Survey related to angling in the bypassed reach, which have yet to be filed by SCE. Because the approved study calls for a phased approach, and SCE is still collecting data for the Level 1 Desktop Review, Commission staff do not recommend that SCE immediately move to Level 3 Intensive Study.

Instead, and following the same rationale as outlined in *Discussion and Staff Recommendation*s under *Study AES-1: Aesthetic Flows*, SCE should file the full results of the REC-2 Survey with the DLA by July 3, 2023. The filing should include an analysis specific to angling preferences and a recommendation regarding the necessity to move a Level 2 Limited Reconnaissance Site Visit. This reporting should be complete with enough time to, if possible, develop methods and recruit angling participants for a Level 3 study to align with the enhanced flows required as part of the *REC-1 Whitewater* Level 3 Intensive Study. If the results of the REC-2 Survey and Level 2 Limited Reconnaissance Site Visit identify flow gaps that could be addressed by the enhanced flows required, this study would be timed to utilize enhanced flows to capture angling preferences at flows between 200-600 cfs. We estimate that a Level 3 focus group would cost an additional $1,000 [section 5.9(b)(7)], and if deemed necessary by Levels 1 and 2, inform license conditions related to angling flows.

Level 1 Desktop Review

The ANG-1 Level 1 Desktop Review includes a review of existing relevant information including: (1) angling literature, fishing regulations, hydrology, and stream habitat; (2) structured interviews with anglers familiar with the NFKR in the Fairview

Dam bypassed reach and above Fairview Dam; and (3) angler surveys, conducted as part of the REC-2 Surveys, as specified in the approved study plan. Based on the request, Commission staff cannot determine which facts associated with low flows and angling quality or additional stakeholder comments that KRB is requesting that the study account for, so it is not clear why this additional information is needed [section 5.9(b)(4)]. Therefore, the Commission does not recommend a modification to the Level 1 Desktop Review to include them.

Level 1 REC-2 Survey

KRB's comments related to the REC-2 Survey and the *Enjoyable Angling Flows Study* are the same as its comments on the *Aesthetic Flows Study*. Therefore, our discussion and recommendations on the reliability and validity of the REC-2 Survey are the same for *Enjoyable Angling Flows Study* as discussed above under the *Aesthetic Flows Study.*

REQUESTED NEW STUDIES

KRB Project Economics Studies

KRB requests that SCE conduct two new studies regarding project economics – a *Voltage Stepping Costs Study* and a *CAISO Bid History Study*. Commission staff consider the two studies sufficiently similar in nature and intent; therefore, we discuss them in conjunction below.

KRB comments that SCE's Proposed Study Plan (filed March 7, 2022) notes that the KR3 Project provides critical generation supporting the local community, which is more efficient than importing power from the grid through the Isabella Substation because the project is not subject to losses associated with voltage stepping for transmission and distribution. KRB contends that SCE's statement needs to be quantified and therefore, requests a *Voltage Stepping Costs Study*. KRB states that the goal of the study is to quantify the cost associated with the importation of energy into the KR3 Project's service area. KRB states that the study objective is to quantify the additional costs (including components beyond voltage-stepping, if any) incurred by energy importation at several magnitudes (5 megawatts (MW) to 35 MW, in 5-MW increments) for several durations (4, 7, 72, and 96 hours) and under several replacement energy price conditions (high, moderate, low, and negative).

KRB states that the goal of the *CAISO Bid History Study* is to quantify the market valuation of the energy generated by the KR3 Project from 2021 to 2023 reported by the California Independent System Operator (CAISO). The objective of the study is to obtain SCE's CAISO bid history, specifically the market rates of the bids.

KRB contends that information on the historical market value of energy generated by the KR3 Project, and the costs incurred by voltage stepping various amounts of energy, including the conditions under which voltage stepping would be required, are essential to a fair and informed balancing of developmental and non-developmental values. KRB states that the information would inform staff's analyses, including evaluating the "highest" usage of the NFKR [e.g., whitewater boating] and evaluating potential license conditions to mitigate environmental effects with consideration of the costs of project generation during certain time periods. For example, KRB comments that the information could be used to identify time periods when energy values are low or negative during which time SCE could curtail generation and implement protection, mitigation, and enhancement (PM&E) measures.

Comments on the Study Request

SCE does not agree with the need for either of the requested studies. SCE asserts that KRB does not adequately address the criteria for requesting new studies required by sections 5.15(e) and 5.9(b) of the Commission's regulations, including demonstration of a nexus between project operations and effects on a resource to be studied or that the study results would inform the development of license requirements. Moreover, SCE notes that it is the Commission's policy to evaluate the economics of hydropower projects, as it articulated in *Mead Corp*.[29]

Discussion and Staff Recommendation

It's unclear how the cost and bid information requested by KRB could be used to inform the development of potential license conditions [section 5.9(b)(5)]. Commission policy is to evaluate the economics of hydropower projects, as articulated in *Mead Corp.*, which is to compare the project's current cost to produce power to an estimate of the most likely alternative source of power's current cost to produce the same amount of energy and capacity for the region (i.e., the alternative source of power's cost). The information used in our economic analysis is based on current electric power cost conditions as reported by the U.S. Energy Information Administration's Annual Energy Outlook report for the region in which the project is located. Neither the bid price nor the cost to import electricity to replace electricity generated at the project are part of the project's cost to produce electricity. Therefore, because the information that would be provided by the requested studies is not necessary for staff's economic analysis [section 5.9(b)(4)], they are not required.

[29] *See Mead Corp.*, 72 FERC ¶ 61,027 (July 13, 1995).

LITERATURE CITED

CEFWG (California Environmental Flows Working Group). 2021a. *California Environmental Flows Framework*. Version 1.0. California Water Quality Monitoring Council Technical Report. Accessed: March 2024. Retrieved from: https://ceff.ucdavis.edu/sites/g/files/dgvnsk5566/files/media/documents/CEFF%20Technical%20Report%20Ver%201.0%20Mar_31_2021_DRAFT_FINAL%20for%20web.pdf

Grantham, T. E., D. M. Carlisle, J. Howard, B. Lane, R. Lusardi, A. Obester, S. Sandoval-Solis, B. Stanford, E. D. Stein, K. T. Taniguchi-Quan, S. M. Yarnell, and J. K. H. Zimmerman. 2022. "Modeling Functional Flows in California's Rivers." *Front. Environ. Sci.* 10: 787473. Accessed: March 2024. Retrieved from: https://doi.org/10.3389/fenvs.2022.787473

Lane, B. A., S. Sandoval-Solis, E. D. Stein, S. M. Yarnell, G. B. Pasternack, and H. E. Dahlke. 2018. "Beyond metrics? The role of hydrologic baseline archetypes in environmental water management." *Environmental Management*. Volume 62. Issue 4. Pages 678–693. Accessed: March 2024. Retrieved from: https://doi.org/10.1007/s00267-018-1077-7

SCE (Southern California Edison). 1994. *Kern River Flow Study*. July 12.

Whittaker, D., Shelby, B. and J. Gangemi. 2005. Flows and recreation: A guide to studies for river professionals. Whittaker, Shelby, & Gangemi, and the Hydropower Reform Coalition.