

Application for New License
Major Project – Existing Dam

Exhibit F
General Design Drawings

Security Level: Public

Yuba River Development Project
FERC Project No. 2246



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Table of Contents

Section No.	Description	Page No.
1.0	Introduction.....	F-1
2.0	General Design Drawings	F-3
3.0	Supporting Design Report for Existing Facilities	F-5
4.0	List of Attachments.....	F-5

List of Figures

Figure No.	Description	Page No.
None.		

List of Tables

Table No.	Description	Page No.
2.0-1.	List of Exhibit F general design drawings for the Yuba River Development Project.	F-3

List of Attachments

Attachment F-1 General Design Drawings

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EXHIBIT F

GENERAL DESIGN DRAWINGS

1.0 Introduction

The Yuba County Water Agency (YCWA or Licensee) has prepared this Exhibit F, Report on Design Drawings, as part of its Application for a New License (Application) from the Federal Energy Regulatory Commission (FERC) for the Yuba River Development Project (Project), FERC Project Number 2246. 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 5 (Integrated Licensing Process). In particular, this report conforms to the regulations in 18 C.F.R. Section (§) 5.18(a)(5)(iii), which requires in part that an application include an Exhibit F in conformance with 18 C.F.R. § 4.51(g) and 4.39. Section 4.41(g) pertains to design drawings and Section 4.39 provides specifications for maps and drawings. As 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 four 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. The design drawings are included in Attachment F-1 to this exhibit. Section 3.0 addresses the use of the YCWA’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 YCWA’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

General design drawings for YCWA’s Project as described in Exhibit A to this Application are provided in the exhibit drawings listed in Table 2.0-1. YCWA considers these design drawings to be final and prepared in conformance to 18 C.F.R. § 4.39. These drawings 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 L drawings, which depict the as-built principal Project works. For ease of reference, YCWA lists the design drawings by their current exhibit number, and the proposed new Exhibit F denotations.

Table 2.0-1. List of Exhibit F general design drawings for the Yuba River Development Project.

YCWA’s Proposed Exhibit F Drawing Number in New License	YCWA’s Proposed Exhibit F Drawing Name	Exhibits F and L Drawing Number in Existing License	Date of FERC Order Approving Exhibits F or L Drawings	Exhibits F and L FERC-Assigned Drawing Number
1	New Colgate Development - New Bullards Bar Dam - General Plan	L-14	9/16/1996	2246-94
2	New Colgate Development - New Bullards Bar Dam - Spillway Plan, Profile and Rating Curve	L-16	9/16/1996	2246-96
3	New Colgate Project - New Bullards Bar Dam – Site Plan and Profile	F-2	9/16/1996	2246-144
4	New Colgate Development - New Bullards Bar Dam - Layout and Geometric Data	L-15	9/16/1996	2246-95
5	New Colgate Development - New Bullards Bar Dam – Right Thrust Block Details	L-17	9/16/1996	2246-112
6	New Colgate Development - New Bullards Bar Dam – Left Thrust Block Details	L-38	9/16/1996	2246-113
7	New Bullards Minimum Flow Development - Minimum Flow Powerhouse - Penstock, Profile, and Details	F-4	9/16/1996	2246-146
8	New Bullards Minimum Flow Development - Minimum Flow Powerhouse - General Plan	F-3	9/16/1996	2246-145

Table 2.0-1. (continued)

