SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)

DRAFT LICENSE APPLICATION
VOLUME I

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

July 2024

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project
(FERC Project No. 2290)

Draft License Application
Volume I

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

July 2024

Support from:

ERM

Page Intentionally Left Blank

LIST OF EXHIBITS

Initial Statement

Exhibit A Description of Project

Exhibit B Project Operation and Resource Utilization

Exhibit C Construction History and Proposed Construction Schedule

Exhibit D Project Costs and Financing

Exhibit F General Design Drawings and Supporting Information (filed as **CUI//CEII**)

Exhibit G Project Maps

Exhibit H Project Need and Key Information

Page Intentionally Left Blank

Initial Statement

BEFORE THE

FEDERAL ENERGY REGULATORY COMMISSION

APPLICATION FOR LICENSE FOR

MAJOR PROJECT—EXISTING DAM

Section 5.18(a)(5)(iii) of Title 18 of the Code of Federal Regulations (CFR) refers to Section 4.51 (License for Major Project – Existing Dam) for a description of information that an applicant must include in the initial statement of its license application.

(a) Initial statement.

(1) (Name of applicant) applies to the Federal Energy Regulatory Commission for a (license or new license, as appropriate) for the (name of project) water power project, as described in the attached exhibits. (Specify any previous FERC project number designation.)

(2) The location of the project is:

State or territory: _____

County: _____

Township or nearby town: _____

Stream or other body of water: _____

(3) The exact name and business address of the applicant are:

_____

The exact name and business address of each person authorized to act as agent for the applicant in this application are: _____

(4) The applicant is a [citizen of the United States, association of citizens of the United States, domestic corporation, municipality, or state, as appropriate] and (is/is not) claiming preference under section 7(a) of the Federal Power Act. See 16 U.S.C. 796.

(5)

(i) The statutory or regulatory requirements of the state(s) in which the project would be located that affect the project as proposed, with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes, and with respect to the right to engage in the business of developing, transmitting, and distributing power and in any other business necessary to accomplish the purposes of the license under the Federal Power Act, are: [Provide citation and brief identification of the nature of each requirement; if the applicant is a municipality, the applicant must submit copies of applicable state and local laws or a municipal charter, or, if such laws or documents are not clear, any other appropriate legal authority, evidencing that the municipality is competent under such laws to engage in the business of developing, transmitting, utilizing, or distributing power.]

(ii) The steps which the applicant has taken or plans to take to comply with each of the laws cited above are: (provide brief description for each law).

(6) The applicant must provide the name and address of the owner of any existing project facilities. If the dam is federally owned or operated, provide the name of the agency.

(1) Southern California Edison Company (SCE or Applicant) applies to the Federal Energy Regulatory Commission (FERC or Commission) for a new license for the existing Kern River No. 3 Project No. 2290 (Project), as described in the attached exhibits.

(2) Location of the Project:

State: California
Counties: Kern and Tulare
Township or Nearby Towns: Kernville
Stream or Other Body of Water: North Fork Kern River

(3) The exact name and business address of the applicant:

Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770

The exact name and business address of each person authorized to act as agent for the Applicant in this application:

Wayne P. Allen
Principal Manager, Regulatory Support Services
Southern California Edison Company
2244 Walnut Grove Avenue
GO1 Quad 1A, Generation Col. 7N
Rosemead, CA 91770
Telephone: (626) 302-9741

Kelly Henderson
Senior Attorney
Southern California Edison Company

2244 Walnut Grove Avenue
Law Department: GO1 Quad 3D
Rosemead, CA 91770
Phone: (626) 302-4411
E-mail: Kelly.henderson@sce.com

(4) Applicant's Organizational Status:

The Applicant is a public utility corporation incorporated in the State of California and does business in central, coastal, and southern California. The Applicant is not claiming preference under Section 7(a) of the Federal Power Act. See 16 U.S.C. 796. SCE is claiming preference as the incumbent licensee under Section 15(a)(2) of the FPA, 16 U.S.C. 808(a)(2).

(5) Patient California Statutory and Regulatory Requirements

i. The statutory or regulatory requirements in California, the state in which the Project is located, that affect the Project with respect to bed and banks and to the appropriation, diversion, and use of water for power purposes and with respect to the right to engage in the business of developing, transmitting, and distributing power and in any other business necessary to accomplish the purposes of the license under the Federal Power Act are:

A. *California Water Code §102* – allows for appropriation and use of water for power purposes.

B. *California Water Code §13160; Title 23 California Code of Regulations §3855* – regulates the federally required filing of applications for water quality certification with the State Water Board.

C. *Public Utilities Code §201, et seq.* – regulates the right of the public utility to produce, generate, transmit, or furnish power to the public.

D. Public Resource Code §3000, et seq. – regulates activities that may affect the coastal zone pursuant to the federal Coastal Zone Management Act, 16 U.S.C 1451.

ii. The steps which the Applicant has taken or plans to take to comply with each of the laws cited above are:

A. The Applicant has the water rights necessary to operate the Project.

B. In compliance with FERC's regulations at 18 CFR § 5.23(b), the Applicant will request a water quality certification, including proof of the date on which the certifying agency received the request, no later than 60 days following FERC's issuance of the Notice of Acceptance and Ready for Environmental Analysis (REA).

C. The California Public Utilities Commission has authorized SCE to produce, generate, transmit, or furnish power to the public.

D. The applicant will seek a Negative Determination from the California Coastal Commission, concurring that the Proposed Action will not affect the coastal zone and therefore, does not require a consistency determination.

(6) Owner of Project Facilities

The Applicant is the owner and existing licensee of the Project. There are no federal facilities associated with the Project.

Section 5.18 Application Content

Section 5.18(a)(5)(iii) of Title 18 of the Code of Federal Regulations (CFR) (revised March 8, 2024) describes general content requirements that an applicant must include in the initial statement of its license application.

(a) General content requirements. Each License application filed pursuant to this part must:

(1) Identify every person, citizen, association of citizens, domestic corporation, municipality, or state that has or intends to obtain and will maintain any proprietary right necessary to construct, operate, or maintain the project;
(2) Identify (providing names and mailing addresses):

(i) Every county in which any part of the project, and any Federal facilities that would be used by the project, would be located;
(ii) Every city, town, or similar local political subdivision:
(A) In which any part of the project, and any Federal facilities that would be used by the project, would be located; or
(B) That has a population of 5,000 or more people and is located within 15 miles of the project dam;
(iii) Every irrigation district, drainage district, or similar special purpose political subdivision:
(A) In which any part of the project, and any Federal facilities that would be used by the project, would be located; or
(B) That owns, operates, maintains, or uses any project facilities that would be used by the project;
(iv) Every other political subdivision in the general area of the project that there is reason to believe would likely be interested in, or affected by, the application; and
(v) All Indian tribes that may be affected by the project.

(3)
(i) For a license (other than a license under section 15 of the Federal Power Act) state that the applicant has made, either at the time of or before filing the application, a good faith effort to give notification by certified mail of the filing of the application to:
(A) Every property owner of record of any interest in the property within the bounds of the project, or in the case of the project without a specific project boundary, each such owner of property which would underlie or be adjacent to any project works including any impoundments; and
(B) The entities identified in paragraph (a)(2) of this section, as well as any other Federal, state, municipal or other local government agencies that there is reason to believe would likely be interested in or affected by such application.
(ii) Such notification must contain the name, business address, and telephone number of the applicant and a copy of the Exhibit G contained in the application, and must state that a license application is being filed with the Commission.
(4)
(i) As to any facts alleged in the application or other materials filed, be subscribed and verified under oath in the form set forth in paragraph (a)(3)(B) of this Section by the person filing, an officer thereof, or other person having knowledge of the matters set forth. If the subscription and verification is by anyone other than the person filing or an officer thereof, it must include a statement of the reasons, therefore.

(ii) This application is executed in the:
State of: _____
County of:_____
By: _____
(Name): _____
(Address): _____
being duly sworn, depose(s) and say(s) that the contents of this application are true to the best of (his or her) knowledge or belief. The undersigned Applicant(s) has (have) signed the application this day of , 2 .

(Applicant(s))
By: _____
Subscribed and sworn to before me, a [Notary Public, or title of other official authorized by the state to notarize documents, as appropriate] this day of, 2.

/SEAL [if any]
(Notary Public, or other authorized official)

(1) Applicant possesses and will maintain all necessary to construct, operate, and maintain the Project.

(2)

ii. The Project is located in both Kern and Tulare Counties. The principal administrative office locations are:

County of Kern
1415 Truxton Avenue
Bakersfield, CA 93301

Tulare County
Board of Supervisors/Administrative Office
2800 West Burrel Avenue
Visalia, CA 93291

iii. The Project is not located within any city, town, or other similar local political subdivision.

The Project is not located within 15 miles of any city, town, or similar local political subdivision that has a population of 5,000 or more people.

iv. There are no irrigation districts, drainage districts, or other similar special purpose political subdivisions located within the Project

No irrigation district, drainage district, or other similar special purpose political subdivision owns, operates, or maintains any Project facilities.

No federal facility is used or is proposed to be used by the Project.

v. There are no other political subdivisions in the area of the Project that the Applicant believes would be interested in or affected by, other than those listed above.

vi. The following Tribal contacts were provided to SCE by the California Native American Heritage Commission or were otherwise believed by the applicant to potentially be interested or affected by the Project:

Big Pine Paiute Tribe of Owens Valley Cheyenne Stone—Chairperson P.O. Box 700 Big Pine, CA 93513 Cheyenne.stone@bigpinepaiute.org	Kitanemuk and Yowlumne Tejon Indians Delia Dominguez—Chairperson 115 Radio Street Bakersfield, CA 93305 2deedominguez@gmail.com
Big Pine Paiute Tribe of Owens Valley Jacqueline "Danelle" Gutierrez—THPO P.O. Box 700 Big Pine, CA 93513 d.gutierrez@bigpinepaiute.org	Lone Pine Paiute-Shoshone Tribe Thomas Swab—Chairperson P.O. Box 747 Lone Pine, CA 93545 chair@lppsr.org
Big Pine Paiute Tribe of Owens Valley Sally Manning—Environmental Director P.O. Box 700 Big Pine, CA 93513 s.manning@bigpinepaiute.org	Lone Pine Paiute-Shoshone Tribe Kathy Bancroft—THPO P.O. Box 40 Lone Pine, CA 93545 kathybancroft@gmail.com
Chumash Council of Bakersfield Julio Quair—Chairperson 729 Texas Street Bakersfield, CA 93307 chumashtribe@sbcglobal.net	Santa Rosa Rancheria Tachi Yokut Leo Sisco—Chairperson P.O. Box 8 Leemore, CA 93245
Fort Independence Community of Paiute Indians Carl Dahlberg—Chairman P.O. Box 67 Independence, CA 93526 carl@fortindependence.com	Santa Rosa Rancheria Tachi Yokut Shana Powers P.O. Box 8 Leemore, CA 93245 spowers@tachi-yokut-nsn.gov
Fort Independence Community of Paiute Indians Sean Scruggs—THPO P.O. Box 67 Independence, CA 93526 thpo@fortindependence.com falconkeeper22@gmail.com	Tejon Indian Tribe Octavio Escobedo—Chairperson P.O. Box 640 Arvin, CA 93203 oescobedo@tejonindiantribe-nsn.gov
Kawaiisu Band of Kern Valley Indians Cathy Day P.O. Box 1210 Weldon, CA 93283	Tübatulabal Tribe of Kern Valley Robert Gomez—Chairman P.O. Box 226 Lake Isabella, CA 93240 rgomez@tubatulabal.org

Kawaiisu Tribe David Laughing Horse Robinson—Chairman P.O. Box 1547 Kernville, CA 93238 horse.robinson@gmail.com	Tübatulabal Tribe Darrel Garcia-Vice Chair P.O. 226 Lake Isabella, CA 93240 dgarcia@tubatulabal.org
Kern Valley Indian Community Robert Robinson P.O. Box 1010 Lake Isabella, CA 93240 bbutterbredt@gmail.com	Tule River Indian Tribe Kerri Vera—Environmental Coordinator P.O. Box 589 Porterville, CA 93258 tuleriverenv@yahoo.com
Kern Valley Indian Community Julie Tunner—Secretary P. O. Box 1010 Lake Isabella, CA 93240 administrator@kawaiisu.org	Tule River Indian Tribe Neil Peyron—Chairman P.O. Box 589 Porterville, CA 93258 neil.peyron@tulerivertribe-nsn.gov
Kern Valley Indian Community Brandy Kendricks 30741 Foxridge court Tehachapi, CA 93561 krazykendricks@hotmail.com	Tule River Indian Tribe of California Felix Christman, THPO 340 N. Reservation Road Porterville, CA 93257 Tel: 559-719-0420 Email: felix.christman@tulerivertribe-nsn.gov
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow—Chairperson 1179 Rock Haven Court Salinas, CA 93906 kwood8934@aol.com	

(3) Because this application is for a new license under section 15 of the Federal Power Act, the reporting requirements of 18 CFR § 5.18(a)(3)(i) and 5.18(a)(3)(ii) do not apply.

(4) The sworn and subscribed statement required under 18 CFR § 5.18(a)(4) is included below.

(5) In accordance with 18 CFR 4.51, SCE's application is contained in Exhibits A through H herein and contains information and documents prescribed for a license for a major project, existing dam.

SCE is not seeking benefits under PURPA.

[THE FOLLOWING NOTARIZED STATEMENT WILL BE INCLUDED WITH LICENSEE'S FINAL LICENSE APPLICATION, AND IS ATTACHED BELOW FOR REFERENCE ONLY]

VERIFICATION

This Application for New License for Major Project – Existing Dam is executed in the State of California, County of Los Angeles, California, by Wayne P. Allen, who being duly sworn, depose(s) and say(s) that the contents of this application are true to the best of his knowledge or belief. The undersigned Applicant has signed the application this day of _____.

SOUTHERN CALIFORNIA EDISON COMPANY

By:_____

WAYNE P. ALLEN
Principal Manager
Regulatory Support Services

Subscribed and sworn to before me, a Notary Public of the State of California, this day of _____.

By:_____

Notary Public
in and for the County of
Los Angeles, State of California

My commission expires _____

(Notary Seal)

Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)

EXHIBIT A: DESCRIPTION OF PROJECT
DRAFT LICENSE APPLICATION

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

July 2024

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project
(FERC Project No. 2290)

Exhibit A: Description of Project
Draft License Application

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

July 2024

Support from:

ERM

Page Intentionally Left Blank

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVIATIONS

cfs	cubic feet per second
DC	direct current
FERC	Federal Energy Regulatory Commission
hp	horsepower
Hz	hertz
KR3	Kern River No. 3
kV	kilovolt
kVA	kilovolt-ampere
MDM	Mount Diablo Meridian
MW	megawatt
NFKR	North Fork Kern River
Project	Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)
RM	river mile
SCE	Southern California Edison Company

Page Intentionally Left Blank

Exhibit A: Description of Project

The Code of Federal Regulations, Title 18, Section 5.18(a)(5)(iii) (revised March 8, 2024) refers to Section 4.51 (License for major project–existing dam) for a description of information that an applicant must include in Exhibit A of its license application.

Exhibit A is a description of the project. This exhibit need not include information on project works maintained and operated by the U.S. Army Corps of Engineers, the Bureau of Reclamation, or any other department or agency of the United States, except for any project works that are proposed to be altered or modified. If the project includes more than one dam with associated facilities, each dam and the associated component parts must be described together as a discrete development. The description for each development must contain:

(1) The physical composition, dimensions, and general configuration of any dams, spillways, penstocks, powerhouses, tailraces, or other structures, whether existing or proposed, to be included as part of the project;

(2) The normal maximum surface area and normal maximum surface elevation (mean sea level), gross storage capacity and usable storage capacity of any impoundments to be included as part of the project;

(3) The number, type, and rated capacity of any turbines or generators, whether existing or proposed, to be included as part of the project;

(4) The number, length, voltage, and interconnections of any primary transmission lines, whether existing or proposed, to be included as part of the project [see 16 U.S.C. 796(11)];

(5) The specifications of any additional mechanical, electrical, and transmission equipment appurtenant to the project; and

(6) All lands of the United States that are enclosed within the project boundary described under paragraph (h) of this section (Exhibit G), identified and tabulated by legal subdivisions of a public land survey of the affected area or, in the absence of a public land survey, by the best available legal description. The tabulation must show the total acreage of the lands of the United States within the project boundary.

1.0 GENERAL CONFIGURATION

The Kern River No. 3 (KR3) Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 2290, is located on the North Fork Kern River (NFKR) and on Salmon and Corral Creeks near the town of Kernville in Kern and Tulare Counties, California. The Project is a run-of-river configuration with an installed operating capacity of 40.2 megawatts (MW). The Fairview Dam diverts water from the NFKR into the Project water conveyance system at river mile (RM) 18.6 and returns flows back in the river at the KR3 Powerhouse tailrace at RM 3.1 (Figure 1-1).

Project facilities are primarily located on federal lands within Sequoia National Forest, with a small amount of land (surrounding the KR3 Powerhouse) on private lands owned by Southern California Edison Company (SCE). In 1987, Congress designated 78.5 continuous miles of the NFKR from the Kern/Tulare County Line up to the headwaters in Sequoia National Park as "Wild and Scenic River" (Pub. L. No. 100-174, 101 Stat. 924 [1987]). Some portions of the water conveyance system and Project access roads fall within the Wild and Scenic River corridor quarter-mile buffer, but the construction, original licensing, and initiation of operations in 1921 pre-dates the enactment of the Wild and Scenic Rivers Act in 1968, as well as this designation of the NFKR in 1987. Moreover, Congress' wild and scenic designation of the NFKR provides:

> Nothing in this chapter shall affect the continued operation and maintenance of the existing diversion project, owned by Southern California Edison on the North Fork of the Kern River, including reconstruction or replacement of facilities to the same extent as existed on November 24, 1987. 16 USC § 1274(a)(64)(C).

Project amenities south of the Cannell Creek–NFKR confluence—such as the pressure flume, forebay, penstocks, and KR3 Powerhouse—are not located within the wild and scenic river corridor.

