SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
(FERC Project No. 1389)

DRAFT LICENSE APPLICATION

VOLUME I: INITIAL STATEMENT, GENERAL CONTENT REQUIREMENTS, EXHIBITS A, B, C, D, G, H

SOUTHERN CALIFORNIA EDISON®
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August 2024

SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
FERC Project No. 1389

Draft License Application

Volume I: Initial Statement, General Content Requirements, Exhibits A, B, C, D, G, H

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

August 2024

Support from:

Stantec

LIST OF EXHIBITS

SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
(FERC Project No. 1389)

Draft License Application
Initial Statement

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

August 2024

SOUTHERN CALIFORNIA EDISON®
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Before the
United States of America
Federal Energy Regulatory Commission

Rush Creek Hydroelectric Project
FERC Project No. 1389

Application for New License for Major Project–Existing Dam

Initial Statement

Section 5.18(a)(5)(iii) of Title 18 of the Code of Federal Regulations (CFR) (4-1-2023 Edition) 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.

(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 or local laws or a municipal charter, or, if such laws or documents are not clear, 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 Rush Creek Project (Project), as described in the attached exhibits.

(2) The location of the Project is:

State: California
County: Mono
Township or nearby town: June Lake
Stream or other body of water: Rush Creek

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

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 are:

Wayne P. Allen
Principal Manager, Regulatory Support Services
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770
Phone: (626) 302-9741
E-mail: wayne.allen@sce.com

Matthew Woodhall
Project Lead, Regulatory Support Services
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770
Phone: (626) 302-9596
E-mail: matthew.woodhall@sce.com

Kelly Henderson
Senior Attorney
Southern California Edison Company
2244 Walnut Grove Avenue
Rosemead, CA 91770
Phone: (626) 302-4411
E-mail: kelly.henderson@sce.com

(4) 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 United States Code (USC) 796. SCE is claiming preference as the incumbent licensee under Section 15(a)(2) of the FPA, 16 USC 808(a)(2).

(5)

(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* – regulates the federally required filing of applications for water quality certification with the State Water Board, pursuant to Section 401 of the federal Clean Water Act, 33 USC § 1341.

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

(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.

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

(6) SCE is the owner and existing licensee of the Project. There are no federal facilities associated with the Rush Creek Project.

SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
(FERC Project No. 1389)

Draft License Application
General Content Requirements

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

August 2024

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Section 5.18 General Content Requirements

Section 5.18(a) of Title 18 of the Code of Federal Regulations (CFR) (4-1-2023 Edition) describes general content requirements that an applicant for a new license (License for Major Project – Existing Dam) must include in 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 therefor.

(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)

(5) Contain the information and documents prescribed in the following Sections of this chapter, except as provided in paragraph (b) of this Section, according to the type of application:

(i) License for a minor water power project and a major water power project 10 MW or less: § 4.61 of this chapter (General instructions, initial statement, and Exhibits A, F, and G);

(ii) License for a major unconstructed project and a major modified project: § 4.41 of this chapter (General instructions, initial statement, Exhibits A, B, C, D, F, and G);

(iii) License for a major project–existing dam: § 4.51 of this chapter (General instructions, initial statement, Exhibits A, B, C, D, F, and G); or

(iv) License for a project located at a new dam or diversion where the applicant seeks PURPA benefits: § 292.208 of this chapter.

(1) SCE holds all the proprietary rights necessary to construct, operate, and maintain the Rush Creek Project.

(2)

(i) All Project boundaries and facilities are located in Mono County. The principal administrative office location is:

Mono County
Mono County Administration
1290 Tavern Road
Mammoth Lakes, CA 93546

There are no federal facilities used by the Rush Creek Project.

(ii) The Project is not located within the city limits or boundary of any incorporated community. There are no cities, towns, or political subdivisions with a population of 5,000 or more people within 15 miles of any Project dam. No federal facility is used or is proposed to be used by the Project.

(iii) There are no irrigation districts, drainage districts, or other similar special purpose political subdivisions located within the Project area, or which own, operate, or maintain any Project facilities. No federal facility is used or is proposed to be used by the Project.

(iv) Other political subdivisions in the general area of the Project that the Applicant believes would be interested in or affected by this application include Los Angeles Department of Water and Power, and the June Lake Public Utility District. Their addresses are as follows:

Los Angeles Department of Water and Power
1394 S. Sepulveda
Los Angeles, CA 90025

June Lake Public Utility District
2380 CA-158
June Lake, CA 93529

(v) The following Native American tribes may be affected by the Project:

American Indian Council of Mariposa County
PO Box 186
Mariposa, CA 95338

Antelope Valley Indian Community, Coville Paiute Tribe
PO Box 47
Coleville, CA 96107

Big Pine Paiute Tribe of Owens Valley
PO Box 700
Big Pine, CA 93513

Bishop Paiute Tribe
50 Tu-Su Lane
Bishop, CA 93514

Bridgeport Indian Colony
PO Box 37
Bridgeport, CA 93517

Fort Independence Indian Community of Paiute Indians
PO Box 67
Independence, CA 93526

Lone Pine Paiute-Shoshone Tribe
PO Box 747
Lone Pine, CA 93545

Mono Lake Kukzadika'a Tribe
PO Box 177
Big Pine, CA 93513

North Fork Mono Tribe of California
13396 Tollhouse Road
Clovis, CA 93619

North Fork Rancheria of Mono Indians
PO Box 929
North Fork, CA 93643

Timbisha Shoshone Tribe
621 W. Line Street, Suite 109
Bishop, CA 93514

Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California
PO Box 669
Tuolumne, CA 95379

Utu Gwaitu Paiute Tribe of the Benton Paiute Reservation, California
25669 Highway 6
Benton, CA 93512

Walker River Paiute Tribe
PO Box 220
Schurz, NV 89427

Yerington Paiute Tribe of the Yerington Colony and Campbell Ranch
171 Campbell Lane
Yerington, NV 89447

Yosemite-Mono Lake Paiute Indian Community
PO Box 157
Lee Vining, CA 93541

Washoe Tribe of Nevada and California
919 U.S. Highway 395 N
Gardnerville, NV 89410

(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 § 5.18(a)(5), this Application contains the information and documents prescribed for a license for major project, existing dam, as outlined in § 4.51.

SCE is not seeking benefits under the Public Utility Regulatory Policies Act.

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

SUBSCRIPTION

This Application for New License for the Rush Creek Hydroelectric Project, FERC Project No. 1389, is executed in the State of California, County of Los Angeles, by Wayne P. Allen, who, being duly sworn, deposes and says that the contents of this application are true to the best of his knowledge or belief and that they are authorized to execute this application on behalf of Southern California Edison. The undersigned has signed the application this __ day of January 2025.

SOUTHERN CALIFORNIA EDISON COMPANY

By: _____

WAYNE P. ALLEN
Principal Manager
Regulatory Support Services

VERIFICATION

Subscribed and sworn to before me, a Notary Public of the State of California, this __ day of January 2025.

_____

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

My commission expires _____

(Notary Seal)

SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
(FERC Project No. 1389)

Draft License Application
EXHIBIT A: Description of the Project

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

August 2024

SOUTHERN CALIFORNIA EDISON®
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Exhibit A: Description of Project

Section 5.18(a)(5)(iii) of Title 18 of the Code of Federal Regulations 4-1-2023 Edition) 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 United States 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 each 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.

Southern California Edison Company (SCE) owns and operates the Rush Creek Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 1389. The 13.01-megawatt project includes three dams and associated reservoirs – Rush Meadows Dam (Waugh Lake), Gem Dam (Gem Lake), and Agnew Dam (Agnew Lake); a water conveyance system; the Rush Creek Powerhouse; and ancillary facilities.

The Project is located on Rush Creek on the eastern slope of the Sierra Nevada in Mono County, California. The Project is situated approximately 4 miles southwest of the unincorporated community of June Lake and approximately 14 miles upstream from Mono Lake. Most of the Project facilities occupy federal lands within the Inyo National Forest, which is under the jurisdiction of the United States Forest Service. The exception is an area around the Rush Creek Powerhouse, which is located on SCE-owned lands.

Some of the Project's physical infrastructure occupy federal lands within Ansel Adams Wilderness Area, designated by Congress as part of the Wilderness Act of 1964 (Public Law No. 88-577; 16 U.S.C. § 1132 note) and later as part of the California Wilderness Act of 1984 (Public Law No. 98-425; 16 U.S.C. § 1132 note). However, this infrastructure and FERC's licensing of this infrastructure as Project works predate the establishment of this wilderness area.

Map A-1 depicts the location of Project facilities, land ownership, and administrative responsibilities in the vicinity of the Project.

This Exhibit A describes existing Project facilities (from upstream to downstream) including dams and lakes; water conveyance systems; the powerhouse; gages; power and communication lines; and support facilities. Modifications to the original design are noted as well as future modifications that SCE intends to implement under the Proposed Action. A list of current Project facilities is provided in Table A-1. A summary of the physical characteristics/specifications of the primary Project facilities is provided in Table A-2. Refer to the Map A-2a-g for a depiction of Project facility locations.

(1) Project Facilities

Existing Project Facilities

Rush Meadows Development

Rush Meadows Dam

Rush Meadows Dam is a concrete radial-arch structure. The dam was originally constructed in 1918 and was subsequently raised in 1924 and 1925 to its current height and storage capacity. The crest is 463 feet long and located at 9,418.6 feet in elevation. The maximum height of the dam is 50 feet. Metal pipe handrails are installed along a runway atop the crest of the dam. A geomembrane layer covers the upstream face of the dam. The north end of the dam abuts the canyon wall, and the south end is buttressed. The south end of the dam adjoins a wing wall that contains the spillway, which prior to 2018 was a 55-foot-long ungated notch 3 feet lower than the crest, at an elevation of 9,415.6 feet.

In 2018, a notch was constructed in the spillway to increase the capacity to facilitate compliance with the FERC-mandated reservoir elevation restrictions during high-runoff years (FERC 2012, 2016). A 12-foot-wide by roughly 19-foot-high notch was installed in the spillway's left section and reinforced with two concrete buttresses on the downstream side. The crest elevation of the new spillway notch is 9,395.6 feet. In a letter dated February 7, 2020, and following the final inspection of work at Rush Meadows Dam, (California Department of Water Resources, Division of Safety of Dams (DSOD) issued an amended Certificate of Approval for the dam that revised the terms and conditions to read "water may be impounded to elevation 9,395.60, National Geodetic Vertical Datum of 1929 Datum, the crest of the spillway notch." DSOD concluded that the spillway notch adequately mitigates the seismic stability concerns with Rush Meadows Dam, and DSOD lifted its reservoir restriction imposed

on February 14, 2013, and updated the condition assessment of the dam from “Fair” to “Satisfactory” (DSOD 2020).

A concrete inlet chamber is located off-center at the base of the upstream side of the dam. The upstream face of the inlet chamber contains a pair of 6-foot-wide metal grates. Behind the grates, two slide gates installed in the dam face control the flow of water into two steel outlet pipes (the right outlet is circular with a 24-inch diameter and the left outlet is square with sides measuring 30 inches) located at an elevation of 9,368.6 feet. On the downstream side of the dam, there is a valve house and both outlet pipes discharge into Rush Creek, which flows into Gem Lake.

Waugh Lake

As originally designed and constructed, Rush Meadows Dam impounded Waugh Lake, a 185-acre reservoir with a storage capacity of 5,277 acre-feet (ac-ft). However, since 2012, as required by FERC, Waugh Lake has been limited to an elevation of 9,392.1 feet to meet seismic restrictions and alleviate safety concerns (FERC 2012, 2016), resulting in a 130-acre reservoir with a storage capacity of 1,555 ac-ft.

Gages

The following gages measure stream flow and reservoir elevation in the vicinity of Rush Meadows Dam:

- Rush Creek below Rush Meadows (Waugh Lake) (U.S. Geological Survey [USGS] No. 10287262; SCE No. 359R) – Stream gage located approximately 160 feet downstream of Rush Meadows Dam
- Waugh Lake (USGS No. 10287260; SCE No. 359) – Reservoir gage located in gage house adjacent to north abutment of dam

Trail

The Rush Meadows Dam Access Trail (Project trail) extends approximately 160 feet from the Rush Creek Trail (non-Project trail) providing access to the dam and ancillary facilities adjacent to the north side of the dam.

Ancillary Facilities

Ancillary Project facilities associated with the Rush Meadows Development are located downstream of the dam adjacent to the north abutment, and include:

- Equipment shed
- Gage house
- Solar facility

Gem Development

Gem Dam

Gem Dam is a reinforced concrete multiple-arch structure. The dam was originally constructed from 1915–1917, with an additional gravity section added in 1924. The crest is 688 feet long and located at 9,057.5 feet elevation. The maximum height of the dam is 84 feet. Metal pipe handrails are installed along a runway atop the crest. A geomembrane layer covers the upstream face of the dam.

The dam comprises 16 full arches adjoined by buttresses and two partial arches at each end. Each full arch segment is 40 feet wide between the centers of the adjoining buttresses. The northern-most partial arch is not numbered. The remaining arches are designated from north to south as Arches No. 1 to No. 17.

Two spillways are located at the south end of the dam. The partial arch segment at the south abutment (Arch No. 17) contains the upper spillway at 9,053.64 feet in elevation, comprising five rectangular openings, each approximately 5 feet wide and 2 feet high, arranged in a horizontal row just below the crest of the dam. The adjacent arch segment (Arch No. 16) contains the lower spillway, consisting of a row of eight identical openings approximately 5 feet wide and 2 feet high, set 2 feet lower than the upper spillway at 9,051.63 feet in elevation.

A 48-inch-diameter, steel flowline from Gem Lake Intake passes beneath the dam structure (Arch No. 3) and conveys water to the Agnew Junction. From the Agnew Junction, water is conveyed via penstock(s) to the Rush Creek Powerhouse. See below for a discussion of the Project's water conveyance system.

A 36-inch-diameter low-level outlet pipe (8,985 feet in elevation) installed at the base of the dam (Arch No. 8) is used to pass high flows downstream and release water to maintain the minimum instream flow requirements in the existing license. The upstream end of the outlet pipe is covered by a grate. The downstream end of the pipe passes through a small, galvanized iron valve house and terminates at an anchor block, situated on a concrete footing at the base of the dam. Water is discharged into Rush Creek, which flows into Agnew Lake.

In 2020 and 2021, SCE upgraded the Arch No. 8 outlet valve, discharge pipe, and associated electrical work to improve hydraulic characteristics of the valve and allow for higher flow releases from Gem Lake into Rush Creek to assist in maintaining the seismic restricted reservoir elevation during high-runoff years. The Arch No. 8 outlet valve was retrofitted with a 36-inch knife gate fitting, and the existing 36-inch-diameter discharge pipe was replaced with a 54-inch-diameter pipe.

Gem Lake

As originally designed and constructed, Gem Dam impounded Gem Lake, a 282-acre reservoir with a storage capacity of 17,228 ac-ft. Since 2012, as required by FERC, Gem Lake has been limited to an elevation of 9,027.5 feet to meet seismic restrictions and alleviate safety concerns (FERC 2012, 2016), resulting in a 256-acre reservoir with a storage capacity of 10,752 ac-ft.

Gages

The following gages measure stream flow and reservoir elevation in the vicinity of Gem Dam:

- Rush Creek below Gem Lake (USGS No. 10287281; SCE No. 352R) – Stream gage located below the dam
- Gem Lake (USGS No. 10287280; SCE No. 352) – Reservoir gage located at the Gem Valve House

Tramway

The Gem Tram, an approximately 1,490-foot-long (0.28 mile) incline railroad, is used to transport personnel and equipment between the Upper Agnew Boathouse/Dock on the southwestern shore of Agnew Lake and the Gem Tram Hoist House located near the south abutment of Gem Dam.

The Gem Tram includes upper and lower landings that provide areas for loading/unloading of personnel and equipment near the dam crest and near the base of the dam. The upper landing is located near the south abutment of the dam adjacent to the hoist house, and the lower landing is approximately 275 feet below the hoist house and south of the cookhouse. Adjacent to the lower landing, the tram includes a bridge over Rush Creek. During high flows in 2017, a portion of the Gem Tram was washed out. Gem Tram is also restricted because the power line to the dam was removed for fire mitigation purposes. The tram is currently not operational until repairs can be implemented.

Trails

The following Project trails are used to access facilities located in the vicinity of Gem Dam:

- Lower Gem Dam Access Trail – 980-foot-long Project trail that extends from Rush Creek Trail (non-Project trail) to the Gem Tram Lower Landing. This trail includes a footbridge adjacent to the lower tram landing.
- Gem Dam Arch 8 Access Trail – 120-foot-long Project trail that extends from the Lower Gem Dam Access Trail (near the Bunkhouse) to the Arch No. 8 Valve House.

- Upper Gem Dam Access Trail – 430-foot-long Project trail that extends from the Lower Gem Dam Access Trail (near the cookhouse) to the south abutment of the Dam. This trail includes a footbridge over Rush Creek.

Ancillary Facilities

Ancillary Project facilities associated with the Gem Development include:

- The Gem Valve House and Cabin includes personnel housing on the main floor and the valve house on the bottom floor (i.e., basement).

- The Gem Valve House Tunnel provides access from the Gem Cabin to the bypass valve controls on the flowline.

- The Gem Bunkhouse, Outhouse, and Cookhouse provide accommodations/ support facilities for personnel.

- Gem Weather Station and Satellite Dish located between the Gem Valve House/Cabin and the Bunkhouse. The weather station records meteorological data, and the satellite dish is used to support communication.

- The Gem Solar Facility located at the Gem Valve House and Cabin powers control and metering devices.

- Gem Lake Dock is located near the south abutment of the dam and stores the Gem Lake Motor Barge, which is used to transport personnel and equipment across the lake.

- A compressor shed and storage shed located near the south abutment of the dam along with two overhead hoist houses—one to transport materials along the dam length and another to lift the barge into the lake.

Agnew Development

Agnew Dam

Agnew Dam, constructed between 1915 and 1917, is a reinforced concrete, multiple-arch structure. The crest is 278 feet long and located at 8,498.9 feet in elevation. The maximum height of the dam is 30 feet. Metal pipe handrails are installed along a runway atop the crest. A geomembrane layer covers the upstream face of the dam. The dam comprises five full arches adjoined by buttresses and two partial arches at each end, which are designated from north to south as Arches No. 1 to No. 7. Each full arch segment is 40 feet wide between the centers of the adjoining buttresses.

Spillways are located in Arches No. 5 and No. 6. Each spillway comprises eight rectangular openings, each approximately 5 feet wide and 2 feet high, arranged in a horizontal row just below the crest of the dam, at 8,495.88 feet in elevation.

The inlet works is a concrete chamber built against the base of the upstream face, between Arches No. 4 and No. 5, at an elevation of 8,470 feet. The sloping upstream face of the chamber is approximately 16 feet wide by 20 feet long. The opening of the chamber is covered with a steel grate that is approximately 13 feet wide by 17 feet long. The chamber is connected to a 30-inch-diameter, steel outlet pipe (8,470 feet in elevation) that passes through the base of the dam at Arch No. 4. This outlet pipe is the intake to the Agnew Flowline and is controlled by a butterfly valve located in an enclosure immediately downstream of the dam. Historically, water was conveyed through the flowline to the Agnew Junction. From Agnew Junction, water was conveyed via penstock into the Rush Creek Powerhouse. See below for a discussion of the Project's water conveyance system and modifications made to the Agnew Flowline in 2017.

In 2017, two rectangular notches measuring 6 feet 2 inches wide by 5 feet high were cut in Agnew Dam at the base of Arches No. 5 and No. 6 (base of notch is 8,472 feet in elevation) to allow the reservoir to pass high flows downstream to facilitate compliance with the FERC-mandated reservoir elevation restrictions (FERC 2012, 2016). In addition, SCE constructed two buttress walls on the downstream side of each notch to provide additional stability and prevent downcutting or scour behind the dam. Currently, the flowline intake is closed and the new notches at the dam are used to meet minimum instream flow requirements in the existing license and pass high flows downstream.

Agnew Lake

As originally designed and constructed, Agnew Dam impounded Agnew Lake, a 40-acre reservoir with a storage capacity of 810 ac-ft. Since 2013, under the FERC-mandated storage restrictions, only a small natural lake (23 acres; 569 ac-ft), that pre-dates the Project, exists upstream of the dam (FERC 2013, 2016).

Gages

The following gages measure stream flow and reservoir elevation in the vicinity of Agnew Dam:

- Rush Creek below Agnew Lake (USGS No. 10287289; SCE No. 357) – Stream gage located approximately 600 feet downstream of Agnew Dam at the Project flume

- Agnew Lake (USGS No. 10287285; SCE No. 351) – Reservoir gage located at the Agnew Boathouse

Tramway

The Agnew Tram, an approximately 4,280-foot-long (0.81 mile) incline railroad, is used to transport personnel and equipment between Rush Creek Powerhouse and the Agnew Tram Hoist House located at the north abutment of Agnew Dam. The Agnew Tram Landing (500 feet below the hoist house) is located adjacent to the Agnew Cabin and is used for loading/unloading of personnel and equipment. A barge provides for transport of personnel and equipment across Agnew Lake to the Gem Tram. Currently, the tram is not operational, however repairs are planned.

Trail

The Agnew Stream Gage Access Trail (Project trail) extends approximately 170 feet from Rush Creek Trail (a non-Project trail) to the Project gaging station/flume.

Ancillary Facilities

Ancillary Project facilities associated with the Agnew Development include:

- Agnew Cabin located south of the dam provides personnel housing.
- Agnew Weather Station located on the southwest side of Agnew Cabin records meteorological data.
- Agnew Flume is located approximately 500 feet downstream of Agnew Dam and facilitates flow measurements in Rush Creek.
- Lower Agnew Lake Boathouse/Dock is located near the north abutment of the dam. Historically, the Agnew Lake Motor Barge was stored here and was used to transport personnel and equipment across the lake.
- Upper Agnew Lake Boathouse/Dock located on the southwest end of the lake provides access to the Gem Tram.

Rush Creek Powerhouse

The Rush Creek Powerhouse (constructed from 1915–1922) is located on an approximately 10-acre complex on SCE-owned lands. The powerhouse, located at an elevation of 7,253 feet, is a two-story concrete structure that is approximately 40 feet wide by 80 feet long by 63 feet high. The powerhouse contains two single-overhung, single-jet, impulse turbines (Pelton water wheel) rated at a total of 16,515 horsepower (HP) (Unit No. 1 – 8,515 HP; Unit No. 2 – 8,000 HP); two horizontal-shaft generator units with a total installed capacity of 13,010-kilowatts (kW) (Unit No. 1 – General Electric, 5,850-kW; Unit No. 2 – Allis Chalmers, 7,161-kW). The powerhouse is equipped with one 20-ton overhead crane and a 2-ton secondary crane, which provide hoisting capability for all major equipment.

A 150-foot-long, 2.4-kilovolt (kV) distribution line (Project facility) conveys power from the powerhouse turbines to the switchyard (non-Project facility) when the Project is generating electricity and from the switchyard to the powerhouse when the Project is not generating.

Originating at the Agnew Junction, two 28-inch-diameter steel penstocks enter the west side of the powerhouse and connect to the turbines. From the east side of powerhouse, a 470-foot-long tailrace returns water to Rush Creek. USGS Gage No. 102873000/ SCE No. 367 is located on the west wall and records flow through the powerhouse.

The powerhouse complex is accessed via the Rush Creek Powerhouse Complex Access Road, a Project road. Two gated entry points are available off State Route 158. The powerhouse complex also includes various ancillary facilities that support Project operations, including:

- Cottages
- Garages
- Warehouse and loading dock
- Machine shop
- Pump house
- Woodsheds
- Helicopter landing site
- Propane tank
- Bridges over the powerhouse tailrace and Rush Creek

Water Conveyance System

This section includes a description of the current water conveyance system, which SCE modified in 2017 to facilitate compliance with the seismic restrictions. Refer to Figure A-1 for a depiction of the current water conveyance system. The figure depicts previously existing features in blue, new or modified features in red, and non-functional features in brown.

Water captured in Waugh Lake is released directly into Rush Creek for conveyance to Gem Lake; no Project water conveyance system is associated with Waugh Lake / Rush Meadows Dam. Water captured in Gem Lake can be either conveyed via Project flowlines and penstocks to the Rush Creek Powerhouse or released into the natural stream channel from low-level outlets and/or flowline valves.

From Gem Dam, water is conveyed through a 48-inch-diameter riveted-steel flowline downhill approximately 4,584 linear feet to the Agnew Junction. The flowline from the reservoir to the Agnew Junction is completely underground. Water can be released from the Arch No. 8 Outlet and minimum instream flow release at the base of the dam; a bypass flowline just downstream of the dam; and from a pressure release valve or new 18-inch valve located just upstream of Agnew Junction. The new 18-inch valve was installed in 2017 at an existing flange in the Gem Flowline to maximize outflows and reduce reservoir levels of Gem Lake.

From Agnew Dam, historically, water was conveyed through a lap welded, 30-inch-diameter steel flowline downhill approximately 575 linear feet to the Agnew Junction. Along the flowline between Agnew Dam and Agnew Junction, a release valve was used to provide the minimum instream flow requirements downstream of the dam, and a drain valve was used to draw down the reservoir. The flowline from Agnew Dam includes sections that are both above ground and below ground.

In 2017, SCE modified the Agnew Flowline to release additional water from the reservoir (emergency action) due to the high projected runoff (220 percent of the average snowpack). The bottom of the Agnew Flowline was cut in two places to maximize outflows and expedite lowering of Agnew Lake. The Agnew Dam was also modified, as discussed above. Currently, the flowline intake is closed, and the new notches in the base of the dam are used to meet minimum instream flow requirements in the existing license and pass high flows downstream.

At the Agnew Junction, water from the Gem Dam Flowline can enter either the penstock for Powerhouse Unit No. 1 or No. 2. Historically, water from the Agnew Dam Flowline could only enter the penstock for Powerhouse Unit No. 1. However, with the Agnew Flowline modification in 2017 and the seismic restriction, no water from Agnew Lake is available for generation.

From the Agnew Junction, two parallel, 30-inch to 28-inch-diameter welded steel penstocks convey water 4,280 linear feet to the powerhouse. From Agnew Junction, both penstocks are underground until 75 feet before entering the Rush Creek Powerhouse where they become visible.

Power and Communication Lines

As stated above, a 150-foot-long, 2.4-kV distribution line (Project facility) conveys power from the powerhouse turbines to the switchyard[1] (non-Project facility) when the Project is generating electricity and from the switchyard to the powerhouse when the Project is not generating. Refer to Figure A-2 for a schematic showing the Project's transmission and distribution system.

[1] Adjacent to the powerhouse, the associated transformer, switchyard, substation, and 115-kV transmission lines extending from the switchyard to California's electric grid are non-Project facilities.

The Rush Creek Powerhouse is used to respond to California Public Utility Commission and California Independent System Operator (ISO) demands for power. Demands can be market driven (i.e., energy needs and renewable load), or can be a response to needs for grid and electrical stability to Mono Basin when the source transmission line is de-energized (115-kV Rush Creek/Casa Diablo line). The Rush Creek/Casa Diablo line is the only source line into the Mono Basin from the California ISO greater grid.

Historically, a 1.59-mile-long 4-kV Agnew Distribution Line extended between the Rush Creek Powerhouse and Gem Dam, including a 0.78-mile-long segment to Agnew Dam and a 0.81-mile-segment that continued to Gem Dam. The line also includes two tap lines—one to Agnew Dam (200 feet long) and the other to the Upper Agnew Boat Dock (620 feet long).

In 2019, SCE inspected the Agnew 4-kV circuit, which revealed the circuit needed repairs. Until such time that the repairs can be made, the circuit was de-energized in 2020 from Agnew Dam to Gem Dam (0.81-mile segment) via the removal of the conductor from Tower 13 to Tower 20. While the conductor was removed, currently the towers are still in place. To supply power to Gem Dam and associated facilities, SCE installed a solar/battery system that includes solar arrays, batteries and inverter, backup generator system, and propane tanks.

