

Application for New License
Major Project – Existing Dam

Exhibit F
General Design Drawings
Security Level: Public

Camp Far West Hydroelectric Project
FERC Project No. 2997



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EXHIBIT F

GENERAL DESIGN DRAWINGS

1.0 Introduction

The South Sutter Water District (SSWD or Licensee) has prepared this Exhibit F, General Design Drawings, as part of its Application for a New License Major Project – Existing Dam – (Application) from the Federal Energy Regulatory Commission (FERC or Commission) for the Camp Far West Hydroelectric Project, FERC Project Number (No.) 2997 (Project). This exhibit is prepared in conformance with Title 18 of the Code of Federal Regulations (C.F.R.), Subchapter B (Regulations under the Federal Power Act), Part 4 (Traditional Licensing Process). In particular, this exhibit conforms to the regulations in 18 C.F.R. Sections 4.41(g) and 4.39. Section 4.41(g) pertains to Project maps and Section 4.39 provides specifications for maps and drawings. As a reference, these two sections state:

18 C.F.R. §4.41(g): Exhibit F consists of general design drawings of the principal project works described under paragraph (b) of this section (Exhibit A) and supporting information used as the basis of design. If the Exhibit F submitted with the application is preliminary in nature, applicant must so state in the application. The drawings must conform to the specifications of § 4.39.

- (1) The drawings must show all major project structures in sufficient detail to provide a full understanding of the project, including:
 - (i) Plans (overhead view);
 - (ii) Elevations (front view);
 - (iii) Profiles (side view); and
 - (iv) Sections.
- (2) The applicant may submit preliminary design drawings with the application. The final Exhibit F may be submitted during or after the license process and must show the precise plans and specifications for proposed structures. If the project is licensed on the basis of preliminary designs, the applicant must submit the final Exhibit F for Commission approval prior to the commencement of any construction of the project.
- (3) Supporting design report. The applicant must furnish, at a minimum, the following supporting information to demonstrate that existing and proposed structures are safe and adequate to fulfill their stated functions, and must submit such information in a separate report at the time the application is filed. The report must include:
 - (i) An assessment of the suitability of the site and the reservoir rim stability based on geological and subsurface investigations, including investigations of soils and rock borings and tests for the evaluation of all foundations and construction materials sufficient to determine the location and type of dam structures suitable for the dam site;
 - (ii) Copies of all boring logs, geology reports and laboratory tests reports;
 - (iii) An identification of all borrow areas and quarry sites and an estimate of required quantities and suitable construction material;
 - (iv) Stability and stress analyses for all major structures and critical abutment slopes under all probable loading conditions, including seismic and hydrostatic forces induced by water loads up to the Probable Maximum Flood as appropriate; and
 - (v) The basis for determination of seismic loading and the Spillway Design Flood in sufficient detail to permit independent staff evaluation.

- (4) The applicant must submit two copies of the supporting design report described in paragraph (g)(3) of this section at the time preliminary and final design drawings are submitted to the Commission for review. If the report contains preliminary drawings, it must be designated a “Preliminary Supporting Exhibit Report.”

18 C.F.R. §4.39: Specifications for maps and drawings. All required maps and drawings must conform to the following specifications, except as otherwise prescribed in this chapter:

- (a) Each original map or drawing must consist of a print on silver or gelatin 35mm microfilm mounted on Type D (3 1/4” by 7 3/8”) aperture cards. Full-sized prints of maps and drawings must be on sheets no smaller than 24 by 36 inches and no larger than 28 by 40 inches. A space five inches high by seven inches wide must be provided in the lower right hand corner of each sheet. The upper half of this space must bear the title, numerical and graphical scale, and other pertinent information concerning the map or drawing. The lower half of the space must be left clear. Exhibit G drawings must be stamped by a Registered Land Surveyor. If the drawing size specified in this paragraph limits the scale of structural drawings (exhibit F drawings) described in paragraph (c) of this Section, a smaller scale may be used for those drawings. Potential applicants or licensees may be required to file maps or drawings in electronic format as directed by the Commission.
- (b) Each map must have a scale in full-sized prints no smaller than one inch equals 0.5 miles for transmission lines, roads, and similar linear features and no smaller than one inch equals 1,000 feet for other project features, including the project boundary. Where maps at this scale do not show sufficient detail, large scale maps may be required. Each map must show:
- (1) True and magnetic meridians;
 - (2) State, county, and town lines; and
 - (3) Boundaries of public lands and reservations of the United States [see 16 U.S.C. 796(1) and (2)], if any. If a public land survey is available, the maps must show all lines of that survey crossing the project area and all official subdivisions of sections for the public lands and reservations, including lots and irregular tracts, as designated on the official plats of survey that may be obtained from the Bureau of Land Management, Washington, D.C., or examined in the local land survey office; to the extent that a public land survey is not available for public lands and reservations of the United States, the maps must show the protractions of townships and section lines, which, if possible, must be those recognized by the Federal agency administering those lands.
- (c) Drawings depicting details of project structures must have a scale in full-sized prints no smaller than:
- (1) One inch equals 50 feet for plans, elevations, and profiles; and
 - (2) One inch equals 10 feet for sections.
- (d) Each map or drawing must be drawn and lettered to be legible when it is reduced to a print that is 11 inches on its shorter side. Following notification to the applicant that the application has been accepted for filing [see §4.31(c)], prints reduced to that size must be bound in each copy of the application which is required to be submitted to the Commission or provided to any person, agency, or other entity.
- (e) The maps and drawings showing project location information and details of project structures must be filed in accordance with the Commission’s instructions on submission of Critical Energy Infrastructure Information in §§388.112 and 388.113 of subchapter X of this chapter.