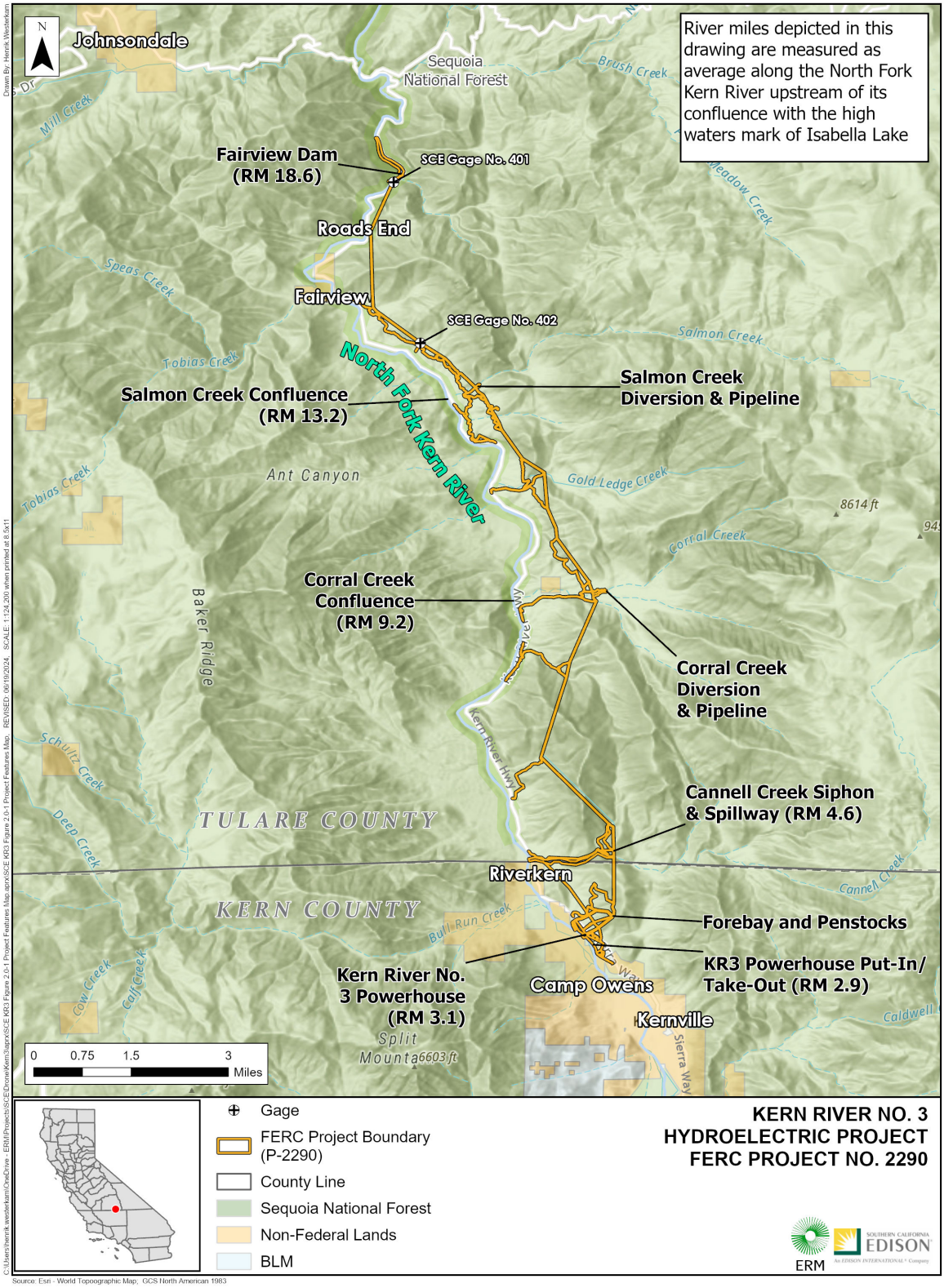
Exhibit A includes a summary of Project facilities, including the dam, diversions, flowline, forebay, penstocks, powerhouse, stream gages, and ancillary or support facilities under FERC's jurisdiction (Table 1-1).

Table 1-1. Summary of Project Facilities and Features

Dam and Diversions
• Fairview Dam • Salmon Creek Diversion and pipeline • Corral Creek Diversion and pipeline
KR3 Powerhouse and Associated Equipment
• Powerhouse
Water Conveyance System
• Sandbox

• Tunnels, flumes, adits, and Cannell Creek siphon and spillway (collectively referred to as the "flowline") • Pressure flume, forebay, spillway, penstocks, and forebay drain gage (i.e., Release Valve)
Other Project Appurtenances
• Ancillary structures • Gaging stations

Project facilities are shown below (Figure 1-1).



BLM = Bureau of Land Management; FERC = Federal Energy Regulatory Commission; RM = river mile; SCE = Southern California Edison

Figure 1-1. Kern River No. 3 Hydroelectric Project Facilities.

1.1. DAM AND DIVERSIONS

1.1.1. FAIRVIEW DAM

Fairview Dam and intake structure is a mass concrete overflow gravity structure located on the NFKR in Section 12, T.23 S., R.32 E., Mount Diablo Meridian (MDM), approximately 18 miles north of the town of Kernville. The intake structure is approximately 26 feet above the streambed, with an overflow crest that is 206 feet long and a radiused top approximately 6.5 feet wide and 60 feet high at its highest point. The crest of the dam is located at 3,632 feet above mean sea level. The downstream dam face is rounded with a 5-foot radius at the crest where the downstream slope and the crest join. The upstream face has a 12 to 1 slope. The crest of the dam also serves as a spillway and is designed for a capacity of approximately 15,000 cubic feet per second (cfs) with 8 feet of head (the point on a watercourse up to which it has been artificially broadened and/or raised by an impoundment).

Water is diverted from the NFKR at the east dam abutment. The intake structure is a rectangular reinforced concrete structure 85 feet long by 19 feet wide and is equipped with a trash rack that provides a 2-inch clearance. There are two flowline intake gates located at the east end of the dam that divert water into a concrete-lined sediment trap (sandbox).

Two fish-release slide gates near the east dam abutment are designed to control lower flows along the NFKR. Each gate has a dimension of 19 feet by 8 feet and is capable of conveying flows up to 300 cfs, depending on head pressure behind the dam. The fish-release slide gates can be adjusted remotely from the KR3 Powerhouse or manually adjusted on-site during adverse conditions (e.g., power outage or communication loss).

There are two connected fish ladders located adjacent to the west abutment of the dam that have remained non-operational (closed) since 1997 (79 FERC 62,113 [1997], *Order Approving Plan to Close Fish Ladders at Fairview Dam*).

1.1.2. SALMON CREEK DIVERSION AND PIPELINE

Salmon Creek Diversion is located on Salmon Creek—approximately 5.4 miles downstream from Fairview Dam and approximately 0.4 mile upstream of the confluence with the NFKR in Section 30, T.24 S., R.33 E., MDM). This diversion is a mass concrete overflow structure with a crest length of approximately 61 feet long and extends 5 feet above the streambed. The crest of the dam is located at 3,590 feet above mean sea level. The upstream face is lined with vertical metal grating. An elevated wooden walkway provides access across the diversion. There are three hand-operated gates: two drain gates that direct water into Salmon Creek and a third gate that conveys water into the diversion pipe. The steel diversion pipe is 226 feet long with a 26 inch diameter. Flow from the diversion pipe can be returned to the creek approximately 180 feet downstream from the diversion through interchangeable fixed-orifice plates that provide the minimum instream flow release, with any remaining flow directed into the main flowline. Seepage from beneath the two drain gates also provides flow into Salmon Creek.

1.1.3. Corral Creek Diversion and Pipeline

Corral Creek Diversion is located on Corral Creek—approximately 9.4 miles downstream from Fairview Dam and approximately 1.1 miles upstream of the confluence with the NFKR in Section 9, T.24 S., R.33 E., MDM. The diversion is a steel-reinforced concrete gunite structure, similar in design to the Salmon Creek Diversion with a trash rack. The diversion crest length is approximately 43 feet, approximately 8 feet above the streambed. A 17-foot-wide spillway notch is cut into the top of the diversion. There are two hand-operated valves: an 8-inch slide gate that passes natural flows downstream when not diverting, and a pipe with interchangeable fixed-orifice plates that provides the minimum instream flow release first, with any additional flows diverted to the flowline. Flows exceeding the instream flow requirement are diverted via an approximately 900-foot-long steel pipe that varies in diameter between 11 and 14 inches to the main flowline.

1.2. Powerhouse and Associated Equipment

The KR3 Powerhouse is located along the NFKR, approximately 2 miles north of the town of Kernville. The facility contains the power generation and distribution equipment for the Project. The powerhouse is a reinforced concrete structure, measuring 130 feet long and 88 feet wide. The powerhouse stands approximately 57.5 feet above the uphill grade (northeast) and extends another 40 feet below grade (southwest).

The building is a four-story structure with a basement and subbasement. The four stories above grade exist only along the north and east walls. The remainder of the building above grade is one large room, referred to as the generator room. The main generator room occupies most of the downstream side of the building measuring 105 feet by 47 feet. It is a large open expanse, with a height of nearly 50 feet and the two generators occupy the center of the floor, with the governors and brake wheels immediately adjacent to the units. The lower 66-kilovolt (kV) transformers and circuit breakers line the upstream, or hillside, wall behind the generators. A crane is attached to the roof trusses at the level of the fourth story.

The north wall is broken into four stories of small rooms. The second floor (or control room floor) contains the operator’s gallery/control room and offices. The third floor (or mezzanine floor) contains batteries and communications equipment. The fourth floor (or upper bus floor) houses oil tanks. The east wall is also broken into floors, with circuit breakers (or "buses") on the first and third stories.

The basement or turbine floor contains the turbines and pressure relief valves. The basement floor is only half-width, being concrete and berm on the uphill side. The two turbines occupy most of the floor area and are situated directly below the generators, to which they are attached by shafts. The penstocks pass beneath the concrete and berm rear of the building, connecting to the turbines and to waste tubes where the berm meets the open room. The runner for the turbines is encased in concrete between the basement and subbasement.

A small one-story annex, original to the building, exists at the eastern end of the building, extending only to the level of the turbine floor ceiling. It houses two submersible sump pumps and two pumps associated with the plant cooling water, described below. At the western end of the turbine room is an oil storage tank area.

Finally, a small subbasement exists below the turbine floor level. It includes a much smaller area directly below the turbines and houses the draft tubes for the turbines and the tailrace for the waste tubes, or relief pipes. The subbasement contains the draft tube section of the turbines.

A short tailrace, which comprises a concrete wing wall measuring 90 feet long, approximately 20 feet high, and 18 inches thick is attached to the powerhouse. The wing wall extends out in front of the discharge pipes to keep the draft tubes in submerged conditions.

1.3. WATER CONVEYANCE SYSTEM

The largest component of the Project is the approximately 13-mile-long water conveyance system along the eastern hillslope above the NFKR. Water from the intake at Fairview Dam is directed through the sandbox, and then into the flowline, which is comprised of a series of buried, concrete-lined tunnels; open and covered above-ground flumes; and a steel siphon before connecting to a regulating pressure flume, forebay, and penstocks.

1.3.1. SANDBOX

The sandbox is located downstream of Fairview Dam at the head of the water conveyance system along the east bank of the river. There is a short section of flume that connects the dam intakes and the sandbox. The sandbox is a settling basin where abrasive sediments settle out of the water column before flows are directed into the flowline. The sandbox is a reinforced concrete structure that is 449 feet long and 89 feet wide and is divided into two compartments approximately 43 feet wide each with depths ranging between 10 and 20 feet. The flared mouth of the sandbox contains curving division walls that radiate into and direct flow uniformly into the sandbox. A grid of longitudinal and transverse concrete braces sits on top of the structure. At the downstream end of the sandbox, there are two fish screens to prevent fish from entering the flowline.

1.3.2. FLOWLINE

1.3.2.1. Tunnels, Flumes, and Adits

There are 24 below-ground tunnel segments totaling 60,270 feet, numbered sequentially north to south. The tunnel segments vary in length from several hundred feet to over 1 mile. The tunnel segments are 8 feet high and between 8.5 and 9.5 feet wide. The floors and sides of the tunnel are lined with concrete and the arched ceiling of the tunnel is lined only where rock appears to be unstable. Water flow in the tunnel does not achieve a depth of greater than 7.5 feet. Tunnel portal access points, or adits, are situated at various tunnel or tunnel–flume junctions along the flowline.

The above-ground sections of the water conveyance system, or flumes, are located between tunnel segments. The flumes are constructed of reinforced concrete and are 8.5 feet wide and 8.25 feet high. The majority of the 4,600 feet of concrete flumes are enclosed; however, there are approximately 1,000 feet of uncovered, or open-topped, flume segments. The water conveyance system descends between 1.5 to 2 vertical feet for every 1,000 horizontal feet.

1.3.2.2. Cannell Creek Siphon and Spillway

The Cannell Creek Siphon and Spillway is located approximately 1 mile upstream from the KR3 Forebay. The siphon is 1,146 feet long, 8 to 9.5 feet in diameter, and made of riveted steel pipe. It is supported on concrete piers that are anchored to bedrock where it crosses above Cannell Creek.

The upstream section of the siphon is connected to a small concrete reservoir (approximately 45 feet long by 10 feet tall) that serves to regulate flow into the siphon. If water elevations in the flowline exceed 3,498.6 mean sea level, water from the flowline will naturally spill into a 45-foot-long concrete spillway and approximately 470-foot-long rock spillway channel down to Cannell Creek. The confluence of Cannell Creek and the NFKR is approximately 1 mile downstream from the spillway.

1.3.3. Pressure Flume, Forebay, Spillway, and Penstocks

1.3.3.1. Pressure Flume and Forebay

The pressure flume and forebay are the terminus of the flowline and are situated on the hill (northeast of the KR3 Powerhouse). The pressure flume is a 1,100-foot reinforced concrete pipe (9-feet, 6-inch diameter) and the forebay is a 61-foot-long, 20-foot-wide, and 30-foot-high concrete box.

1.3.3.2. Forebay Spillway

Two 24-inch slide gates are located between the end of the pressure flume and the forebay and control flow into the penstocks. If the water surface elevation in the forebay exceeds the spillway crest (3,505.65 mean sea level), water is directed into the bedrock-lined spillway channel. The spillway channel runs west, adjacent to the two penstocks along the hill slope until it rejoins with the NFKR approximately 700 feet upstream from the KR3 Powerhouse. The spillway channel is approximately 2,700 feet long with an elevation change of approximately 815 feet.

1.3.3.3. Penstocks and Release Valve

The KR3 Penstocks are composed of two metal pipes, each approximately 2,500 feet long, extending from the forebay to the KR3 Powerhouse. The diameter of the penstocks decreases over the length of the pipes, with a diameter of 84 inches at the forebay tapering down to 60 inches where they meet the powerhouse. The thickness of the penstock walls increases toward the powerhouse to compensate for increased velocity

and pressure. The uppermost 795-foot length of the penstocks, nearest the forebay, is comprised of riveted steel, and the lower section is composed of lap-jointed steel pipe.

The penstocks are supported by concrete piers and anchors. The piers are spaced every 20 feet along the pipes. Concrete anchors encase the penstocks and are used where a major change in grade requires a joint in the pipe. The last 160 feet of pipe (downhill nearest the powerhouse) is buried under earth fill.

1.4. OTHER PROJECT APPURTENANCES

1.4.1. ANCILLARY STRUCTURES

Several detached ancillary buildings support the operations and maintenance of the Project. See Table 1.4-1 and descriptions below

Table 1.4-1. Ancillary Structures

SCE Building No.	Name	Size	Vicinity
102	Cottage	27’ x 40’	Powerhouse
111	Relief House	17’ 3” x 22’	Sandbox
116	Machine Shop	24’ x 36’	Powerhouse
125	Garage	18’ x 20’	Powerhouse
128	Garage	18’ x 24’	Sandbox
132	Fire House Box	6’ x 8’	Powerhouse
133	Fire House Box	6’ x 8’	Powerhouse
134	Garage	60’ x 22’	Powerhouse
138	Garage	36’ x 22’	Powerhouse
139	Warehouse No. 1	120’ x 60’	Powerhouse
140	Warehouse No. 2	60’ x 60’	Powerhouse
141	Tunnel House	10’ x 12’	Sandbox
142	Chlorinator House	8’ x 8’	Penstocks
N/A	Two 5,000-Gallon Water Tanks	21.5’ diameter	Penstocks

N/A = not applicable

1.4.1.1. Cottage, Garages, Fire House Box

Approximately 600 feet uphill from the powerhouse are additional buildings and a parking lot. The cottage (SCE building no. 102), originally constructed as worker housing, is a one-story rectangular wood frame house, measuring about 30 feet by 50 feet. It features a gabled roof with front-facing gable end with a wood shingle roof. It features 6/1 double hung sash on most elevations. At the northeast corner there are six multi-lite sliding windows. A garage (SCE building no. 138) used as a tool shed and a fire house box (SCE

building no. 133) are located southeast of the cottage. An additional garage (SCE building no. 134) and fire house box (SCE building no. 132) are located approximately 175 feet west of the cottage. Another small garage/shed (SCE building no. 125) is located approximately 300 feet south of the cottage.

1.4.1.2. Machine Shop

Adjacent to the powerhouse is the machine shop (SCE building no. 116), which is a concrete, one-story, flat-roofed building that was originally used as a machine shop with belt-driven power tools. The machine shop is architecturally similar to the powerhouse and measures 24 feet by 36 feet.

1.4.1.3. Relief House, Garage, and Tunnel House

Three additional buildings are located in the area of the sandbox. The garage (SCE building no. 128) is a wood-frame structure dating to 1921. It has board and batten siding, a corrugated metal gabled roof, and a sliding door on the uphill side. The tunnel house or Bubbler Shack Building (SCE building no. 141), built in 1984, is situated at the downstream end of the sandbox, just upstream from the entrance to the first tunnel. The Relief House (SCE building no. 111) is located at the north end of the intake and was constructed in 1968, replacing the original control building. The Relief House is a concrete block control building with a flat timber roof.

1.4.1.4. Chlorinator House and Water tanks

A Chlorinator House (SCE building no. 142) and two 5,000-gallon water tanks are located on the east side of the penstocks.

1.4.1.5. Warehouses

Two warehouses are located approximately 1,700 feet south of the powerhouse. Warehouse No. 1 (SCE building no. 139) measures approximately 120 feet by 60 feet and Warehouse No. 2 (SCE building no. 140), measures approximately 60 feet by 60 feet. Both warehouses include a covered overhang for parking SCE vehicles.

1.4.2. GAGING STATIONS

SCE maintains two recording gaging stations that monitor and record water flow for Project compliance. SCE gage 401 is located in the NFKR just below the Fairview Dam and SCE gage 402 is located within the flowline between tunnel sections 6 and 7 (Adit 6/7) (Table 1.4-2).

Table 1.4-2. Project Gaging Stations

Gage Name / Location	SCE Gage No.	USGS Gage No.	Flow Records
Kern River near Kernville, CA / Downstream of Fairview Dam	401	11186000	2/1922 to present [a]

Gage Name / Location	SCE Gage No.	USGS Gage No.	Flow Records
KR3 Pipeline near Kernville, CA / within Flow Conveyance at Adit 6/7	402	11185500	9/1960 to present [b]

CA = California; SCE = Southern California Edison; USGS = U.S. Geological Survey

Notes:

[a] January 1912, non-recording gage installed; February 1922, water-stage recorder installed; September 1967, manometer installed at sandbox drain canal; December 1988 to present, manometer system in "tunnel house" shelter built at Tunnel No. 1.

[b] March 1921 through October 1953 published record WSP 1315-A. October 1953 through September 1960 combined flow only.

2.0 STORAGE CAPACITY

The Project has essentially no storage capacity behind Fairview Dam or either of the diversions along Salmon and Corral Creeks. However, a small pool of water (under 2 acre-feet in volume with an approximate surface area of half an acre-foot and a water surface elevation of 3,612 mean sea level) backs up behind Fairview Dam.

3.0 TURBINES AND GENERATORS

The powerhouse contains two original Francis reaction-type turbines that are vertically mounted and rated at 57,400 horsepower (hp) total:

- Unit 1—28,700 hp, design head 800 feet and operating at 600 revolutions per minute.
- Unit 2—28,700 hp, design head 800 feet and operating at 600 revolutions per minute.