The 0.78-mile-long segment of the 4-kV Agnew Distribution Line from the Rush Creek Powerhouse to Agnew Dam is still in service and distributes power to the dam appurtenances. The tap line to the Upper Agnew Boat Dock was de-energized but not physically removed.

The Communication Line from Rush Creek Powerhouse to Gem Lake Dam (approximately 1.63 miles long) is the main Project communication line. From the Rush Creek Powerhouse, the line runs above ground and alongside the Agnew Tram tracks to the Agnew Tram Hoist House. From the Agnew Tram Hoist House, the line continues across Agnew Lake in an armored plastic conduit on the bottom of the lake to the Upper Agnew Lake Boathouse/Dock. From the Upper Agnew Lake Boathouse/Dock, the communication line runs above ground and alongside the Gem Tram tracks to the Gem Tram Hoist House. The following spurs extend from the main line:

- Communication Line from Agnew Hoist House to Agnew Boathouse (170 foot long)
- Communication Line from Gem Tram Hoist House to Gem Valve House (510 foot long)
- Communication Line from Gem Valve House to Arch No. 8 Valve House (240 foot long)

Proposed Project Facilities

SCE's Proposed Action includes the following Project modifications:

- Partial removal of Agnew and Rush Meadows dams; and
- Retrofitting Gem Dam to facilitate continued operation and maintenance of the Project for power generation.

Under the Proposed Action, hydroelectric operations at Rush Meadows and Agnew dams would be discontinued and these facilities would be removed from the FERC license once all license conditions and regulatory requirements of FERC and other resource agencies are met. Gem Dam would be retrofitted to facilitate compliance with the seismic restrictions under a probable maximum flood event with a new spillway and reduced dam height. Under the Proposed Action, hydroelectric operations at Gem Dam and Rush Creek Powerhouse would continue under FERC jurisdiction consistent with conditions identified in a new FERC license. Table A-3 identifies whether existing facilities would be removed or retained under the Proposed Action.

(2) Storage Capacity

The Project includes three reservoirs. A summary of the normal maximum surface area, normal maximum surface elevation, gross storage capacity, and usable storage capacity for Project reservoirs is provided below. The table includes the (1) original design specifications, (2) current specifications considering FERC-mandated seismic restrictions and facility modifications, and (3) proposed specifications.

Under the Proposed Action, Rush Meadows and Agnew dams would be partially removed (only abutments remaining) such that they no longer impound water. A riverine section of Rush Creek would exist in the former Waugh lakebed. Only a small natural lake, that pre-dates the Project, would exist upstream of Agnew Dam. This natural lake would remain once the dam is removed but would not be part of the FERC project. Gem Dam would be retrofitted to meet seismic restrictions under a probable maximum flood event with a new spillway and reduced dam height.

Storage Facility	Normal Maximum Surface Area (acre)	Normal Maximum Surface Elevation (feet)	Gross Storage Capacity (ac-ft)	Usable Storage Capacity (ac-ft)
Waugh Lake				
Original Design	185	9,415.6	5,277	5,277
Current Configuration (at restricted WSE)[1]	130	9,395.6	1,555	1,555
Proposed Action	0	0	0	0

Storage Facility	Normal Maximum Surface Area (acre)	Normal Maximum Surface Elevation (feet)	Gross Storage Capacity (ac-ft)	Usable Storage Capacity (ac-ft)
Gem Lake				
Original Design	282	9,051.6	17,228	17,228
Current Configuration (at restricted WSE)	256	9,027.5	10,752	10,752
Proposed Action	256	9,027.5	10,752	10,752
Agnew Lake				
Original Design	40	8,495.8	1,379	1,379
Current Configuration (at restricted WSE)[1]	23	8,470	569	0 (natural lake)
Proposed Action	23	8,470	569	0 (natural lake)

1. SCE implemented structural modifications to Project dams, including notching the base of Agnew Dam (2017) and Rush Meadows Spillway (2018) to pass higher flows downstream and passively facilitate compliance with the seismic restrictions.

(3) Turbines and Generators

The Project includes one powerhouse as described in Item (1) and in Table A-2. A summary of the number, type, and rated capacity of the turbines and generators associated with the Project is provided below. No new turbines or generators are proposed for the Project.

Equipment	Number	Type	Rated Capacity	
Turbine	2	single-overhung, single-jet, impulse turbines (Pelton water wheel)	16,515 horsepower (HP)	Unit No. 1 – 8,515 HP Unit No. 2 – 8,000 HP
Generator	2	horizontal shaft generator units	13,010-kilowatts (kW)	Unit No. 1 – General Electric, 5,850-kW Unit No. 2 – Allis Chalmers, 7,161-kW

(4) Primary Transmission Lines

A 150-foot-long, 2.4-kV distribution line (Project facility) conveys power from the powerhouse turbines to the switchyard (non-Project facility) when the Project is generating electricity and from the switchyard to the powerhouse when the Project is not generating. No new primary transmission lines are proposed for the Project.

(5) Mechanical, Electrical, and Transmission Equipment

All mechanical, electrical, and transmission equipment associated with the Project was previously described.

(6) Lands of the United States within Project Boundaries

The existing FERC Project boundary encompasses approximately 720 acres, including 688 acres of federal lands administered by the United States Forest Service (Inyo National Forest). Of these 688 acres, approximately 573 are located on lands designated as wilderness area.

Under the Proposed Action, the FERC Project boundary will be reduced as a result of the removal of Project facilities and will encompass approximately XXX acres, including XXX acres of federal lands. Of these XXX acres, approximately XXX will be located on lands designated as wilderness area.

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.

References

DSOD (California Department of Water Resources, Division of Safety of Dams). 2020. Rush Creek Meadows Dam, No. 104-34, Mono County. Letter to Southern California Edison. February 7, 2020.

FERC (Federal Energy Regulatory Commission). 2012. Reservoir Drawdown for Rush Meadows Dam and Gem Lake Dam. FERC Accession No. 20120703-0309. June 28.

———. 2013. Interim Reservoir Operation Plan for Agnew Lake Dam. FERC Accession No. 20130502-0335. April 24.

———. 2016. Plan and Schedule for the Seismic Retrofit of the Rush Creek Project. FERC Accession No. 20161108-0178. October 27.

TABLES

Table A-1. Rush Creek Project Facilities

Rush Meadows Dam Area
Dams
Rush Meadows Dam
Reservoirs
Waugh Lake
Valve House
Rush Meadows Dam Valve House
Stream Gages
Rush Creek below Rush Meadows (Waugh Lake) (USGS No. 10287262; SCE No. 359r)
Reservoir Gages
Waugh Lake (USGS No. 10287260; SCE No. 359)
Trails
Rush Meadows Dam Access Trail
Rush Meadows Dam/Waugh Lake Ancillary and Support Facilities
Rush Meadows Dam Equipment Shed
Rush Meadows Dam Gage House
Rush Meadows Dam Solar Facility
Gem Dam Area
Dams
Gem Dam
Reservoirs
Gem Lake
Flowline
Gem Dam to Agnew Junction Flowline
Valve House
Gem Valve House and Cabin
Gem Dam Arch 8 Valve House
Gem Flowline Valve House
Stream Gages
Rush Creek below Gem Lake (USGS No. 10287281; SCE No. 352r)
Reservoir Gages
Gem Lake (USGS No. 10287280; SCE No. 352)
Gem Dam Area (continued)
Communication Lines
Communication Line from Rush Creek Powerhouse to Gem Lake Dam

Communication Line from Gem Valve House to Arch 8 Valve House
Communication Line from Gem Tram Hoist House to Gem Valve House
Trams and Hoist Houses
Gem Tram
Gem Tram Hoist House
Gem Tram Lower/Upper Landing
Trails
Lower Gem Dam Access Trail
Gem Dam Arch 8 Access Trail
Upper Gem Dam Access Trail
Gem Dam/Lake Ancillary and Support Facilities
Gem Lake Dock
Gem Lake Motor Barge
Gem Bunkhouse
Gem Outhouse
Gem Cookhouse
Gem Dam Compressor Shed
Gem Dam Storage Shed
Gem Dam Overhead Hoist House for Dam Length
Gem Dam Overhead Hoist House
Gem Fish Release Footbridge
Gem Tram Landing Footbridge
Gem Tram Bridge
Gem Weather Station
Gem Satellite Dish
Gem Solar Facility
Gem Valve House Tunnel

Agnew Dam Area
Dams
Agnew Dam
Reservoirs
Agnew Lake
Flowline
Agnew Dam to Agnew Junction Flowline
Valve House
Agnew Junction (Valve House and Stand Pipe)
Agnew Dam Valve House
Stream Gages
Rush Creek below Agnew Lake (USGS No. 10287289; SCE No. 357)
Reservoir Gages
Agnew Lake (USGS No. 10287285; SCE No. 351)
Power Lines
4-kV Agnew Distribution Line
4-kV Agnew Dam Tap Line
4-kV Upper Agnew Boat Dock Tap Line
Communication Lines
Communication Line from Agnew Hoist House to Agnew Boathouse
Trams and Hoist Houses
Agnew Tram
Agnew Tram Hoist House
Agnew Tram Landing
Trails
Agnew Stream Gage Access Trail
Agnew Dam/Lake Ancillary and Support Facilities
Lower Agnew Lake Boathouse / Dock
Upper Agnew Lake Boathouse / Dock
Agnew Lake Motor Barge
Agnew Cabin
Agnew Weather Station
Agnew Flume (downstream of Agnew Dam)

Rush Creek Powerhouse Area
Penstocks
Agnew Junction to Rush Creek Powerhouse Penstock (No. 1)
Agnew Junction to Rush Creek Powerhouse Penstock (No. 2)
Powerhouse
Rush Creek Powerhouse
Gages
Rush Creek Powerhouse (USGS No. 10287300; SCE No. 367)
Power Line
2.4-kV Switchyard to Powerhouse Distribution Line
Powerhouse Ancillary and Support Facilities
Rush Creek Powerhouse Complex Access Road
Cottages (2)
Garages (4)
Warehouse and Dock
Machine Shop
Pump House
Woodsheds (2)
Helicopter Landing Site
Tank (propane)
Bridge over Powerhouse Tailrace
Bridge over Rush Creek

Table A-2. Rush Creek Project Facility Specifications

Facility	Current Configuration
Rush Meadows Dam and Waugh Lake	
Dam	
Type	constant radial arch
Material	concrete
Height (maximum)	50 ft
Length	463 ft
Volume	3,078 cu yd
Elevation of Dam Crest	9,418.6 ft
Elevation of Outlet Pipes (bottom)	9,368.6 ft
Geomembrane	Installed on entire upstream face of dam (2009) • Removed at location of spillway notch
Outlet Pipe Capacity (two steel-lined conduits, right is circular with a 24 in.-diameter; and left is square with sides measuring 30 in.)	200 cfs at WSE elevation of 9,415.6 ft
Spillway	
Type	uncontrolled, concrete overflow
Elevation	9,395.6 ft (@ spillway crest)
Dimensions	43 ft wide x 3 ft deep 12 ft wide x 19 ft deep (notch)
Capacity	4,600 cfs (900 cfs [existing] + 3,700 cfs [notch]) at elevation of 9,418.6 ft
Reservoir	
Elevation at Maximum Operating Water Surface	9,395.6 ft (@ modified WSE)
Elevation at Minimum Operating Water Surface	9,376 ft
Gross Storage	1,555 ac-ft (@ modified WSE)
Dead Storage	0 ac-ft
Active Storage	1,555 ac-ft (@ modified WSE)
Area at Maximum Operating Water Surface	130 ac (@ modified WSE)
Area at Minimum Operating Water Surface	1 ac
Gem Dam and Lake	
Dam	
Type	multiple arch (16 complete; 2 partial)
Material	concrete
Height (maximum)	84 ft
Length	688 ft
Volume	21,612 cu yd

Facility	Current Configuration
Elevation of Dam Crest	9,057.5 ft
Elevation of Outlet Pipe (bottom)	8,985 ft
Geomembrane	Installed on entire upstream face of dam (2007)
Outlet Capacity (36-in. pipe)	260 cfs capacity at max elevation of 9,027.5 ft (restricted WSE) 280 cfs capacity at max elevation of 9,051.6 ft
Spillway	
Type	Uncontrolled
Upper Spillway Elevation	9,053.64 ft
Openings/Dimensions	5 openings/5 ft wide x 2 ft high
Lower Spillway Elevation	9,051.63 ft
Openings/Dimensions	8 openings/5 ft wide x 2 ft high
Total Width	65 ft
Capacity	1,270 cfs at elevation of 9,057.5 ft
Intake Structure	
Material	reinforced concrete
Encased Steel Pipe Diameter	48 in.
Control	48-in. butterfly valve
Flowline (Gem Dam to Agnew Junction)	
Type	steel pipe
Length	4,584 ft
Diameter	48 in.
Capacity	18-in.-diameter outlet with gate valve installed on existing blind flange which allows for up to 200 cfs to be released when Rush Creek Powerhouse is offline
Reservoir	
Elevation at Maximum Operating Water Surface	9,027.5 ft (@ restricted WSE)
Elevation at Minimum Operating Water Surface	8,964.3 ft
Gross Storage	10,752 ac-ft (@ restricted WSE)
Dead Storage	0 ac-ft
Active Storage	10,752 ac-ft (@ restricted WSE)
Area at Maximum Operating Water Surface	256 ac (@ restricted WSE)
Area at Minimum Operating Water Surface	20 ac
Gem Tram	
Agnew Lake to Gem Dam	1,490 ft (0.28 mi)

Facility	Current Configuration
Agnew Dam and Lake	
Dam	
Type	multiple arch (5 complete; 2 partial)
Material	concrete
Height (maximum)	30 ft
Length	278 ft
Volume	713 cu yd
Elevation of Dam Crest	8,498.9 ft
Elevation of Outlet Pipe (bottom)	8,470.0 ft
Geomembrane	Installed on entire upstream face of dam in (2012) • Removed at location of notches in 2017
Outlet Capacity (30-in. pipe)	53 cfs at WSE elevation of 8,498.5 ft
2017 Modifications: Two notches cut into base of dam (Arches No. 5 and No. 6) measuring 6 ft 2 in. high by 5 ft wide	1,164 cfs total notch capacity at WSE elevation of 8,498.5 ft
Spillway	
Type	Uncontrolled
Elevation	8,495.88 ft
Openings	16 rectangular
Opening Dimensions	5 ft wide x 2 ft high
Total Width	80 ft
Capacity	1,250 cfs at WSE elevation of 8,498.5 ft
Intake Structure	
Material	reinforced concrete
Encased Steel Pipe Diameter	30 in.
Control	30-in. gate valve
Flowline (Agnew Dam to Agnew Valve House)	
Type	steel pipe
Length	575 ft
Diameter	30 in.
Capacity	100 cfs Note: capacity when water is discharged into creek through flowline cuts

Facility	Current Configuration
Reservoir	
Elevation at Maximum Operating Water Surface	8,470.0 ft
Elevation at Minimum Operating Water Surface	8,470.0 ft
Gross Storage	569 ac-ft
Dead Storage	569 ac-ft
Active Storage	0 ac-ft
Area at Maximum Operating Water Surface	23 ac
Area at Minimum Operating Water Surface	23 ac
Agnew Tram	
Powerhouse to Agnew Dam	4,280 ft (0.81 mi)
Rush Creek Powerhouse	
Total Installed Capacity	13.01 MW
Powerhouse (Unit 1)	
Installed Capacity	5.85 MW
Generator	General Electric, horizontal-shaft
Turbine	single-overhung, single-jet, impulse 28-in. hydraulic, slide-gate, turbine shutoff valve
Horsepower	8,515
Design Head	1,750 ft
R.P.M.	300
Minimum Estimated Hydraulic Capacity	3 cfs
Maximum Estimated Hydraulic Capacity	55 cfs
Powerhouse (Unit 2)	
Installed Capacity	7.16 MW
Generator	Allis Chalmers, horizontal-shaft
Turbine	single-overhung, single-jet, impulse 28-in. hydraulic, slide-gate, turbine shutoff valve
Horsepower	8,000
Design Head	1,650 ft
R.P.M.	300
Minimum Estimated Hydraulic Capacity	3 cfs
Maximum Estimated Hydraulic Capacity	55 cfs
Penstocks	
Type	steel pipe (2)
Length (Agnew Valve House to Powerhouse)	4,280 ft (0.81 mi)
Diameter	28–30 in.
Capacity	110 cfs (55 cfs each penstock)

Facility	Current Configuration
Tail Race	
Maximum Tail Water Surface	7,225.0 ft
Minimum Tail Water Surface	7,221.5 ft

Notes: — = no change
ac = acre
ac-ft = acre-feet
cfs = cubic foot/feet per second
cu yd = cubic yard
ft = feet
in. = inch
mi = mile
MW = megawatt
WSE = water surface elevation

Table A-3. Project Facility Disposition under the Proposed Action

Project Facility		Remove	Retain
Rush Meadows Dam Area			
Dam	Rush Meadows Dam	X	
Reservoir	Waugh Lake	X	
Valve House	Rush Meadows Dam Valve House	X	
Stream Gage	Rush Creek below Rush Meadows (Waugh Lake) (USGS No. 10287262; SCE No. 359r)		X
Reservoir Gage	Waugh Lake (USGS No. 10287260; SCE No. 359)	X	
Trail	Rush Meadows Dam Access Trail	X	
Rush Meadows Dam/Waugh Lake Ancillary and Support Facilities	Rush Meadows Dam Equipment Shed	X	
	Rush Meadows Dam Gage House	X	
	Rush Meadows Dam Solar Facility	X	
Gem Dam Area			
Dam	Gem Dam		X
Reservoir	Gem Lake		X
Flowline	Gem Dam to Agnew Junction Flowline		X
Valve House	Gem Valve House and Cabin		X
	Gem Dam Arch 8 Valve House		X
	Gem Flowline Valve House		X
Stream Gage	Rush Creek below Gem Lake (USGS No. 10287281; SCE No. 352r)		X
Reservoir Gage	Gem Lake (USGS No. 10287280; SCE No. 352)		X
Communication Lines	Communication Line from Rush Creek Powerhouse to Gem Lake Dam		X
	Communication Line from Gem Valve House to Arch 8 Valve House		X
	Communication Line from Gem Tram Hoist House to Gem Valve House		X
Trams and Hoist Houses	Gem Tram		X
	Gem Tram Hoist House		X
	Gem Tram Lower/Upper Landing		X
Trails	Lower Gem Dam Access Trail		X
	Gem Dam Arch 8 Access Trail		X
	Upper Gem Dam Access Trail		X

Project Facility		Remove	Retain
Gem Dam/Lake Ancillary and Support Facilities	Gem Lake Dock		X
	Gem Lake Motor Barge		X
	Gem Bunkhouse		X
	Gem Outhouse		X
	Gem Cookhouse		X
	Gem Dam Compressor Shed		X
	Gem Dam Storage Shed		X
	Gem Dam Overhead Hoist House for Dam Length		X
	Gem Dam Overhead Hoist House		X
	Gem Fish Release Footbridge		X
	Gem Tram Landing Footbridge		X
	Gem Tram Bridge		X
	Gem Weather Station		X
	Gem Satellite Dish		X
	Gem Solar Facility		X
	Gem Valve House Tunnel		X
Agnew Dam Area			
Dam	Agnew Dam	X	
Reservoir/Natural Lake	Agnew Lake		X (natural lake)
Flowline	Agnew Dam to Agnew Junction Flowline	X	
Valve House	Agnew Junction (Valve House and Stand Pipe)		X
	Agnew Dam Valve House	X	
Stream Gage	Rush Creek below Agnew Lake (USGS No. 10287289; SCE No. 357)		X
Reservoir Gage	Agnew Lake (USGS No. 10287285; SCE No. 351)	X	
Power Lines	4-kV Agnew Distribution Line		X
	4-kV Agnew Dam Tap Line	X	
	4-kV Upper Agnew Boat Dock Tap Line		X
Communication Line	Communication Line from Agnew Hoist House to Agnew Boathouse		X
Trams and Hoist Houses	Agnew Tram		X
	Agnew Tram Hoist House		X
	Agnew Tram Landing		X
Trail	Agnew Stream Gage Access Trail		X

Project Facility		Remove	Retain
Agnew Dam/Lake Ancillary and Support Facilities	Lower Agnew Lake Boathouse/Dock		X
	Upper Agnew Lake Boathouse/Dock		X
	Agnew Lake Motor Barge		X
	Agnew Cabin		X
	Agnew Weather Station	X	
	Agnew Flume (downstream of Agnew Dam)		X
Rush Creek Powerhouse Area			
Penstocks	Agnew Junction to Rush Creek Powerhouse Penstock (No. 1)		X
	Agnew Junction to Rush Creek Powerhouse Penstock (No. 2)		X
Powerhouse	Rush Creek Powerhouse		X
Gage	Rush Creek Powerhouse (USGS No. 10287300; SCE No. 367)		X
Power Line	2.4 kV Switchyard to Powerhouse Distribution Line		X
Powerhouse Ancillary and Support Facilities	Rush Creek Powerhouse Complex Access Road		X
	Cottages (2)		X
	Garages (4)		X
	Warehouse and Dock		X
	Machine Shop		X
	Pump House		X
	Woodsheds (2)		X
	Helicopter Landing Site		X
	Tank (propane)		X
	Bridge over Powerhouse Tailrace		X
	Bridge over Rush Creek		X

Notes: kV= kilovolt
SCE = Southern California Edison
USGS = United States Geological Survey

FIGURES

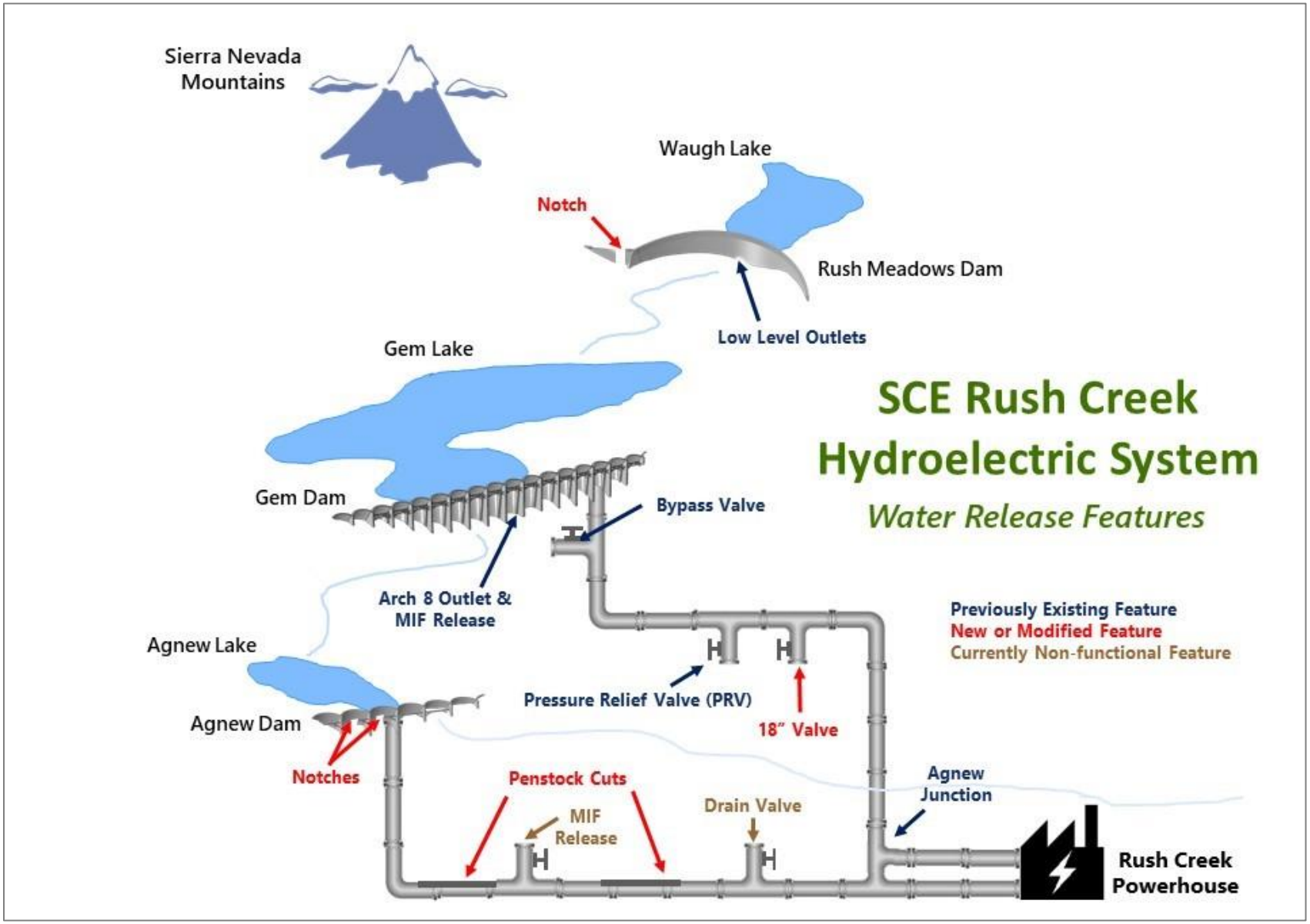

Figure A-1. Rush Creek Project Current Water Release Features

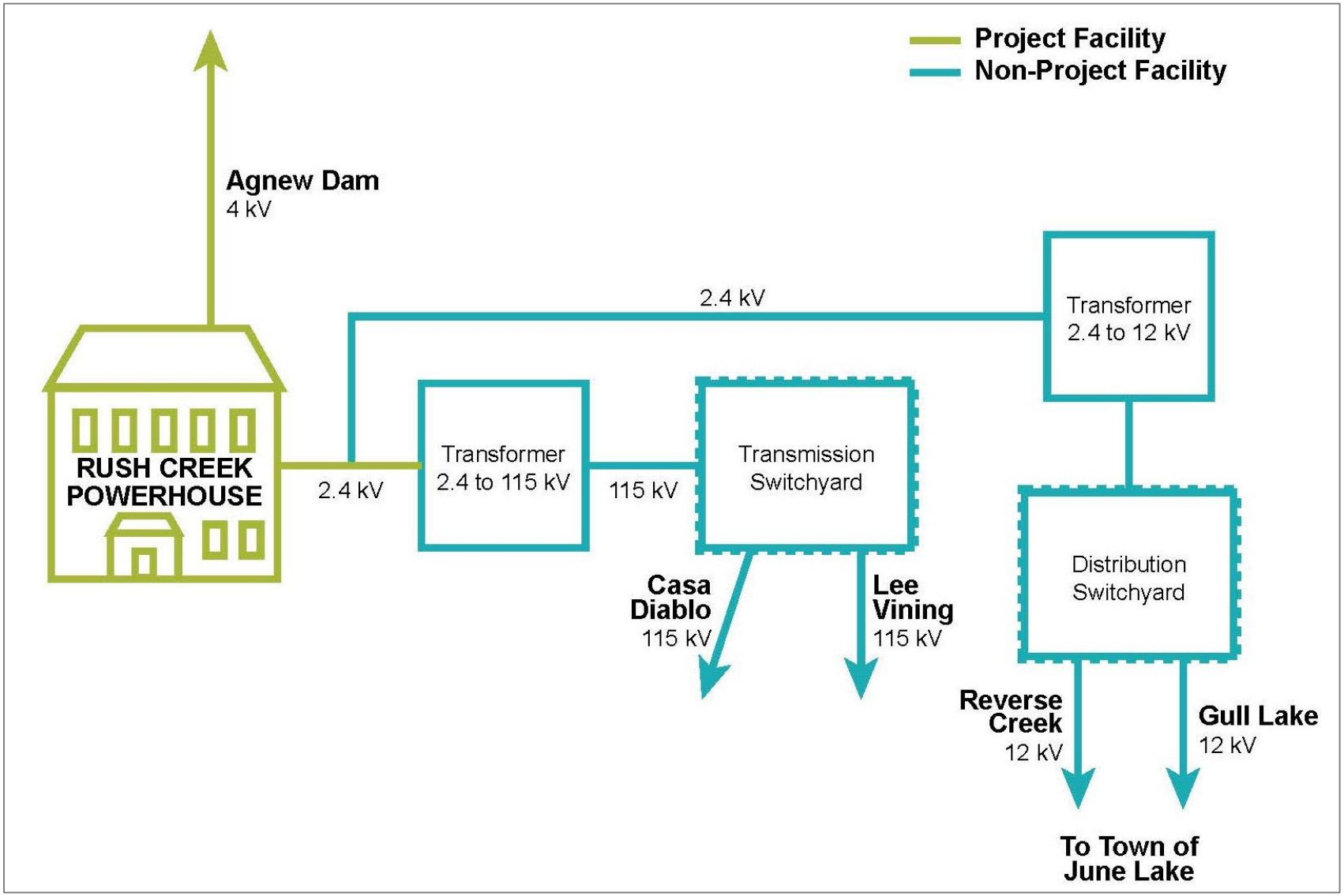

Figure A-2. Rush Creek Project Transmission and Distribution Line Diagram

MAPS

HOOVER WILDERNESS
Lee Vining
Mono Lake
120
Rush Creek
Tuolumne County
Mono County
158
Grant Lake
395
YOSEMITE WILDERNESS
ANSEL ADAMS WILDERNESS
INYO NATIONAL FOREST
YOSEMITE NATIONAL PARK
Alger Lakes
June Lake
Lost Lakes
Silver Lake
Gull Lake
June Lake
Rush Creek Powerhouse
Reversed Creek
Gem Lake
Agnew Lake
Agnew Dam
Waugh Lake
Rush Creek
Marie Lakes
Rush Meadows Dam
Gem Dam
Rush Creek Project
To Bishop
Thousand Island Lake
Davis Lakes
Madera County
OWENS RIVER HEADWATERS WILDERNESS
SIERRA NATIONAL FOREST

SCE Facilities

- Dam
- Powerhouse
- Flowline / Penstock
- FERC Boundary

Other Features

- Major City/Town
- Highway
- River/Stream
- Lake
- County Boundary

Land Jurisdiction and National Wilderness Areas/Parks*

- Local Government
- LADWP
- State Government
- Bureau of Land Management
- U.S. Forest Service
- Ansel Adams Wilderness (U.S. Forest Service)
- Hoover Wilderness (U.S. Forest Service)
- Owens River Headwaters Wilderness (U.S. Forest Service)
- Yosemite National Park / Yosemite Wilderness (National Park Service)
- Private (Blank)

*SOURCES: BLM, 2020.
Mono Co., 2019.
Wilderness.net, 2019.