Besides this introductory material, this Exhibit F includes three sections. Section 2.0 provides a list of all design drawings needed to show all major Project structures in sufficient detail to provide a full understanding of the Project. These include Plan, elevation and section profiles. Section 3.0 addresses the use of the SSWD’s Part 12 Independent Safety Inspection Reports to meet the requirements for a Supporting Design Report for existing Project facilities. Section 4.0 provides information regarding the attachment to this Exhibit F.

See Exhibit A for a description of Project facilities and features, Exhibit B for a description of Project operations, Exhibit C for construction history and construction schedule, Exhibit D for costs and financing information, and Exhibit E for a discussion of potential environmental effects and SSWD’s proposed resource management measures. Project maps are included in Exhibit G. Exhibit H contains a detailed description of the need for the electricity provided by the Project, the availability of electrical energy alternatives, and other miscellaneous information.

All elevation data in this Exhibit are in National Geodetic Vertical Datum of 1929 (NGVD29), unless otherwise specified.

2.0 General Design Drawings

Exhibit F General Design Drawings for the Project depict the primary Project components described in Exhibit A. The Exhibit F design drawings are designated Critical Energy/Electric Infrastructure Information (CEII) and are filed only with the Federal Energy Regulatory Commission (FERC). Drawings F-1, F-2 and F-3 provide plan, elevation, profiles and sections in accordance with the requirements of 18 C.F.R. § 4.41(g), and were developed primarily from FERC-approved Exhibit F drawings, which depict the as-built principal Project works. Drawing F-4 is a single-line electric diagram of the Project. Table 2.0-1 presents a listing of the Exhibit F drawings being filed with FERC as CEII in support of this application for subsequent license.

Table 2.0-1. Exhibit F Drawings.

Exhibit F Drawing No.	Drawing Title
F-1	Existing and Proposed Facilities
F-2	Powerhouse Plans and Sections
F-3	Plans and Sections – Dike and Wing Dams
F-4	Single-Line Electric Diagram

After the Pool Raise is complete, SSWD will file with the Commission revised and new Exhibit F drawings showing the inclusion of the Pool Raise in the Project. Refer to Figures 5.1-1, 5.1-2, 5.1-3 and 5.1-4 in Exhibit A for a conceptual design of the Pool Raise.

3.0 Supporting Design Report for Existing Facilities

Sections 4.41(g)(2) require that an applicant file with FERC two copies of a Supporting Design Report when the applicant files a license application. The purpose of the Supporting Design Report is to demonstrate “...*that existing and proposed structures are safe and adequate to fulfill their stated functions...*” SSWD’s recent Part 12 Independent Dam Safety Inspection Reports fulfill the requirements of the regulations for filing a Supporting Design Report for existing Project facilities as part of the Application for New License. All of the Project’s Independent Dam Safety Inspection Reports are on file with FERC.

4.0 Supporting Design Report for the Pool Raise

With regards to the Pool Raise, SSWD is in the process of conducting geotechnical investigation to support the Pool Raise. These include design-level investigations performed near the footprint of the new spillway, which includes areas upstream and downstream of the concrete structure where excavation of overburden material is anticipated. The work, as described in Exhibit C of this FLA, will include the following subtasks:

- Geotechnical Field Investigation Report
- Geotechnical Design Recommendation Report

SSWD anticipates that these investigations will be complete within 1 year of license issuance and SSWD will file with the Commission a Supporting Design Report for the Pool Raise within 2 years of license issuance.

5.0 List of Attachments

Attachment F-1 General Design Drawings (CEII)

6.0 References Cited

None.

Attachment F-1

General Design Drawings (PDF)

In accordance with Section 5.30 and 4.32(k) of FERC's regulations, and in light of heightened national security concerns, SSWD requests that the General Design Drawings included in Attachment F-1 be treated by FERC as Critical Energy Infrastructure Information (CEII) under § 388.112 of FERC's regulations, and not be released to the public.

The material satisfies the definition of CEII in § 388.112(c) of FERC's regulations because they contain detailed design information about existing critical infrastructure that relates details about the generation and transmission of electrical energy, and could be useful to a person planning an attack on critical infrastructure. Moreover, such information is exempt from disclosure under the freedom of Information Act 5 U.S.C. § 552, and does not simply give the general location of the critical infrastructure.

Procedures for the public to obtain access to CEII may be found at 18 C.F.R. § 388.113. Requests for access should be made to FERC's CEII Coordinator.