The turbines are controlled by an oil governor system. Pressure relief valves are installed to protect the penstock in the event of sudden load rejection. Each turbine is equipped with a separate turbine shut-off valve (butterfly valves with horizontal shafts). The shut-off valves are electric-motor operated.

A Pelton Governor controls the wicket gates. The governor ball-head motor is driven by a permanent magnet generator, which is attached to the top of the main generator shaft. High-pressure oil is supplied to the main servos (which control fuel flow) via duplicate governor oil sets (which are each powered by motor-driven, two-stage pumps capable of delivering 200 gallons per minute). The system also includes pressure tanks, control devices, and safety devices. A water-driven turbine is also provided to drive either governor oil pump in the event of an emergency.

The main generator room occupies most of the downstream side of the powerhouse and two vertical shaft General Electric direct-current (DC) generators (Unit No. 1 and Unit No. 2) occupy the room.

The system supplies and regulates the amount of DC required by the generator field windings and includes all power regulating controls that are provided by generators. The generators are partially enclosed and air-cooled by air drawn through individual

humidifiers. The exciters are rated at 250 volts and 380 amperes. A spare motor-driven exciter is provided, which consists of a General Electric 250-volt, 800-amperes DC generator.

The generator-installed ratings are as follows:

- Unit No. 1—20,500 kilovolt-ampere (20.5 MW), 0.90 power factor, 11.0 kV voltage, and 60 hertz (Hz).
- Unit No. 2—19,675 kilovolt-ampere (19.7 MW), 0.915 power factor, 11.0 kV voltage, and 60 Hz.

Unit No. 1 and Unit No. 2 each have an average normal operating capacity of 18.4 MW for a total of 36.8 MW and a total installed capacity of 40.2 MW.

4.0 TRANSMISSION LINES

There are no transmission lines within SCE's transmission system that are regulated under the Project's license. Electricity produced by the KR3 Powerhouse enters SCE's bulk electric grid on the 66 kV bus located inside the KR3 Powerhouse. The point of separation occurs at the Unit 1 and 2 66 kV upper and lower bus circuit breakers and the Nos. 1 and 2 local service bank 66 kV fused disconnects inside the KR3 Substation (non-Project).

5.0 MECHANICAL, ELECTRICAL, AND TRANSMISSION EQUIPMENT

5.1. POWER DISTRIBUTION EQUIPMENT

Station light and power is obtained from two three-phase air-cooled transformers; one single-phase transformer; and three single-phase transformers. Station service circuits are controlled by oil circuit breakers, which can be remotely operated. Also included are disconnect switches, buses, and fuses.

5.2. OIL STORAGE AND HANDLING SYSTEM

The bearing oil system is gravity-fed from head tanks installed at the upper floor level of the powerhouse. The system is equipped with pumps, filters, sump tanks, valves, and piping to individual bearings. In addition, facilities are available in the powerhouse for filtering the transformer insulating oil. A storage tank is also available to facilitate oil processing.

5.3. COMPRESSED AIR SYSTEM

The powerhouse is equipped with a motor-driven stationary compressor, complete with receiver and piping for general use.

5.4. FIRE PROTECTION SYSTEM

Fire protection for the generators is provided by a cart-mounted portable halon system which can be connected to the generator air housing in the event of a fire. Portable fire extinguishers, hose reels, and hydrants are provided and strategically located in and around the powerhouse.

The water within the penstocks also supplies various fire hydrants situated around the powerhouse that can be utilized by SCE and other county entities for fire suppression.

5.5. BATTERY SYSTEM

Station control power is supplied by a battery.

5.6. STATION CRANE

The powerhouse is equipped with a 65-ton electrically operated overhead bridge crane attached to the roof trusses. The crane provides hoisting capability for all major powerhouse equipment.

5.7. SWITCHING

Switching facilities are located in the upper and lower bus rooms of the Powerhouse for the 66 kV system. Oil circuits breakers along with manually operated disconnect switches and auxiliary equipment, provide the switching capability.

5.8. PLANT COOLING WATER

The generator cooling system is a closed-loop system. The system has coils in the river that act as heat exchangers with additional coils in the generator bearing tubs. There is one heat exchanger that uses well water or regulated penstock water when more cooling is needed. There are two humidifiers that act as ambient air coolers for additional cooling.

6.0 LANDS OF THE UNITED STATES WITHIN PROJECT BOUNDARY

The Project is almost entirely on lands owned by the U.S. Forest Service, Sequoia National Forest. Land ownership within the FERC Project Boundary consists of:

- Federal land: 225.2 acres
- SCE-owned land: 9.37 acres

A detailed map series of all Project facilities under FERC jurisdiction is included in Exhibit G.

Information regarding lands of the United States that are within the current Project boundary, including legal subdivisions and acreage, will be included in the Final License Application.

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)

EXHIBIT B: PROJECT OPERATION AND RESOURCE UTILIZATION DRAFT LICENSE APPLICATION

SOUTHERN CALIFORNIA EDISON®

Energy for What's Ahead℠

July 2024

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project
(FERC Project No. 2290)

Exhibit B: Project Operation and Resource Utilization
Draft License Application

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

July 2024

Support from:

ERM

Page Intentionally Left Blank

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS AND ABBREVIATIONS

AF	acre-feet
cfs	cubic feet per second
FERC	Federal Energy Regulatory Commission
KR3	Kern River No. 3
MIF	minimum instream flow
MW	megawatt
MWh	megawatt-hour
NFKR	North Fork Kern River
Project	Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)
SCE	Southern California Edison
WY	water year

Exhibit B: Statement of Operation and Resource Utilization

The Code of Federal Regulations, Title 18, Section 5.18(a)(5)(iii) (revised March 8, 2024) refers to Section 4.51 (License for major project–existing dam) for a description of information that an applicant must include in Exhibit B of its License Application.

Exhibit B is a statement of project operation and resource utilization. If the project includes more than one dam with associated facilities, the information must be provided separately for each such discrete development. The exhibit must contain:

(1) A statement whether operation of the powerplant will be manual or automatic, an estimate of the annual plant factor, and a statement of how the project will be operated during adverse, mean, and high water years;

(2) An estimate of the dependable capacity and average annual energy production in kilowatt-hours (or a mechanical equivalent), supported by the following data:

   i. The minimum, mean, and maximum recorded flows in cubic feet per second of the stream or other body of water at the powerplant intake or point of diversion, with a specification of any adjustments made for evaporation, leakage, minimum flow releases (including duration of releases), or other reductions in available flow; monthly flow duration curves indicating the period of record and the gauging stations used in deriving the curves; and a specification of the period of critical streamflow used to determine the dependable capacity;

   ii. An area-capacity curve showing the gross storage capacity and usable storage capacity of the impoundment, with a rule curve showing the proposed operation of the impoundment and how the usable storage capacity is to be utilized;

   iii. The estimated hydraulic capacity of the powerplant (minimum and maximum flow through the powerplant) in cubic feet per second;

   iv. A tailwater rating curve; and

   v. A curve showing powerplant capability versus head and specifying maximum, normal, and minimum heads;

(3) A statement, with load curves and tabular data, if necessary, of the manner in which the power generated at the project is to be utilized, including the amount of power to be used on-site, if any, the amount of power to be sold, and the identity of any proposed purchasers; and

(4) A statement of the applicant's plans, if any, for future development of the project or of any other existing or proposed water power project on the stream or other body of water, indicating the approximate location and estimated installed capacity of the proposed developments.

1.0 TYPE OF OPERATION

The Kern River No. 3 (KR3) Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 2290, is a run-of-river hydroelectric facility located on the North Fork Kern River (NFKR). The Project has one powerhouse and operates on water diverted from Fairview Diversion Dam, the primary intake, located on the NFKR, and from two smaller diversions located on Salmon Creek and Corral Creek. The diverted water is conveyed within a 13-mile-long aboveground and belowground flowline situated along the eastern hillslope above the NFKR. All diverted water is returned to the NFKR at the KR3 Powerhouse tailrace, approximately 16 miles downstream from Fairview Dam. Refer to Exhibit A for additional descriptions of Project features.

Plant Supervision—Within the KR3 Powerhouse control room, board instruments and devices are provided for semi-automatic control of the facility. The semi-automated controls and devices monitor generator temperatures, water level, circuit breaker conditions, meters, relays, graphic and indication instruments, station power transformers, and water level; velocity instrumentation provides indication for flow management. Water levels in the flowline at the siphon inlet are monitored by level sensors, which control the governors to regulate the water that passes through the turbines. The plant automation system provides status signals, telemetering, and alarms. The operator on duty performs start-up and shutdown of the turbine/generator units while following Southern California Edison (SCE) safety practices and other notification requirements. When unattended, the facility is electronically supervised by personnel located at the Eastern Hydro Operations Control Center (non-Project) in Bishop, California.

Annual Plant Factor—The estimated average annual plant factor for the KR3 Powerhouse for the past 5 years (2019 to 2023) is as follows:

- 5-year average annual generation: 123,505 megawatt-hours (MWh)
- Dependable capacity: 36.8 megawatts (MW)
- Average annual plant factor: 38 percent

Operation during Low, Mean, and High Water Years—The Project is operated in a run-of-river mode and generates power (i.e., diverts flows into the flowline) when sufficient water is available at the primary intake at Fairview Dam and at two small diversions that supply additional water to the flowline (Salmon Creek and Corral Creek Diversions). Inflows can vary seasonally and annually, depending upon the winter snowpack and other storm events. SCE controls the flowline so that a constant flow rate is maintained when operationally feasible. When changes in flows occur within SCE's control, SCE operates the Project so that flow reductions downstream of Fairview Dam (increasing flows in the flowline) do not exceed 30 percent of the existing flow per half hour for the protection of aquatic resources in the NFKR downstream of Fairview Dam (FERC License Article 407). Historically, when reducing flows in the flowline below 300 cubic feet per second (cfs), a ramping rate of 50 cfs per half hour was used.

During low and some mean water years (WYs), flows are either diverted into the Project's intake and flowline for power generation or through two fish release slide gates that can release up to 300 cfs each into the NFKR below Fairview Dam, depending upon head pressure behind the dam. The minimum instream flow (MIF) is provided through the fish release slide gates, which can be adjusted remotely from the KR3 Powerhouse or manually adjusted on-site during adverse conditions (i.e., power outage or communication loss). However, during lower-flow periods, SCE may elect to operate only one generating unit and take the other off-line to conduct routine maintenance or may elect to remove both generating units from service and allow all flows to pass through the fish release gates. Conversely, during periods of high flows (seasonal peak run-off or high WYs), flow diversion is limited to approximately 600 cfs, which is the capacity of the flowline. Any additional inflows greater than the 1,200 cfs combined capacity of the intake to the flowline (approximately 600 cfs) and the two fish release slide gates to the NFKR (300 cfs per gate) spill over the crest of the dam.

2.0 CAPACITY AND PRODUCTION

The amount and timing of flow diverted for power at Fairview Dam is a function of inflow from the NFKR upstream of the Project, FERC license requirements for MIF and seasonal whitewater flow releases, flowline capacity, and other operational agreements.

Annual net generation for the Project since issuance of the current license (1997 to 2023) is summarized in Table 2-1. During this period, the Project experienced periods (days, weeks, and months) of no or reduced generation, which may be the result of: (1) planned routine maintenance and inspections or non-routine infrastructure repairs/upgrades; (2) unscheduled (forced) outages due to equipment malfunction; (3) periods of low inflow where SCE was required to meet MIF requirements in the Fairview Dam Bypass Reach[1] and there was insufficient water remaining for generation; or (4) instances in which SCE elected to pause generation due to increased sediment loads in the NFKR upstream of the Project to reduce undue wear on the water conveyance system and generating units (see Table H-3 in Exhibit H of this License Application).

Project outages to conduct routine maintenance and inspections last approximately 2 to 4 weeks and are typically scheduled in the fall/winter during low-flow months but may occur throughout the year depending on the type of maintenance needed. Planned infrastructure maintenance outages/repairs are typically scheduled during the fall and winter months when natural inflows are lower where one or both units would be removed from service (extended outages longer than 4 weeks since 2005 are noted in Table 2-1).

Over the term of the current license, annual generation ranged from 368 MWh in 2014, when the Project was taken off-line for most of the year to complete upgrades and repairs at Fairview Dam and along the water conveyance system (intake, sandbox, and flowline), to a maximum of 219,904 MWh (2017), a high WY. The Project's annual average generation over the term of the current license (1997 to 2023) is 118,297 MWh, with a

[1] The Fairview Dam Bypass Reach is defined as the approximately 16-mile bypass reach of the NFKR between Fairview Dam and the KR3 Powerhouse tailrace.

5-year average (2019 to 2023) of 123,505 MWh. Natural inflows dictate the Project's dependable capacity.[2] The estimated annual dependable generating capacity is 35,152 MWh, which represents a year with the lowest annual inflow (2015).

Table 2-1. Summary of Project Generation (1997–2023)

Year	Net Generation (MWh)
1997	217,094
1998	225,378
1999	124,409
2000	136,726
2001	103,615
2002	126,599
2003	127,459
2004	47,716
2005[a]	121,681
2006[b]	178,822
2007[b,c]	47,771
2008[c]	69,422
2009[d]	117,767
2010[d,e]	92,479
2011[d,e]	174,822
2012	102,302
2013[f]	72,381
2014[f]	368
2015	35,152
2016	117,487
2017	216,902
2018	120,120
2019	211,529
2020	100,912
2021	44,110
2022[g]	76,347
2023	184,652

MWh = megawatt-hours
Notes: Periods with reduced generation capacity due to extended maintenance outages are as follows.
[a] March and May 2005: Project was off-line intermittently to install new cooling water system.
[b] August 2006 to April 2007: Unit 2 was off-line for repairs.
[c] August 2007 to March 2008: Unit 1 was off-line for repairs.
[d] July 2009 to May 2011: Unit 2 was off-line for repairs.
[e] September 2010 to February 2011: Project was off-line for automation upgrades.
[f] August 2013 to mid-December 2014: Project was off-line for upgrades and repairs at Fairview Dam and along water conveyance system.
[g] August 2022 to November 2022: Unit 1 was off-line for repairs.

2.1. Daily Average Available Flows

The NFKR upstream of the Project is unregulated, as there are no upstream dams or diversions that influence river flows. Inflows to the Project are seasonally influenced by weather patterns (snow and rainfall in the watershed) and the annual snowpack accumulated in the river's headwaters. Annual inflow from the NFKR to the Project between WYs 1997 and 2022 ranged from approximately 120,400 acre-feet (AF) (WY 2015) to more than 1,437,500 AF (WY 2017). The median annual inflow was approximately 366,300 AF during this period, with a mean annual inflow of approximately

[2] The dependable capacity of a generating facility is defined as "the generating capacity that the plant can deliver under the most adverse water supply conditions to meet the needs of an electric power system with a given maximum demand" (Elliott et al. 1997).

523,600 AF. Figure 2.1-1 depicts the annual available at the primary Project intake, which was estimated from the summation of two gaging stations (SCE gage 401, Kern River near Kernville [U.S. Geological Survey gage 11186000], and SCE gage 402, Kern River No. 3 Conduit at Adit 6/7 [U.S. Geological Survey gage 11185500]).

The NFKR has a hydrograph similar to other west-slope Sierra Nevada rivers, with drier summer and fall periods, and winter precipitation predominantly occurring as snow in the upper basin. Peak snowmelt run-off generally occurs in late April or early May and tapers off by September (Stephens et al., 1995). A summary of the mean (average) daily inflow from the NFKR at Fairview Dam for WYs 2017 to 2022 is provided in Figure 2.1-2 and Figure 2.1-3. A maximum daily average streamflow was estimated at 25,200 cfs on January 3, 1997, and the minimum daily average streamflow was estimated at 70 cfs on September 9, 2015. Refer to Section 7.3, *Water Resources*, of Exhibit E for a hydrology analysis depicting both mean and median flow statistics.

Monthly flow duration curves for WYs 2017 to 2022 are provided in Appendix B.1.

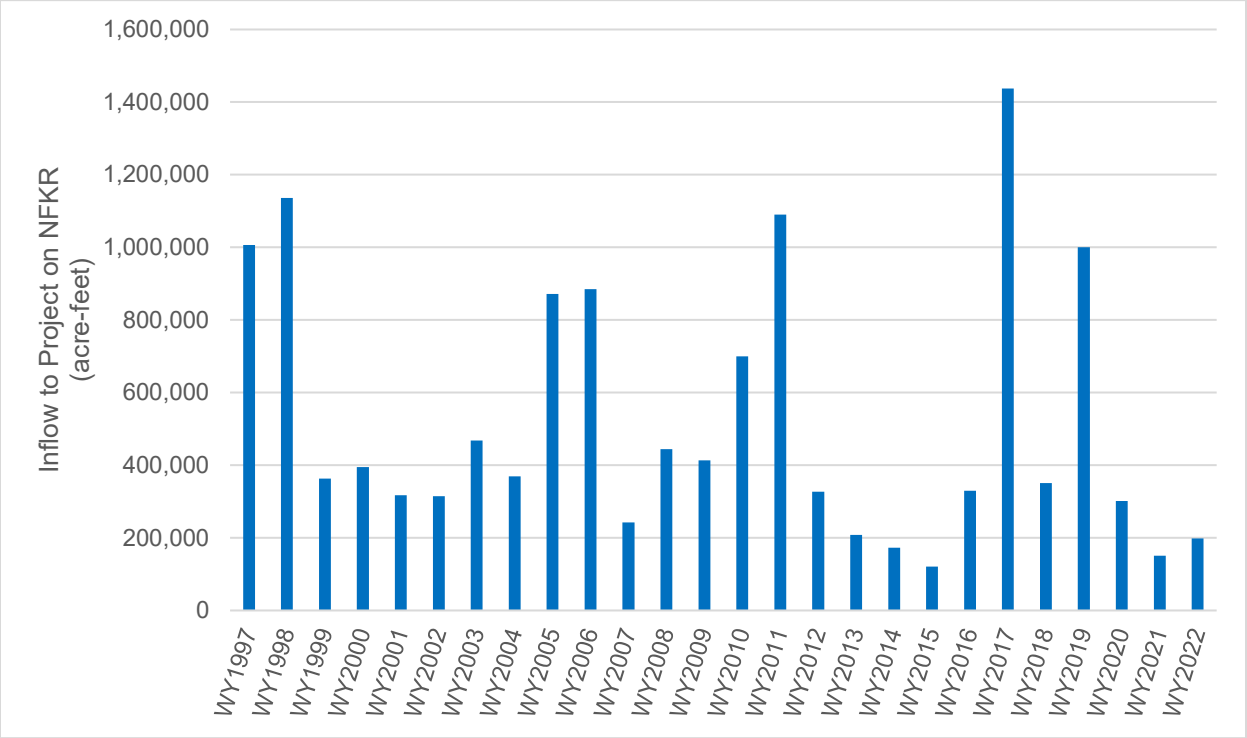


Figure 2.1-1. Annual Inflow (acre-feet) to the Project on the North Fork Kern River, Water Years 1997–2022 (sum of U.S. Geological Survey gages 11185500 and 11186000).