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead℠

Rush Creek Project (FERC 1389)

Map A-1

Project Vicinity and Land Jurisdictions

0 0.5 1 2 Miles

Projection: UTM Zone 11
Datum: NAD 83

Date: 4/19/2024

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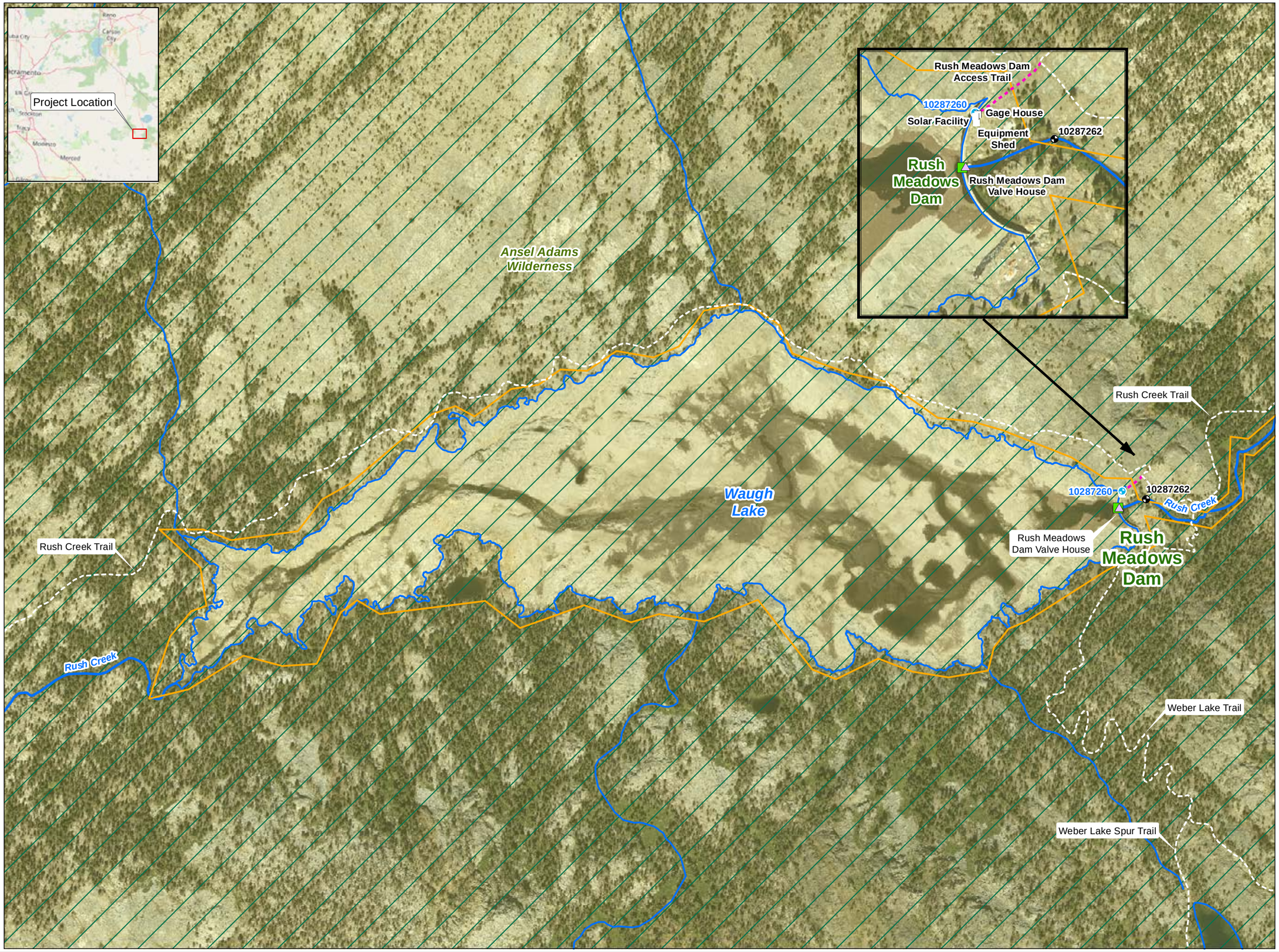


SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Communication Line
- Tramway
- Project Road
- Project Trail
- FERC Project Boundary

Other Features

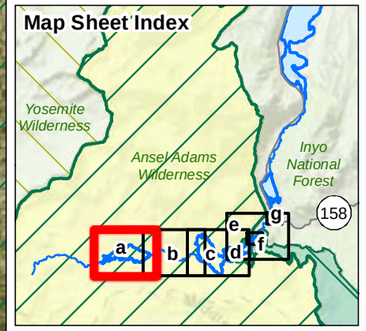
- Watercourse
- Lake
- Non-Project Trail

Land Management

National Wilderness Area**

- Ansel Adams Wilderness
- Owens River Headwaters Wilderness

**NOTE: Ansel Adams Wilderness and Owens River Headwaters Wilderness are located on USFS Lands



Southern California Edison
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map A-2a

Project Facilities
Rush Meadows Dam/Waugh Lake

0 250 500 Feet

Date: 5/23/2024

Projection: UTM Zone 11
Datum: NAD 83

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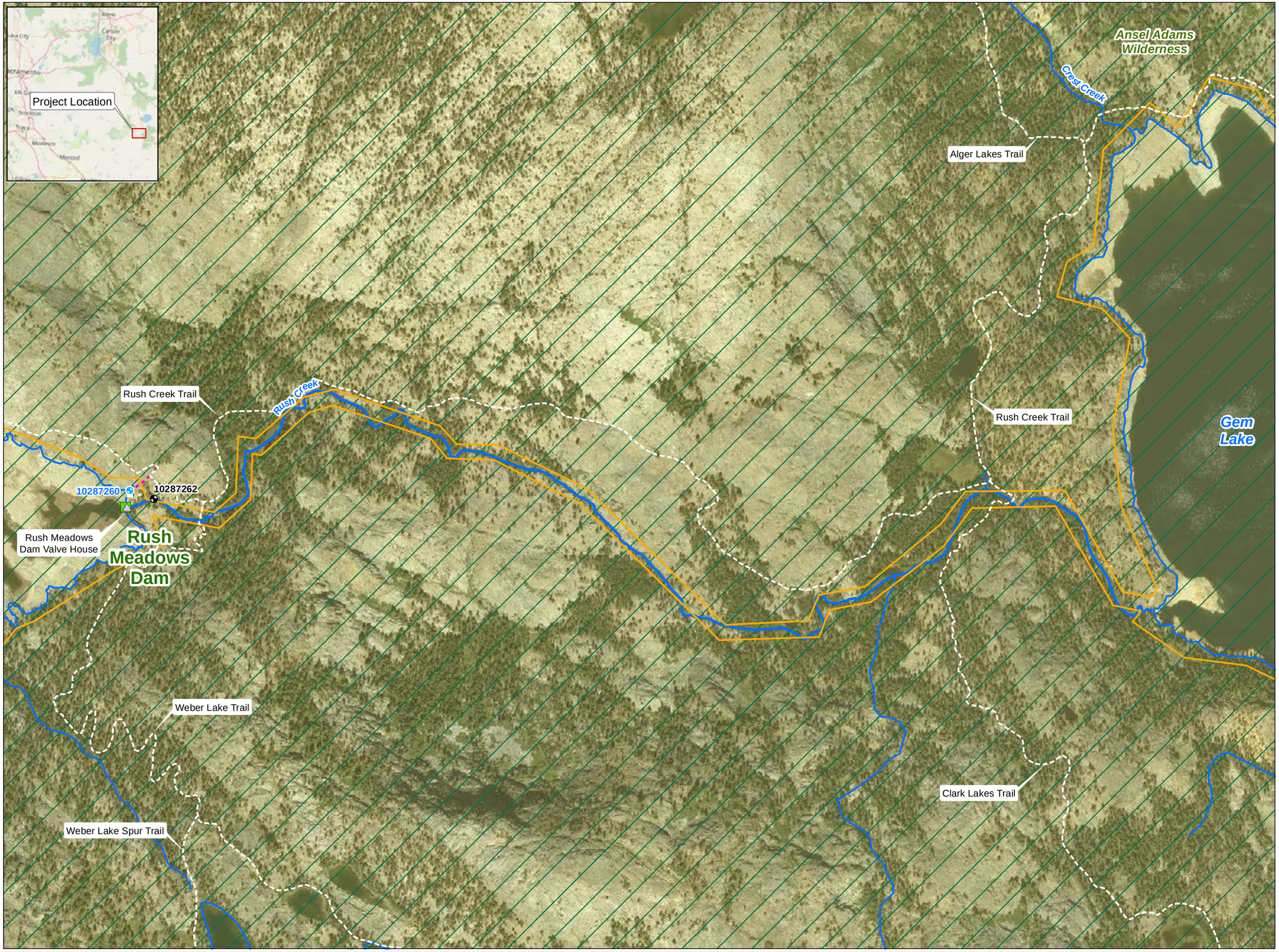

SCE Facilities

- Powerhouse
- Dam
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- Reservoir Gage
- Ancillary Facility
- Helicopter Landing Site
- Water Conveyance Feature
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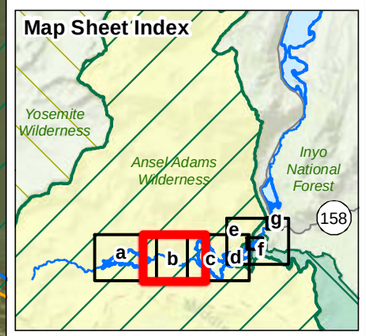

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead℠

Rush Creek Project (FERC 1389)

Map A-2b

Project Facilities
Rush Meadows Dam/Gem Lake

0 250 500 Feet

Date: 5/23/2024

Projection: UTM Zone 11
Datum: NAD 83

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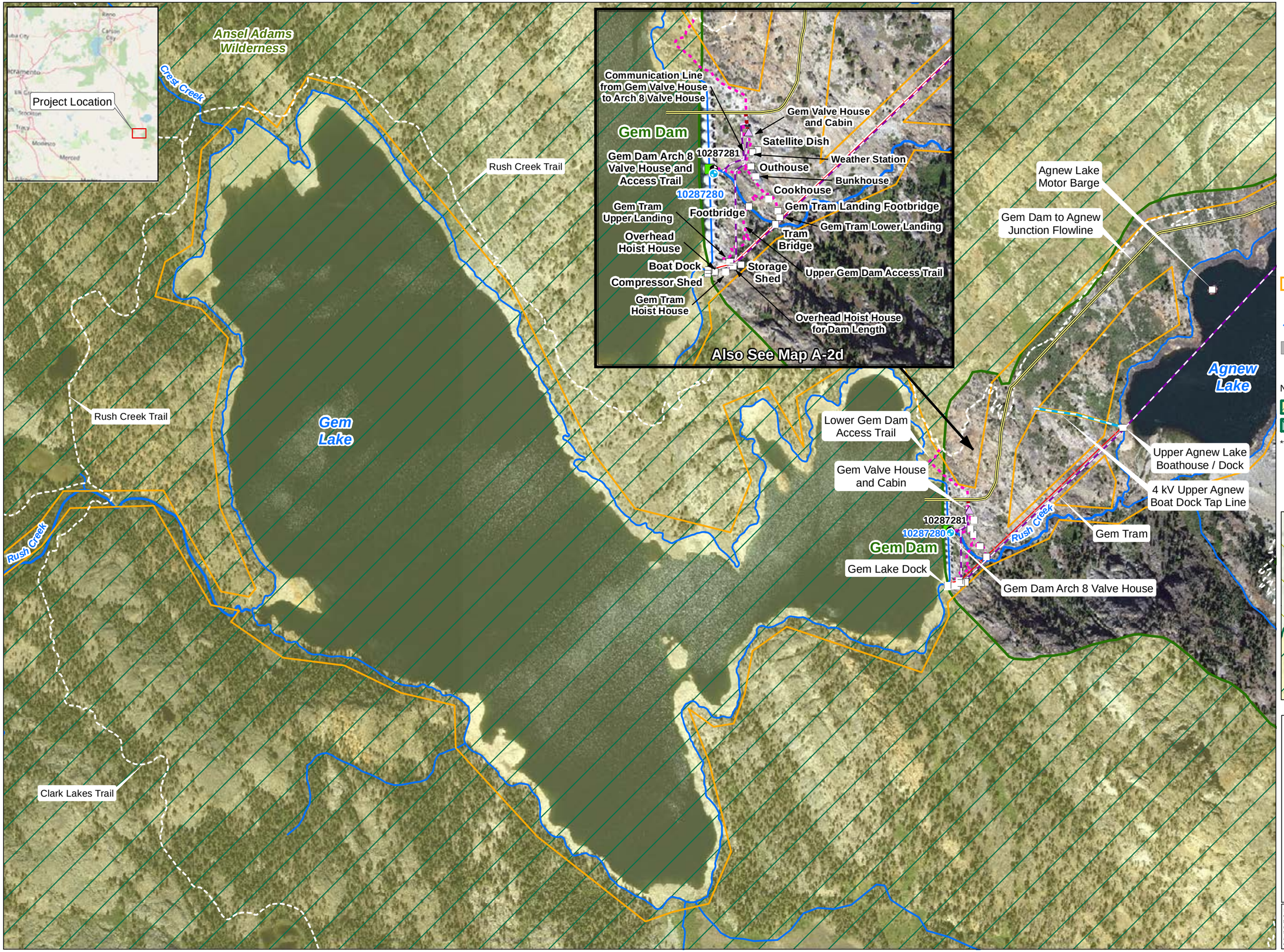

SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
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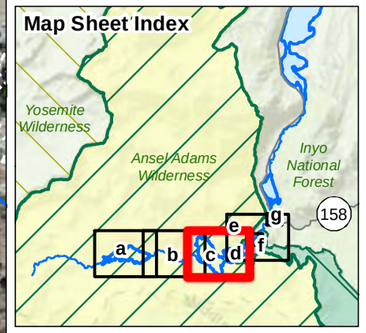

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map A-2c

Project Facilities
Gem Dam/Gem Lake

0 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 5/23/2024

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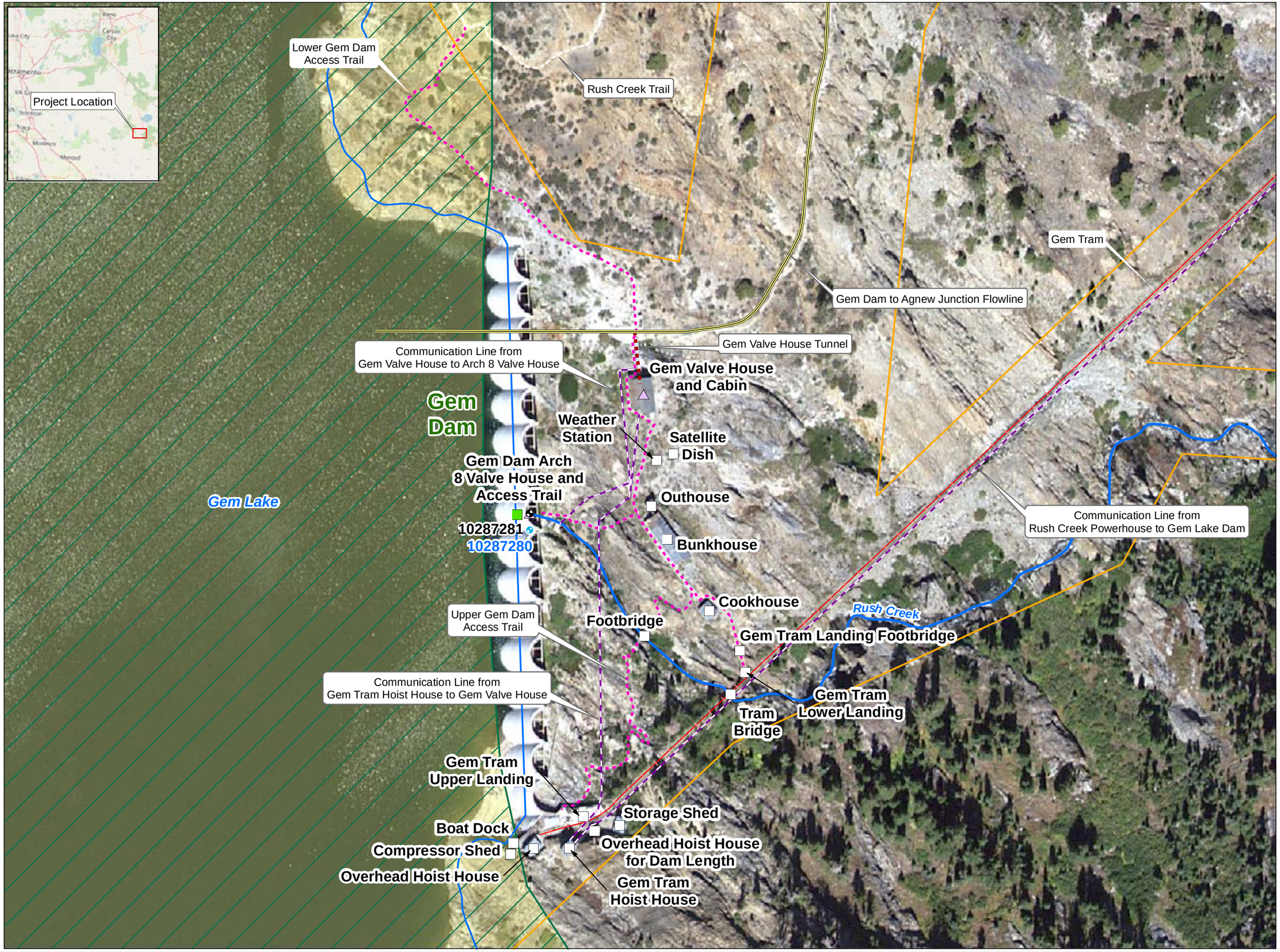

SCE Facilities

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- Dam
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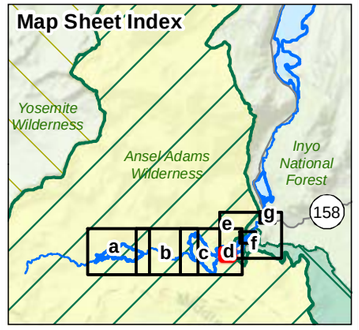


SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

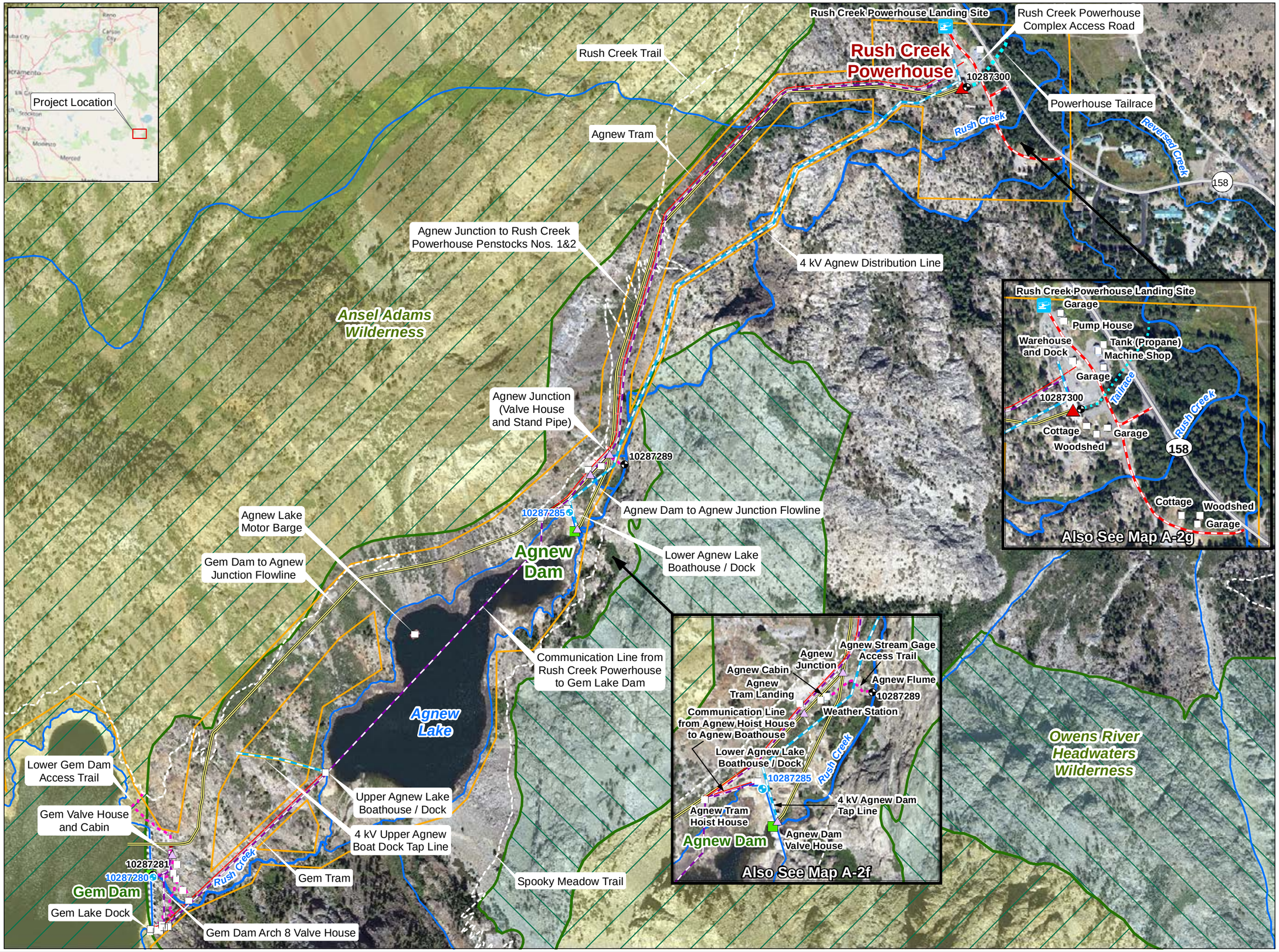
Map A-2d

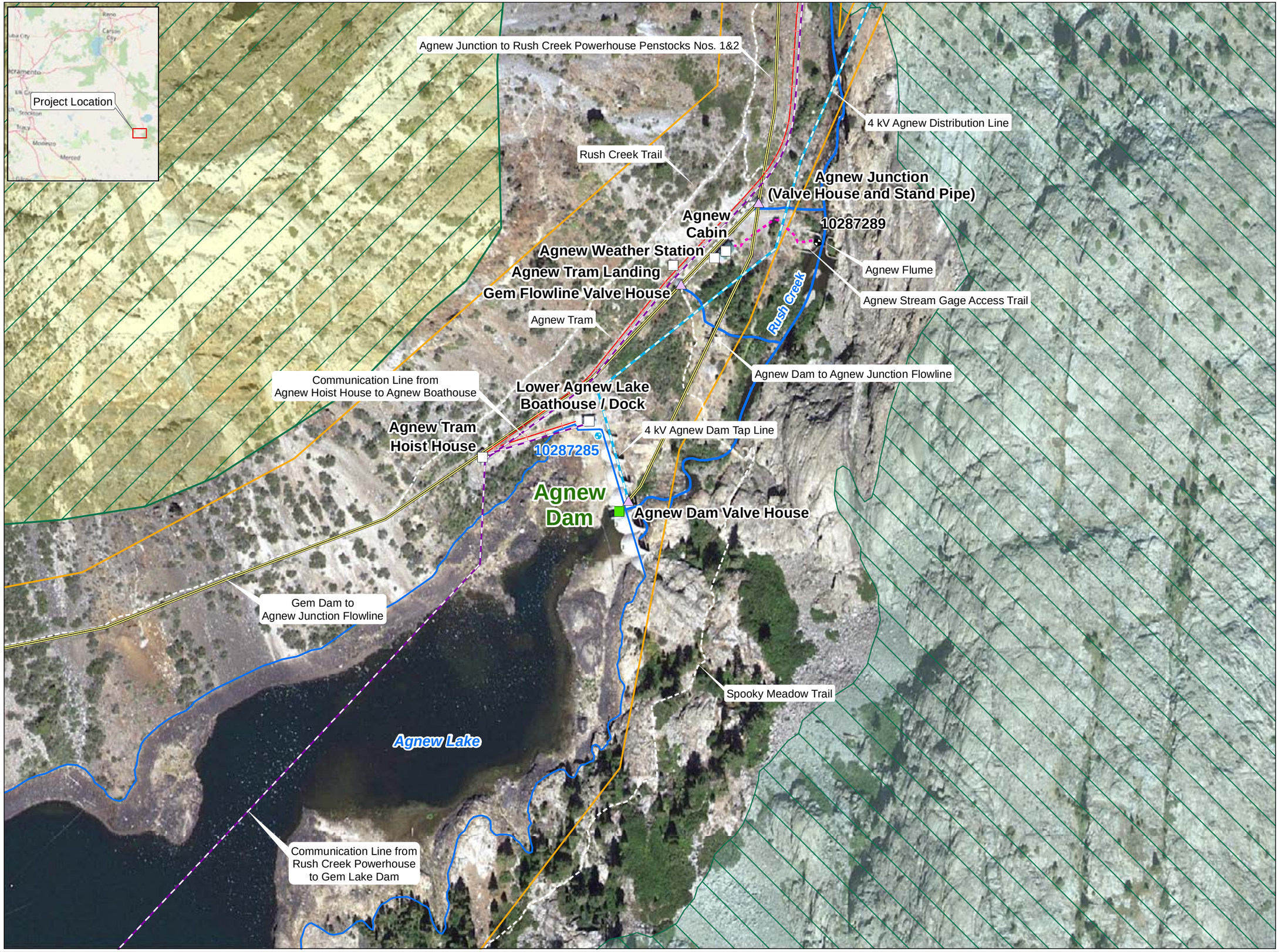
Project Facilities
Gem Dam Details

0 50 100 Feet

Date: 5/23/2024

Projection: UTM Zone 11
Datum: NAD 83





SCE Facilities

- Powerhouse
- Dam
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- Reservoir Gage
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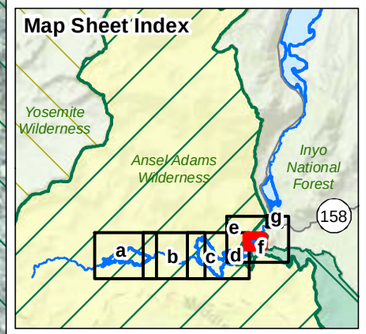


SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead℠

Rush Creek Project (FERC 1389)

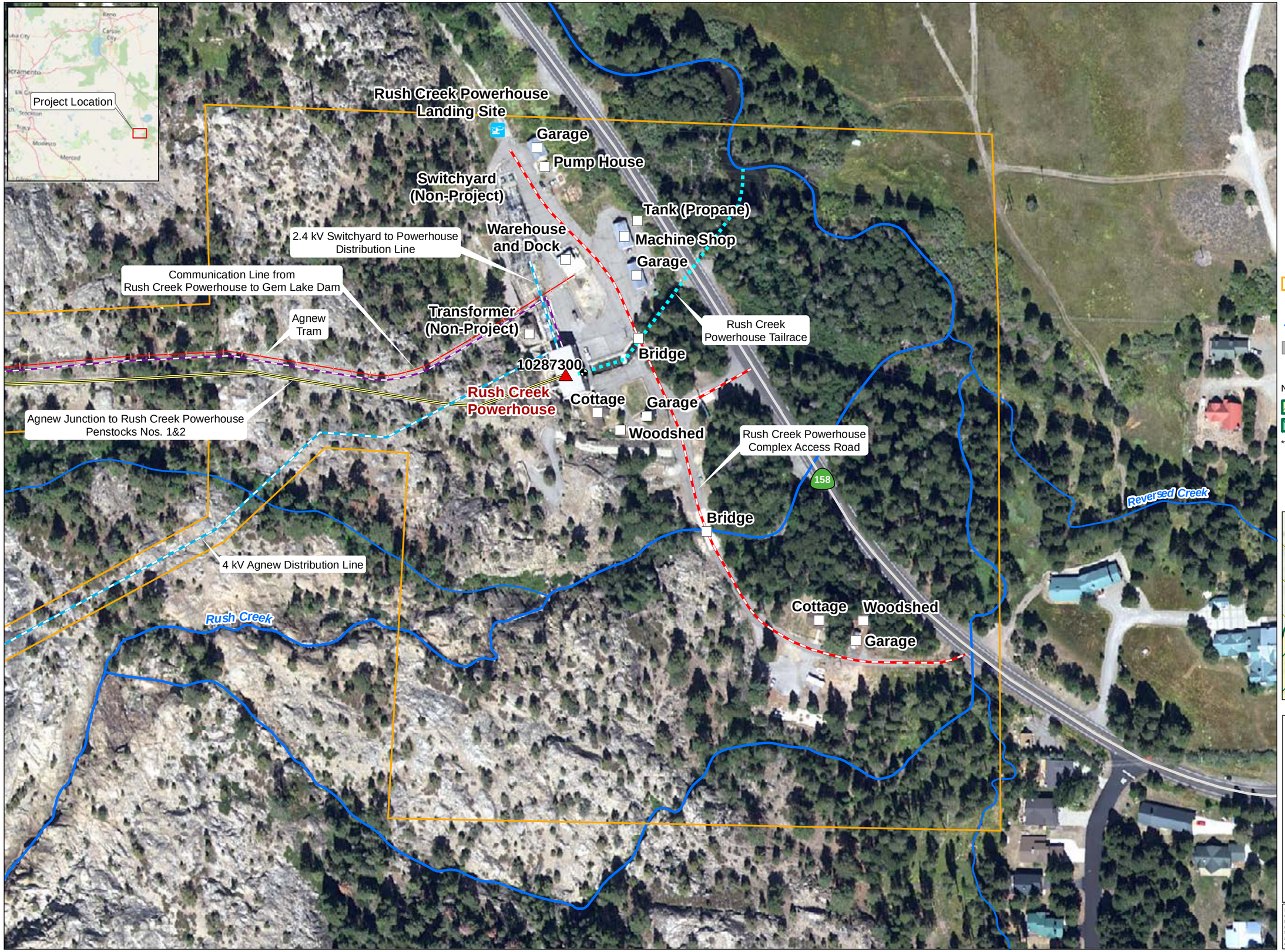
Map A-2f

Project Facilities
Agnew Dam Details

0 50 100 Feet

Date: 5/23/2024

Projection: UTM Zone 11
Datum: NAD 83



SCE Facilities

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
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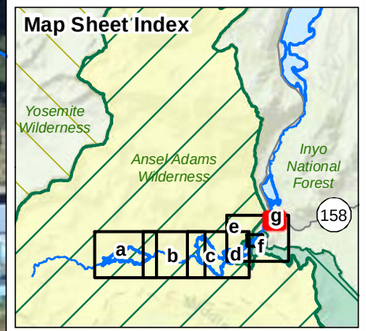

SOUTHERN CALIFORNIA EDISON
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map A-2g

Project Facilities
Powerhouse Details

0 50 100 Feet

Date: 5/23/2024

Projection: UTM Zone 11
Datum: NAD 83

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SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
(FERC Project No. 1389)

Draft License Application
EXHIBIT B: Statement of Operation and Resource Utilization

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

August 2024

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

Exhibit B: Statement of Operation and Resource Utilization

Section 5.18(a)(5)(iii) of Title 18 of the Code of Federal Regulations (CFR) (4-1-2023 Edition) 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.

Introduction

The 13.01-megawatt (MW) Rush Creek Project (Project) includes: three dams and associated reservoirs—Rush Meadows Dam (Waugh Lake), Gem Dam (Gem Lake), and Agnew Dam (Agnew Lake); a water conveyance system; the Rush Creek Powerhouse; and ancillary facilities. The three Project reservoirs historically provided storage for lake recreation during the summer and allowed for electricity generation at the Rush Creek Powerhouse. Water exiting the powerhouse enters a short tailrace and is returned to Rush Creek upstream of Silver Lake.

Seismic Restrictions

Between 2008 and 2013, Southern California Edison Company (SCE) conducted detailed fault studies, structural testing, and engineering analysis of Rush Meadows, Gem, and Agnew dams as a consequence of the Silver Lake Fault being identified as a potential safety concern in 2007. Early testing focused on Rush Meadows and Gem dams. The results of the analysis indicated a potential dam safety issue when the reservoirs are full and there is a large seismic loading event (earthquake). As such, SCE filed a request with the Federal Energy Regulatory Commission (FERC) for a temporary variance in the minimum storage level requirements for Waugh and Gem lakes (SCE 2012). FERC approved the request to limit Waugh Lake to an elevation of 9,392.1 feet and Gem Lake to an elevation of 9,027.5 feet to address seismic concerns. The approval stated that SCE may not refill the reservoirs above the seismic restrictions until authorization is received from FERC (FERC 2012).

In 2013, FERC approved SCE's request for temporary variance to keep Agnew Lake completely drained to address seismic concerns. The approval stated that Agnew Lake will not be refilled until FERC finds that the dam is safe with a full reservoir under seismic loading (FERC 2013).

Since 2013, FERC has filed numerous letters stating that SCE shall retain the reservoir restrictions at the three reservoirs until FERC formally notifies SCE otherwise. Most recently, on October 27, 2016, FERC issued a letter directing SCE to maintain the reservoirs at Rush Meadows, Gem, and Agnew dams at or below the agreed-upon restricted reservoir elevations until further notice (Waugh Lake – 9,392.1 feet; Gem Lake – 9,027.5 feet; and Agnew Lake – completely drained) (FERC 2016).

As a result of the seismic restrictions placed on the Project, in 2014 SCE began consulting with FERC and various resource agencies to discuss engineering and licensing process options for developing a comprehensive long-term solution to address the seismic concerns, including consideration of dam retrofitting and/or decommissioning.

In 2016/2017, the Rush Creek Watershed experienced 220 percent of the average snowpack resulting in unprecedented high-runoff conditions. Prior to this high-runoff event, SCE determined the restricted reservoir elevations at Waugh, Gem, and Agnew lakes could not be maintained through normal Project operations of outlet valves and penstock releases. To address the seismic restrictions and alleviate safety concerns as required by FERC (Division of Dam Safety and Inspections) and the California Department of Water Resources (Division of Safety of Dams [DSOD]), SCE implemented emergency actions in 2017 and additional interim structural modifications in 2017–2018 and 2020–2021, as summarized below:

- Emergency Actions (2017) – Installed a temporary pumping system to remove water from Agnew Lake and modified the Gem and Agnew flowlines to manage lake elevations more effectively.

- Interim Structural Modifications (2017–2018) – Notched the base of Agnew Dam (2017) and Rush Meadows Spillway (2018) to pass higher flows downstream and passively comply with the seismic restrictions.

- Interim Structural Modifications (2020–2021) – Retrofitted the existing Gem Dam Arch No. 8 outlet valve to improve hydraulic characteristics of the valve and increase flow releases at the Arch No. 8 outlet.

Project Operations

Project operations can be described for two periods: (1) Historical Operations (water years [WY] 1990–2011), prior to implementation of reservoir elevation restrictions; and (2) Current Operations (WY 2012–2023), post-implementation of the reservoir elevation restrictions. Historical and current FERC elevation requirements for the Project reservoirs are provided in Table B-1. Current FERC minimum flow release requirements are provided in Table B-2.

Project reservoir storage for water years 1990–2023 are shown in Figures B-1a and B-1b. Daily mean flows through the project, including Rush Creek Powerhouse flow, flow below Agnew Dam, and the combined flow are shown in Figure B-2.

Waugh Lake

Historically, the low-level outlets for Rush Meadows Dam were closed and Waugh Lake began filling between late April and mid-June depending on Rush Creek inflow and weather conditions affecting access to the facilities. Waugh Lake typically began filling about 2.5 weeks after Gem Lake, the larger downstream reservoir, began filling. Waugh Lake typically filled to the spillway elevation (5,100 acre-feet [ac-ft]; 9,415.6 feet) or greater each year (storage increased above the spillway elevation during spill events). Storage was then maintained to the extent sufficient water was available to meet minimum stream flow requirements in Rush Creek below Waugh (10 cubic feet per second [cfs] or natural inflows, if less) from July 1 through the Tuesday following Labor Day weekend, at which point the storage was released into Rush Creek and Gem Lake for generation. The reservoir low-level outlets were then left open through winter and early spring (no storage and no water on the dam face).

Under Current Operations, Waugh Lake storage is maintained below the seismic restrictions, to the extent possible, given the spillway and low-level outlet capacity and the magnitude of inflows. During the winter and early spring, the reservoir is drained and the low-level outlets are left open. Since approximately 2017, the low-level outlets have generally been left open year-round. The notching of the spillway in 2018 facilitates compliance with the FERC-mandated reservoir elevation restrictions. During high spring inflows that exceed the low-level outlet capacity, storage can accumulate in the reservoir to the level of the notched spillway. When inflow subsides, the reservoir drains through the open low-level outlets.

Gem Lake

Historically, Gem Lake began filling in the spring between early April and late May, depending on the Rush Creek inflow. Gem Lake would typically fill up to the spillway elevation (17,000 ac-ft; 9,051.63 feet elevation) or greater (storage increased above the spillway elevation during high flow events). Storage would be maintained consistent with the July 1 through Labor Day weekend recreation requirements to the extent sufficient water was available to meet minimum stream flow requirements in Rush Creek below Gem Lake and, in low water years, a target 14 cfs release from the powerhouse, based on FERC requirements. Typically, the reservoir elevation was maintained until Waugh Lake was fully drained and then Gem Lake was lowered until either (1) spring flows triggered refill the following year or (2) the storage dropped to between 1,000 to 4,000 ac-ft.

Under Current Operations, Gem Lake fills to the maximum seismic restriction capacity of approximately 10,752 ac-ft (9,027.5 feet elevation) and maintains storage through the summer. Most of the storage is released in the fall/winter and the reservoir refills during high spring flows the following year.

Agnew Lake

Historically, Agnew Lake began filling in the spring between approximately late March and early June, depending on Rush Creek inflow. Agnew Lake would then remain filled consistent with the July 1 through Labor Day weekend license requirement (within 15 feet of the spillway elevation; 8,496 feet [1,379 ac-ft]). Typically, maximum storage was maintained, to the extent sufficient water was available to meet minimum stream flow requirements in Rush Creek below Agnew Lake, until approximately the second week of October and after Waugh Lake was fully drained. At this point, Agnew storage would be released until the water level dropped to near the level of the intake at 8,470 feet.

Under Current Operations, Agnew Lake is no longer used for storing water or power generation. Water entering the lake flows unimpeded through the two notches in the base of the dam and flows into Rush Creek, eventually entering Silver Lake. Agnew was a natural lake prior to construction of the dam. The natural lake has a maximum elevation of 8,470 feet and gross storage of 569 ac-ft. This storage is not available for power production.

Rush Creek Powerhouse

The Rush Creek Powerhouse (constructed from 1915–1922) is located on an approximately 10-acre complex on SCE-owned lands. The powerhouse (elevation of 7,253 feet) is a two-story concrete structure that is approximately 40 feet wide by 80 feet long by 63 feet high. The powerhouse contains two single-overhung, single-jet, impulse turbines (Pelton water wheel) rated at a total of 16,515 horsepower (HP) (Unit No. 1 – 8,515 HP; Unit No. 2 – 8,000 HP); two horizontal-shaft generator units with a total installed capacity of 13,010-kilowatts (kW) (Unit No. 1 – General Electric, 5,850-kW; Unit No. 2 – Allis Chalmers, 7,161-kW). The powerhouse is equipped with one 20-ton overhead crane and a 2-ton secondary crane, which provide hoisting capability for equipment.

Historically, flows were provided to the Rush Creek Powerhouse (United States Geological Survey [USGS] Gage No. 10287300/SCE No. 367) from both Gem Dam and Agnew Dam flowlines/penstocks. Flow varied from zero to 110 cfs (both units operating), depending on water availability and releases from the dams. Monthly average flows for the WY 1990–2011 period ranged from 34.7 to 62.5 cfs, with the highest flows in June and July and the lowest flows in the winter and early spring.

Currently, flow is provided to the Rush Creek Powerhouse from only the Gem Dam flowline. Flows vary from approximately zero to 110 cfs (both units operating), depending on water availability. During some periods/years, flows remain relatively steady for multiple weeks at a time and at other times, flows fluctuate daily. Monthly average flows for the WY 2012–2023 period ranged from 16 to 67 cfs, with the highest flows in June and July and the lowest flows in the fall, winter, and early spring.

(1) Type of Operation

SCE is not proposing any changes to the way the Rush Creek Powerhouse is operated or maintained.

Plant Supervision – The powerhouse is remotely controlled by an automated system from the Operations Center. The system allows for remote unit load control and shutdown and requires operator intervention to return to service.

Annual Plant Factor – The estimated average annual plant factor for Rush Creek Powerhouse since issuance of the current license under Historical Operations (1997–2011) and under Current Operations (2012–2023) is provided in is provided in the table below:

Powerhouse	Average Annual Generation (MWh)	Installed Capacity (MW)	Average Annual Plant Factor (%)
Rush Creek Historical Operations (1997–2011)	46,181	13.01	40.5
Rush Creek Current Operations (2012–2023)	33,022	13.01	29.0

Operation During Adverse, Mean, and High-Water Years

The Project is operated in a store-and-release mode, meaning water is held behind Gem Dam for storage and then released downstream for electricity generation throughout the year. Total inflow to Gem Lake can vary significantly by water year and ranges from a low of about 9,905 ac-ft (WY 2015) to 61,567 ac-ft (WY 2017) in the 24-year period from WY 1990–2023 (Figure B-3). The median total annual inflow was approximately 22,600 ac-ft during this period (Figure B-3).

Water diverted into the flowline at Gem Dam passes through the powerhouse (up to 110 cfs) into the powerhouse tailrace, where it is gaged, and then enters Rush Creek downstream of the tailrace. Gem Dam bypass flows (minimum flows and spills) enter Rush Creek and are gaged at a flume downstream of Agnew Dam. Figures B-4a, B-4b and B-4c show monthly average flows for the combined powerhouse and flume gages, the flume gage, and the powerhouse for example water years. The example water years are representative of different runoff conditions (2015–dry, 2016–normal, and 2023–wet). Figure B-5 shows the monthly flow exceedances for the combined powerhouse and flume gages and for the powerhouse gage, respectively.

SCE typically diverts water for power generation throughout the year in normal and wetter years, peaking May through August (Figures B-4b and B-5). Diversions are generally lowest in November through April. In drier years, low inflows (Figures B-4a and B-5) result in lower diversion for generation (Figures B-4b and B-5).

(2) Capacity and Production

Rush Creek Powerhouse operation is dependent on water availability. Snowpack, snow melt, spring rain events, drought, and power demand all impact flow levels in the Project watershed, which in turn affects SCE's water-release schedule. In addition, the Project is operated in a manner consistent with FERC license requirements for minimum instream flows, reservoir levels, and ramping rates, and FERC-mandated seismic restrictions. Historical and Current FERC elevation requirements for the Project reservoirs are provided in Table B-1. Current FERC minimum flow release requirements are provided in Table B-2.

Annual net generation for the Project (1990–2023) is summarized in Table B-3. Under Current Operations (2012–2023) annual generation ranged from 17,923 megawatt hours (MWh) (2012) to 51,640 MWh (2017). The Project's average annual generation was 33,022 MWh. The estimated dependable generating capacity of the Project under Current Operations by calendar year is 18,047[1] MWh based on generation records from 2015, which was a very dry year.

(i) Daily Average Available Flows

The minimum, mean and maximum daily average recorded flows for the combined Gem Dam bypass and Rush Creek Powerhouse, Rush Creek Powerhouse, and Gem Dam bypass are provided below for the Historical and Current operational periods:

[1] Net generation was slightly lower in 2012 (17,923 MWh), however this included a generation outage from January through June of that year, and therefore was not considered a valid year on which to base the dependable generating capacity.

Location of Flow Measurement	Historical Operations (WY 1990–2011) cfs			Current Operations with Seismic Restrictions (WY 2012–2023) cfs		
	Mean	Min	Max	Mean	Min	Max
Gem Dam Bypass (Combined Rush Creek below Agnew Dam and Rush Creek Powerhouse [SCE 367/USGS 10287300 and SCE 357/10287289])	56.3	0.7	503.0	53.7	1.0	541.0
Rush Creek Powerhouse [SCE 367/USGS 10287300]	46.5	0.0	106.0	34.3	0.0	113.0
Gem Dam Bypass (flume below Agnew Dam [SCE 357/USGS 10287289])	9.9	0.0	397.0	19.4	0.7	440.0

Monthly flow duration curves for Rush Creek Powerhouse flows are provided in Table B-4 and Table B-5 for Historical (WY 1990–2011) and Current Operations (WY 2012–2023), respectively. Monthly flow duration curves for the combined Gem Dam bypass and Rush Creek Powerhouse are provided in Table B-6 and Table B-7 for Historical and Current Operations, respectively. Figure B-5 shows the monthly exceedance flows at these locations for Current Operations. Flow gages SCE 367/USGS 10287300 [Rush Ck PP tailrace nr June Lake CA] and SCE 357/USGS 10287289 [Rush C at Flume bl Agnew Lake nr June Lake CA] where used to develop the monthly flow duration curves.

(ii) Impoundment Capacity

The volume and surface area of these reservoirs at maximum post-2012 seismic restriction capacity is provided below:

Reservoir Name	Post-2012 Capacity (ac-ft)	Post-2012 Surface-Area (acres)
Waugh Lake	1,555 (seismic restriction capacity but not actively used)	130
Gem Lake	10,752	256
Agnew Lake	569 (not available for generation)	23

Under Current Operations, only Gem Lake is actively used for Project storage. Gem Lake fills to the maximum seismic restriction capacity of approximately 10,752 ac-ft (9,027.5 feet elevation) in the spring and maintains storage through the summer. Most of the storage is released in the fall/winter and the reservoir refills in the spring of the following year. Waugh Lake is no longer used to actively store water. The current seismic restriction allows some storage; however, the low-level outlets are left open year-round. Due to hydraulic capacity of the two outlets, water can

temporarily impound behind the dam during high flow events. Agnew Lake is no longer used to store water and the 569 ac-ft capacity is not storage or available for power generation but is the natural lake capacity.

Figure B-6a, Figure B-6b, and Figure B-6c show the volume elevation curves and seismic restrictions for Waugh Lake, Gem Lake and Agnew Lake, respectively.

(iii) Hydraulic Capacity

The estimated operating ranges for the Project powerhouse are as follows:

Powerhouse	Minimum Estimated Hydraulic Capacity (cfs)	Maximum Estimated Hydraulic Capacity (cfs)
Rush Creek	5	110

(iv) Tailwater Rating Curves

Turbines at the powerhouse discharge under minimal pressure into a tailrace canal (rectangular flume) which returns diverted water to Rush Creek. Since the turbines do not discharge under the surface of a stream or reservoir, a tailwater rating curve is not applicable in the calculation of generation capability.

(v) The design head of each powerhouse is as follows:

Figure B7 shows the approximate Rush Creek powerplant capability versus head relationship under current seismic restrictions. The minimum, normal[2] and maximum static heads are 1,717.6 feet, 1,764.7 feet and 1,780.8 feet, respectively. The minimum, normal and maximum powerplant capabilities are 12.5 MW, 12.9 MW, and 13.0 MW, respectively. The bottom elevation of the flow line leaving Gem Lake is 8,964.3 feet and the elevation of the powerhouse centerline is 7,246.7 feet (1,717.6 feet of head). The total variation in head at Gem Lake is 8,964.3 feet to 9,027.5 feet (63.2 feet head difference; 3.7 percent) under the current seismic restriction.

(3) Use of Generated Energy

Power generated at the Project is utilized by SCE to meet demand for energy in its service area. A nominal portion of the output provides local power to operate Project facilities.

(4) Plans for Future Development

SCE's Proposed Action does not include any new development at the Project.

[2] Average calculated from 2012–2023 Gem Lake elevations.

References

SCE (Southern California Edison Company). 2012. Request for Temporary Variance of License Article 401 for Curtailment of Gem and Waugh Lakes Water Elevation Requirement, SCE Rush Creek Hydroelectric Project (FERC No. 1389). FERC Accession No. 20120608-5011. June 7.

FERC (Federal Energy Regulatory Commission). 2012. Reservoir Drawdown for Rush Meadows Dam and Gem Lake Dam. FERC Accession No. 20120703-0309. June 28.

———. 2013. Interim Reservoir Operation Plan for Agnew Lake Dam. FERC Accession No. 20130502-0335. April 24.

———. 2016. Plan and Schedule for the Seismic Retrofit of the Rush Creek Project. FERC Accession No. 20161108-0178. October 27.

TABLES

Table B-1. FERC Elevation Requirements for Waugh, Gem, and Agnew Lakes, Including Current Seismic Restrictions

Reservoir	Current License Elevation Requirement (but Superseded by Current Seismic Restrictions)	Seismic Restrictions (Maximum Elevation, Ft)
Waugh Lake		
Regular Water Years	Within 2 ft of spillway elevation (9,416 ft) July 1 to the Tuesday following Labor Day weekend[1]	9,392.1 ft (≈1,555 ac-ft)
Low Water Years (<75 percent of the April 1 snow water equivalent for the Mono Basin)	Within 3 ft of spillway elevation (9,416 ft) July 1 to the Tuesday following Labor Day weekend[2]	
Gem Lake		
Regular Water Years	Within 2 feet of spillway elevation (9,052 feet) July 1 to the Tuesday following Labor Day weekend[1]	9,027.5 ft (≈10,752 ac-ft)
Low Water Years (<75 percent of the April 1 snow water equivalent for the Mono Basin)	Within 6 feet of spillway elevation (9,052 feet) July 1 to the Tuesday following Labor Day weekend[2]	
Agnew Lake		
All Water Years	Within 15 ft of spillway elevation (8,496 ft) July 1 to the Tuesday following Labor Day weekend	Completely Drained 8,470.0 ft (≈569 ac-ft natural lake)

[1] Licensee may maintain reduced lake levels when necessary to avoid the spill of water from Gem Lake at potentially damaging volumes. In such event, licensee shall cause the water level in Waugh and Gem Lakes to reach 2 ft below the spillway elevations as soon as practicable after July 1.

[2] To the extent sufficient water is available to meet (i) minimum stream flow requirements required in Condition No. 5, and (ii) a target 14 cfs release from the project powerhouse, based on plant operational minimums.

Notes: ac-ft = acre-feet
ft = feet

Table B-2. FERC Instream Flow Requirements for the Rush Creek Project

Location	Instream Flow Requirement (cfs)	Measurement Gage
Below Rush Meadows (Waugh Lake) Dam	10 cfs or natural flow into Waugh Lake, whichever is less	SCE 359 R and USGS 10287262
Below Gem Dam	1 cfs or natural flow if the reservoir falls below the face of the dam	SCE 352 R and USGS 10287281
Below Agnew Dam	1 cfs or natural flow if the reservoir falls below the face of the dam	SCE 357 and USGS 10287289

Notes: cfs = cubic foot/feet per second
FERC = Federal Energy Regulatory Commission
SCE = Southern California Edison Company
USGS = U.S. Geological Survey

Table B-3. Summary of Rush Creek Project Generation (1990–2023)

Year	Total Annual Net Generation (MWh)
Post-Seismic Restriction (2012–2023)	
2023	40,403
2022	32,650
2021	22,061
2020*	35,425
2019	48,006
2018	21,955
2017	51,640
2016	45,954
2015	18,047
2014	22,177
2013	40,023
2012*	17,923
Total Generation, Current Operations (2012–2023)	**396,264**
Average Annual Generation, Current Operations (2012–2023)	**33,022**
Pre-Seismic Restriction (1990–2011)	
2011*	48,384
2010	54,054
2009	56,088
2008*	16,070
2007	22,599
2006	63,318
2005	42,107
2004*	11,335
2003	32,753
2002	44,444
2001	36,921
2000	52,636
1999	54,585
1998	63,955
1997	67,574
1996	66,726

Year	Total Annual Net Generation (MWh)
1995	70,495
1994	35,057
1993	66,450
1992	39,610
1991	31,325
1990	39,486
Total Generation, Historical Operations (1990–2011)	**1,015,972**
Average Annual Generation, Historical Operations (1990–2011)	**46,181**

* Partial powerhouse outage or data missing in this year

Notes: MWh = megawatt hours

Table B-4. Duration Curves for Flows through the Rush Creek Powerhouse (Historical Operations WY 1990–2011) [SCE 367 & USGS 10287300]

Month	Flow Duration Curves (percent of time flow equaled or exceeded)[1]															
	95%	90%	85%	80%	75%	70%	60%	50%	40%	30%	25%	20%	15%	10%	5%	Max
Oct	5	22	25	28	33	35	38	50	61	76	78	79	85	91	96	104
Nov	3	19	25	30	31	35	36	38	41	49	51	61	69	78	79	102
Dec	3	14	24	29	31	33	35	36	37	41	47	49	51	52	62	79
Jan	4	15	20	29	31	32	34	36	38	41	44	48	49	52	60	96
Feb	5	15	17	29	31	33	36	37	41	45	50	52	52	58	76	102
Mar	5	14	24	26	29	31	37	41	50	53	57	67	75	76	87	102
Apr	3	7	12	14	14	15	26	36	40	42	47	51	62	78	90	101
May	14	14	15	20	25	31	35	42	62	79	91	96	99	100	103	106
Jun	14	14	20	29	33	34	36	54	89	94	100	102	102	103	104	104
Jul	11	20	22	30	34	35	45	66	88	93	97	100	102	104	104	106
Aug	6	8	12	13	14	21	23	31	36	54	70	83	89	96	102	106
Sep	5	10	15	22	25	29	34	36	55	70	79	83	88	96	100	103
Annual	5	13	16	23	28	31	35	38	45	54	67	77	87	96	101	106

Note:

[1] Powerhouse flows from Rush Creek PP tailrace (USGS 10287300).