YCWA's Proposed Exhibit F Drawing Number in New License	YCWA's Proposed Exhibit F Drawing Name	Exhibits F and L Drawing Number in Existing License	Date of FERC Order Approving Exhibits F or L Drawings	Exhibits F and L FERC- Assigned Drawing Number
9	New Bullards Minimum Flow Development - Minimum Flow Powerhouse - Plan and Details	F-5	9/16/1996	2246-147
10	New Bullards Minimum Flow Development - Minimum Flow Powerhouse – Cross Section	F-6	9/16/1996	2246-148
11	New Colgate Development - Log Cabin Dam and Camptonville Tunnel - General Arrangement	L-20	9/16/1996	2246-97
12	New Colgate Development - Camptonville Tunnel - Plan, Profile, and Sections	L-21	9/16/1996	2246-98
13	New Colgate Development - Our House Dam and Lohman Ridge Tunnel - General Arrangement	L-22	9/16/1996	2246-99
14	New Colgate Development - Lohman Ridge Tunnel - Plan, Profile, and Sections	L-23	9/16/1996	2246-100
15	New Colgate Development - New Colgate Power Tunnel - Intake Sections and Elevations (Proposed addition to set)	--	--	--
16	New Colgate Development - New Colgate Power Tunnel - Plan, Profile, and Sections	L-24	9/16/1996	2246-155
17	New Colgate Development - New Colgate Powerhouse - Site Plan, Generator Deck El. 598.0	L-35	9/16/1996	2246-110
18	New Colgate Development - New Colgate Powerhouse - General Arrangement, Generator Deck El. 598.0	L-39	9/16/1996	2246-114
19	New Colgate Development - New Colgate Powerhouse - General Arrangement, Generator Deck El. 577.5	L-25	9/16/1996	2246-102
20	New Colgate Development - New Colgate Powerhouse - General Arrangement, Generator Deck El. 560.5	L-26	9/16/1996	2246-103
21	New Colgate Development - New Colgate Powerhouse - Cross Section (Sheet 1 of 2)	L-41	9/16/1996	2246-116
22	New Colgate Development - New Colgate Powerhouse - Cross Section (Sheet 2 of 2)	L-36	9/16/1996	2246-111
23	Narrows 2 Development - Narrows 2 Intake Tunnel and Powerhouse - Site Plan	L-27	9/16/1996	2246-104
24	Narrows 2 Development - Narrows 2 Intake Tunnel and Powerhouse - Profile, Sections, and Steel Liner	L-29	9/16/1996	2246-106
25	Narrows 2 Development - Narrows 2 Full Flow Bypass - Site Plan	L-43	11/22/2005	2246-157
26	Narrows 2 Development - Narrows 2 Turbine Shutoff Valve - General Arrangement	L-44	11/22/2005	2246-158
27	Narrows 2 Development - Narrows 2 Bypass Valve Structure - Equipment Arrangement (Sheet 1 of 2)	L-45	11/22/2005	2246-159
28	Narrows 2 Development - Narrows 2 Bypass Valve Structure - Equipment Arrangement (Sheet 2 of 2)	L-46	11/22/2005	2246-160
29	Narrows 2 Development - Narrows 2 Powerhouse - Site Plan Roof Deck (El. 348) & Generator Floor (El. 324)	L-31	9/16/1996	2246-108
30	Narrows 2 Development - Narrows 2 Powerhouse - Site Plan Turbine Floor (El. 304) & Distributor (El. 292)	L-32	9/16/1996	2246-109

Table 2.0-1. (continued)

YCWA's Proposed Exhibit F Drawing Number in New License	YCWA's Proposed Exhibit F Drawing Name	Exhibits F and L Drawing Number in Existing License	Date of FERC Order Approving Exhibits F or L Drawings	Exhibits F and L FERC-Assigned Drawing Number
31	Narrows 2 Development - Narrows 2 Powerhouse - Cross Section (Sheet 1 Of 2)	L-40	9/16/1996	2246-115
32	Narrows 2 Development - Narrows 2 Powerhouse - Cross Section (Sheet 2 Of 2)	L-30	9/16/1996	2246-107
--	New Bullards Bar Dam – Site Plan - Title Sheet for As-Built Drawings not appropriate for Exhibit F. Proposed for removal from set.	F-1	9/16/1996	2246-149
--	Narrows 2 Development - Narrows 2 Intake Tunnel and Powerhouse - Site Plan (Sheet 2 of 2) – No project structures shown. Proposed for removal from set.	L-28	9/16/1996	2246-105
--	Narrows 2 Development - Narrows 2 Full Flow Bypass - Site Plan Option A - Not selected, proposed for removal from set.	L-42	11/22/2005	2246-156
--	New Bullards Bar Dam – Turbine Building - Not constructed, proposed for removal from set.	F-2	9/16/1996	2246-150
--	Not Issued by FERC, or Issued and Later Deleted by FERC.	L-18	--	--
--	Not Issued by FERC, or Issued and Later Deleted by FERC.	L-19	--	--
--	Not Issued by FERC, or Issued and Later Deleted by FERC.	L-33	--	--
--	Not Issued by FERC, or Issued and Later Deleted by FERC.	L-34	--	--
--	Not issued or deleted by FERC	L-37	--	--

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...” YCWA’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.

YCWA will file with FERC Supporting Design Reports for YCWA’s proposed new flood control outlet at New Bullards Bar Dam and new tailwater depression system at New Colgate Powerhouse with detailed design drawings after the additions are approved by FERC.

4.0 List of Attachments

This exhibit includes one attachment:

- Attachment F-1: General Design Drawings

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Exhibit F: General Design Drawings

Attachment F-1

General Design Drawings

In accordance with Section 5.30 and 4.32(k) of FERC's regulations, and in light of heightened national security concerns, YCWA 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 drawings satisfy 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.

YCWA has not included these general design drawings in this Exhibit F, Attachment F-1, or otherwise made the drawings available to the public. YCWA has filed the drawings with FERC in Volume VI - General Design Drawings and Single-Line Electric Diagram - of YCWA's Application for New License for the Yuba River Development Project, and marked the volume CEII.

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.

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