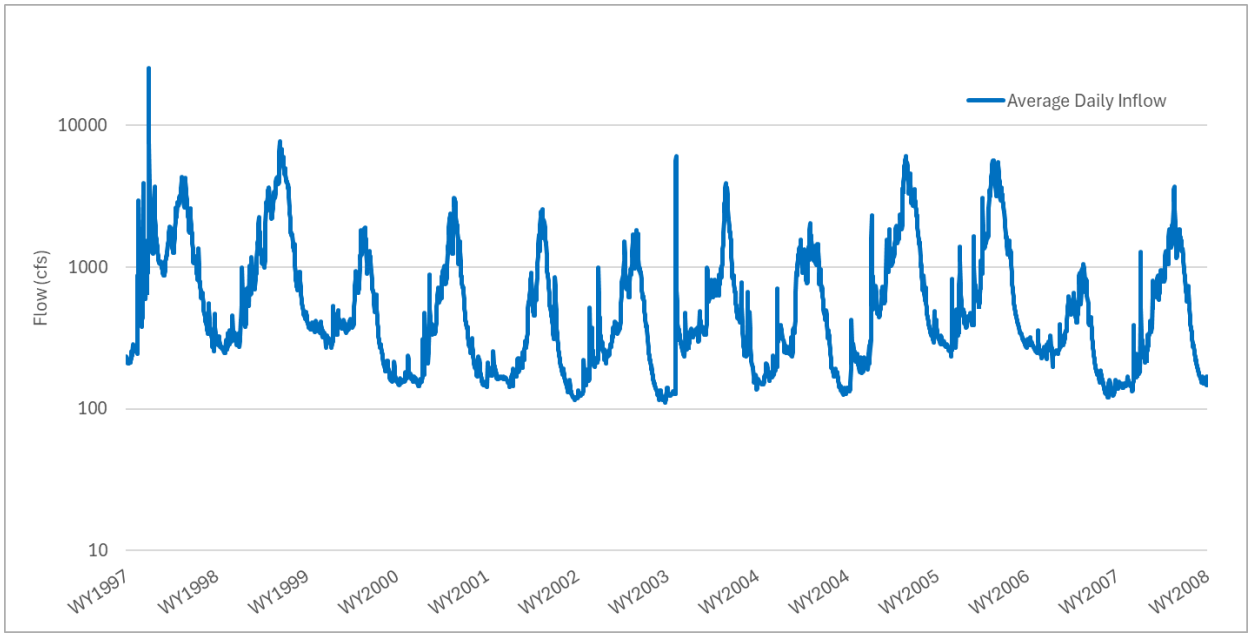


Figure 2.1-2. Average Daily Inflow (cubic feet per second) to the Project on the North Fork Kern River, Water Years 1997–2008 (sum of U.S. Geological Survey gages 11185500 and 11186000).

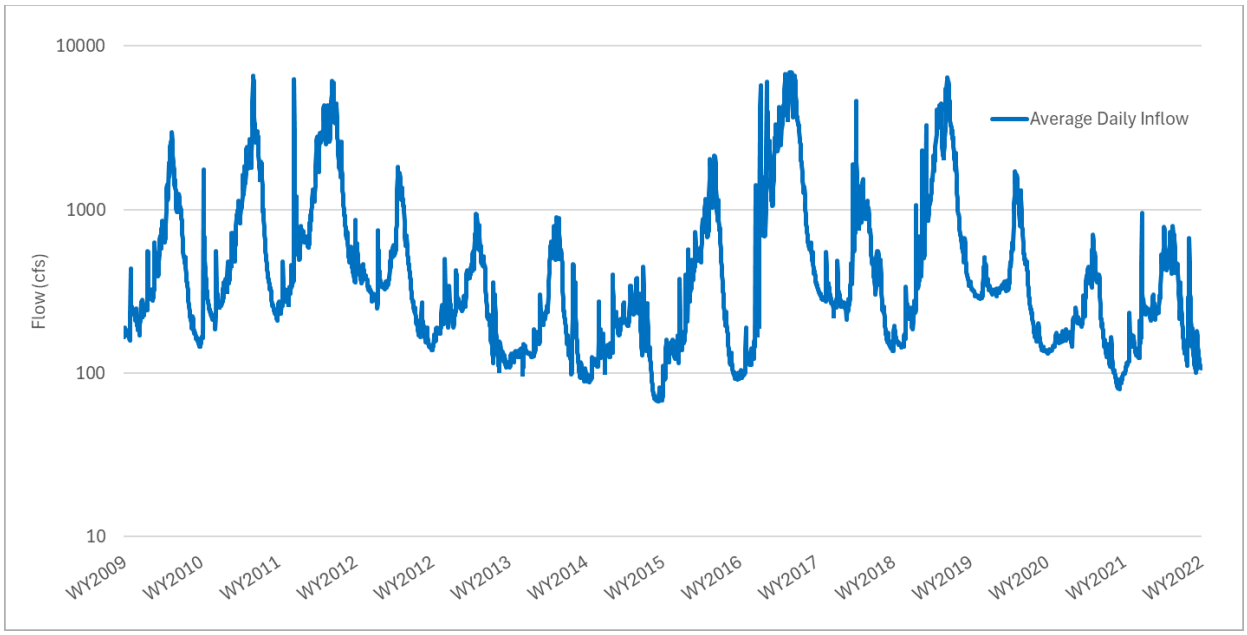


Figure 2.1-3. Average Daily Inflow (cubic feet per second) to the Project on the North Fork Kern River, Water Years 2009–2022 (sum of U.S. Geological Survey gages 11185500 and 11186000).

2.2. IMPOUNDMENT CAPACITY

The Fairview Dam located on the NFKR has little to no storage (up to 2 AF). An area-capacity curve showing the gross storage capacity of the impoundment is not applicable to this Project because it is run-of-river only and there is no storage capacity.

2.3. HYDRAULIC CAPACITY

The estimated operating ranges for the hydraulic capacity of the powerplant is a minimum of 40 cfs per unit and a maximum of approximately 600 cfs.

2.4. TAILWATER RATING CURVE

The turbines in the powerhouse are set at or above the tailwater. Since the turbines are not submerged under the surface of the stream, a tailwater rating curve is not applicable in the calculation of dependable capacity.

2.5. POWERPLANT CAPABILITY

The dependable operating capacity (36.8 MW) is less than the installed operating capacity (40.2 MW) due to the constraints of the flowline (capacity is approximately 600 cfs), which prevents both units from operating at full capacity. Additionally, the Project's head is provided by topographic relief where water availability dictates dependable capacity. At a normal operational static head of 821 feet; however, water availability—rather than minor head changes at the forebay—dictates operational capacity. Consequently, a capacity versus head curve is not applicable.

3.0 USE OF GENERATED ENERGY

The KR3 Powerhouse operates as a base load facility. All energy generated, minus the necessary to operate plant auxiliaries, is transmitted to the SCE transmission system. The amount of energy necessary to operate plant auxiliaries is normally about 15,000 to 20,000 kilowatt hours per month.

4.0 PLANS FOR FUTURE DEVELOPMENT

No future development is proposed for the Project.

5.0 REFERENCES

Elliott, T.C., K. Chen, and R.C. Swanekamp. 1997. *Standard Handbook of Powerplant Engineering*. Second Edition. McGraw-Hill October 1, 1997.

Stephens, S.J., D.P. Christenson, M. Lechner, and H. Werner. 1995. *Upper Kern Basin Fishery Management Plan*. A Cooperative Program of the California Department of Fish and Game, Sequoia National Forest, and Sequoia National Park. April.

Page Intentionally Left Blank

APPENDIX B.1
FLOW DURATION CURVES

Page Intentionally Left Blank

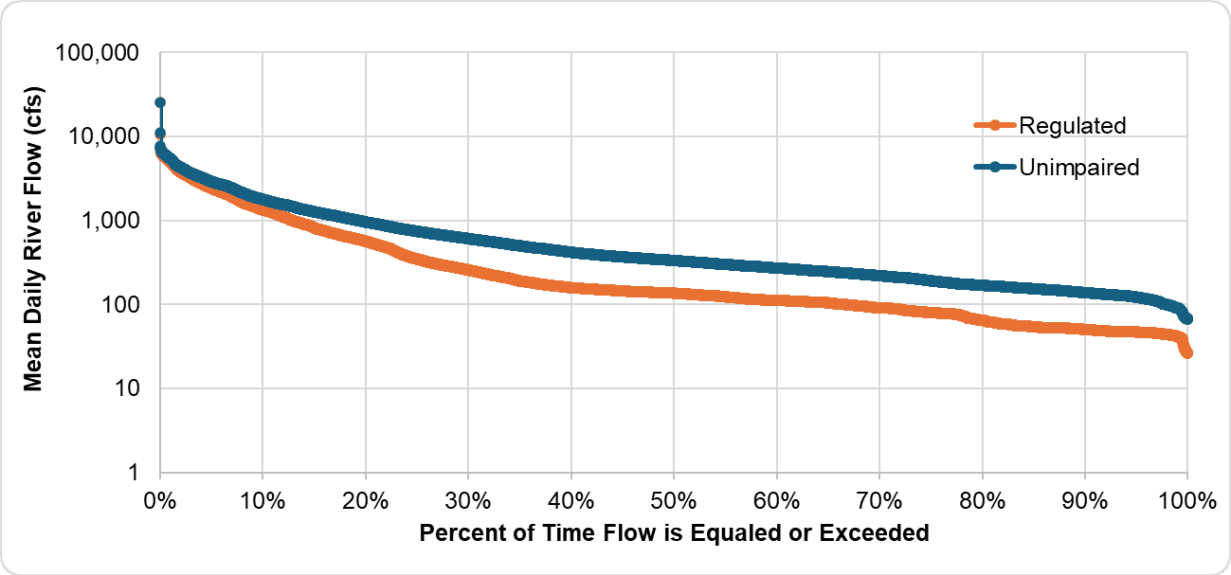


Figure B.1-1. Annual Flow Duration Curve for the Regulated North Fork Kern River below Fairview Dam (USGS Gage 11186000, SCE Gage 401) and Unimpaired Flow, Water Years 1997–2022.