Table B-5. Duration Curves for Flows Through the Rush Creek Powerhouse (Current Operations WY 2012–2023) [SCE 367 & USGS 10287300]

Month	Flow Duration Curves (percent of time flow equaled or exceeded)1															
	95%	90%	85%	80%	75%	70%	60%	50%	40%	30%	25%	20%	15%	10%	5%	Max
Oct	4	10	10	12	12	16	20	22	30	35	36	37	44	53	54	79
Nov	3	4	8	10	10	11	13	20	28	31	35	41	44	44	53	100
Dec	0	0	0	3	4	9	10	10	16	30	31	31	42	53	84	102
Jan	0	0	0	3	5	8	10	10	13	23	30	30	31	33	38	81
Feb	0	0	4	7	10	10	10	15	30	30	31	41	54	60	88	105
Mar	0	0	4	4	5	6	9	18	30	53	60	63	84	101	103	104
Apr	0	0	4	4	4	5	7	20	31	49	53	53	60	62	91	107
May	0	0	2	3	6	10	22	46	56	83	94	102	103	104	106	108
Jun	0	0	8	10	19	32	62	94	100	101	101	101	102	103	106	113
Jul	0	0	9	18	20	20	37	49	97	99	100	101	101	103	105	106
Aug	3	0	5	11	13	15	20	22	26	44	65	89	99	100	101	105
Sep	3	0	4	5	12	14	19	20	24	25	26	32	35	39	77	102
Annual	0	0	4	6	10	10	15	22	31	41	51	60	88	100	102	113

Note:

[1] Powerhouse flows from Rush Creek PP tailrace (USGS 10287300).

Table B-6. Duration Curves for the Combined Gem Dam Bypass and Rush Creek Powerhouse (Historical Operations WY 1990–2011) [SCE 367 & USGS 10287300 and SCE 357 & USGS 10287289]

Month	Flow Duration Curves (percent of time flow equaled or exceeded)1															
	95%	90%	85%	80%	75%	70%	60%	50%	40%	30%	25%	20%	15%	10%	5%	Max
Oct	21	24	27	31	34	36	42	54	68	79	81	83	87	92	101	279
Nov	9	24	28	32	35	36	39	40	44	51	54	62	72	80	82	105
Dec	6	16	25	30	32	35	37	38	39	42	50	51	51	53	64	81
Jan	10	16	21	31	32	34	36	38	39	42	45	50	51	54	61	106
Feb	8	16	17	31	32	34	38	39	42	47	51	54	55	60	79	105
Mar	7	16	25	28	30	32	39	42	50	56	60	69	78	79	89	105
Apr	6	7	14	16	16	18	29	37	42	44	49	56	63	80	90	104
May	15	16	17	22	27	31	36	44	65	85	93	97	101	106	108	152
Jun	18	22	24	31	34	35	46	76	98	106	118	172	193	256	295	327
Jul	14	21	23	32	34	37	51	73	97	112	146	214	264	290	314	503
Aug	7	11	15	15	17	21	25	34	41	69	72	87	98	103	113	343
Sep	11	13	21	23	29	32	35	39	61	72	81	89	90	98	101	107
Annual	10	16	21	25	31	33	37	40	49	60	71	81	91	101	118	503

Note:

[1] Sum of Rush Creek at Flume below Agnew (USGS 10287289) and Rush Creek PP tailrace (USGS 10287300) – includes minimum flows and spill below Agnew.

Table B-7. Duration Curves for the Combined Gem Dam Bypass and Rush Creek Powerhouse (Current Operations WY 2012–2023) [SCE 367 & USGS 10287300 and SCE 357 & USGS 10287289]

Month	Flow Duration Curves (percent of time flow equaled or exceeded)1															
	95%	90%	85%	80%	75%	70%	60%	50%	40%	30%	25%	20%	15%	10%	5%	Max
Oct	6	12	12	14	15	18	22	24	33	37	38	40	46	56	102	104
Nov	5	6	11	11	12	13	16	22	30	33	37	43	46	46	57	103
Dec	3	5	6	10	11	12	12	15	32	33	39	48	52	56	86	110
Jan	2	2	5	8	8	11	12	13	19	32	32	32	33	38	49	84
Feb	2	6	7	9	11	11	13	18	32	32	33	44	58	64	90	109
Mar	5	6	7	8	8	10	12	23	32	55	62	66	91	103	105	107
Apr	7	8	8	9	10	12	22	34	42	55	58	63	66	75	114	251
May	7	9	10	14	24	38	57	73	103	133	152	166	172	187	218	321
Jun	3	8	11	15	27	51	88	103	107	161	201	259	360	423	492	541
Jul	2	8	12	20	22	23	39	50	100	102	105	249	304	432	494	508
Aug	6	6	7	14	15	17	22	25	29	47	67	97	102	104	106	251
Sep	5	5	5	7	15	16	21	23	26	27	28	34	36	42	79	104
Annual	5	7	8	11	12	13	21	27	35	48	59	75	102	106	193	541

Note:

[1] Sum of Rush Creek at Flume below Agnew (USGS 10287289) and Rush Creek PP tailrace (USGS 10287300) – includes minimum flows and spill below Agnew.

FIGURES

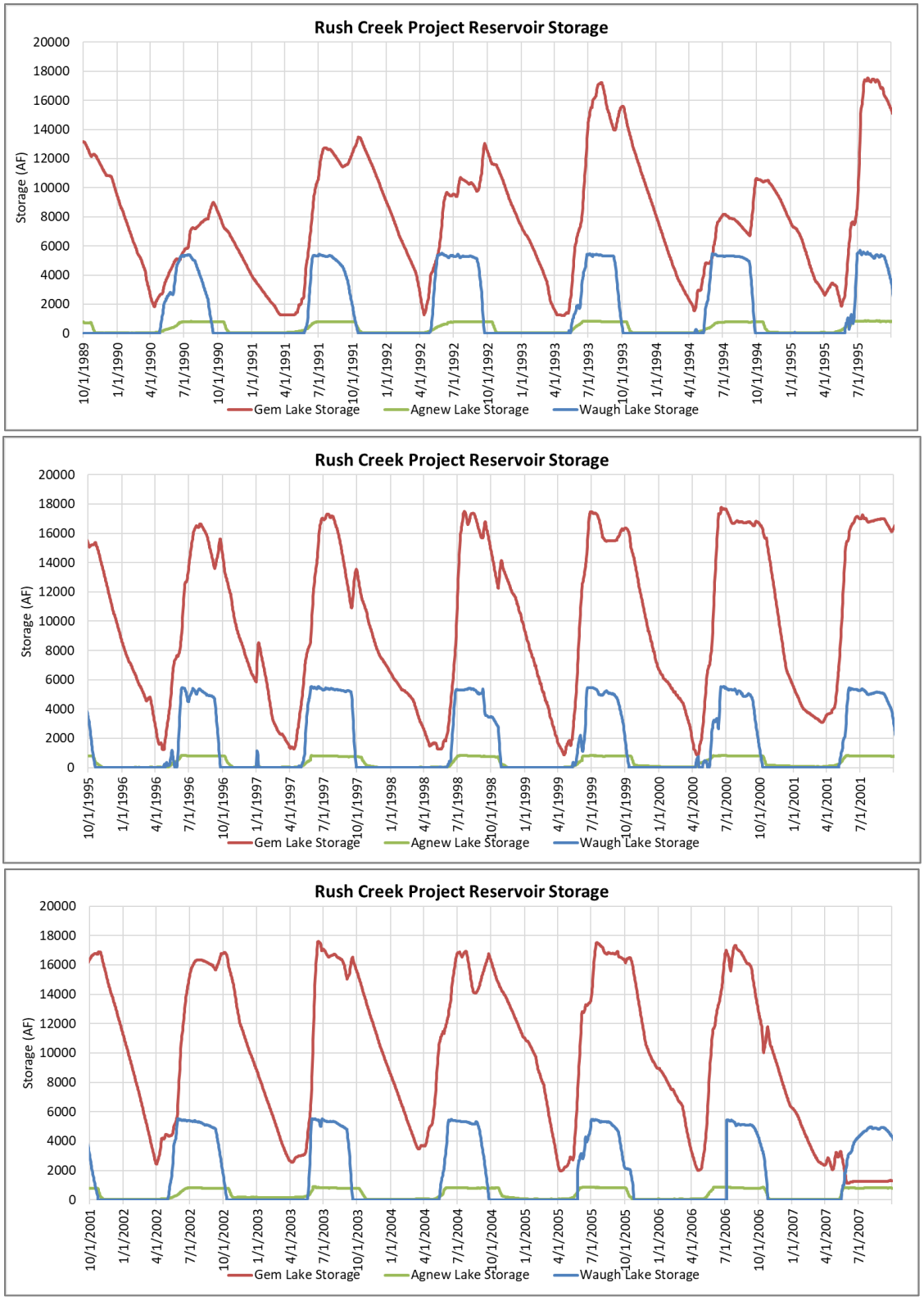


Figure B-1a. Rush Creek Project Reservoir Storage (WY 1990–2007) [SCE 359/USGS 10287260, SCE 352/USGS 10287280, and SCE 351/USGS 10287285]

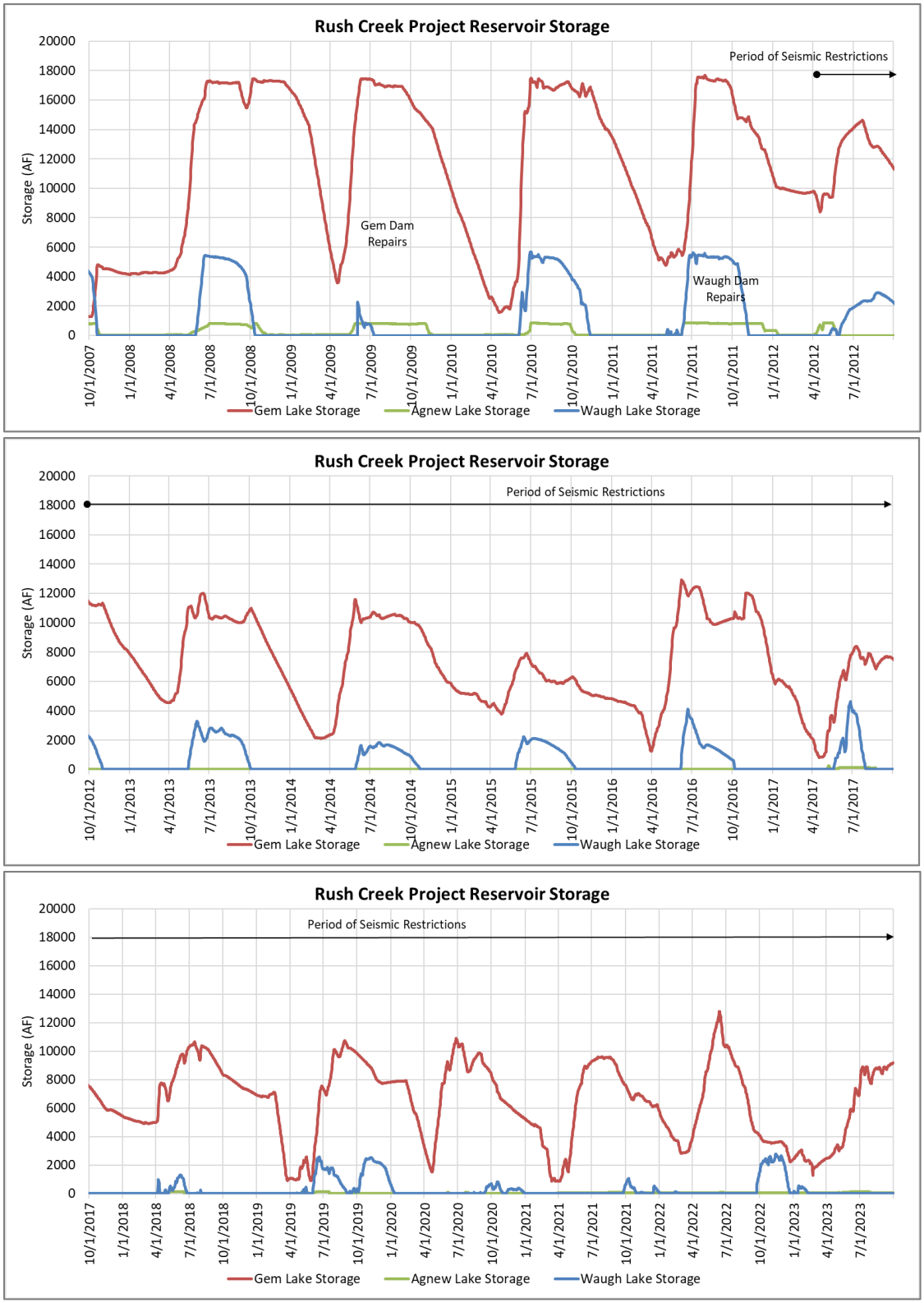


Figure B-1b. Rush Creek Project Reservoir Storage (WY 2007–2023) [SCE 359/USGS 10287260, SCE 352/USGS 10287280, and SCE 351/USGS 10287285]

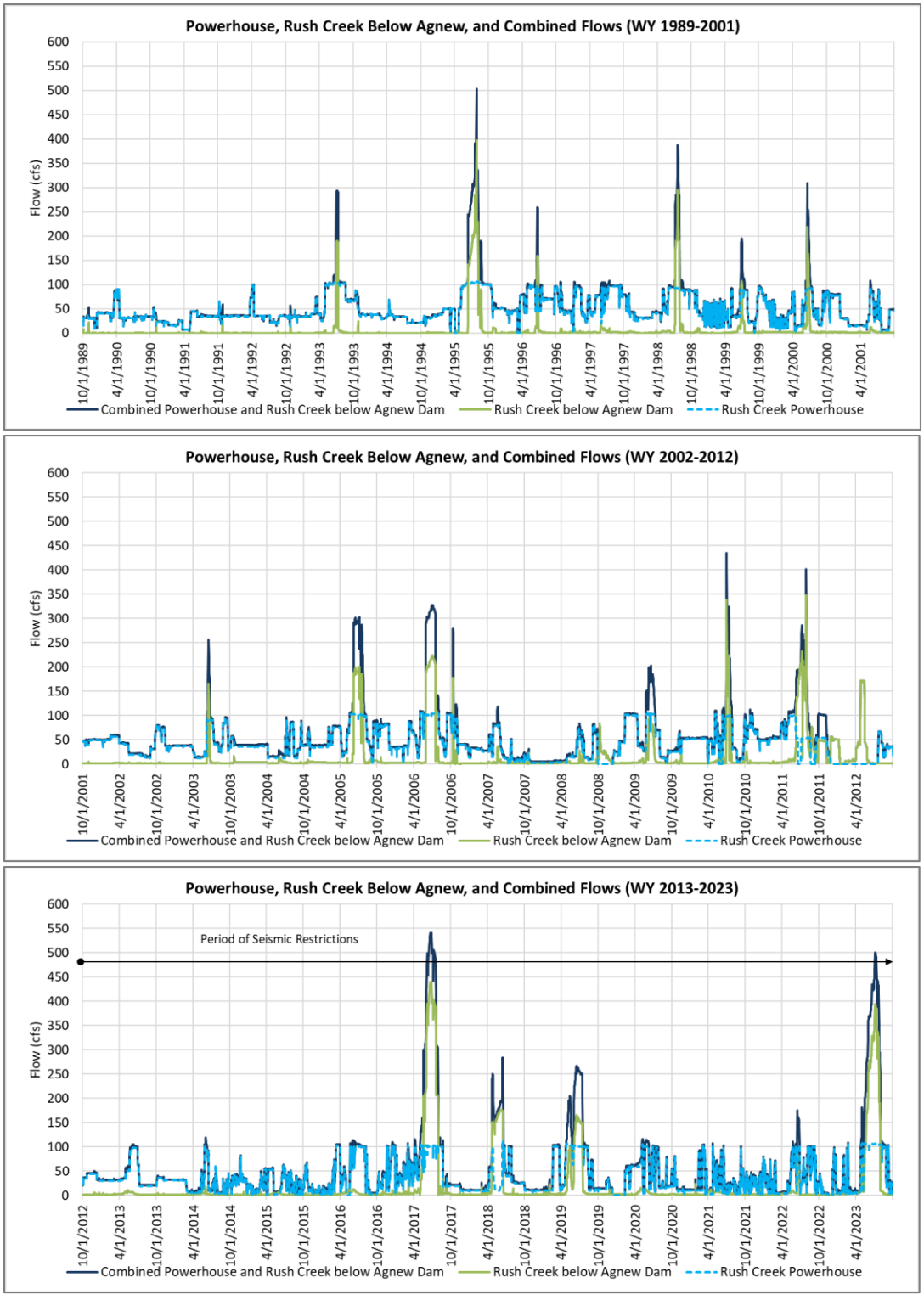


Figure B-2. Daily Mean Flow (WY 1990–2023) at the Rush Creek Powerhouse (SCE 367/USGS 10287300), Rush Creek below Agnew Dam (SCE 357/USGS 10287289), and the Locations Combined (Combined Powerhouse and Gem Dam bypass [Rush Creek below Agnew Dam flume])

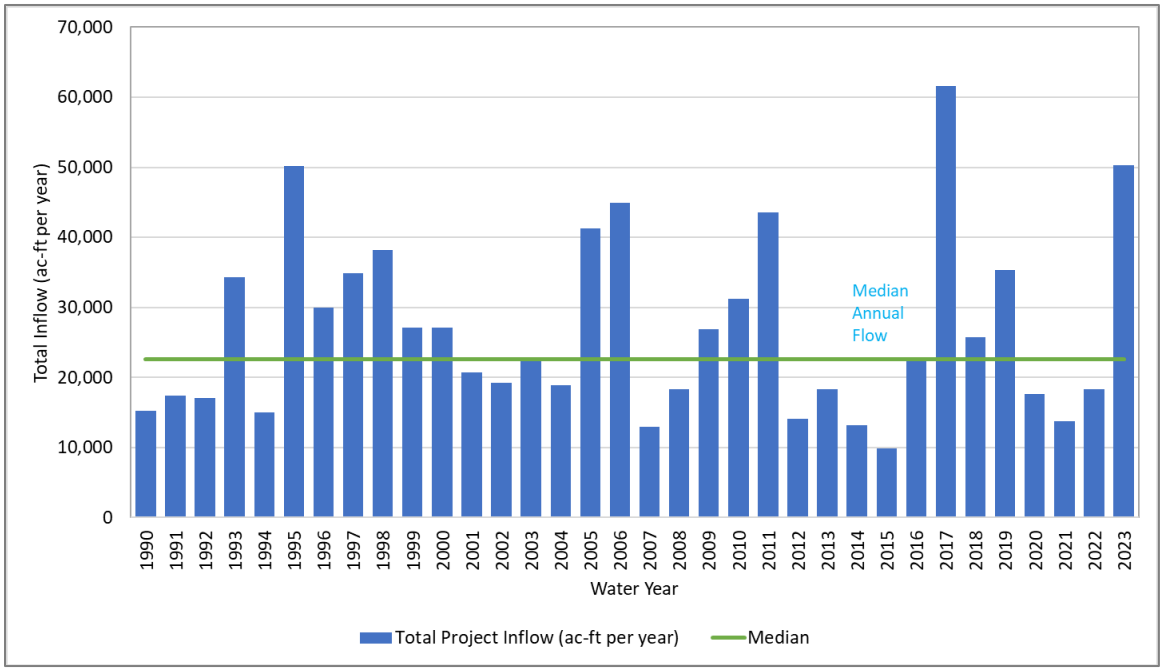


Figure B-3. Annual Inflow to the Rush Creek Project (WY 1990–2023)

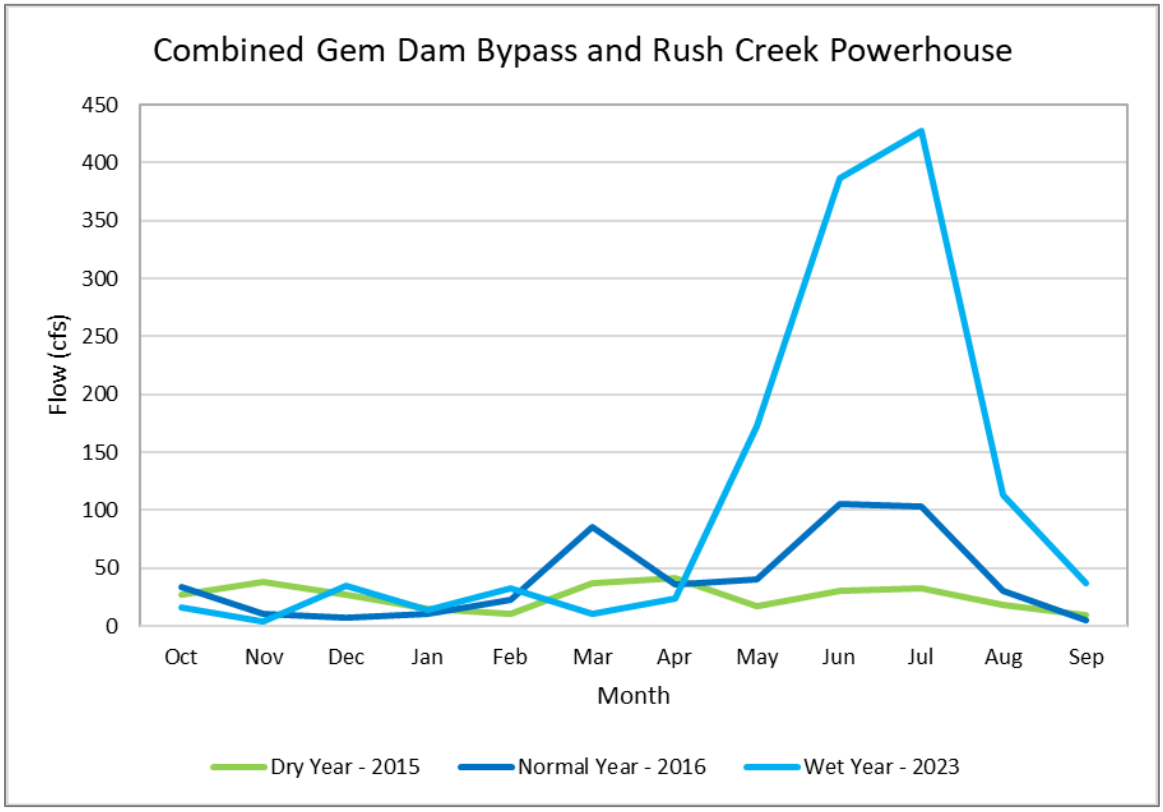


Figure B-4a. Combined Gem Dam Bypass and Rush Creek Powerhouse Monthly Average Flows in a Dry Year (2015), Normal Year (2016), and Wet Year (2023) [SCE 367/USGS 10287300 combined with SCE 357/USGS 10287289]

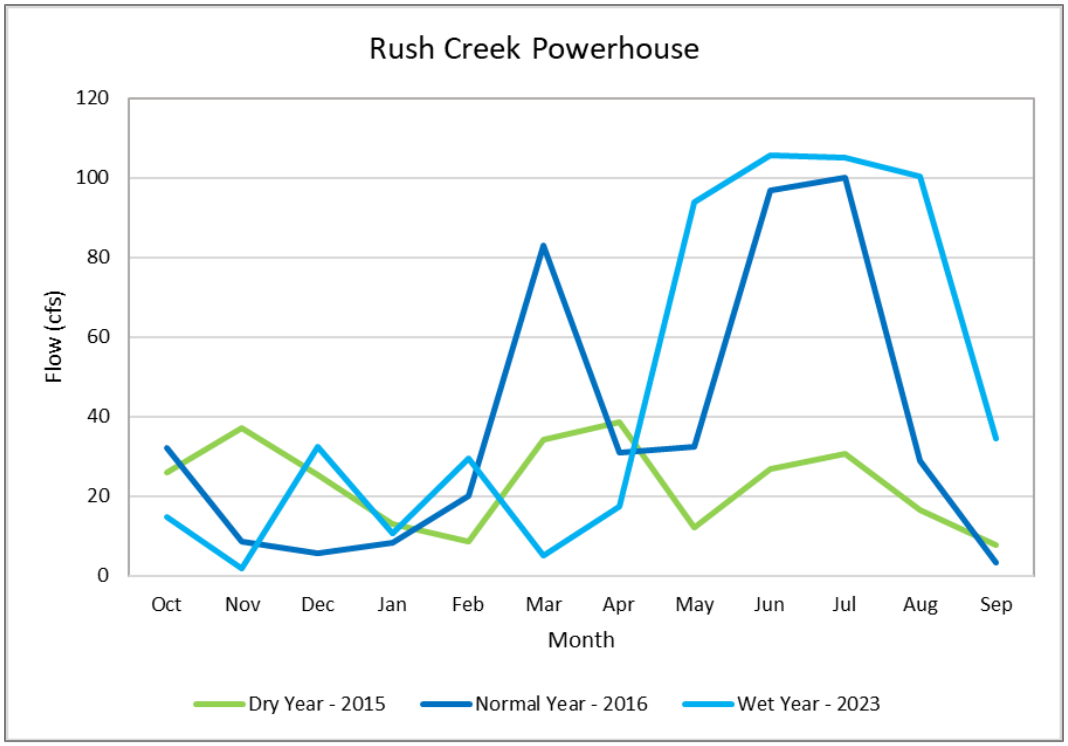


Figure B-4b. Rush Creek Powerhouse Monthly Average Flows in a Dry Year (2015), Normal Year (2016), and Wet Year (2023) [SCE 367/USGS 10287300]

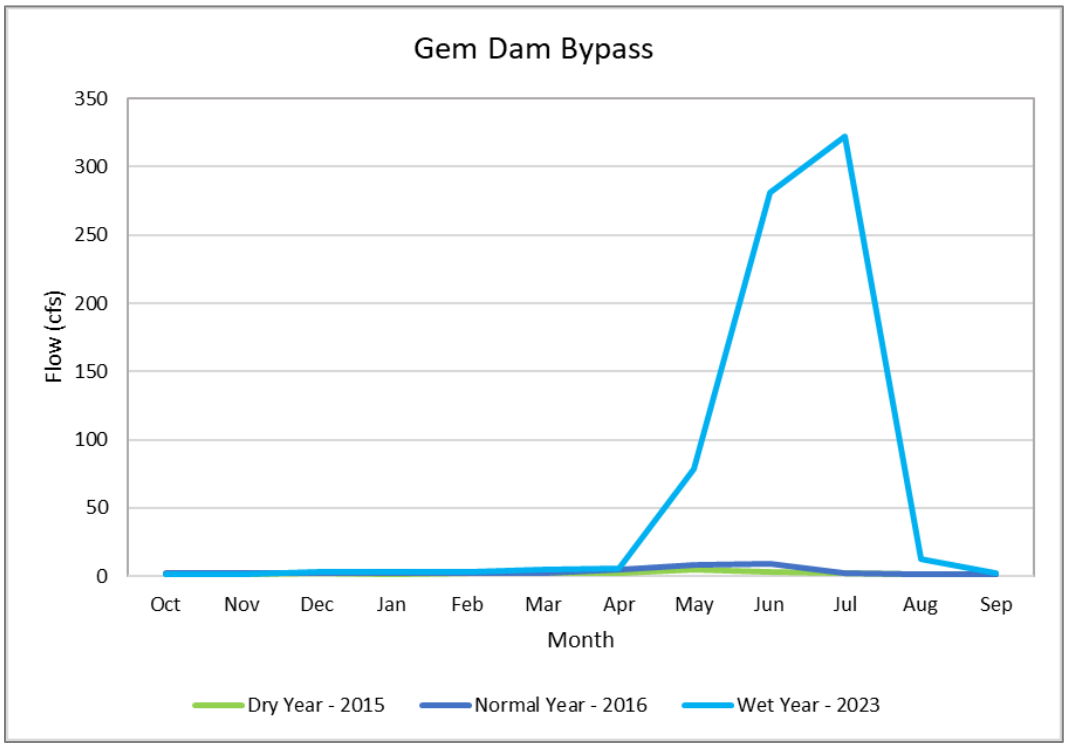


Figure B-4c. Gem Dam Bypass Monthly Average Flows in a Dry Year (2015), Normal Year (2016), and Wet Year (2023) [SCE 357/USGS 10287289]