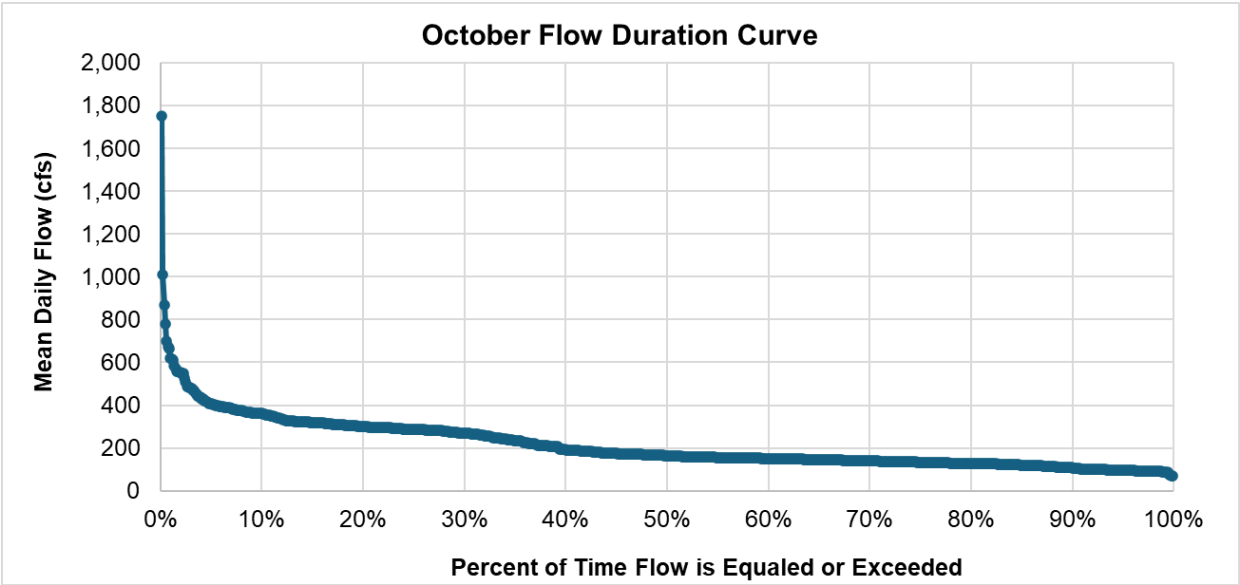


Figure B.1-2. October Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

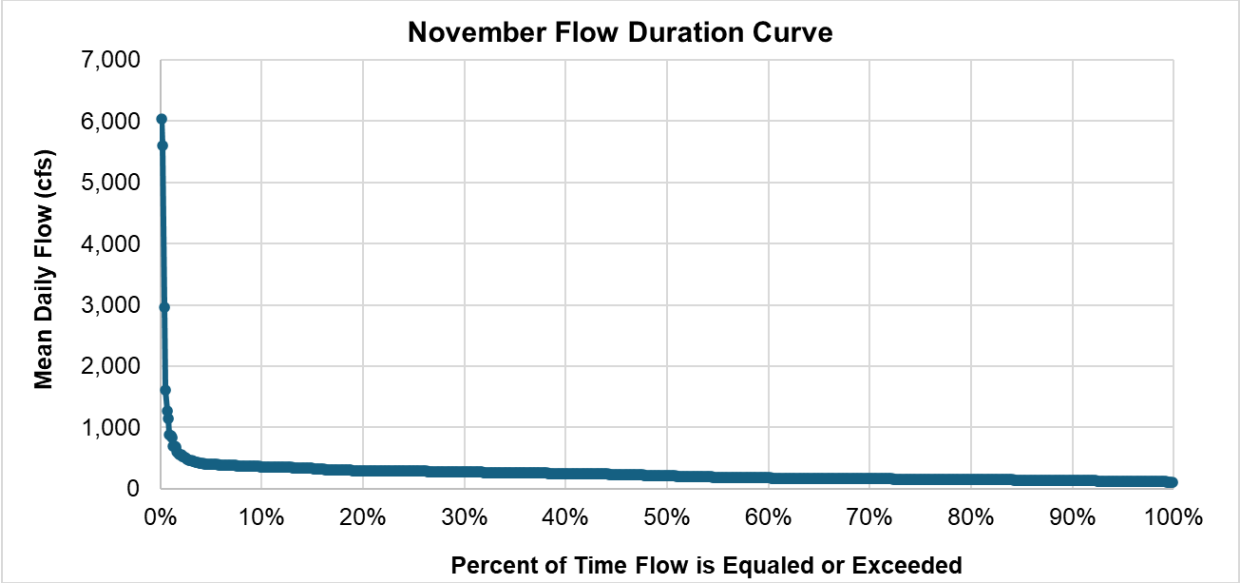


Figure B.1-3. November Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

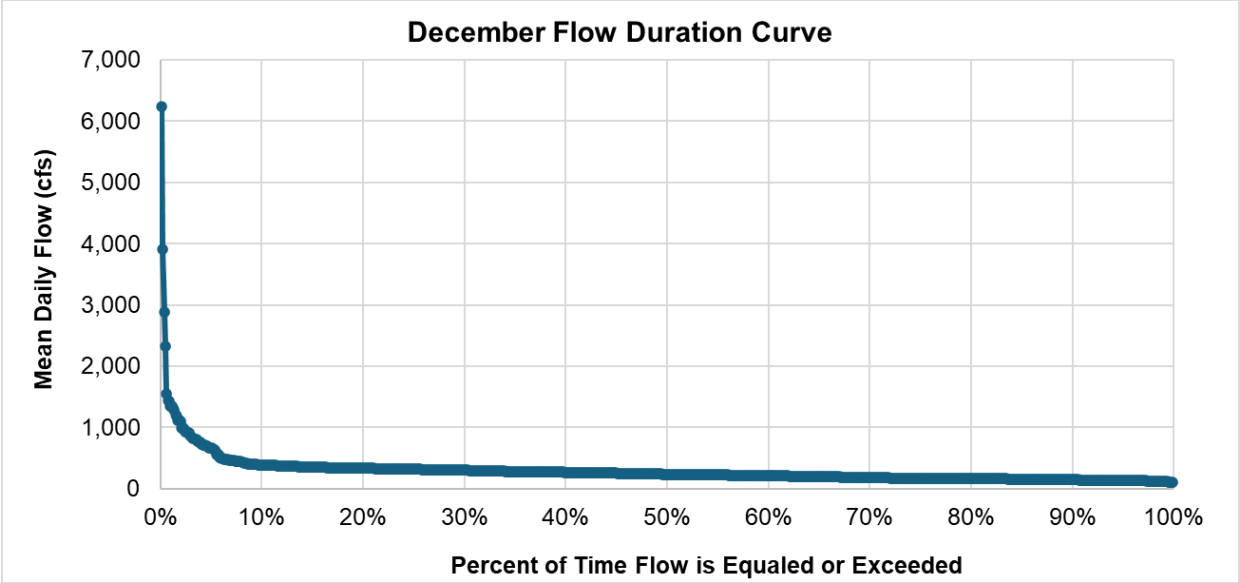


Figure B.1-4. December Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

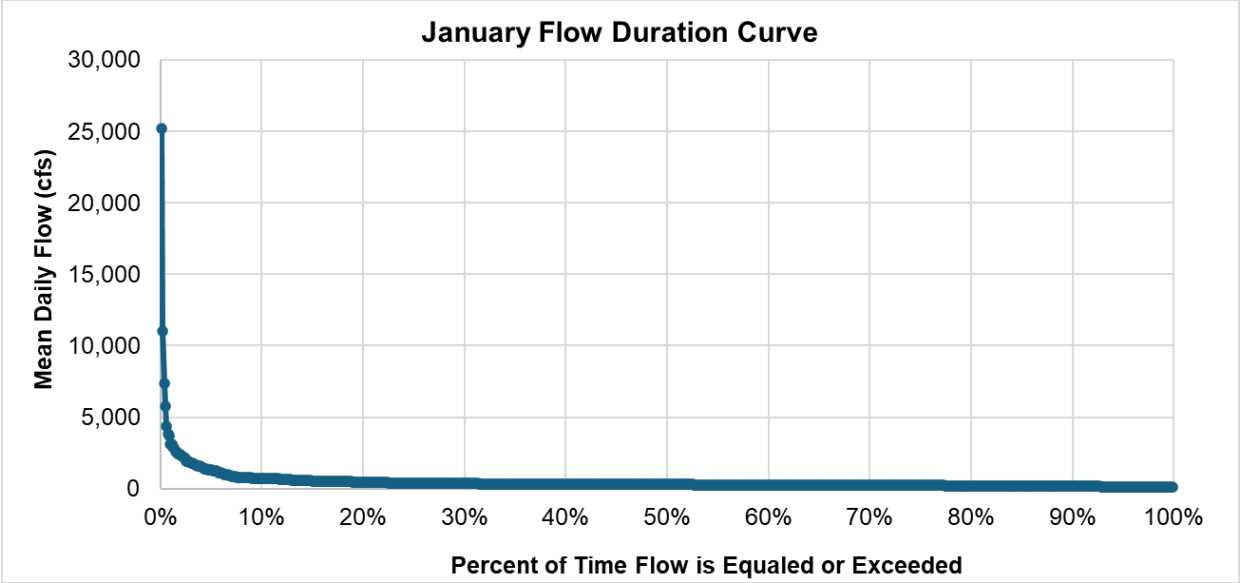


Figure B.1-5. January Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

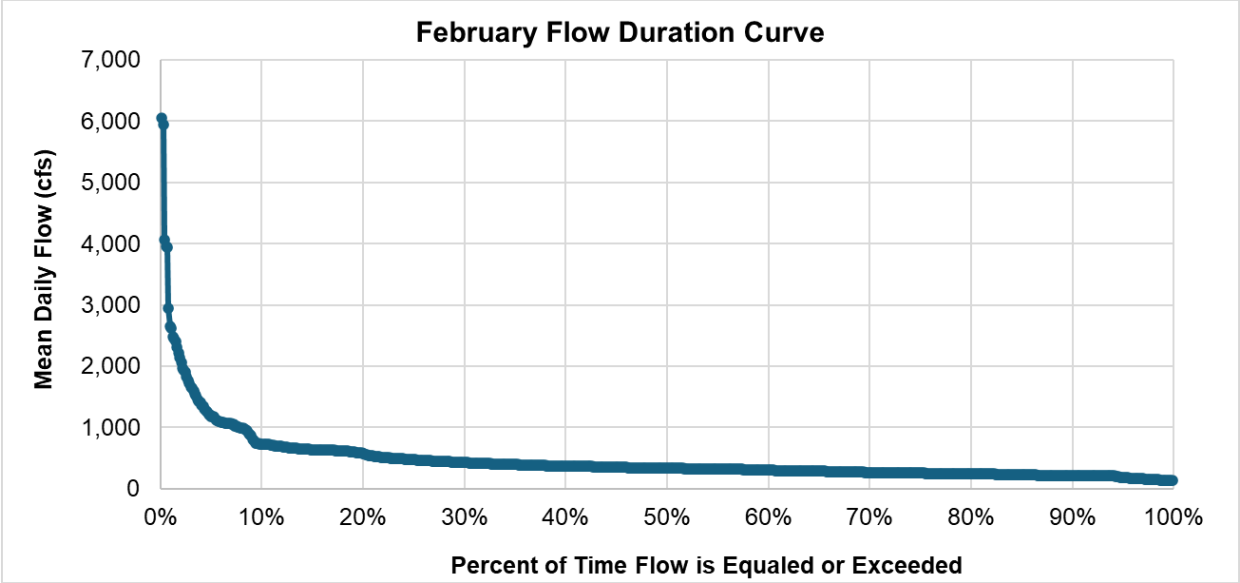


Figure B.1-6. February Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

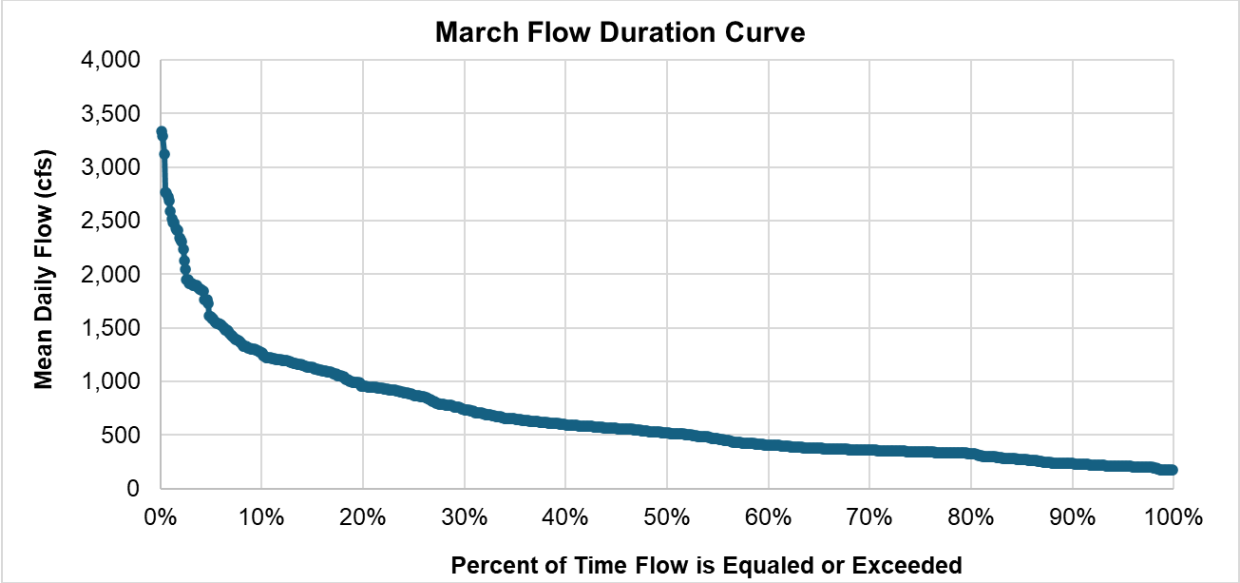


Figure B.1-7. March Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

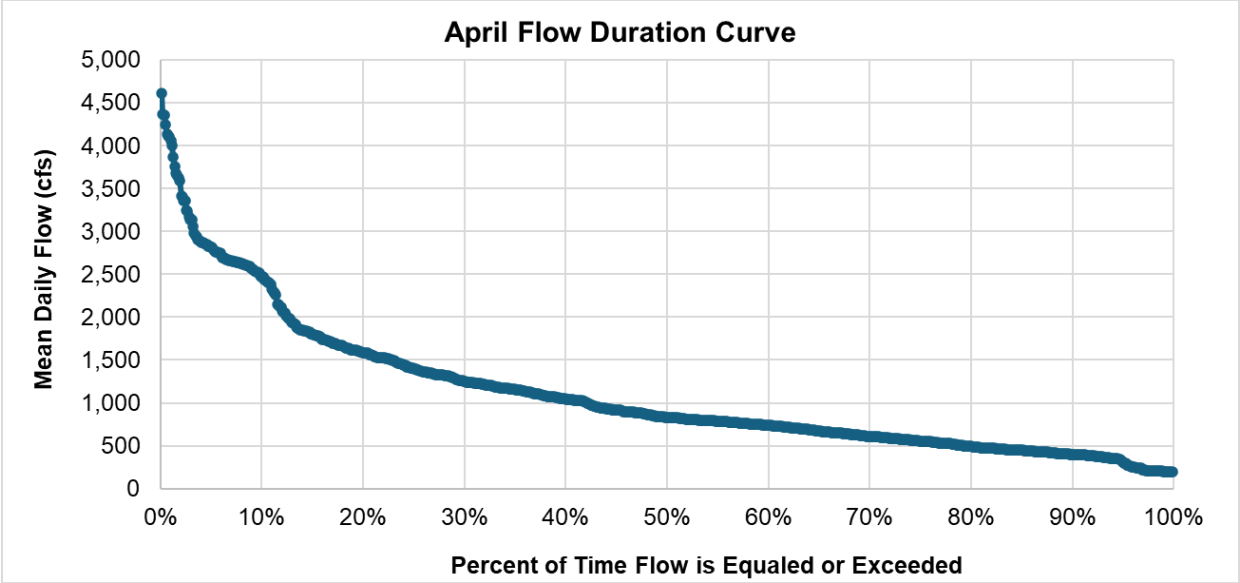


Figure B.1-8. April Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997-2022.

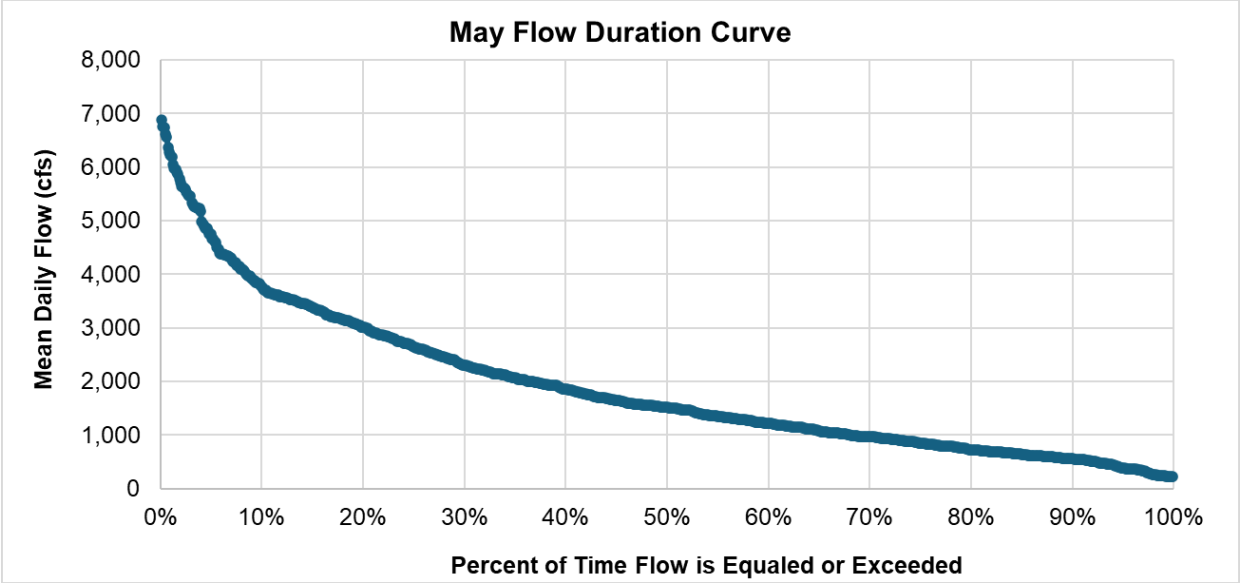


Figure B.1-9. May Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

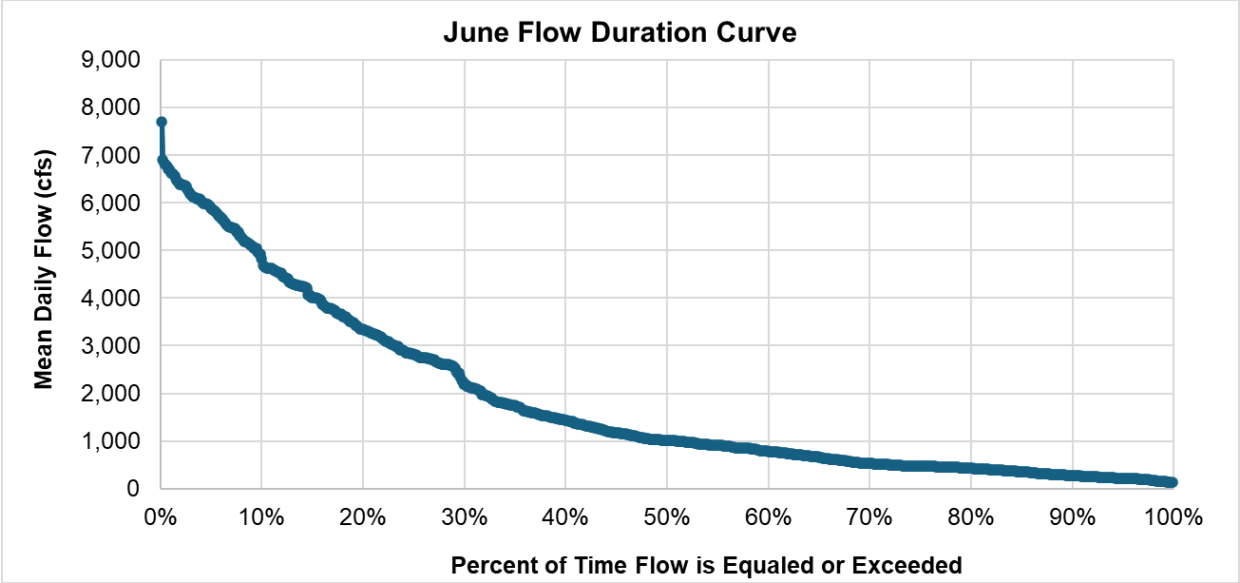


Figure B.1-10. June Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

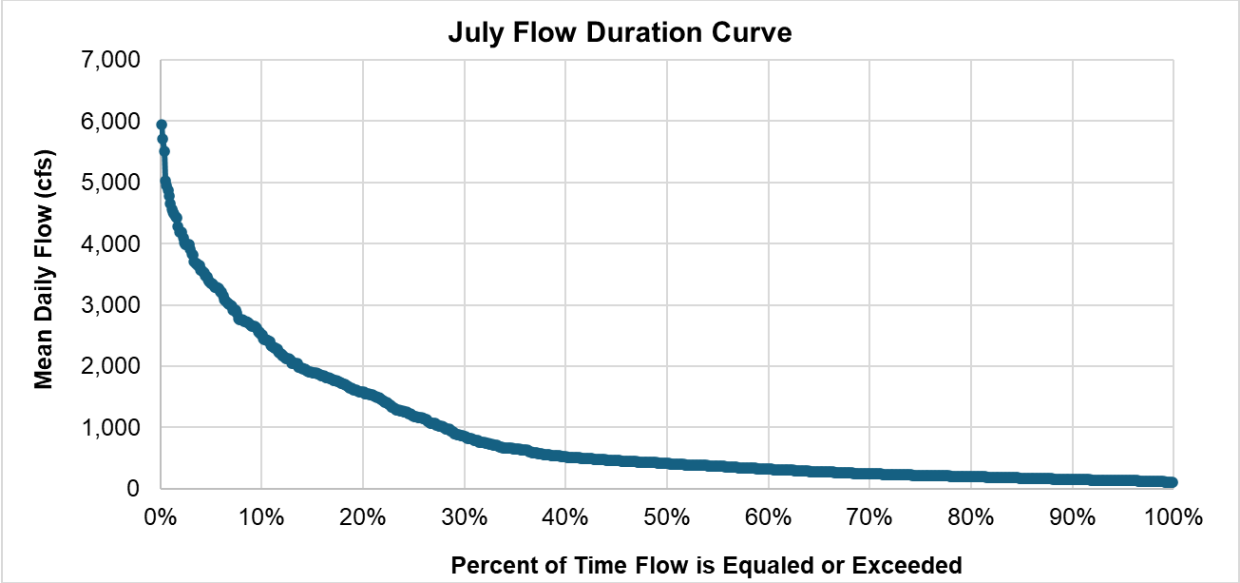


Figure B.1-11. July Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

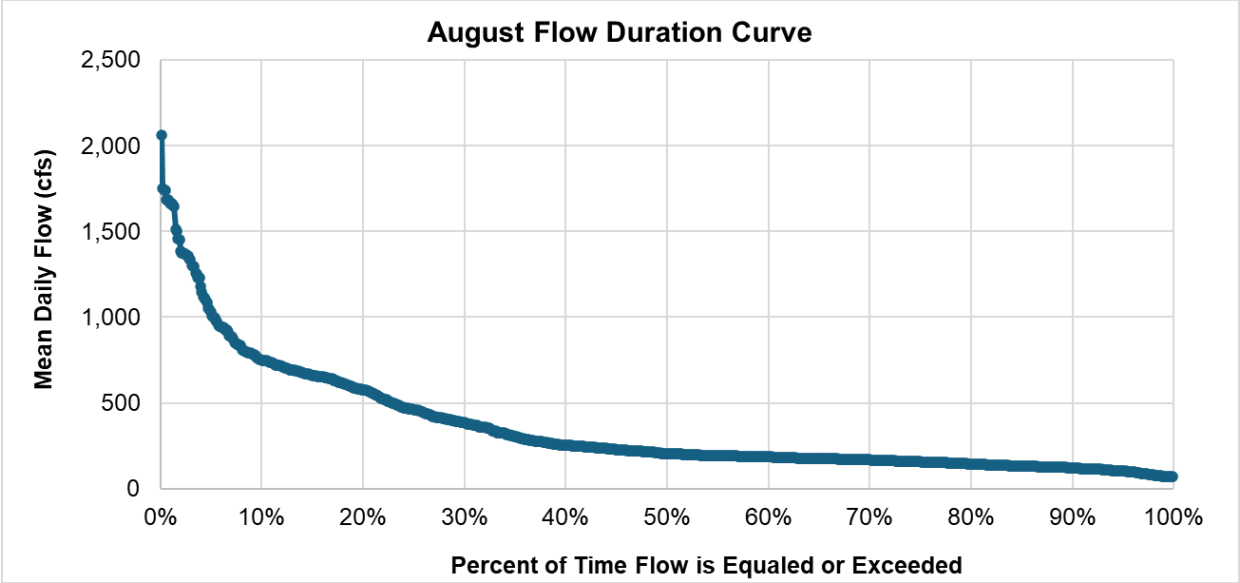


Figure B.1-12. August Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997-2022.

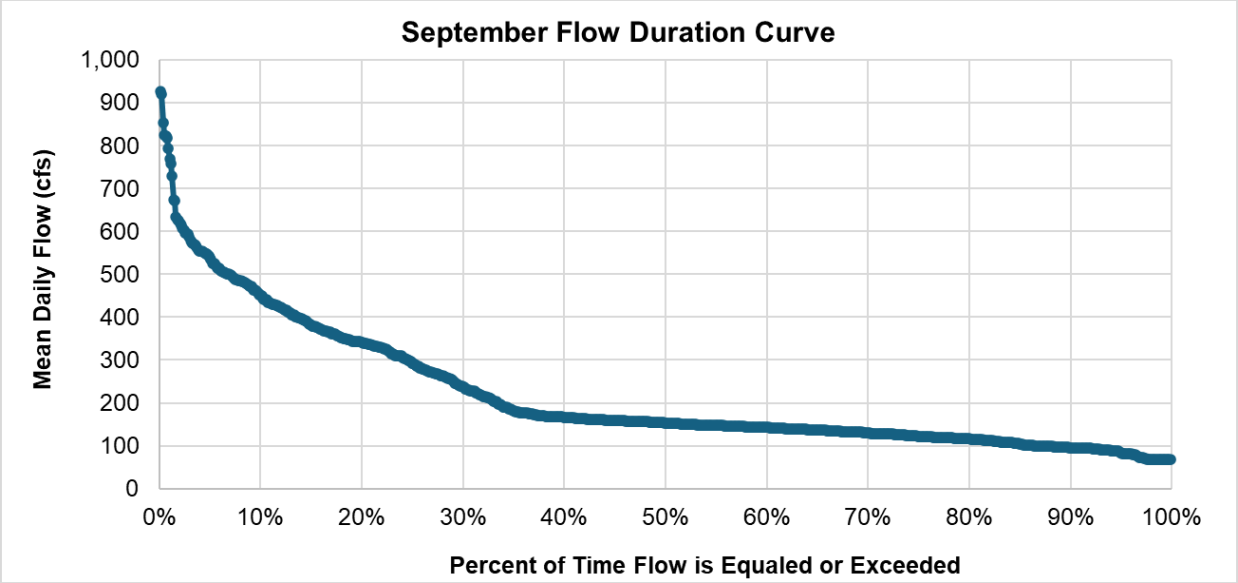


Figure B.1-13. September Flow Duration Curve for the North Fork Kern River downstream of Fairview Dam, Water Years 1997–2022.

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)

EXHIBIT C: CONSTRUCTION HISTORY AND PROPOSED CONSTRUCTION SCHEDULE DRAFT LICENSE APPLICATION

SOUTHERN CALIFORNIA EDISON®

Energy for What's Ahead℠

July 2024

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project
(FERC Project No. 2290)

Exhibit C: Construction History and Proposed Construction Schedule
Draft License Application

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

July 2024

Support from:

ERM

Page Intentionally Left Blank

Exhibit C: Project Construction History and Proposed Construction Schedule

The Code of Federal Regulations, Title 18, Section 5.18(a)(5)(iii) (revised March 8, 2024) refers to Section 4.51 (License for major project–existing dam) for a description of information that an applicant must include in Exhibit C of its license application.