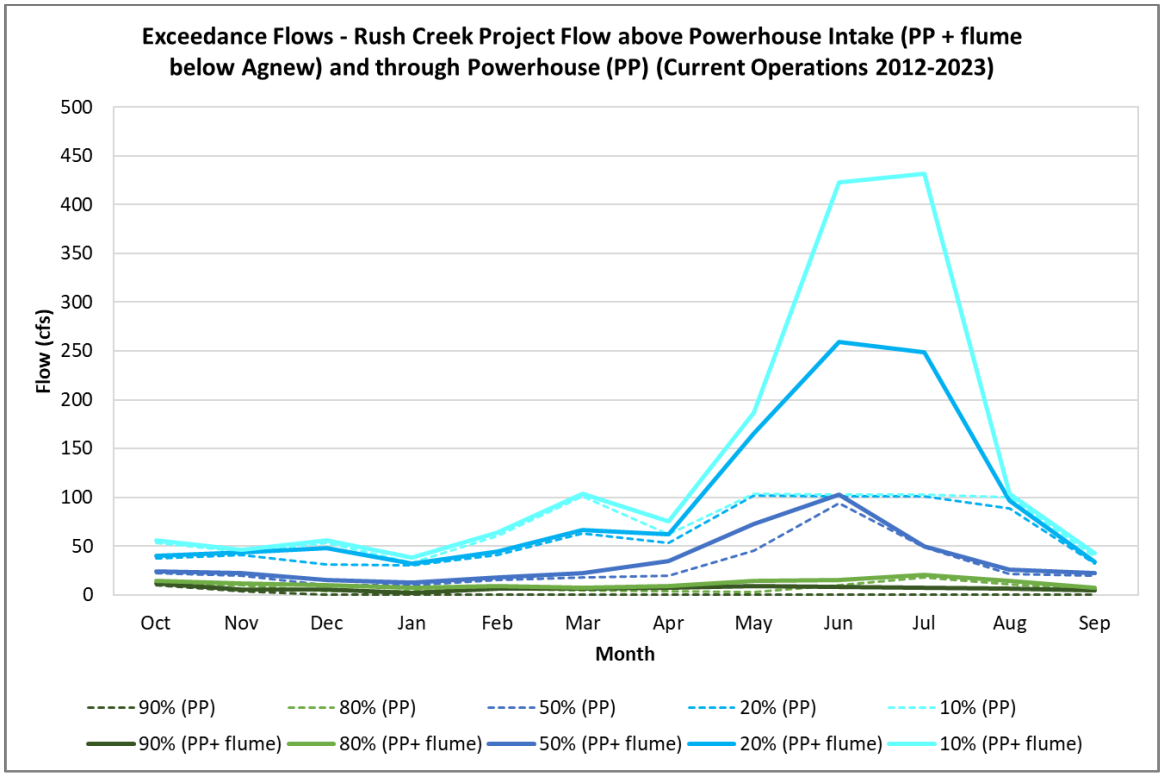


Figure B-5. Combined Gem Dam Bypass and Rush Creek Powerhouse (PP + flume) and Powerhouse only (PP) Monthly Exceedance Flows (10%, 20%, 50%, 80%, and 90%) (WY 1990–2011) [SCE 367/USGS 10287300 combined with SCE 357/USGS 10287289]

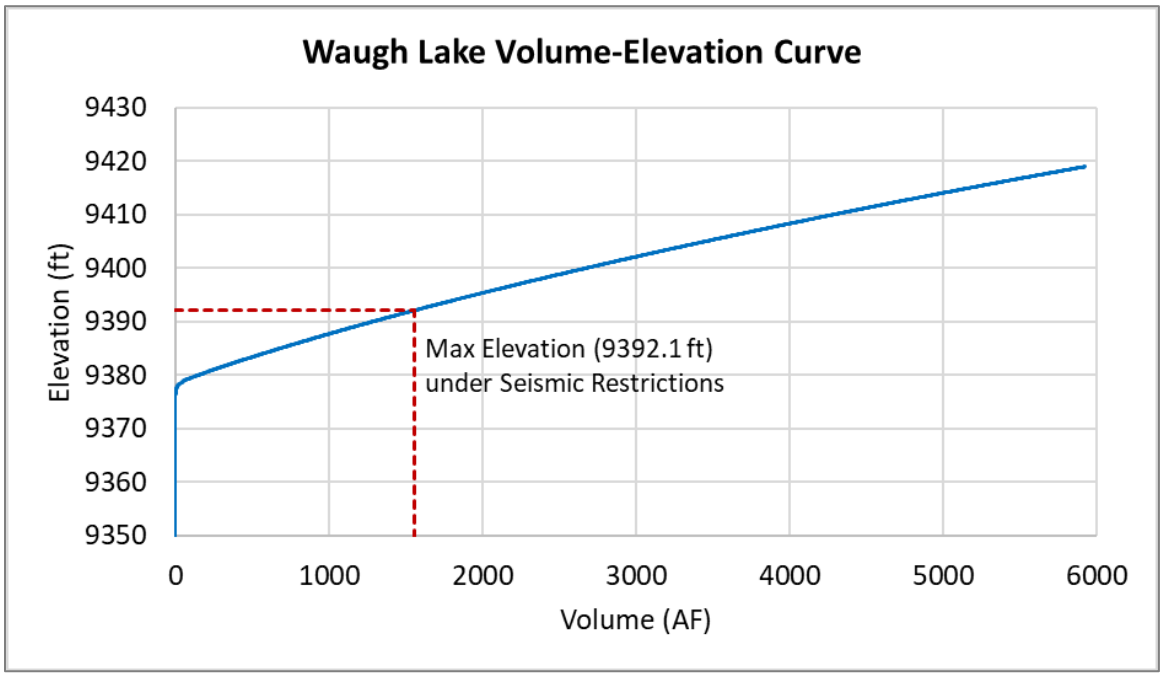


Figure B-6a. Waugh Lake Volume-Elevation Curve

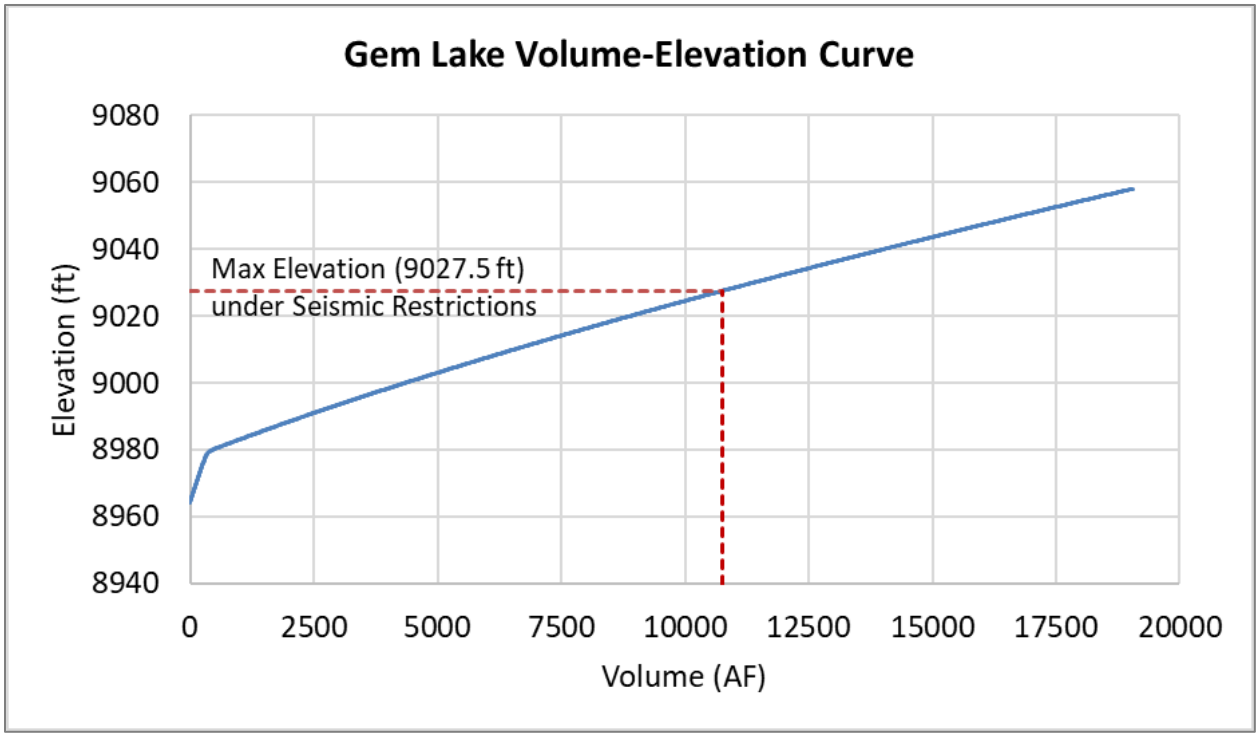


Figure B-6b. Gem Lake Volume-Elevation Curve

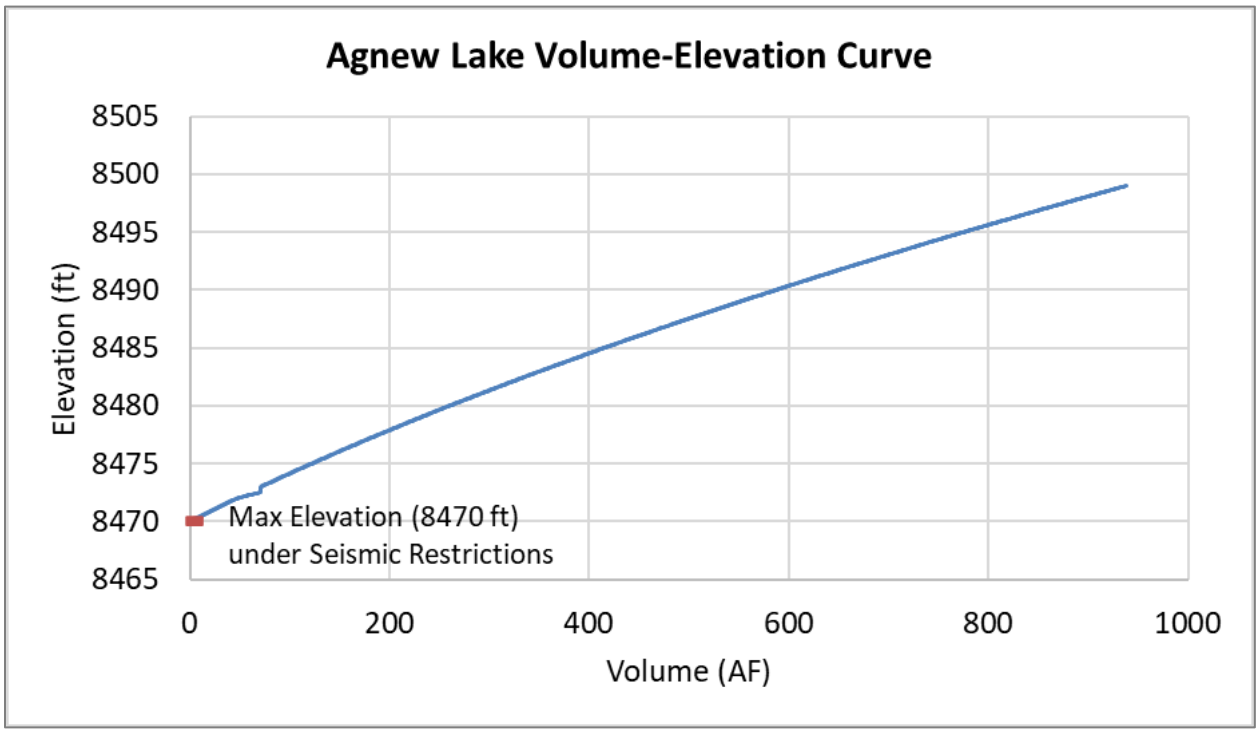


Figure B-6c. Agnew Lake Volume-Elevation Curve

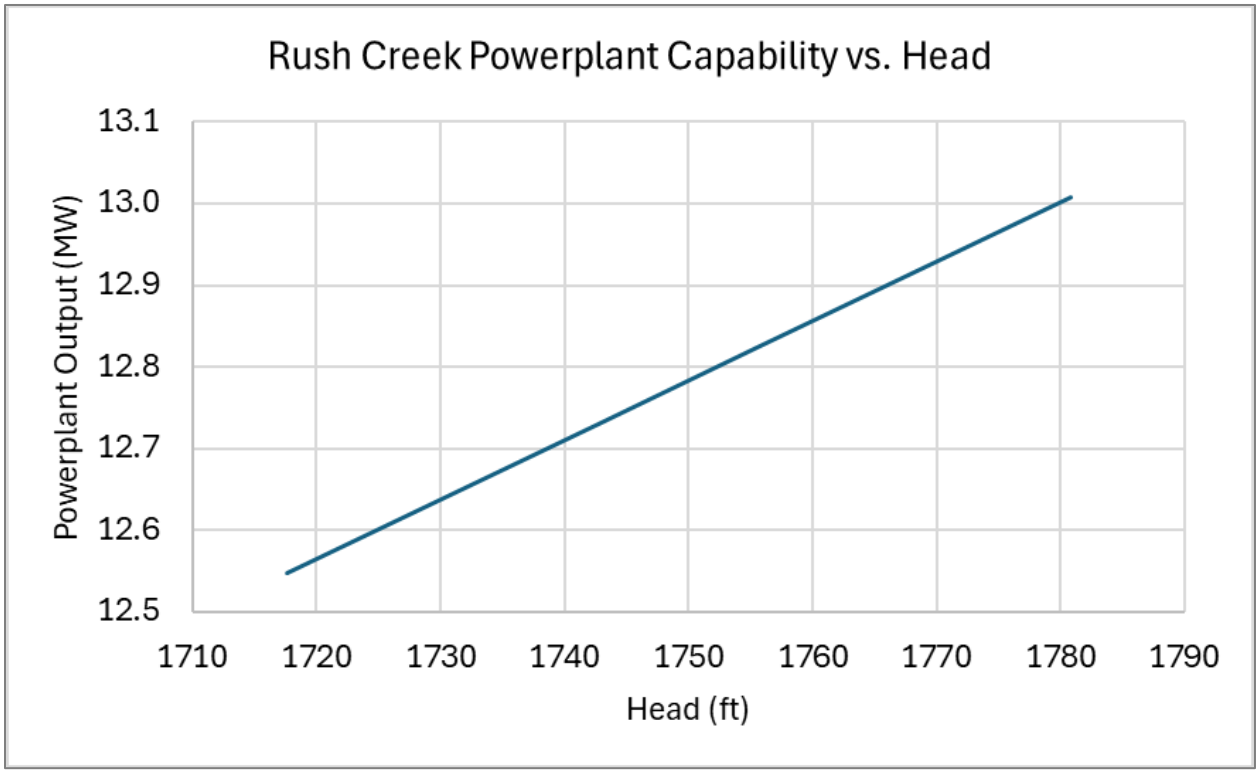


Figure B-7. Approximate Rush Creek Powerplant Capability Versus Head

SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
(FERC Project No. 1389)

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

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

August 2024

Exhibit C: Construction History and Proposed Construction Schedule

Section 5.18(a)(5)(iii) of Title 18 of the Code of Federal Regulations (CFR) (4-1-2023 Edition) 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) Construction History

This application is not for an initial license. Therefore, a tabulated chronology of construction is not required. Refer to Exhibit H for a discussion of the history of the project and record of programs to upgrade the operation and maintenance of the project (18 CFR § 5.18(c)(1)(ii)(D)).

(2) New Development

Southern California Edison Company's Proposed Action included in its License Application includes:

- Partial removal of Agnew and Rush Meadows dams; and
- Retrofitting Gem Dam to facilitate continued operation and maintenance of the Rush Creek Hydroelectric Project (Project) for power generation.

Under the Proposed Action, hydroelectric operations at Rush Meadows and Agnew dams would be discontinued and these facilities would be removed from the Federal Energy Regulatory Commission (FERC) license once all license conditions and regulatory requirements of FERC and other resource agencies are met. Gem Dam would be retrofitted to facilitate compliance with the seismic restrictions under a probable maximum flood event with a new spillway and reduced dam height. Under the Proposed Action, hydroelectric operations at Gem Dam and Rush Creek

Powerhouse would continue under FERC jurisdiction consistent with conditions identified in a new FERC license. No new generation capacity is proposed to be added to the Project. Refer to Exhibit E, Section 5 for a complete description of the Proposed Action.

The construction schedule is contingent on issuance of a new license and associated license conditions for the Project. In general, construction activities would follow a phased approach over several years, as noted below:

- Phase 1: Development of Final Engineering Plans
- Phase 2: Permitting/Agency Coordination and Approval of the Engineering Design by FERC and California Division of Safety of Dams
- Phase 3: Implementation/Construction
- Phase 4: Restoration and Implementation of License Conditions

It is anticipated that partial removal of Rush Meadows and Agnew dams would require one construction season and retrofitting of Gem Dam would require three construction seasons. The duration of construction may change based on final engineering design. The construction season would extend from approximately June 1 to October 31, depending on weather and snow conditions.

A schedule for these construction-related activities will be provided to FERC within a year following license issuance. It is anticipated that Phase 1 would begin within two years following license issuance.

SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
(FERC Project No. 1389)

Draft License Application
EXHIBIT D: Project Costs and Financing

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

August 2024

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

Exhibit D: Project Costs and Financing

Section 5.18(a)(5)(iii) of Title 18 of the Code of Federal Regulations (4-1-2023 Edition) 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 statement 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 A).

(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 of 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 estimated 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) Original Cost

This application is not for an initial license, therefore, a statement of the original cost of Rush Creek Hydroelectric Project (Project) land, water rights, structures, and facilities are not applicable.

(2) Takeover Cost

It is the intent of Southern California Edison Company (SCE) to continue to operate the Project upon receipt of a new license. However, in the event the Project is taken over at the end of the license term, pursuant to Section 14 of the Federal Power Act (FPA), SCE would be entitled to receive their net investment plus severance damages. The amount payable to SCE in the event of a takeover, as provided in Section 14 of the FPA, includes the net investment, not to exceed fair value. Some of the principles bearing upon the final determination of fair value are yet to be ascertained. There are, however, some basic figures as to which there should be no substantial dispute. The net book value, which is the historical cost less accumulated depreciation, can be used as one proxy for fair value. SCE estimates the Project's total estimated net book value is approximately $10.8 million as of December 2023.

(3) Cost of New Development

SCE's Proposed Action does not include any new development at the Project. It does, however, include significant work associated with existing Project facilities, including:

- Partial removal of Agnew and Rush Meadows dams; and
- Retrofitting Gem Dam to facilitate continued operation and maintenance of the Project for power generation.

Under the Proposed Action, hydroelectric operations at Rush Meadows and Agnew dams would be discontinued and these facilities would be removed from the Federal Energy Regulatory Commission (FERC) license once all license conditions and regulatory requirements of FERC and other resource agencies are met. Gem Dam would be retrofitted to facilitate compliance with seismic restrictions under a probable maximum flood event with a new spillway and reduced dam height. Under the Proposed Action, hydroelectric operations at Gem Dam and Rush Creek Powerhouse would continue under FERC jurisdiction consistent with conditions identified in a new FERC license. No new generation capacity is proposed to be added to the Project.

Estimated costs for Project modifications are provided below. Costs are Class 4 engineering estimates that will be refined once the engineering design for each modification is finalized.

Action	Estimated Cost ($2024)
Rush Meadows Dam – Partial Removal	$13,800,000
Agnew Dam – Partial Removal	$9,200,000
Gem Dam – Retrofitting	$71,300,000

(4) Cost of Financing

The annual costs for the Project include expenses for operation and maintenance, as well as capital improvement work.

(i) The current Cost of Capital is listed below:

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

(ii) Property taxes associated with the Project for 2023 were approximately $185,172. State and federal income taxes are computed for all SCE Hydro assets combined and, therefore, no amount is specifically identified for this Project.

(iii) Depreciation for the Project for 2023 was $431,574.

(iv) In 2023, Project operation and maintenance expenses were $1,746,190 and administrative and general expenses were $405,042.

(v) The estimated capital cost and annual operation and maintenance expense of each proposed environmental measure is listed in XX and totals $XX as an annualized value (over a 50-year license term). *Note: these values will be provided in the Final License Application*.

(5) Value of Project Power

The value of the Project power is quantified through three market products: energy value, capacity value, and renewable energy credits (REC). Energy produced by the powerhouse is valued based on California Independent System Operator's 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.

The Project's projected value is determined by first estimating the production of the plant. The estimated annual amount of energy produced from the Project was derived from a 20-year annual average of historical production from 2004 to 2023.

The forecasted production (megawatt hours [MWh]) for the Project was multiplied by the marginal energy cost forecast and the REC 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.

SCE estimates the 2023 Energy Value ($/MWh) to be $34.02, the 2023 REC Value ($/MWh) to be $30.30 and the 2023 Capacity Value ($/kilowatt-year) to be $172.44 (refer to Exhibit E, Section 11, Developmental Analysis).

(6) Sources of Financing and Revenues

SCE filed a General Rate Case (GRC) with the California Public Utilities Commission, which was approved in August 2021. Included in that Rate Case filing were the generation-related operation and maintenance expenses as well as administrative and general expenses. The GRC filings included the expected costs for the years of 2021–2024, which are associated with the operation and maintenance of all the SCE Hydro assets, as well as the costs associated with any anticipated incremental capital additions. The capital and operation and maintenance expenses necessary for continued operation of the Project would be collected through those approved rates. Those approved rates would include costs associated with license condition requirements imposed upon the Project in the new license.

This Project is operated as a component of SCE's Hydro Generation Division, which is part of the Power Supply Department. 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) 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 Final License Application*.

(8) Value of On-Peak and Off-Peak Project Power

SCE estimates the 2023 On-Peak Energy Value ($/MWh) to be $34.18, and Off-Peak Energy Value to be $33.70. REC and Capacity values and prices are set and estimated in a monthly basis, therefore On-Peak and Off-Peak values are not applicable.

(9) Effects of Change in Project Operations

Due to changes in Project operations under the Proposed Action, it is estimated that the average annual project generation would be XX megawatt hours, resulting in a change in the value of project power of approximately $XX per year. *Note: these values will be provided in the Final License Application*.

SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
(FERC Project No. 1389)

Draft License Application
EXHIBIT G: Project Maps

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

August 2024

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

Exhibit G: Project Maps

Section 5.18(a)(5)(iii) of Title 18 of the Code of Federal Regulations (CFR) (4-1-2023 Edition) 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.), the map datum (i.e., feet, meters, miles, etc.). Three sets of the maps must be submitted on compact disk 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 that 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*. The boundary around linear (continuous) project features such as access roads, transmission lines, and conduits may be described by specified distances from center lines or offset lines of survey. The width of such corridors must not exceed 200 feet unless good cause is shown for a greater width. Several sections of a continuous feature may be shown on a single sheet with information showing the sequence of contiguous sections.

(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 bench mark will be destroyed or rendered unusable by the construction of project works, at least two permanent, marked witness monuments or bench marks must be established at accessible points. The maps show the location (and elevation, for bench marks) of the survey monument or bench mark which will be destroyed or rendered unusable, as well as of the witness monuments or bench marks. Connecting courses and distances from the witness monuments or bench marks to the original must also be shown.

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

(4) *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 occupancy and use other than fee title, including rights acquired or to be acquired by easement or lease.

The current Exhibit G maps (G-1 through G-4) for the Rush Creek Project (Project) on file with the Federal Energy Regulatory Commission (FERC) are listed below and provided in Appendix G-1.

Exhibit No.	Description
G-1	Rush Meadows Reservoir
G-2	Rush Creek Natural Stream Bed
G-3	Gem Lake and Dam
G-4	Agnew Lake and Dam

A review of the existing FERC Project boundary against the latest data sources available for the Project is currently being conducted by Southern California Edison Company (SCE). Advancements in technology such as Global Positioning Systems, Light Detection and Ranging (LiDAR), and improved aerial imagery have allowed for greater accuracy in the depiction of Project facilities both on the exhibits and in the electronic Geographic Information System files to be submitted to FERC. Based on these sources, SCE will revise the existing FERC Project boundary to correct known errors in the current Exhibit G. These specific boundary corrections (i.e., technical corrections) and acreage information will be included in the revised Exhibit G to be provided in the Final License Application.

Following implementation of Project facility modifications, SCE will file revised Exhibit G maps to formally remove lands from the FERC Project boundary that will no longer be necessary for operation and maintenance of the Project. These FERC Project boundary revisions, which SCE is requesting that FERC approve as part of this Application (and to become effective upon FERC's approval of a set of revised Exhibit G maps that SCE will file following completion of construction activities associated with Agnew and Rush Meadows), are depicted in Proposed Action Maps PA-1 through PA-4 provided in Appendix G-2. Maps PA-1 through PA-4 are for reference only and any boundaries and

acreage estimates are preliminary and subject to change according to further refinement of engineering design.

The post-implementation Exhibit G submittal would include updated calculations of federal lands included within the new FERC Project boundary. Once FERC approves the revised Exhibit G maps, the Project boundary change would become effective.

Current and Estimated FERC Project Boundary Acreages

Ownership	Current Acreage	Estimated Acreages following Technical Corrections	Estimated Acreages post Project Facility Modifications
United States Forest Service	688	To be provided in the FLA	To be provided in the FLA
Southern California Edison	32	To be provided in the FLA	To be provided in the FLA
Total	**720**	**To be provided in the FLA**	**To be provided in the FLA**

FLA = Final License Application

APPENDIX G-1

Current Exhibit G Maps

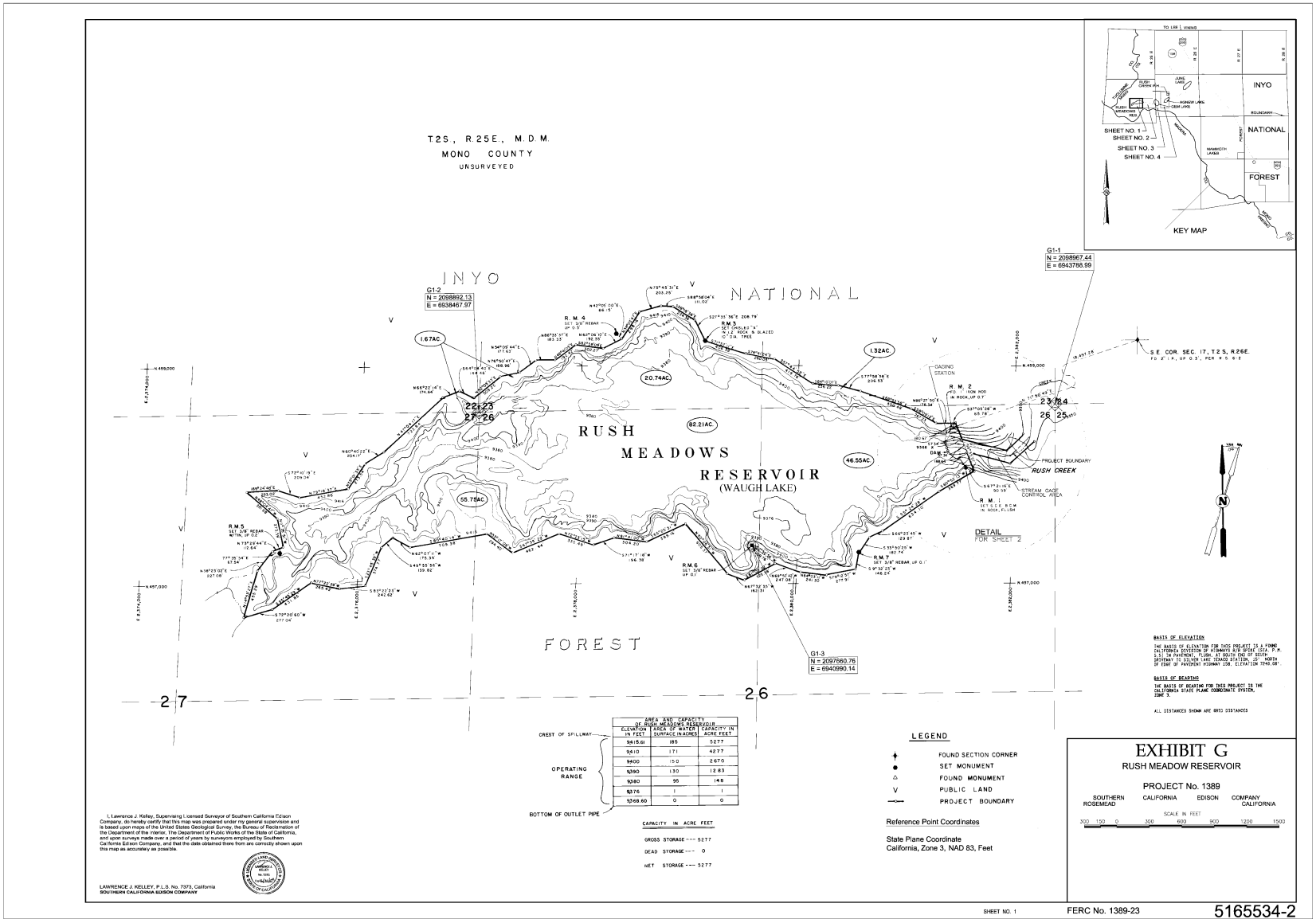


Figure G-1. Rush Meadows Reservoir

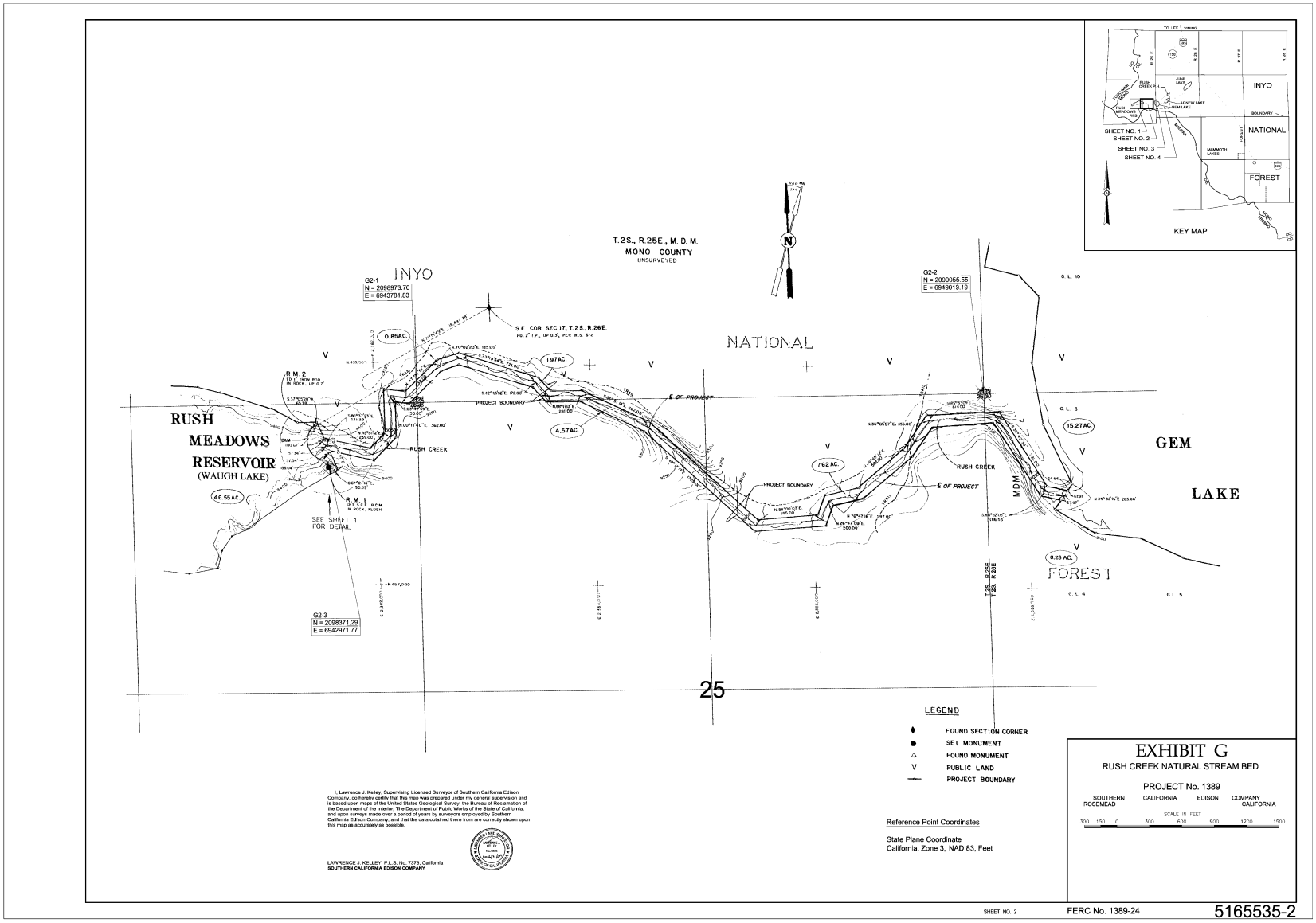


Figure G-2. Rush Creek Natural Stream Bed

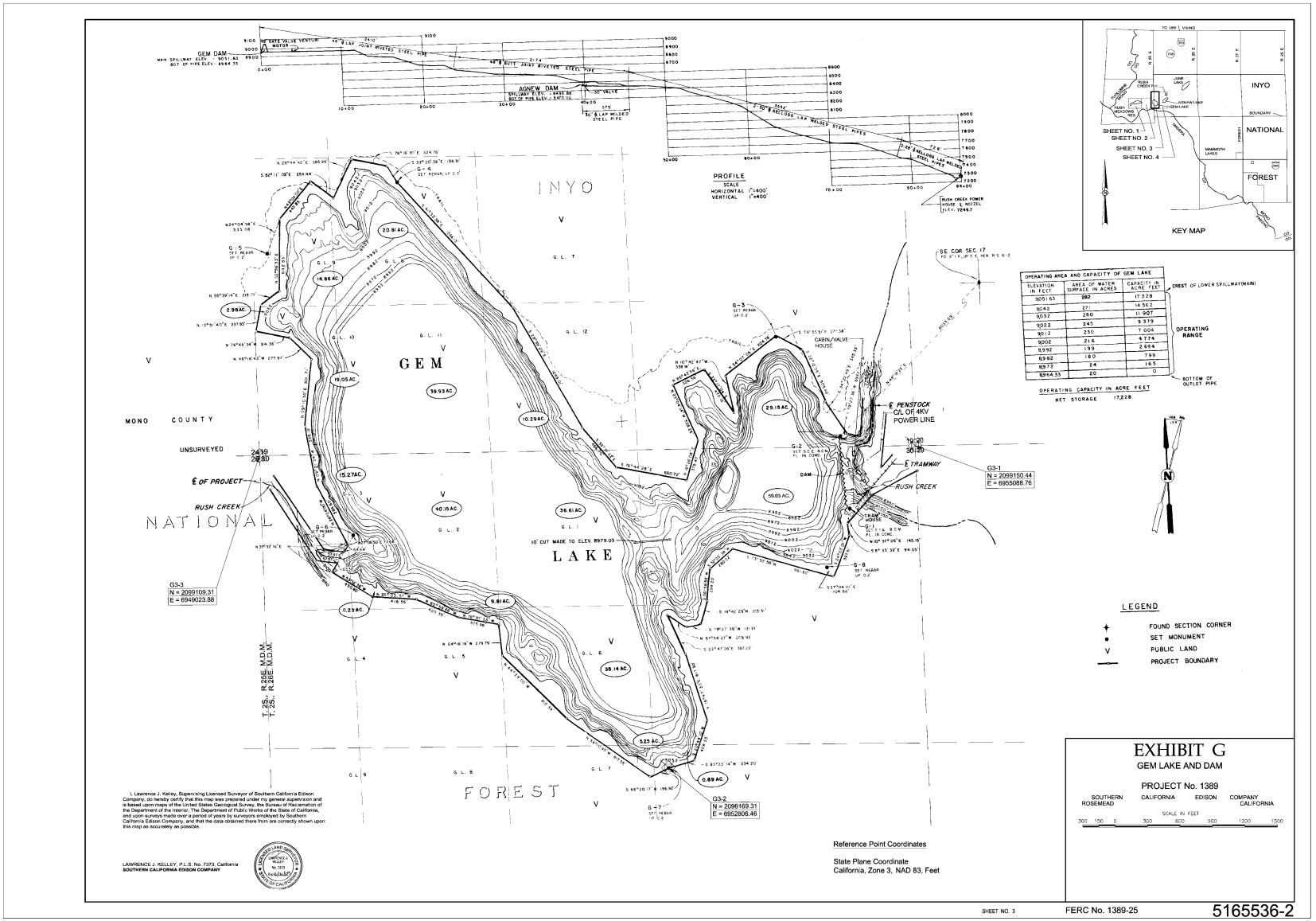


Figure G-3. Gem Lake and Dam

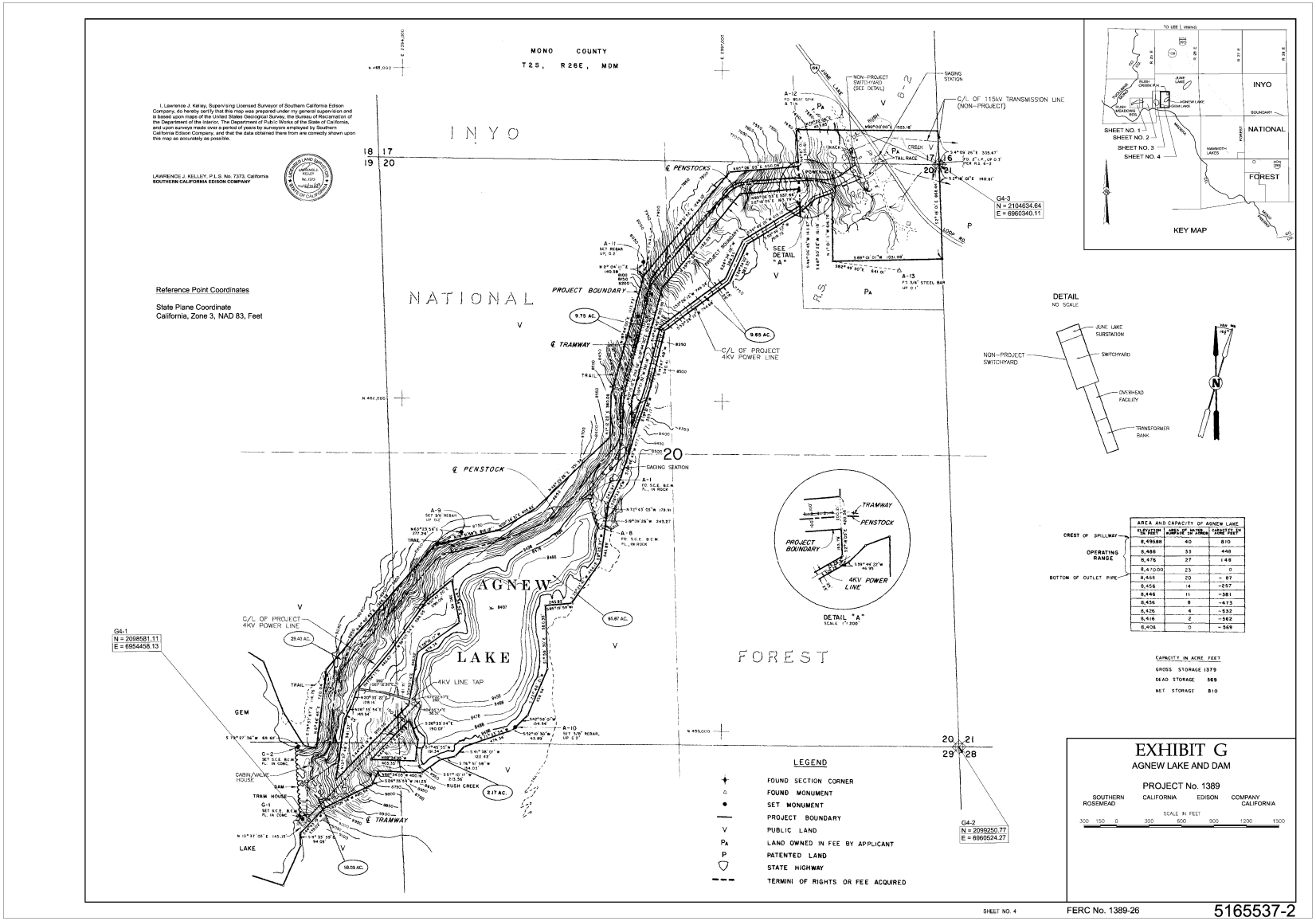
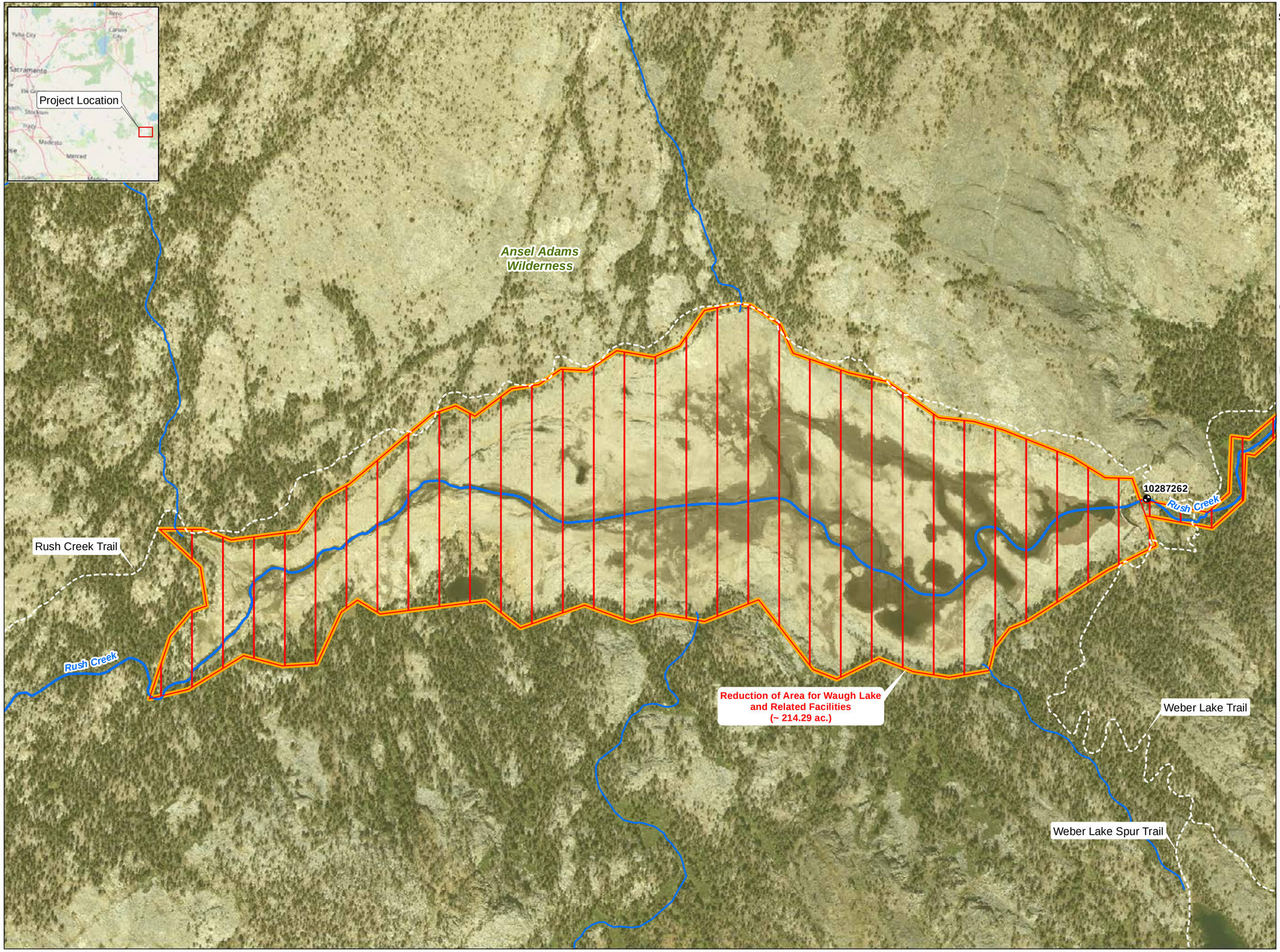


Figure G-4. Agnew Lake and Dam

APPENDIX G-2

Preliminary Maps Depicting the FERC Project Boundary following Implementation of Project Facility Modifications



SCE Facilities (Under Proposed Action)

- Powerhouse
- Dam
- Stream Gage
- Reservoir Gage
- Ancillary Facility
- Helicopter Landing Site
- Water Conveyance Feature
- Tailrace
- Tunnel
- Flowline / Penstock
- Power Line
- Communication Line
- Tramway
- Project Road
- Project Trail
- FERC Project Boundary

Other Features

- Watercourse
- Lake
- Non-Project Trail

Land Management

National Wilderness Area**

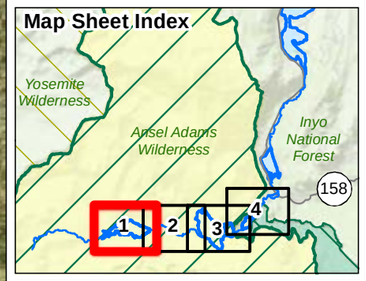
- Ansel Adams Wilderness
- Owens River Headwaters Wilderness

**NOTE: Ansel Adams Wilderness and Owens River Headwaters Wildernes are located on USFS Lands

Proposed FERC Boundary Modifications

- Boundary Reduction

Map Sheet Index



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Rush Creek Project (FERC 1389)

Map PA-1

Preliminary FERC Boundary Modifications Under the Proposed Action

0 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 8/22/2024

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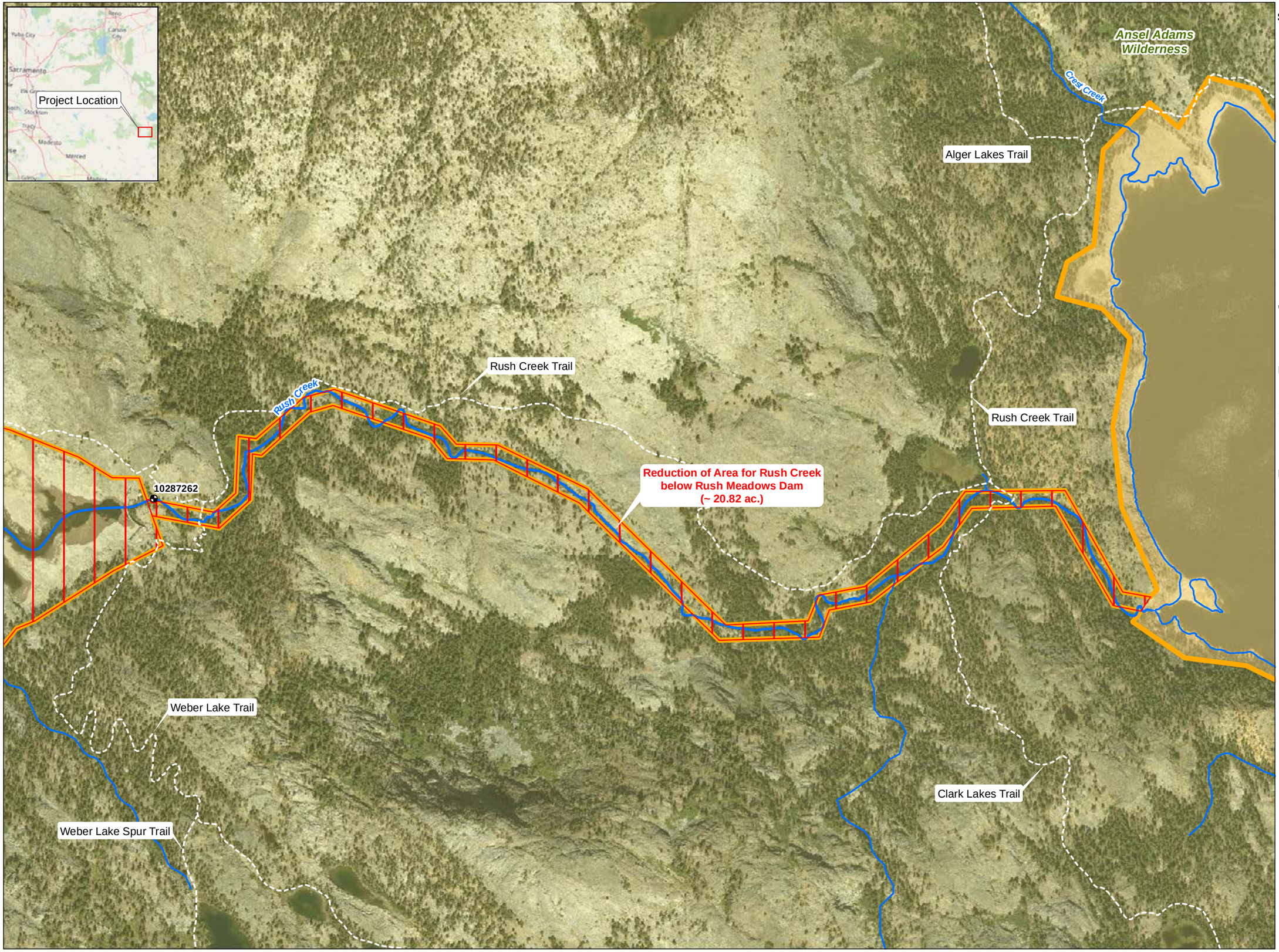

SCE Facilities (Under Proposed Action)

- Powerhouse
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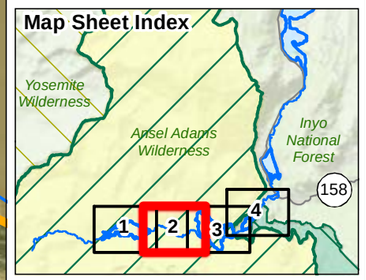
Proposed FERC Boundary Modifications

- Boundary Reduction

Map Sheet Index



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Rush Creek Project (FERC 1389)

Map PA-2

Preliminary FERC Boundary Modifications Under the Proposed Action

0 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 8/22/2024

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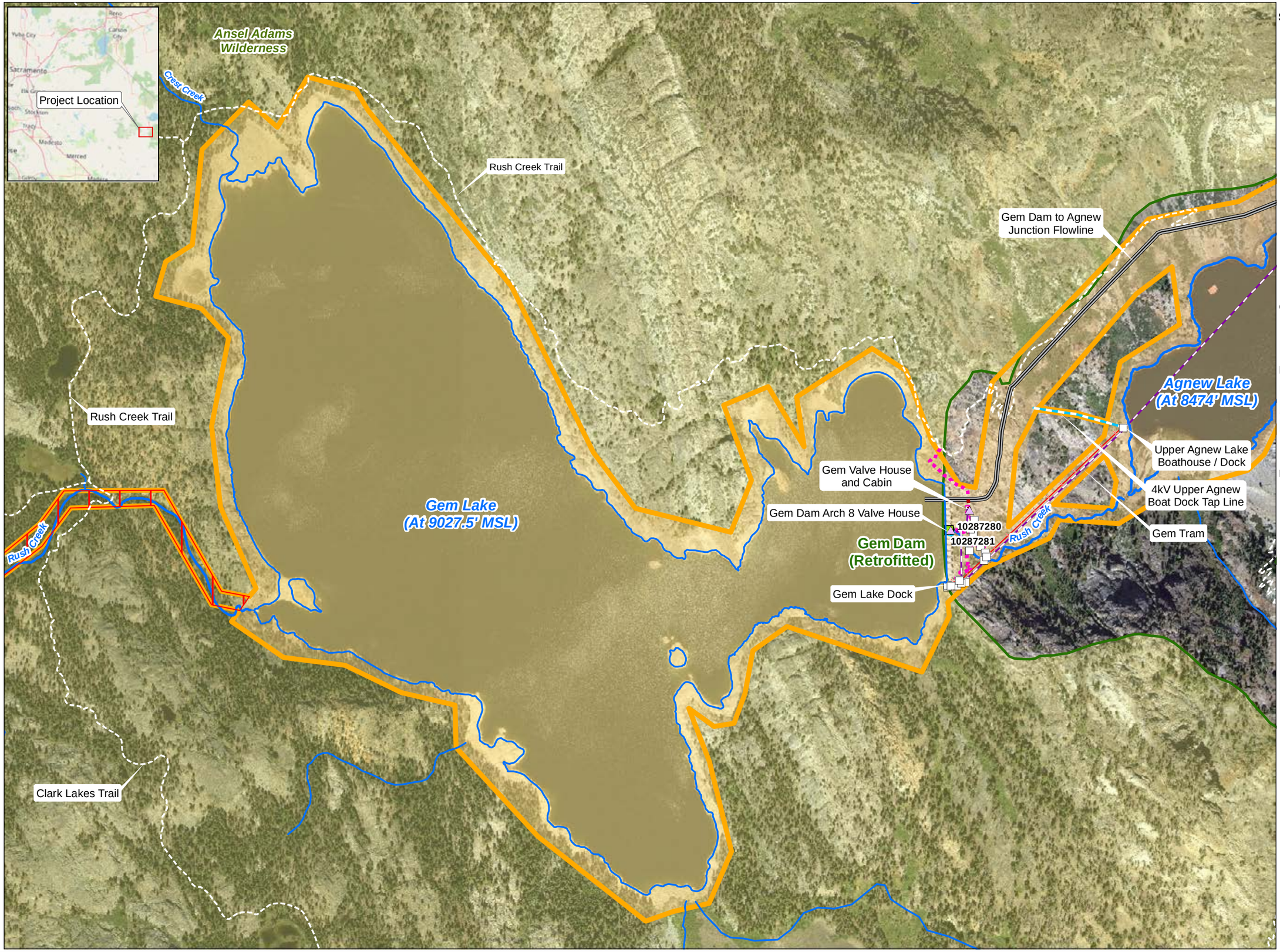

SCE Facilities (Under Proposed Action)

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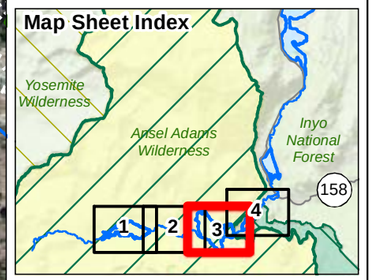
Proposed FERC Boundary Modifications