Exhibit C is a construction history and proposed construction schedule for the project. The construction history and schedules must contain:

(1) If the application is for an initial license, a tabulated chronology of construction for the existing projects structures and facilities described under paragraph (b) of this section (Exhibit A), specifying for each structure or facility, to the extent possible, the actual or approximate dates (approximate dates must be identified as such) of:

   i. Commencement and completion of construction or installation;

   ii. Commencement of commercial operation; and

   iii. Any additions or modifications other than routine maintenance; and

(2) If any new development is proposed, a proposed schedule describing the necessary work and specifying the intervals following issuance of a license when the work would be commenced and completed.

1.0 CONSTRUCTION HISTORY

This application is not for an initial license. Therefore, a tabulated chronology of construction is not required. Refer to Exhibit H, *Project Need and Key information*, for a discussion of the history and a record of programs to upgrade the operation and maintenance of the Kern River No. 3 Hydroelectric Project (18 CFR § 5.18(c)(1)(ii)(D)).

2.0 PROPOSED CONSTRUCTION SCHEDULE

No new development is proposed for the Project.

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)

EXHIBIT D: PROJECT COSTS AND FINANCING DRAFT LICENSE APPLICATION

SOUTHERN CALIFORNIA EDISON®

Energy for What's Ahead℠

July 2024

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project
(FERC Project No. 2290)

Exhibit D: Project Costs and Financing
Draft License Application

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

July 2024

Support from:

ERM

Page Intentionally Left Blank

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

FERC	Federal Energy Regulatory Commission
FLA	Final License Application
GRC	General Rate Case
KR3	Kern River No. 3
MWh	megawatt hour
O&M	operation and maintenance
Project	Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)
REC	renewable energy credit
SCE	Southern California Edison

Exhibit D: Project Costs and Financing

The Code of Federal Regulations, Title 18, Section 5.18(a)(5)(iii) (revised March 8, 2024) refers to Section 4.51 (License for major project–existing dam) for a description of information that an applicant must include in Exhibit D of its license application.

Exhibit D is a statement of costs and financing. The exhibit must contain:

(1) If the application is for an initial license, a tabulated statement providing the actual or approximate original cost (approximate costs must be identified as such) of:

- i. Any land or water right necessary to the existing project; and
- ii. Each existing structure and facility described under paragraph (b) of this section (Exhibit D).

(2) If the applicant is a licensee applying for a new license, and is not a municipality or a state, an estimate of the amount which would be payable if the project were to be taken over pursuant to section 14 of the Federal Power Act upon expiration of the license in effect [see 16 U.S.C. 807], including:

- i. Fair value;
- ii. Net investment; and
- iii. Severance damages.

(3) If the application includes proposals for any new development, a statement of estimated costs, including:

- i. The cost of any land or water rights necessary to the new development; and
- ii. The cost of the new development work; with a specification of:
  - A. Total cost of each major item;
  - B. Indirect construction costs such as costs of construction equipment, camps, and commissaries;
  - C. Interest during construction; and
  - D. Overhead, construction, legal expenses, taxes, administrative and general expenses, and contingencies.

(4) A statement of the estimated average annual cost of the total project as proposed specifying any projected changes in the costs (life-cycle costs) over the estimated financing or licensing period if the applicant takes such changes into account, including:

- i. Cost and capital (equity and debt);
- ii. Local, state, and Federal taxes;
- iii. Depreciation and amortization;
- iv. Operation and maintenance expenses, including interim replacements, insurance, administrative and general expenses, and contingencies; and
- v. The estimate capital cost and estimated annual operation and maintenance expense of each proposed environmental measure.

(5) A statement of the estimated annual value of project power, based on a showing of the contract price for sale of power or the estimated average annual cost of obtaining an equivalent amount of power (capacity and energy) from the lowest cost alternative source, specifying any projected changes in the cost of power from that source over the estimated financing or licensing period if the applicant takes such changes into account.

(6) A statement specifying the sources and extent of financing and annual revenues available to the applicant to meet the costs identified in paragraphs (e) (3) and (4) of this section.

(7) An estimate of the cost to develop the license application;

(8) The on-peak and off-peak values of project power, and the basis for estimating the values, for projects which are proposed to operate in a mode other than run-of-river; and

(9) The estimated average annual increase or decrease in project generation, and the estimated average annual increase or decrease of the value of project power, due to a change in project operations (*i.e.*, minimum bypass flows; limits on reservoir fluctuations).

1.0 ORIGINAL COST

Southern California Edison (SCE) is applying to the Federal Energy Regulatory Commission (FERC) for a new license—not an initial license—for the Kern River No. 3 (KR3) Hydroelectric Project (Project), FERC Project No. 2290. Therefore, a statement of the original cost of Project land or water rights, structures, or facilities is not applicable.

2.0 TAKEOVER COST

It is the intent of SCE to continue to operate the Project upon receipt of a new license. However, if the Project were to be taken over by the United States at the expiration of the existing license, pursuant to Section 14 of the Federal Power Act, the amount payable to SCE includes the net investment, not to exceed the fair value.

Pursuant to Section 14 of the Federal Power Act, SCE provides the estimates provided in Table 2-1.

Table 2-1. Takeover Value Estimates

Value Type	Value
Fair Value	$15,208,982
Net Investment[1]	$15,208,982
Severance Damages	$15,208,982

[1] SCE considers net investment to equal net book value.

3.0 COST OF NEW DEVELOPMENT

SCE's Proposed Action for the Project does not include any new development as part of this application, therefore a statement of estimated cost for new development is not applicable.

4.0 ANNUAL COST OF TOTAL PROJECT

The annual costs for this Project include expenses for operation and maintenance (O&M) as well as capital improvement work.

The current SCE cost of capital is listed in Table 4-1.

Table 4-1. Cost of Capital Equity and Debt

Cost Type	Percent of Cost
Long-Term Debt	1.89%
Preferred Equity	0.33%
Common Equity	5.23%
Total Cost of Capital	7.44%

- Property taxes associated with this Project for tax year 2023 were $54,364 (Kern County) and $163,091 (Tulare County). State and federal income taxes are computed for all of the SCE hydropower assets combined, and no amount is specifically designated for this individual Project.

- Depreciation for the Project in 2023 was $1,444,239.

- The average O&M expenses for the 5-year period (2019 to 2023) are $3,757,052. Additional administrative and general expenses totaled $289,086 in 2023.

- *The estimated capital cost and estimated annual O&M expense of each proposed environmental measure will be included in the Final License Application (FLA).*

5.0 VALUE OF PROJECT POWER

The value of Project power is quantified through three market products: energy value, capacity value, and renewable energy credits (RECs). Energy produced by the plant is based on California Independent System Operator wholesale market prices. Capacity value is based on expected future capacity prices. REC prices are based on the expected price to buy or sell RECs in the future. These costs would be the annual costs paid to a qualifying facility or independent power producer type resource for replacement capacity, energy, and O&M. The fuel value represents the largest contribution to the overall costs.

The Project's value is determined by first estimating the production of the powerplant. The estimated annual amount of energy produced from the Project was derived from a 20-year annual average of historical production from 2003 to 2023.

The forecasted production (megawatt hours [MWh]) for the Project was multiplied by the marginal energy cost forecast and the RECs price forecast, and the expected capacity of the Project was multiplied by the marginal capacity cost forecast. The sum of the three products is the total value that SCE would expect from the power being provided by this Project.

The estimated energy value ($/MWh) and capacity value ($/kilowatt-year) will be provided as part of the FLA.

6.0 SOURCES OF FINANCING AND REVENUES

As previously discussed in Section 3.0, *Cost of New Development*, there is no new development planned for the Project. Therefore, special financing for any major capital work is not required.

SCE previously filed a General Rate Case (GRC) with the California Public Utilities Commission, which was approved in August 2021. Included in the GRC filing was the generation-related O&M expenses as well as administrative and general expenses. The GRC filings included the expected costs for the years of 2021 to 2023, which are associated with the O&M of all the SCE hydropower assets, as well as the costs associated with any anticipated incremental capital additions. The capital and O&M

expenses necessary for continued Project operation would be collected through those approved rates, which would include costs associated with license condition requirements that might be imposed upon the Project in the new license.

The Project is operated as a component of the entire Hydro Generation Division, which is part of the Power Supply Department of SCE. The O&M expenses for the Project are therefore not wholly estimated at the division or department level, as the departmental costs are usually extrapolated from historical costs. Any financing charges required for individual projects would normally be included in the overall department budget and would not be directly attributable to the individual project.

7.0 LICENSE APPLICATION DEVELOPMENT COST

The Licensee's estimated cost through issuance of a new license is [*$XX*]. *Note: this value will be provided in the FLA.*

8.0 VALUE OF ON-PEAK AND OFF-PEAK PROJECT POWER

The KR3 Project is operated in a run-of-river mode. Therefore, a statement of the on-peak and off-peak values of Project power is not applicable.

9.0 EFFECTS OF CHANGE IN PROJECT OPERATIONS

Note: these values will be provided in the FLA.

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)

EXHIBIT F: GENERAL DESIGN DRAWINGS AND SUPPORTING INFORMATION DRAFT LICENSE APPLICATION

SOUTHERN CALIFORNIA EDISON®

Energy for What's Ahead℠

July 2024

This Exhibit includes Controlled Unclassified Information/Critical Energy Infrastructure Information (CUI//CEII) in accordance with 18 CFR § 388.113(c) and has been removed from the public version of this Application. This material is contained in Volume III (CEII). Procedures for obtaining access to CEII may be found at 18 CFR § 388.113.

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)

EXHIBIT G: PROJECT MAPS
DRAFT LICENSE APPLICATION

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

July 2024

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project
(FERC Project No. 2290)

Exhibit G: Project Maps
Draft License Application

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

July 2024

Support from:

ERM

Page Intentionally Left Blank

TABLE OF CONTENTS

Page

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

CFR	Code of Federal Regulations
FERC	Federal Energy Regulatory Commission
FLA	Final License Application
Project	Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)

Exhibit G: Project Maps

Section 5.18(a)(5)(iii) of Title 18 of the Code of Federal Regulations (CFR) (revised March 8, 2024) refers to Section 4.51 (License for Major Project – Existing Dam) for a description of information that an applicant must include in Exhibit G of its license application.

Exhibit G is a map of the project that must conform to the specifications of 18 CFR §4.39. In addition to the other components of Exhibit G, the Applicant must provide the project boundary data in a geo-referenced electronic format—such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format. The electronic boundary data must be positionally accurate to ±40 feet in order to comply with the National Map Accuracy Standards for maps at a 1:24,000 scale (the scale of United States Geological Survey) quadrangle maps). The electronic Exhibit G data must include a text file describing the map projection used (i.e., Universal Transverse Mercator, State Plane, Decimal Degrees, etc.) and the map datum (i.e., feet, meters, miles, etc.). Three sets of the maps must be submitted on compact disc or other appropriate electronic media. If more than one sheet is used for the paper maps, the sheets must be numbered consecutively, and each sheet must bear a small insert sketch showing the entire project and indicate the portion of the project depicted on that sheet. Each sheet must contain a minimum of three known reference points. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown. If, at any time after the application is filed, there is any change in the project boundary, the applicant must submit, within 90 days following the completion of project construction, a final Exhibit G showing the extent of such changes. The map must show:

(1) Location of the project and principal features. The map must show the location of the project as a whole with reference to the affected stream or other body of water and, if possible, to a nearby town or any other permanent monuments or objects, such as roads, transmission lines or other structures, that can be noted on the map and recognized in the field. The map must also show the relative locations and physical interrelationships of the principal project works and other features described under paragraph (b) of this section (Exhibit A).

(2) Project boundary. The map must show a project boundary enclosing all project works and other features described under paragraph (b) of this section (Exhibit A) that are to be licensed. If accurate survey information is not available at the time the application is filed, the applicant must so state, and a tentative boundary may be submitted. The boundary must enclose only those lands necessary for operation and maintenance of the project and for other project purposes, such as recreation, shoreline control, or protection of environmental resources (see paragraph (f) of this section (Exhibit E)). Existing residential, commercial, or other structures may be included within the boundary only to the extent that underlying lands are needed for project purposes (e.g., for flowage, public recreation, shoreline control, or protection of environmental resources). If the boundary is on land covered by a public survey, ties must be shown on the map at sufficient points to permit accurate platting of the position of the boundary relative to the lines of the public land survey. If the lands are not covered by a public land survey, the best available legal description of the position of the boundary must be provided, including distances and directions from fixed monuments or physical features. The boundary must be described as follows:

    i. Impoundments.

A. The boundary around a project impoundment must be described by one of the following:

1. Contour lines, including the contour elevation (preferred method);
2. Specified courses and distances (metes and bounds);
3. If the project lands are covered by a public land survey, lines upon or parallel to the lines of the survey; or
4. Any combination of the above methods.

B. The boundary must be located no more than 200 feet (horizontal measurement) from the exterior margin of the reservoir, defined by the normal maximum surface elevation, except where deviations may be necessary in describing the boundary according to the above methods or where additional lands are necessary for project purposes, such as public recreation, shoreline control, or protection of environmental resources.

ii. Continuous features.

iii. Noncontinuous features.

A. The boundary around noncontinuous project works such as dams, spillways, and powerhouses must be described by one of the following:

1. Contour lines;
2. Specified courses and distances;
3. If the project lands are covered by a public land survey, lines upon or parallel to the lines of the survey; or
4. Any combination of the above methods.

B. The boundary must enclose only those lands that are necessary for safe and efficient operation and maintenance of the project or for other specified project purposes, such as public recreation or protection of environmental resources.

(3) *Federal lands.* Any public lands and reservations of the United States (Federal lands) [see 16 U.S.C. 796 (1) and (2)] that are within the project boundary, such as lands administered by the U.S. Forest Service, Bureau of Land Management, or National Park Service, or Indian tribal lands, and the boundaries of those Federal lands, must be identified as such on the map by:

i. Legal subdivisions of a public land survey of the affected area (a protraction of identified township and section lines is sufficient for this purpose); and

ii. The Federal agency, identified by symbol or legend, that maintains or manages each identified subdivision of the public land survey within the project boundary; or

iii. In the absence of a public land survey, the location of the Federal lands according to the distances and directions from fixed monuments or physical features. When a Federal survey monument or a Federal benchmark will be destroyed or rendered unusable by the construction of project works, at least two permanent, marked witness monuments or benchmarks must be established at accessible points. The map shows the location (and elevation, for benchmarks) of the survey monument or benchmark which will be destroyed or rendered unusable, as well as of the witness monuments or benchmarks. Connecting courses and distances from the witness monuments or benchmarks to the original must be shown.

iv. The project location must include the most current information pertaining to affected Federal lands as described under 18CFR §4.81(b)(5).

(3) *Non-Federal lands.* For those lands within the project boundary not identified under paragraph (h)(3) of this section, the map must identify by legal subdivision:

i. Lands owned in fee by the applicant and lands that the applicant plans to acquire in fee; and

ii. Lands over which the applicant has acquired or plans to acquire rights to occupy and use other than fee title, including rights acquired by easement or lease.

1.0 PROJECT BOUNDARY MAP

The existing Exhibit G maps for the Kern River No. 3 Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 2290, are on file with the FERC and summarized in Table 1-1.

Table 1-1. Drawing Numbers and Sheet References for Maps

Drawing Number	Title
5225160-2	Sheet No. 3, Overview
5225161-2	Sheet No. 4
5225162-2	Sheet No. 5
5225163-2	Sheet No. 6
5225164-2	Sheet No. 7
5225165-2	Sheet No. 8
5225166-2	Sheet No. 9
5225167-2	Sheet No. 10
5225168-1	Sheet No. 11
5225170-2	Sheet No. 13
5225171-3	Sheet No. 14
5225172-3	Sheet No. 15
5225173-2	Sheet No. 16
5225174-2	Sheet No. 17

A review of the existing FERC Project Boundary against the latest data sources available for the Project is currently being conducted by SCE. Under SCE's proposed Project, the existing FERC Project Boundary will likely be modified to (1) include all lands necessary for operation and maintenance of the Project; (2) remove lands no longer necessary for operation and maintenance of the Project; and (3) correct known errors in the current Exhibit G for the Project. *These specific boundary modifications or corrections will be included in the revised Exhibit G as part of the Final License Application.*

2.0 FEDERAL LANDS

A calculation of the existing and proposed FERC Project Boundary acreage is outlined in Table 2-1 and will include updated information on proposed boundary changes in the FLA.

Table 2.1. Land Ownership within the Project Boundary

Ownership	Current Acreage	Proposed Acreage
U.S Forest Service	225.2	To be provided in the FLA
Southern California Edison	9.37	To be provided in the FLA

FLA = Final License Application

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)

EXHIBIT H: PROJECT NEED AND KEY INFORMATION
DRAFT LICENSE APPLICATION

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

July 2024

Page Intentionally Left Blank

SOUTHERN CALIFORNIA EDISON

Kern River No. 3 Hydroelectric Project
(FERC Project No. 2290)

Exhibit H: Project Need and Key Information
Draft License Application

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

July 2024

Support from:

ERM

Page Intentionally Left Blank

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ACRONYMS AND ABBREVIATIONS

CAISO	California Independent System Operator
CDFW	California Department of Fish and Wildlife
CEII	Critical Energy Infrastructure Information
CFR	Code of Federal Regulations
EAP	Emergency Action Plan
FERC	Federal Energy Regulatory Commission
KR3	Kern River No. 3
MIF	minimum instream flow
MW	megawatt
MWh	megawatt-hour
NFKR	North Fork Kern River
Project	Kern River No. 3 Hydroelectric Project (FERC Project No. 2290)
SCE	Southern California Edison Company

Page Intentionally Left Blank

Exhibit H: Project Need and Key Information

The Code of Federal Regulations, Title 18, Section 5.18(c) (revised March 8, 2024) describes information that an applicant for a new license (License for major project–existing dam) must include in Exhibit H of its license application.

Exhibit H is the project need and key information. The exhibit must contain:

(1) Information to be provided by an applicant for new license: Filling requirements –

i. **Information to be supplied by all applicants**. All Applicants for a new license under this part must file the following information with the Commission:

A. A discussion of the plans and ability of the applicant to operate and maintain the project in a manner most likely to provide efficient and reliable electric service, including efforts and plans to:

1) Increase capacity or generation at the project;

2) Coordinate the operation of the project with any upstream or downstream water resource projects; and;

3) Coordinate the operation of the project with the applicant's or other electrical systems to minimize the cost of production.

B. A discussion of the need of the applicant over the short and long term for the electricity generated by the project, including:

1) The reasonable costs and reasonable availability of alternative sources of power that would be needed by the applicant or its customers, including wholesale customers, if the applicant is not granted a license for the project;

2) A discussion of the increase in fuel, capital, and any other costs that would be incurred by the applicant or its customers to purchase or generate power necessary to replace the output of the licensed project, if the applicant is not granted a license for the project;

3) The effect of each alternative source of power on:

(i) The applicant's customers, including wholesale customers;

(ii) The applicant's operating and load characteristics; and

(iii) The communities served or to be served, including any reallocation of costs associated with the transfer of a license from the existing licensee.