- Boundary Reduction



SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map PA-3

Preliminary FERC Boundary Modifications Under the Proposed Action

0 250 500 Feet

Projection: UTM Zone 11
Datum: NAD 83

Date: 8/22/2024

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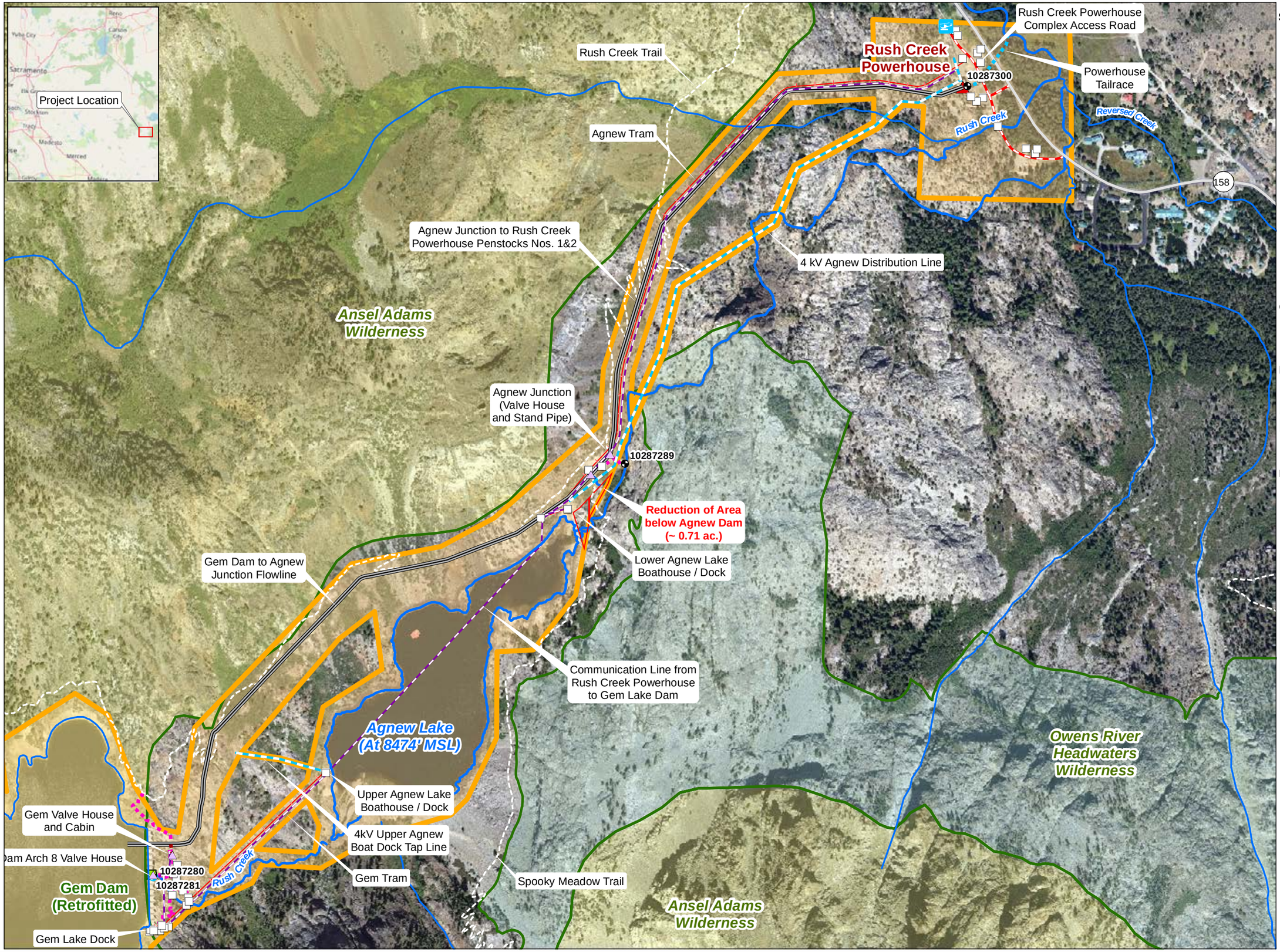

SCE Facilities (Under Proposed Action)

- Powerhouse
- Dam
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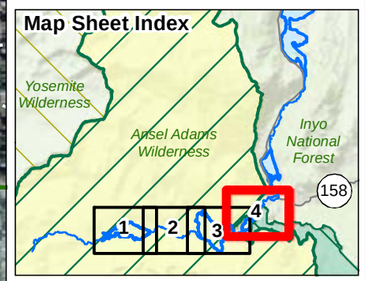
Proposed FERC Boundary Modifications

- Boundary Reduction



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Energy for What's Ahead™

Rush Creek Project (FERC 1389)

Map PA-4

Preliminary FERC Boundary Modifications Under the Proposed Action

0 250 500 Feet

Date: 8/22/2024

Projection: UTM Zone 11
Datum: NAD 83

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SOUTHERN CALIFORNIA EDISON

Rush Creek Hydroelectric Project
(FERC Project No. 1389)

Draft License Application
EXHIBIT H: General Information

Southern California Edison
2244 Walnut Grove Avenue
Rosemead, CA 91770

August 2024

SOUTHERN CALIFORNIA EDISON®
Energy for What's Ahead℠

Exhibit H: General Information

Section 5.18(c) of Title 18 of the Code of Federal Regulations (CFR) (4-1-2023 Edition) describes information that an applicant for a new license (License for Major Project – Existing Dam) must include in Exhibit H of its license application.

The information required to be provided by this paragraph (c) must be included in the application as a separate exhibit labeled "Exhibit H."

(1) *Information to be provided by an applicant for new license: Filing 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) *Information 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 an applicant for new license: Filing 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) Efficiency and Reliability

Southern California Edison Company (SCE) has extensive experience operating and maintaining its vast hydroelectric systems efficiently and reliably. SCE is responsible for generating, purchasing, transmitting, and distributing electricity to its customers. The Rush Hydroelectric Creek Project (Project), Federal Energy Regulatory Commission (FERC) Project No. 1389, is operated in conjunction with SCE's other generating resources to meet the electricity demand of its customers throughout the state.

(1) Increase 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

The Project is the uppermost water resource project on Rush Creek; there are no other upstream projects. Water exiting the powerhouse enters a short tailrace and is returned to Rush Creek immediately downstream of the Reversed Creek confluence. Downstream of the Project, the Los Angeles Department of Water and Power owns and operates the Grant

Lake Dam (a non-power dam). SCE does not coordinate operation of the Project Los Angeles Department of Water and Power.

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

The entire set of SCE generation facilities is coordinated through the SCE Energy Control Center to maximize generation while minimizing economic and environmental costs. SCE bids power from its retained generation facilities into markets governed by the California Independent System Operator (CAISO). Thus, electrical generation from the Project is coordinated with other generation throughout California.

(B) Need for Electricity Generated by the Project

The Rush Creek Powerhouse is used to respond to California Public Utility Commission (CPUC) and CAISO demands for power. Demands can be market driven (i.e., energy needs and renewable load), or can be a response to need for grid and electrical stability to Mono Basin when the source transmission line is de-energized (115-kilovolt Rush Creek/Casa Diablo line). The line can be de-energized to protect public safety, because of weather events, or to support maintenance activities like pole replacements or line upgrades.

The Casa Diablo line is the only source transmission line into the Mono Basin from the CAISO greater grid. The Rush Creek Powerhouse provides a local source of back-up power to June Lake, Lee Vining, Bridgeport, Mono City, and the U.S. Marine Corps Pickle Meadows Base should the Casa Diablo line be de-energized.

With the Rush Creek Powerhouse and Casa Diablo line operational, during off-peak and peak conditions, there is enough generation and capacity in the lines to feed load in the area. If a new license is not issued and the Rush Creek Powerhouse is no longer generating electricity, each time the Casa Diablo line is de-energized SCE would have approximately 2,152 customers without power. Absent the Rush Creek Powerhouse to serve as backup to the Casa Diablo line, there could be significant impacts to customers.

(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 CAISO 20-Year Transmission Outlook includes the need for 5,000 megawatts (MW) of new, incremental clean firm[1], resources and the loss of facilities like the Rush Creek Project 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 megawatt hour (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).

(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.

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.

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

[2] Presentation-20YearTransmissionOutlook-Apr18-2024 (2).pdf at Page 11

ii. Operating and load characteristics

Alternative clean, firm sources of power would have negligible impact on operating and load characteristics.

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 has an installed capacity of 13.01 MW. Annual net generation for the Project (1990–2023) is summarized in Table H-1. Seismic restrictions, first implemented in 2012, affect the total amount of water available for power generation at Rush Creek Powerhouse.

Under current operations (2012–2023) annual generation ranged from 17,923 MWh (2012) to 51,640 MWh (2017). The Project's average annual generation was 33,022 MWh. The estimated dependable generating capacity of the Project under current operations by calendar year is 18,047[3] MWh based on generation records from 2015, which was a very dry year.

According to the United States Energy Information Administration, in 2022, the average annual amount of electricity sold to (purchased by) residential electricity customers was 10,791 kilowatt hours. Based on this figure, the Project provides enough electricity to supply 3,060 households. According to the latest United States Census Bureau data, there are 5,473 households in Mono County. Thus, production at Rush Creek is enough to provide electric service to over half (56 percent) of the households in Mono County. Energy generated by the Project is important both locally and regionally.

[3] Net generation was slightly lower in 2012 (17,923 MWh), however this included a generation outage from January through June of that year, and therefore was not considered a valid year on which to base the dependable generating capacity.

The Project's net book value as of December 2023 was approximately $10.8 million and the direct operation and maintenance expenses for 2023 was $1,746,190. Additional Project 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 & 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. The Project provided 11.87 MW "net qualifying capacity" during the third quarter of 2023. The actual capacity and energy requirement were met by a variety of resources.

ii. Resources 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 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 Project were to cease operations, new, incremental clean, firm resources would need to be built to replace the characteristics of the Project.

(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

SCE is not a Tribe nor is the Project on a Tribal reservation.

(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 license. However, a 150-foot-long, 2.4-kilovolt (kV) distribution line conveys power from the powerhouse turbines to the switchyard (non-Project facility) when the Project is generating electricity and from the switchyard to the powerhouse when the Project is not generating. Adjacent to the powerhouse, the associated transformer, switchyard, substation, and 115-kV transmission lines extending from the switchyard to California's electric grid are non-Project facilities.

SCE assessed the impact on the transmission system if a new license to operate the Project is not issued. As stated above, the only alternative source of power to the Rush Creek Project is the Casa Diablo transmission line. If a new license is not issued and the Rush Creek Powerhouse is no longer generating electricity, each time the Casa Diablo line is de-energized SCE would have approximately 2,152 customers without power. Absent the Rush Creek Powerhouse to serve

as backup to the Casa Diablo line, there could be significant impacts to the transmission system and SCE customers.

(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 provides additional reliability as a source of power for local SCE customers in the event that the Casa Diablo line is not in service.

(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 the Need for Modifications

Since 2012, the Project has operated under seismic restrictions (lower maximum reservoir elevation) imposed by FERC and the Division of Safety of Dams (refer to Exhibit E, Section 4.0). To facilitate compliance with the seismic restrictions, SCE implemented structural modifications at Agnew and Rush Meadows dams in 2017 and 2018, respectively, and Gem Dam in 2020–2021. Specifically, SCE notched Agnew Dam and Rush Meadows Dam Spillway to pass higher flows downstream to passively comply with the seismic restrictions. In addition, SCE upgraded the Arch No. 8 outlet valve, discharge pipe, and associated electrical work at Gem Dam to improve hydraulic characteristics of the valve and allow for higher flow releases from Gem Lake into Rush Creek to facilitate compliance with the seismic restrictions during high-runoff years.

In preparation for relicensing the Project, SCE conducted additional analysis to identify long-term options for the Project. The Proposed Action represents SCE's recommendations that allow for continued operation of the Project while removing facilities that no longer contribute to the overall purpose of the Project. SCE's Proposed Action includes the following Project modifications:

- Partial removal of Agnew and Rush Meadows dams; and

- Retrofitting Gem Dam to facilitate continued operation and maintenance of the Project for power generation.

Under the Proposed Action, hydroelectric operations at Rush Meadows and Agnew dams would be discontinued and these facilities would be removed from the FERC license once all license conditions and regulatory requirements of FERC and other resource agencies are met. Gem Dam would be retrofitted to facilitate compliance with the seismic restrictions under a probable maximum flood event with a new spillway and reduced dam height. Under the Proposed Action, hydroelectric operations at Gem Dam and Rush Creek Powerhouse would continue under FERC jurisdiction consistent with conditions identified in a new FERC license. Estimated costs associated with these modifications are included in Exhibit D.

(H) Statement of Conformance if no Modifications are Proposed

SCE plans to modify existing Project facilities and operations. Accordingly, this requirement is not applicable.

(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 does not intend to expand the Project to encompass additional lands.

(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 CPUC 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' performance. The results of the performance of the programs are filed annually with the CPUC.

(L) List of Indian Tribes and Addresses

The following Indian tribal contacts are believed by SCE to potentially have an interest in the Project; although, no Project facilities are located on any tribal lands:

American Indian Council of Mariposa County
PO Box 186
Mariposa, CA 95338

Antelope Valley Indian Community, Coville Paiute Tribe
PO Box 47
Coleville, CA 96107

Big Pine Paiute Tribe of Owens Valley
PO Box 700
Big Pine, CA 93513

Bishop Paiute Tribe
50 Tu-Su Lane
Bishop, CA 93514

Bridgeport Indian Colony
PO Box 37
Bridgeport, CA 93517

Fort Independence Indian Community of Paiute Indians
PO Box 67
Independence, CA 93526

Lone Pine Paiute-Shoshone Tribe
PO Box 747
Lone Pine, CA 93545

Mono Lake Kukzadika'a Tribe
PO Box 177
Big Pine, CA 93513

North Fork Mono Tribe of California
13396 Tollhouse Road
Clovis, CA 93619

North Fork Rancheria of Mono Indians
PO Box 929
North Fork, CA 93643

Timbisha Shoshone Tribe
621 W. Line Street, Suite 109
Bishop, CA 93514

Tuolumne Band of Me-Wuk Indians of the Tuolumne Rancheria of California
PO Box 669
Tuolumne, CA 95379

Utu Gwaitu Paiute Tribe of the Benton Paiute Reservation, California
25669 Highway 6
Benton, CA 93512

Walker River Paiute Tribe
PO Box 220
Schurz, NV 89427

Yerington Paiute Tribe of the Yerington Colony and Campbell Ranch
171 Campbell Lane
Yerington, NV 89447

Yosemite-Mono Lake Paiute Indian Community
PO Box 157
Lee Vining, CA 93541

Washoe Tribe of Nevada and California
919 U.S. Highway 395 N
Gardnerville, NV 89410

(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 18 CFR § 5.18(c)(1)(ii)(A), this Exhibit H contains the information specified in 18 CFR § 5.18(c)(1). This information appears in Section (1)(i) of this Exhibit H, above.

(B) Safe Management, Operation, and Maintenance

(1) Operation during Flood Conditions

To ensure safe management, operation, and maintenance of the Project during flood and high-flow events a Station Order Binder is maintained for the powerhouse. This document includes individual site-specific plans (Station Orders) outlining actions and considerations for high water flow events at each station and/or its associated head and tail works. The Station Orders provide for 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:

- Low-level outlets are opened.
- The powerhouse is operated at maximum hydraulic capacity (all units at full load) to minimize flooding.
- Areas at SCE facilities prone to flooding are sand bagged.
- Storm doors at SCE facilities are closed.
- Sump pumps at SCE facilities are checked/installed.

(2) Warning Devices for Downstream Public Safety

The Project is classified as a “high hazard”. Warning devices and notifications used to ensure downstream public safety include:

- SCE participates in National Dam Safety Awareness Day to promote public awareness of dam safety and the risks associated with living and recreating near dams.
- SCE coordinates with the Inyo County Office of Emergency Services and Mono County Office of Emergency Services to notify the public (residents, recreationists, and businesses as applicable), who could potentially be impacted by a dam failure, with public safety advisory letters and public/educational meetings when deemed necessary. Additionally, SCE

communicates public safety advisory flyers to land management agencies with recreation facilities, which may be impacted by dam safety emergency events, for posting and distribution annually.

- SCE provided funding to Mono County Sheriff's Office for Internet Public Alerting System to June Lake residents downstream of dams. The system provides notification directly to affected residents' cell phones without having to call each individual person separately.

- The Project includes a siren system capable of providing voice commands to warn the public.

(3) Changes Affecting the Emergency Action Plan

Pursuant to 18 CFR § 12.20(a), SCE maintains an Emergency Action Plan (EAP) for Agnew Dam, Gem Dam, and Rush Meadows Dam and operates the dams in accordance with each individual EAP. Under the Proposed Action, SCE would remove Rush Meadows and Agnew dams. Once the dams are removed from the Project, an EAP would no longer be required for these dams. Gem Dam would be retrofitted under the Proposed Action. Changes to the Gem Dam EAP would be needed to reflect retrofitting activities and removal of Rush Meadows and Agnew dams from the Project.

(4) Monitoring Devices

The Project includes the following instrumentation monitoring programs and devices to detect equipment failure:

- Leakage weirs and geomembrane liner drains
- Crack monitoring
- Dam face discoloration/seepage monitoring
- Headwater gages
- Downstream dam gages
- Deflection and alignment survey monuments
- Vibration monitoring
- Flow differential monitoring
- Line protection monitoring

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

There were no lost-time accidents involving employees recorded at the Project within the last 10 years.

There are no known records of injury or death to the public within the Project boundary within the last 10 years.

(C) Current Operations and Constraints

Currently, the Project includes three dams and associated reservoirs—Rush Meadows Dam (Waugh Lake), Gem Dam (Gem Lake), and Agnew Dam (Agnew Lake); a water conveyance system; the Rush Creek Powerhouse; and ancillary facilities. The three Project reservoirs historically provided storage for lake recreation during the summer and allowed for electricity generation at the Rush Creek Powerhouse in the fall/winter. Water exiting the powerhouse enters a short tailrace and is returned to Rush Creek upstream of Silver Lake.

The Project is currently operated under a seismic restriction. Current operations at each reservoir are summarized below:

- Waugh Lake – Waugh Lake storage is maintained below the seismic restriction (9,321.1 feet elevation) reducing storage in Waugh Lake to 1,555 acre-feet (ac-ft). During the winter and early spring, the reservoir is completely drained (the low-level outlets are left open). Since approximately 2017, the low-level outlets have generally been left open year-round. The notching of the spillway in 2018 facilitates compliance with the FERC-mandated reservoir elevation restrictions.
- Agnew Lake – Agnew Lake is no longer used for storing water for power generation. A pre-Project natural lake is present with a maximum elevation of 8,470 feet and gross storage of 569 ac-ft. Water entering the lake passes through the two notches at the base of the dam and flows into Rush Creek, eventually entering Silver Lake. The notching of the dam in 2017 facilitates compliance with the FERC-mandated reservoir elevation restrictions.

- Gem Lake – Gem Lake fills up to the maximum seismic restriction capacity of 10,752 ac-ft (9,027.5 feet elevation) in the spring and maintains storage through the summer. Most of the storage is released in the late fall/winter and the reservoir remains low until spring high flows refill it the following year. Releases from Gem Lake are either diverted into the Rush Creek Powerhouse or travel downstream in Rush Creek to Agnew Lake.

Refer to Exhibit B for a complete description of Project operations.

(D) Project History and Upgrades

Project developments were constructed during the following timeframes:

Rush Meadows Dam	Completed in 1918 and subsequently raised in 1924 and 1925.
Gem Dam	Constructed between 1915 and 1917 and an additional gravity section was added in 1924.
Agnew Dam	Constructed between 1915 and 1917.
Rush Creek Powerhouse	Constructed between 1915 and 1922.

Since issuance of the current license, the Project has undergone the following upgrades and modifications:

1998	Grouting program at Rush Meadows Dam
2004	Reconstruction of trash rack and installation of ten post-tensioned anchors in the spillway crest at Rush Meadows Dam
2007	Geomembrane liner installed on entire upstream face of Gem Dam
2009	Geomembrane liner installed on entire upstream face of Rush Meadows Dam, pressure grouting performed in voids around trash rack, and installation of ten anchors in the arch crest
2010	Rush Meadows Concrete Study, acoustic tomography / SASW
2011	Rush Meadows Concrete Study, coring
2012	Geomembrane liner installed on entire upstream face of Agnew Dam and reconstruction of the intake and trash rack
2017	Installed 18-inch-diameter outlet with gate valve on an existing blind flange along Gem Flowline
2017	Lower half of Agnew Flowline removed in two places along a 16-foot length of the suspended section

2017	Cut 6-feet 2-inch wide by 5-feet-high notch into the base of Agnew Dam in Arch 5 and Arch 6
2018	Cut 12-foot-wide by roughly 19-foot-high notch in the left section of Rush Meadows Dam
2019	Gem Dam solar battery system installation
2020	4-kilovolt powerline from Agnew Dam to Gem Dam physically removed
2020–2021	Gem Dam Arch 8 outlet valve retrofitted

(E) Unscheduled Outages

A summary of generation lost at the Project over the last five years because of unscheduled outages, including the cause, duration, and corrective action taken is provided in Table H-2.

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

FERC issued a new license to SCE for the Project on February 4, 1997. Project-specific license articles mandated by FERC and conditions submitted by the United States Forest Service (Forest Service) under Section 4(e) of the Federal Power Act are included in the License Order. SCE is responsible for complying with requirements of the FERC license, 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 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 variances for minimum instream flow, reservoir levels, and ramping rates is summarized below. The complete compliance record for the Project for the current license term can be found on FERC's eLibrary.

(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 filed eight incident/deviation reports with FERC over the term of the existing license (1997–2024). In all cases, SCE timely notified FERC of the incident and filed a written incident report. The incident reports filed by SCE satisfy the requirements of 18 CFR § 12.10. None of these incidents resulted in serious damage to public or private property, and they were not considered a license violation by FERC. The filing date and summary of the incident are listed below.

- October 11, 2006: Gem Lake water surface elevation deviation
- December 2, 2009: Agnew Lake minimum instream flow (fish release) deviation
- June 21, 2012: Turbidity plume at Rush Creek Powerhouse
- July 27, 2018: Contractor injury at Rush Meadows Dam
- June 21, 2019: Activation of the Rush Creek Project High Flow Operations Plan
- August 28, 2019: Geomembrane liner tear at Rush Meadows Dam
- June 27, 2022: Reservoir restriction exceedance at Gem Lake Dam
- August 10, 2023: Activation of the Emergency Action Plan for a high-flow event at Rush Meadows Dam, Gem Lake Dam, and Agnew Dam from May 23, 2023 through August 3, 2023

(3) Instream Flow, Reservoir Levels, and Ramping Rates

SCE maintains minimum flows in Rush Creek in accordance with Forest Service Section 4(e) Condition No. 5 (*Minimum Streamflow Requirements*) and maintains reservoir levels and ramping rates (during annual drawdown of the reservoirs) in accordance with Forest Service Section 4(e) Condition No. 8 (*Recreation and Wilderness Management*) of the existing Project license.

License Article 401 provides that the minimum instream flows, lake levels, and/or ramping rates required by Forest Service 4(e) Condition No. 5 and No. 8 may be modified for short periods upon mutual agreement among SCE, the Forest Service, and the California Department of Fish and Wildlife.

Since 2012, per various FERC orders, SCE has operated Project reservoirs to maintain seismic restricted water levels at Waugh Lake (9,392.1 feet), Gem Lake (9,027.5 feet), and Agnew Lake (completely drained).

Beginning in 2012, SCE submitted requests for temporary variance consistent with License Article 401. However, in October 2016, FERC issued a letter to SCE stating that Waugh, Gem, and Agnew lakes are to remain at or below the agreed upon restricted reservoir elevation until further notice, effectively eliminating the need for SCE to file annual temporary variance requests.

(G) Actions Related to the Project that may Affect the Public

SCE maintains a Public Safety Plan for the Project that identifies the location of public safety measures and signage at Project facilities. The Public Safety Plan is reviewed and updated annually, as necessary. Project features aimed at protecting public health and safety include:

- **Signage**: SCE uses signs to warn the public of hazardous areas and potentially dangerous conditions. For example, danger and warning signs are located near facilities that may pose a danger to the public (e.g., powerhouses, switchyards, and water release points).

- **Physical Restraining Devices**: SCE uses various devices to restrict public access to hazardous areas, including:

  – Fences and locked gates limiting access to the powerhouse complex; around the tailrace, substation, and transformer yards; and along Project dams.

  – Grates/trash racks on dam intakes structures.

  – Boat barriers along dam spillways.

(H) Summary of Ownership and Operating Expenses

Annual ownership and operating costs for 2023 are summarized below:

Operation and Maintenance Costs (2023)	$1,746,190
Depreciation (2023)	$ 431,574
Property Taxes (2023)	$ 185,172
Administrative & General Expenses (Calculated from 2023 Net Book Value)	$ 405,042
Total	**$2,767,978**

(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 $8,613.

No Native American 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 section 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. Available at: 2024-padilla-reportvfinal.pdf (ca.gov)

TABLES

Table H-1. Summary of Rush Creek Project Generation (1990–2023)

Year	Total Annual Net Generation (MWh)
Post-Seismic Restriction (2012–2023)	
2023	40,403
2022	32,650
2021	22,061
2020*	35,425
2019	48,006
2018	21,955
2017	51,640
2016	45,954
2015	18,047
2014	22,177
2013	40,023
2012*	17,923
Total Generation, Current Operations (2012–2023)	**396,264**
Average Annual Generation, Current Operations (2012–2023)	**33,022**
Pre-Seismic Restriction (1990–2011)	
2011*	48,384
2010	54,054
2009	56,088
2008*	16,070
2007	22,599
2006	63,318
2005	42,107
2004*	11,335
2003	32,753
2002	44,444
2001	36,921
2000	52,636
1999	54,585
1998	63,955
1997	67,574
1996	66,726
1995	70,495
1994	35,057
1993	66,450
1992	39,610
1991	31,325
1990	39,486
Total Generation, Historical Operations (1990–2011)	**1,015,972**
Average Annual Generation, Historical Operations (1990–2011)	**46,181**

* Partial powerhouse outage of data missing in this year.

Notes: MWh = megawatt hours

Table H-2. Unscheduled Outages (2019–2023)

Date	Duration (Hours)	Cause	Corrective Action
2019			
1/6	1	Line relayed	Line returned to service
2/3	3	Line cleared for emergency outage	Line returned to service
7/23	0.25	Line relayed	Line returned to service
9/29–10/1	32	De-energized for relay upgrade	Line returned to service
11/11–11/24	318	Line cleared for pole replacement	Line returned to service
2020			
3/6–3/11	127	Line cleared for pole replacement	Line returned to service
5/13–5/21	201	Line cleared for pole replacement	Line returned to service
6/11–6/22	272	Line cleared for pole replacement	Line returned to service
6/25	15	Bus outage at Casa Diablo sub	Line returned to service
7/5–7/10	126	Line cleared for pole replacement	Line returned to service
7/10–7/14	94	Line cleared for pole replacement	Line returned to service
8/14–8/20	139	Line cleared for pole replacement	Line returned to service
10/14	10	Line cleared for pole replacement	Line returned to service
10/22–10/27	127	Line cleared for pole replacement	Line returned to service
2021			
5/17–5/26	228	Line repairs	Line returned to service
7/8	12	Line repairs	Line returned to service
8/9	18	Line repairs	Line returned to service
8/10	18	Line repairs	Line returned to service
9/16–9/19	84	Line repairs	Line returned to service
11/30	20	Line repairs	Line returned to service
2022			
5/9	19	Transmission induced	Line returned to service
5/10	16	Transmission induced	Line returned to service
5/14–5/16	60	Transmission induced	Line returned to service
8/10	3	Transmission induced	Line returned to service
10/12–10/14	60	Transmission induced	Line returned to service
10/20	15	Transmission induced	Line returned to service
2023			
1/10	1	Line relayed	Line returned to service
4/2	1	Line relayed	Line returned to service
10/11–10/13	48	Line cleared for pole replacement	Line returned to service
11/1	2	Control inadvertently opened	Line returned to service
11/11	4	De-energized for controlled burn	Line returned to service