C. The following data showing need and the reasonable cost and availability of alternative sources of power:

1) The average annual cost of the power produced by the project, including the basis for that calculation;

2) The projected resources required by the applicant to meet the applicant's capacity and energy requirements over the short and long term including:

(i) Energy and capacity resources, including the contributions from the applicant's generation, purchases, and load modification measures (such as conservation, if considered as a resource), as separate components of the total resources required;

(ii) A resource analysis, including a statement of system reserve margins to be maintained for energy and capacity; and

(iii) If load management measures are not viewed as resources, the effects of such measures on the projected capacity and energy requirements indicated separately;

(iv) For alternative sources of power, including generation of additional power at existing facilities, restarting deactivated units, the purchase of power off-system, the construction or purchase and operation of a new power plant, and load management measures such as conservation: The total annual cost of each alternative source of power to replace project power; the basis for the determination of projected annual cost; and a discussion of the relative merits of each alternative, including the issues of the period of availability and dependability of purchased power, average life of alternatives, relative equivalent availability of generating alternatives, and relative impacts on the applicant's power system reliability and other system operating characteristics; and the effect on the direct providers (and their immediate customers) of alternate sources of power.

D. If an applicant uses power for its own industrial facility and related operations, the effect of obtaining or losing electricity from the project on the operation and efficiency of such facility or related operations, its workers, and the related community.

E. If an applicant is an Indian tribe applying for a license for a project located on the tribal reservation, a statement of the need of such Indian tribe for electricity generated by the project to foster the purposes of the reservation.

F. A comparison of the impact on the operations and planning of the applicant's transmission system of receiving or not receiving the project license, including:

1) An analysis of the effects of any resulting redistribution of power flows on line loading (with respect to applicable thermal, voltage, or stability limits), line losses, and necessary new construction of transmission facilities or upgrading of existing facilities, together with the cost impact of these effects;

2) An analysis of the advantages that the applicant's transmission system would provide in the distribution of the project's power; and

3) Detailed single-line diagrams, including existing system facilities identified by name and circuit number, that show system transmission elements in relation to the project and other principal interconnected system elements. Power flow and loss data that represent system operating conditions may be appended if applicants believe such data would be useful to show that the operating impacts described would be beneficial.

G. If the applicant has plans to modify existing project facilities or operations, a statement of the need for, or usefulness of, the modifications, including at least a reconnaissance-level study of the effect and projected costs of the proposed plans and any alternate plans, which in conjunction with other developments in the area would conform with a comprehensive plan for improving or developing the waterway and for other beneficial public uses as defined in Section 10(a)(1) of the Federal Power Act.

H. If the applicant has no plans to modify existing project facilities or operations, at least a reconnaissance-level study to show that the project facilities or operations in conjunction with other developments in the area would conform with a comprehensive plan for improving or developing the waterway and for other beneficial public uses as defined in Section 10(a)(1) of the Federal Power Act.

I. A statement describing the applicant's financial and personnel resources to meet its obligations under a new license, including specific information to demonstrate that the applicant's personnel are adequate in number and training to operate and maintain the project in accordance with the provisions of the license.

J. If an applicant proposes to expand the project to encompass additional lands, a statement that the applicant has notified, by certified mail, property owners on the additional lands to be encompassed by the project and governmental agencies and subdivisions likely to be interested in or affected by the proposed expansion.

K. The applicant's electricity consumption efficiency improvement program, as defined under Section 10(a)(2)(C) of the Federal Power Act, including:

1) A statement of the applicant's record of encouraging or assisting its customers to conserve electricity and a description of its plans and capabilities for promoting electricity conservation by its customers; and

2) A statement describing the compliance of the applicant's energy conservation programs with any applicable regulatory requirements.

L. The names and mailing addresses of every Indian tribe with land on which any part of the proposed project would be located or which the applicant reasonably believes would otherwise be affected by the proposed project.

ii. **Information to be provided by an applicant licensee.** An existing licensee that applies for a new license must provide:

A. The information specified in paragraph (c)(1) of this section

B. A statement of measures taken or planned by the licensee to ensure safe management, operation, and maintenance of the project, including:

1) A description of existing and planned operation of the project during flood conditions;

2) A discussion of any warning devices used to ensure downstream public safety;

3) A discussion of any proposed changes to the operation of the project or downstream development that might affect the existing Emergency Action Plan, as described in subpart C of part 12 of this chapter, on file with the Commission;

4) A description of existing and planned monitoring devices to detect structural movement or stress, seepage, uplift, equipment failure, or water conduit failure, including a description of the maintenance and monitoring programs used or planned in conjunction with the devices; and

5) A discussion of the project's employee safety and public safety record, including the number of lost-time accidents involving employees and the record of injury or death to the public within the project boundary.

C. A description of the current operation of the project, including any constraints that might affect the manner in which the project is operated.

D. A discussion of the history of the project and record of programs to upgrade the operation and maintenance of the project.

E. A summary of any generation lost at the project over the last five years because of unscheduled outages, including the cause, duration, and corrective action taken.

F. A discussion of the licensee's record of compliance with the terms and conditions of the existing license, including a list of all incidents of noncompliance, their disposition, and any documentation relating to each incident.

G. A discussion of any actions taken by the existing licensee related to the project which affect the public.

H. A summary of the ownership and operating expenses that would be reduced if the project license were transferred from the existing licensee.

I. A statement of annual fees paid under part I of the Federal Power Act for the use of any Federal or Indian lands included within the project boundary.

iii. I**nformation to be provided by an applicant who is not an existing licensee.** An applicant that is not an existing licensee must provide:

A. The information specified in paragraph (c)(1) of this section.

B. A statement of the applicant's plans to manage, operate, and maintain the project safely, including:

1) A description of the differences between the operation and maintenance procedures planned by the applicant and the operation and maintenance procedures of the existing licensee;

2) A discussion of any measures proposed by the applicant to implement the existing licensee's Emergency Action Plan, as described in subpart C of part 12 of this chapter, and any proposed changes;

3) A description of the applicant's plans to continue safety monitoring of existing project instrumentation and any proposed changes; and

4) A statement indicating whether or not the applicant is requesting the licensee to provide transmission services under section 15(d) of the Federal Power Act.

(1) INFORMATION TO BE PROVIDED BY APPLICANT FOR NEW LICENSE: FILING REQUIREMENTS

(i) INFORMATION TO BE SUPPLIED BY ALL APPLICANTS

(A) EFFICIENCY AND RELIABILITY

Southern California Edison Company (SCE) has extensive experience operating and maintaining its substantial hydroelectric systems efficiently and reliably. SCE is responsible for generating, purchasing, transmitting, and distributing electricity to its customers. The Kern River No. 3 (KR3) Hydroelectric Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 2290, is operated in conjunction with SCE's other generating resources to meet the electricity demand of its customers throughout the state.

(1) Increased Capacity or Generation at the Project

SCE currently has no plans to increase capacity or generation at the Project.

(2) Coordinate the Operation of the Project with any Upstream or Downstream Water Resource Projects

There are no upstream or downstream water resource projects which are affected by KR3 Project operations.

The headwaters of the Kern River are in Sequoia National Park, and 95 percent of the Upper Kern River Subbasin is under federal ownership managed by the National Park Service and the Sequoia National Forest. There are no impoundments or diversions in the North Fork Kern River (NFKR) upstream of the Project. As KR3 is a run-of-river project with essentially no storage, any water diverted for power generation is returned to the NFKR approximately 16 miles downstream from its primary diversion point at Fairview Dam. In 1987, Congress designated 78.5 continuous miles of the NFKR from the Kern/Tulare County Line up to the headwaters in Sequoia National Park as "Wild and Scenic River" (Pub. L. No. 100-174, 101 Stat. 924 [1987]). Some portions of the water conveyance system and Project access roads fall within the wild and scenic river corridor quarter-mile buffer. However, the construction, original licensing, and initiation of operations (1921) pre-dates the enactment of the Wild and Scenic Rivers Act in 1968, as well as this designation of the NFKR in 1987. Moreover, Congress' wild and scenic designation of the NFKR provides:

> *"Nothing in this chapter shall affect the continued operation and maintenance of the existing diversion project, owned by Southern California Edison on the North Fork of the Kern River, including reconstruction or replacement of facilities to the same extent as existed on November 24, 1987*." 16 USC § 1274(a)(64)(C)

Project amenities south of the Cannell Creek-NFKR confluence, such as the pressure flume, forebay, penstocks, and KR3 Powerhouse are not located within the wild and scenic river corridor.

Approximately 10 miles downstream of the KR3 Powerhouse, the Kern River is impounded by the U.S. Army Corps of Engineers' Isabella Dam, which forms Isabella Lake. Isabella Dam was constructed in the Kern River channel at the confluence of the NFKR and South Fork Kern River in 1953 for downstream flood control.

(3) Coordinate the Operation of the Project with Other Electrical Systems to Minimize the Cost of Production

This Project operates in a run-of-river mode and is dependent on the amount of available water, which is subject to annual and seasonal variabilities and regulatory requirements. SCE optimizes the use of the Project to provide maximum generation during run-off and peak demand periods while balancing environmental commitments through compliance with license requirements.

(B) NEED FOR PROJECT

The Project's annual average generation over the term of the current license (1997 to 2023) is 118,497 megawatt-hours (MWh)—taking into account wet, dry, and average water years—while the 5-year average annual production—taking into account wet, dry, and average water years—is 123,505 MWh with an average capacity factor of 38 percent. Since its 1921 in-service date, this facility has been and continues to be included in SCE's resource plans, and accounts for 40.2 megawatts (MW) of the total installed SCE hydroelectric resources of 1,165 MW.

(1) Costs and Availability of Alternative Sources of Power

California has very aggressive decarbonization goals (90 percent carbon-free power by 2035 and 100 percent carbon-free power by 2045) and is adding a variety of zero-carbon resources to meet both clean energy goals and

increase reliability as electricity consumption has increased. Without this Project, equivalent new generation facilities would need to be built to meet these goals and targets. This Project provides energy, reliability capacity, and zero-carbon electricity. While the production of the facility varies by season and water year type, the daily production profile is consistent and does not depend on momentary weather patterns, as with wind and solar resources. The closest substitute for the Project would be another hydroelectric facility or new geothermal facility. The latest California Independent System Operator (CAISO) 20-Year Transmission Outlook includes the need for 5,000 MW of new, incremental clean firm[1], resources and the loss of facilities like KR3 could add to this incremental need[2]. A good reference for such costs is California's annual *Padilla Report* on costs of the Renewables Portfolio Standard Program (CPUC, 2024). Figure 5 of the 2024 report shows new geothermal and hydro at around $95 per MWh (CPUC, 2024).

(2) Increase in Fuel, Capital, and Other Costs

Since the Project would need to be replaced with a clean energy resource that meets California's carbon-neutrality goals and is Renewables Portfolio Standard eligible, there would likely not be an increase in fuel consumption. Another entity in California would need to build a new substitute facility at the costs referenced above in Section (i)(B)(1). Also, additional costs for the decommissioning of the Project as well as reconfiguring the transmission lines currently located in the KR3 Substation would need to occur. New extensions of transmission lines would need to occur to a nearby substation, which would also have to undergo a major upgrade to accommodate the additional lines and load. These would be substantial costs and a very lengthy process.

(3) Effect of Alternative Sources of Power

As covered in Section (i)(B)(1), the Project would need to be replaced by an equivalent zero-carbon resource and as such would incur the cost of that new facility and the likely consumption of greenfield for the new facility.

[1] Firm sources of power can generate 24 hours per day, 7 days per week, when needed.

[2] https://stakeholdercenter.caiso.com/InitiativeDocuments/Presentation-20YearTransmissionOutlook-Apr18-2024.pdf at Page 11

(i) Customers, Including Wholesale Customers

Alternative sources or power would have incremental costs to customers for the replacement of firm zero-emitting resources. As stated in Section (i)(B)(1) above, the *Padilla Report* puts these costs at around $95 per MWh.

(ii) Operating and Load Characteristics

Alternative clean, firm sources of power would have negligible impact on operating and load characteristics. However, the KR3 Substation provides the primary interconnection and isolation point for four transmission lines in the area, which helps to balance load and provide improved reliability. The impact of replacing these functions is described further below in Section (i)(F)(1).

(iii) Communities Served or to be Served

Alternative sources of clean, firm power would come at additional cost and such new facilities may have local environmental impacts in other communities.

(C) NEED, REASONABLE COST, AND AVAILABILITY OF ALTERNATIVE SOURCES OF POWER

(1) Average Annual Cost of Power Produced by the Project

The Project's estimated annual operating expenses and capital costs are discussed in Exhibit D.

(2) The Projected Resources Required by SCE to Meet Capacity and Energy Requirements

(i) Energy and Capacity Resources as Separate Components of Total Resources Required

In 2023, the SCE system had a 12.6-gigawatt capacity procurement requirement and a 51.4 terawatt-hour energy procurement requirement. Of the 12.6-gigawatt capacity procurement requirement, 9.36 MW was due to the required planning reserve margin. KR3 provided 9.34 MW "net qualifying capacity" during third quarter 2023. The actual capacity and energy requirement were met by a variety of resources.

(ii) Resource Analysis and System Reserve Margins

California maintains a minimum 15 to 17 percent capacity planning reserve margin. SCE meets its capacity and energy requirements through a relatively small “Utility Owned” portfolio, and the rest of the need is filled through various procurement processes including demand response and energy efficiency procurement. Of the power delivered to customers in 2022, 33.2 percent was from eligible renewables, 3.4 percent large hydro, 27.4 percent natural gas, 8.3 percent nuclear, and 30.4 percent from unspecified market transactions. Over the term of the new license, some of these sources of power will be phased out to meet California’s carbon-neutrality goals by 2045.

(iii) Effects of Efficiency and Load Management Measures

SCE has robust demand response, energy efficiency, and customer self-generation programs. Some of these programs are “load modifiers” and others are supply resources.

(iv) Cost and Merits of Project Alternatives

Energy generated by the KR3 Project displaces energy that would otherwise be generated by gas-fired units in the short-term and reduces the need for new clean, firm resources in the longer-term. Currently, aside from power generated by its own sources, SCE purchases the power needed to serve its customers from qualifying facilities, independent power producers, CAISO, the California Department of Water Resources (under contracts with other third parties), and other utilities. If the KR3 Project were to cease operations, new, incremental clean, firm resources would need to be built to replace the characteristics of KR3. In addition, SCE would have to reconfigure transmission lines (further detailed below in Section (i)(F)(1)), in conjunction with the substantial costs and efforts of decommissioning of the Project. Section (i)(B)(1) above has additional information on this topic.

(D) EFFECT ON INDUSTRIAL FACILITIES

SCE does not use the power associated with the Project for its own industrial facility or related operations, except for local operational support (e.g., station light and power).

(E) TRIBAL NEED FOR THE PROJECT ON A RESERVATION

This information is not applicable, as SCE is not a Tribe.

(F) EFFECT ON TRANSMISSION SYSTEM

(1) Redistribution of Power Flows and Cost Impacts

There are no transmission lines within SCE's transmission system that are regulated under the Project's license. However, electricity produced by the KR3 Powerhouse enters SCE's bulk electric grid on the 66-kilovolt bus at the KR3 Substation located inside the KR3 Powerhouse. This includes: the KR3–Kernville, Vestal–KR3, Vestal–Glennville–Greenhorn–KR3, and Isabella–KR3–Lakegen–Weldon 66-kilovolt transmission lines (all non-Project lines).

The KR3 Powerhouse station is an important main interconnection and isolation point for the four lines listed above. The Powerhouse facility provides great flexibility on bringing power in and out of the area (including bringing carbon-free wind power from Tehachapi into the area from the Monolith Substation). Losing the station would drastically reduce reliability in the area and would require several system upgrades and reconfigurations to ensure reliable power. All four of the 66-kilovolt transmission lines would need to be redirected to the Kernville Substation (requiring SCE to construct new transmission line corridors on new rights-of-ways) and the Kernville Substation would have to be upgraded to provide the functions and capabilities that already exist in the KR3 Powerhouse.

The local load SCE serves includes the communities of Kernville, Wofford Heights, Weldon, and Isabella, California. Any excess generation is transmitted to Vestal Substation and serves two customer substations along the line back to Vestal: Glennville and Greenhorn. Under conditions when the Project is not generating an excess of local load/demand, the difference would be served from the Vestal Substation. This condition exists during low water years.

(2) Advantages of Transmission System

As stated above, there are no transmission lines within SCE's transmission system that are regulated under the Project's license. However, SCE's interconnection with the broader

transmission system occurs within the KR3 Powerhouse and provides the distribution of power to local communities.

(3) Single-Line Diagrams

A single-line design drawing of the Project showing system transmission (not regulated under the Project) is considered Critical Energy Infrastructure Information (CEII) under FERC's CEII regulations at 18 CFR § 388.113. This document will be filed as an appendix to this Exhibit H in the Final License Application, and SCE will request that FERC maintain in a non-public file and withheld from public disclosure per applicable regulations.

(G) STATEMENT OF NEED FOR MODIFICATIONS

SCE has no plans to modify existing Project facilities or operations to increase generation capacity.

(H) CONFORMANCE WITH COMPREHENSIVE PLANS

The Project facilities and operations, including mitigation measures proposed in Exhibit E, are best adapted to a comprehensive plan for the Kern River based on a balance between environmental protection, water supply, recreation, and the commerce and utilization of a low-cost, non-polluting source of energy. The Project, as proposed in this Application for New License, considers all existing and potential uses of the Kern River, including recreation, economically viable hydroelectric generation, energy conservation in the context of the national interests in non-polluting and non-fossil fuel alternatives, public safety, and various aspects of environmental protection, including the prevention of significant detrimental impacts to fish and wildlife resources.

In addition, identification and review of the potentially relevant comprehensive plans indicate that relicensing of the Project will not conflict with the goals or objectives of any such plans. Accordingly, the Project adopts measures to ensure public safety, protect the environment, enhance recreation opportunities, and operate for maximum efficiency and reliability, and thus provide the best possible overall mix of benefits.

(I) FINANCIAL AND PERSONNEL RESOURCES

SCE's source and extent of financing and annual revenues are sufficient to meet the continuing operation and maintenance needs of the Project. For specific financial information, refer to FERC Form No. 1, which is provided to FERC annually.

SCE has personnel resources necessary to meet license obligations for the Project. A variety of training resources and approaches are used, including classroom training, workshops, textbooks, on-the-job training, web-based training, and safety training for all personnel. Safety training is conducted through a combination of regularly scheduled monthly meetings, crew meetings, on-the-job training, and special programs, as needed. The training covers SCE's Occupational Safety, Health, and Fire Prevention rules and hazardous materials handling, as well as programs mandated by governmental agencies such as the California Occupational Safety and Health Division, FERC standards of conduct, as well as training related to compliance with FERC license articles, and environmental and cultural protection programs. Many of these compliance training courses are provided annually.

Job knowledge and skills training programs are available for management, supervisor/administrative, clerical, and craft employees with apprenticeship training programs established for selected job classifications. Individual training needs are evaluated continually, and employees are subsequently scheduled into existing programs offered within SCE or into appropriate outside training programs.

Employees are also encouraged to further their education through the educational assistance program, which provides financial assistance for eligible employees who participate in job-related courses, correspondence programs, and degree and/or certificate programs sponsored by accredited institutions.

(J) NOTIFICATION OF PROPOSED EXPANSION OF PROJECT LANDS

SCE is evaluating the current FERC Project Boundary around existing Project facilities to include all lands necessary for operation and maintenance purposes. Notification of proposed expansion of Project lands will occur concurrently with the filing of the Final License Application, as appropriate.

(K) ELECTRICITY CONSUMPTION EFFICIENCY IMPROVEMENT PROGRAM

(1) Energy and Electrical Conservation

SCE is actively engaged in energy efficiency, conservation, and environmentally beneficial programs. Successful program offerings include customer incentives, online tools, information and education, and cooperative effort with third-party contractors and other utilities. The California Public Utilities Commission ordered the California Investor-Owned

Utilities to procure energy efficiency programs that are designed and implemented by third parties. As a result, each Investor-Owned Utility entered contracts with certain vendors, who were selected through competitive solicitation processes. Additionally, customers now receive energy efficiency services, products, compensation, and/or installation directly or indirectly from these third parties. Example programs include Instant Rebates, Comfortably California, Illuminate California, Statewide Midstream Water Heating Program, and Willdan Energy Efficiency Programs targeting commercial, industrial, and multi-family customers.

SCE's website describes a variety of products to help customers manage energy use via the web, mobile app, or sensors. A suite of online tools gives customers the ability to track energy costs and analyze usage. In addition, other information is disseminated to customers, and energy classes and workshops are offered at Energy Education Centers in Irwindale and Tulare, California. Detailed information regarding energy efficiency and conservation programs is provided on SCE's website at www.sce.com.

(2) Compliance of Energy Conservation Programs

Regulatory compliance and reporting of SCE's energy efficiency programs is tracked through collection, reporting, and verification of information on the programs' performances. The results of the performances of the programs are filed annually with the California Public Utilities Commission.

(L) LIST OF INDIAN TRIBES AND ADDRESSES

Table (i)(L)-1 includes Tribal contacts which SCE believes potentially would be affected by the Project. No Project facilities are located on any Tribal lands:

Table (i)(L)-1. Indian Tribal Contacts

Big Pine Paiute Tribe of Owens Valley Cheyenne Stone – Chairperson P.O. Box 700 Big Pine, CA 93513 Cheyenne.stone@bigpinepaiute.org	Kitanemuk and Yowlumne Tejon Indians Delia Dominguez – Chairperson 115 Radio Street Bakersfield, CA 93305 2deedominguez@gmail.com

Big Pine Paiute Tribe of Owens Valley Jacqueline "Danelle" Gutierrez – THPO P.O. Box 700 Big Pine, CA 93513 d.gutierrez@bigpinepaiute.org	Lone Pine Paiute-Shoshone Tribe Thomas Swab – Chairperson P.O. Box 747 Lone Pine, CA 93545 chair@lppsr.org
Big Pine Paiute Tribe of Owens Valley Sally Manning - Environmental Director P.O. Box 700 Big Pine, CA 93513 s.manning@bigpinepaiute.org	Lone Pine Paiute-Shoshone Tribe Kathy Bancroft – THPO P.O. Box 40 Lone Pine, CA 93545 kathybancroft@gmail.com
Chumash Council of Bakersfield Julio Quair - Chairperson 729 Texas Street Bakersfield, CA 93307 chumashtribe@sbcglobal.net	Santa Rosa Rancheria Tachi Yokut Leo Sisco – Chairperson P.O. Box 8 Leemore, CA 93245
Fort Independence Community of Paiute Indians Carl Dahlberg – Chairman P.O. Box 67 Independence, CA 93526 carl@fortindependence.com	Santa Rosa Rancheria Tachi Yokut Shana Powers P.O. Box 8 Leemore, CA 93245 spowers@tachi-yokut-nsn.gov
Fort Independence Community of Paiute Indians Sean Scruggs – THPO P.O. Box 67 Independence, CA 93526 thpo@fortindependence.com falconkeeper22@gmail.com	Tejon Indian Tribe Octavio Escobedo – Chairperson P.O. Box 640 Arvin, CA 93203 oescobedo@tejonindiantribe-nsn.gov
Kawaiisu Band of Kern Valley Indians Cathy Day P.O. Box 1210 Weldon, CA 93283	Tübatulabal Tribe of Kern Valley Robert Gomez - Chairman P.O. Box 226 Lake Isabella, CA 93240 rgomez@tubatulabal.org
Kawaiisu Tribe David Laughing Horse Robinson - Chairman P.O. Box 1547 Kernville, CA 93238 horse.robinson@gmail.com	Tübatulabal Tribe Darrel Garcia-Vice Chair P.O. 226 Lake Isabella, CA 93240 dgarcia@tubatulabal.org
Kern Valley Indian Community Robert Robinson P.O. Box 1010 Lake Isabella, CA 93240 bbutterbredt@gmail.com	Tule River Indian Tribe Kerri Vera - Environmental Coordinator P.O. Box 589 Porterville, CA 93258 tuleriverenv@yahoo.com
Kern Valley Indian Community Julie Tunner – Secretary P. O. Box 1010 Lake Isabella, CA 93240 administrator@kawaiisu.org	Tule River Indian Tribe Neil Peyron – Chairman P.O. Box 589 Porterville, CA 93258 neil.peyron@tulerivertribe-nsn.gov

Kern Valley Indian Community Brandy Kendricks 30741 Foxridge court Tehachapi, CA 93561 krazykendricks@hotmail.com	Tule River Indian Tribe of California Felix Christman, THPO 340 N. Reservation Road Porterville, CA 93257 Tel: 559-719-0420 Email: felix.christman@tulerivertribe-nsn.gov
Wuksache Indian Tribe/Eshom Valley Band Kenneth Woodrow – Chairperson 1179 Rock Haven Court Salinas, CA 93906 kwood8934@aol.com	

(ii) INFORMATION TO BE PROVIDED BY AN APPLICANT LICENSEE. AN EXISTING LICENSEE THAT APPLIES FOR A NEW LICENSE MUST PROVIDE:

(A) INFORMATION SPECIFIED IN PARAGRAPH (C)(1) OF THIS SECTION

As required by § 5.18(c)(1)(ii)(A) of Title 18 of the Code of Regulations, this Exhibit H contains the information specified in § 5.18(c)(1) of Title 18 of the Code of Federal Regulations. This information appears in Section (1)(i) of this Exhibit H, above.

(B) SAFE MANAGEMENT, OPERATION, AND MAINTENANCE

(1) Project Operation During Flood

To ensure safe management, operation, and maintenance of the Project during flood and high-flow events, Station Order Binders are maintained for the KR3 Powerhouse and at Fairview Dam. These documents include individual site-specific plans (Station Orders) outlining actions and considerations for high water flow events, including contingency planning and response to both planned and unplanned Project high water flow events.

During periods of high flow, various measures are implemented to prevent water damage to infrastructure and equipment, including:

- SCE personnel are dispatched to the Fairview Dam intake area to keep the grid sections clean of debris, and during flood conditions, it is probable that the intake would be manned by several employees, if conditions were deemed safe.
- Fairview Dam intake and flume gates leading into the sandbox and flowline are turned out.

- KR3 Powerhouse taken offline before water in the NFKR crests at a 10-foot elevation over the Fairview Dam spillway.
- Areas prone to flooding are sand bagged.
- Storm doors are closed.
- Sump pumps are checked/installed.

(2) Warning Devices for Downstream Safety

The Project has limited storage capacity and is operated in a run-of-river mode. The Project is classified as a “low hazard” since no reasonably foreseeable Project emergency would endanger life, health, or property. Without reservoirs to create a flooding threat as a result of a dam break, public safety measures for the Project include:

- Signage to warn the public of hazardous areas and potentially dangerous conditions (e.g., signs alerting public for the potential of unscheduled water releases made at the Cannel Creek siphon area and forebay area spillway channels).
- Physical restraining devices to restrict public access to hazardous areas (e.g., fences around the KR3 Powerhouse and switchyards; gates limiting access onto Project facilities; grates and debris catchers on intake structures; fences restricting access to open-topped segments of the water conveyance system).
- River safety measures around Fairview Dam, including a horizontal safety cable (grab line) situated upstream of the dam and signage alerting boaters to exit the river prior to the dam.

These public safety features are graphically depicted and are on file with FERC (dated November 29, 2016; FERC Accession No. 20161130-5049).

(3) Changes Affecting the Emergency Action Plan

Since April 1981, SCE has been exempted from filing an EAP for the Project diversions since it demonstrated that no reasonably foreseeable Project emergency would endanger life, health, or property.

Annual Verification and Request for Continued EAP Exemption was filed with FERC September 29, 2023.

As required in 18 CFR § 12.21(c)(1), SCE continues to review the conditions that allow them the exemption by conducting field reconnaissance of areas downstream of all exempt diversions to confirm that no new downstream development has occurred. During the current license term, SCE has filed annual requests with FERC for a continuation of the exemption from EAP requirements for the Project since no downstream hazard exists should any of the diversions fail. To date, FERC has agreed with SCE's annual requests and determined that an EAP is not required for the Project. Per 18 CFR § 12.21(c)(2), if there are any changes to the Project that might cause an emergency endangering life, health, or property, SCE would promptly notify FERC to determine the necessity to prepare an EAP.

(4) Monitoring Devices

The Project includes the following monitoring devices to detect equipment failure and water conduit failure, including:

- The water in the flowline is monitored at three locations: near the intake at Fairview Dam, Cannel Creek siphon, and at the KR3 Powerhouse. Any significant change in flow is noted by the station operator as a possible failure in the flowline. A failure in the flowline would also be indicated by a rapid decrease in generation.

- The flow near the intake is measured by a telemark, a device that transmits a series of tones over a phone line that is proportional to flow. It is activated periodically by an electrical signal from the operator. A telemeter on the dam also provides monitoring of the depth of water behind the dam.

- A non-recording flow meter at the KR3 Powerhouse continuously measures the flow in each of the penstocks.

Operators are dispatched to investigate and respond to alarms, as needed. SCE inspects all monitoring devices as part of routine operation and maintenance activities. If issues are identified, they are corrected as soon as discovered to ensure safe and reliable operation.

(5) Employee and Public Safety

Three lost-time accidents have been recorded at the Project in the last 10 years, shown in Table (ii)(B)-1.

Table (ii)(B)-1. Lost-Time Accidents (2013–2023)

Date	Type of Lost-Time Injury
12/6/2022	Back strain
7/20/2022	Heat exposure
7/6/2020	Vehicular accident

One fatality occurred within the FERC Project Boundary on December 12, 2006. While the incident was not Project-related, it occurred on SCE-owned lands. SCE promptly notified FERC of this incident on December 20, 2006.

(C) CURRENT OPERATIONS AND CONSTRAINTS

The Project is operated in a run-of-river mode. The primary Project dam (Fairview Dam) and two smaller diversions (Salmon and Corral Creek Diversion) direct water into the Project's flowline for power generation. The diversion alters the volume of water in the rivers downstream of the Project diversions, with minimal to no change in the annual seasonal flow pattern. Refer to Exhibit B for a complete description of current Project operations.

The only significant operational constraints on the Project are instream flow release requirements and severe drought conditions, which could cause the generators to be temporarily shut down due to insufficient flows in the NFKR.

(D) PROJECT HISTORY AND UPGRADES

Construction of the Fairview Dam and intake, water conveyance system, two smaller diversion dams, forebay, penstocks, and KR3 Powerhouse occurred between 1901 and 1921. Project operations commenced in April 1921.

Although the Project has remained virtually the same since being placed in service, there have been upgrades to improve system relay protection, voltage regulation, and metering. A summary of Project infrastructure upgrades that have occurred since the start of operations (not including routine maintenance activities or unit repairs/rebuilds) is provided in Table (ii)(D)-1.

Table (ii)(D)-1. Summary of Project Infrastructure Upgrades

1930s	Replacement of timber flume pipeline at Salmon Creek Diversion with a steel pipe
1940s	Replacement of timber flume pipeline at Corral Creek Diversion with a steel pipe
1960s	Construction of a fish ladder at Fairview Dam
1997	Decommissioning of the fish ladder at Fairview Dam
2005	Calibrated flume construction/installation at Fairview Dam
September 2010–February 2011	Plant Automation and upgrades
Aug 2013–December 2014	Resurfacing Fairview Dam; upgrades to monitoring equipment in the sandbox; repair and replacement of the intake housing; and flowline repairs

(E) UNSCHEDULED OUTAGES

Five years of unscheduled (forced) outages, 2019 to 2023 inclusive, are listed below in Table (ii)(E)-1. Unplanned (forced) outages were caused by: (1) equipment malfunction; (2) periods of low inflow where SCE is required to meet minimum instream flow (MIF) requirements in the Fairview Dam Bypass Reach[3] and there was insufficient water remaining to operate one or both of the units; (3) or when SCE elected to pause generation at one or both units due to increased sediment loads in the NFKR upstream of the Project to reduce undue wear on the water conveyance system and units.

Table (ii)(E)-1. Unscheduled (Forced) Outages (2019–2023)

Unit	Outage Start Date/Time	Outage End Date/Time	Outage Reason/Type	Corrective Action
Unit 2	1/1/2019; 0:00	2/2/2019; 8:30	Insufficient inflows	N/A
Units 1 and 2	7/25/2019; 7:10	7/26/2019; 16:00	Turbid water	N/A
Unit 2	9/16/2019: 16:30	11/7/2019; 13:50	Insufficient inflows	N/A
Unit 1	1/1/2021; 12:00	1/31/2021; 13:42	Insufficient inflows	N/A
Unit 1	2/11/2021; 16:05	5/2/2021 8:57	Insufficient inflows	N/A
Units 1 and 2	6/22/2022; 6:18	6/22/2022; 23:00	Turbid Water and Equipment protection due to lightening in area	N/A
Unit 1	7/21/2022; 8:00	7/27/2022; 8:30	Repair Unit hydraulic jacks	Repair equipment

[3] The approximately 16-mile bypass reach of the North Fork Kern River between Fairview Dam and the Kern River No. 3 Powerhouse tailrace.

Unit	Outage Start Date/Time	Outage End Date/Time	Outage Reason/Type	Corrective Action
Unit 2	11/18/2022; 10:15	12/31/2022; 11:59	Equipment malfunction; order replacement (Unit 1 offline for scheduled maintenance)	Repair equipment
Unit 2	1/1/2023; 4:30	1/6/2023; 1:46	Turbid water (Unit 1 offline for scheduled maintenance)	N/A
Unit 2	1/9/2023; 12:28	1/11/2023; 17:21	Turbid water (Unit 1 offline for scheduled maintenance)	N/A
Unit 2	1/12/2023; 16:15	1/21/2023; 23:59	Turbine bearings with high temperature	Mechanical Crew troubleshoot oil flow and high temp issue
Units 1 and 2	3/9/2023; 16:15	3/31/2023; 10:30	Turbid water	N/A
Units 1 and 2	4/28/2023; 23:58	5/11/2023; 8:52	Turbid water	N/A
Units 1 and 2	6/16/2023; 21:39	6/26/2023; 13:37	Turbid water	N/A
Units 1 and 2	8/20/2023; 17:00	8/24/2023; 13:52	Turbid water	N/A

N/A = not applicable

(F) Record of Compliance with Terms and Conditions of Existing License

(1) Inspections

Over the term of the existing license, SCE has participated in FERC environmental inspections, operations inspections, and dam safety/operation inspections. Any subsequent FERC directives and items identified during the inspections as requiring attention have been timely addressed by SCE and written documentation filed with FERC.

(2) Incident Reporting

SCE is responsible for complying with all requirements of the FERC license, all subsequent orders and amendments issued to date, findings of FERC inspections, findings of other inspections under 18 CFR § 12, as well as other FERC directives, information requests, or inquiries.

SCE has had no recurring situations of non-compliance with the existing license terms and conditions. In the event of a deviation in the existing license, SCE notifies FERC and provides a written report, including proposed corrective actions, if appropriate. FERC conducts its own analysis and determines if the deviation is considered a formal non-

compliance event. SCE has not been cited for a license violation during the current license term and has never received a Notice of Violation from FERC related to the Project.

SCE's compliance history related to inspections, incident reports, and temporary flow modifications is summarized below.

(3) Temporary Flow Modifications

SCE is required to maintain continuous minimum flows, or natural flows, whichever is less, as measured by SCE gage 401 below Fairview Dam. Depending upon the time of year, MIF releases are specified in License Article 406 and Forest Service 4(e) Condition No. 4 (77 FERC ¶ 61,313). SCE is also required to maintain MIFs below Salmon Creek and Corral Creek Diversions per Forest Service 4(e) Condition No. 4 (107 FERC ¶ 62,136).

Additionally, SCE provides 35 cubic feet per second year-round to California Department of Fish and Wildlife's (CDFW) Kern River Planting Base Hatchery via the Project water conveyance system and the KR3 Powerhouse tailrace. If the natural flow is not available to meet both the hatchery needs and the MIF, the hatchery flows takes precedence over the instream flows below the dam (77 FERC ¶ 61,313).

Article 406 of the license also provides that the flow for the hatchery may be temporarily modified if required by operating emergencies beyond the control of the licensee, and for short periods, upon agreement between the licensee, the Forest Service, Sequoia National Forest, and the CDFW. If the flow is so modified, the licensee shall notify the Commission as soon as possible, but no later than 10 days after each such incident. Furthermore, if operations at the hatchery change, CDFW may specify that the 35 cubic feet per second not be diverted at Fairview Dam (77 FERC ¶ 61,313 and 107 FERC ¶ 62,136). On January 10, 2022, CDFW informed FERC and SCE that the pipeline serving the hatchery would be inoperable while repairs and improvements to the hatchery were underway. Therefore, SCE requested FERC's approval for a variance to continue the modified hatchery flows beyond the initial 3 weeks. On July 27, 2023, FERC granted a temporary variance to the hatchery flow for a period of 2 years, or whenever the hatchery pipeline becomes operable, whichever occurs first (184 FERC ¶ 61,051).

(G) ACTIONS RELATED TO THE PROJECT THAT MAY AFFECT THE PUBLIC

SCE has various public safety programs and measures, including signage, physical restraining devices, flowline safety measures, and river safety measures (as described in Section (ii)(A)(2)).

(H) SUMMARY OF OWNERSHIP AND OPERATING EXPENSES

If the Project license were transferred, annual ownership and operating costs that would be reduced include those listed in Table (ii)(H)-1.

Table (ii)(H)-1. Estimated Reduction for Annual Ownership and Operating Costs, Associated with Project Transfer

Component	Amount
Operation and maintenance costs (based on 5-year average, 2019–2023)	$3,757,052
Depreciation (2023)	$1,444,239
Property Taxes (2023)	$217,455
Administrative & general expenses (calculated from 2023 Net Book Value)	$289,086
Total	**$5,707,832**

(I) ANNUAL FEES FOR FEDERAL OR NATIVE AMERICAN LANDS

The annual fees for FERC Bill Year 2023, paid under Part I of the Federal Power Act were $15,661.

No Indian lands are included within the FERC Project Boundary.

(iii) INFORMATION TO BE PROVIDED BY AN APPLICANT WHO IS NOT AN EXISTING LICENSEE. AN APPLICANT THAT IS NOT AN EXISTING LICENSEE MUST PROVIDE:

SCE is an existing licensee; therefore, this is not applicable.

(2) REFERENCES

CPUC (California Public Utilities Commission). 2024. *2024 Padilla Report: Costs and Cost Savings for the RPS Program*. Accessed: May 2024. Retrieved from: https://www.cpuc.ca.gov/-/media/cpuc-website/industries-and-topics/documents/energy/rps/2024/2024-padilla-reportvfinal.pdf