

# **COVER SHEET**

FEDERAL ENERGY REGULATORY COMMISSION

FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE  
UPPER NORTH FORK FEATHER RIVER PROJECT

Project No. 2105-089

SECTION 1

PURPOSE AND NEED FOR ACTION

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FEIS

## **1.0 PURPOSE OF ACTION AND NEED FOR POWER**

On October 23, 2002, Pacific Gas and Electric Company (PG&E) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) for a new license for the existing Upper North Fork Feather River (UNFFR) Project. The licensed capacity of the project is 342.6 megawatts (MW), and PG&E estimates that the dependable capacity is 357.3 MW.<sup>7</sup> On average, the project generates 1,171.9 gigawatt-hours (GWh) of electricity per year. The project is located on the North Fork Feather River (NFFR), in the vicinity of the community of Chester, Plumas County, California (figure 1-1). The project occupies 1,024 acres of United States lands: 409 acres of the Plumas National Forest and 577 acres of the Lassen National Forest, administered by the U.S. Department of Agriculture (USDA), Forest Service (FS); and 38 acres administered by the U.S. Department of the Interior (Interior), Bureau of Land Management.

### **1.1 PURPOSE OF ACTION**

The Commission must decide whether to issue a new license to PG&E for the UNFFR Project and what conditions, if any, should be placed on that license. Issuing a license would allow PG&E to continue generating electricity for the term of that license, making electric power from a renewable source available to its customers.

In this final environmental impact statement (EIS), we assess the effects associated with operation of the project and alternatives to the proposed project; make recommendations to the Commission on whether to issue a new license; and, if so, recommend terms and conditions to become a part of any license issued. In deciding whether to issue a license for a hydroelectric project, the Commission must determine that the project will be best adapted to a comprehensive plan for improving or developing the waterway. In addition to the power and developmental purposes for which licenses are issued (e.g., flood control, irrigation, and water supply), the Commission must give equal consideration to the purposes of energy conservation; the protection of, mitigation of damage to, and enhancement of fish and wildlife (including related spawning grounds and habitat); the protection of recreational opportunities; and the preservation of other aspects of environmental quality.

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<sup>7</sup> PG&E bases its dependable capacity on load carrying ability during the critical hydrologic period coincident with its peak system load. The critical hydrologic period was in 1977, and the peak system load typically occurs during July and August. Dependable capacity is slightly greater than licensed capacity because PG&E can operate the units with slightly greater head and/or flow than rated.

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In this final EIS, we assess the environmental and economic effects of licensing the project (1) as proposed by PG&E, and (2) with our recommended measures. We also consider the effects of the no-action alternative. Important issues that we address include providing appropriate minimum flows in the bypassed reaches, temperature control measures in the NFFR, and whether enhancement of the supply of gravel and other native materials is needed, management of Lake Almanor water surface elevations and its effect on nearshore and riparian habitat, controlling invasive weeds, protecting threatened and endangered species, providing recreational enhancements, and protecting cultural resources.

## **1.2 NEED FOR POWER**

The UNFFR Project is a resource that is important to the operation of the Feather River system as a whole, contributes to PG&E's resource diversity, and plays a part in meeting the capacity requirements of both PG&E and the state of California.

The UNFFR Project is one of the upstream-most projects in a series of water resource and hydroelectric projects in the Feather River basin (figure 1-2). There are 11 powerhouses licensed to PG&E upstream of the California Department of Water Resource's (CDWR's) Lake Oroville Project, which includes hydroelectric generation as well as a 3.5 million acre-foot storage reservoir. Operations at the UNFFR Project not only affect generation at this project, but the reregulation of UNFFR flows influences downstream generation. Thus, project operations affect the availability of generation from the project itself as well as downstream facilities.

The project is operated in conjunction with PG&E's other generating resources to help meet electricity demands and ancillary service needs of PG&E's customers and the state. The UNFFR Project is in the California-Mexico Power Area (CA/MX) of the Western Electricity Coordinating Council (WECC) within the North American Electric Reliability Council (NERC). NERC annually forecasts electrical supply and demand nationally and regionally for a 10-year period. According to NERC's most recent forecast, hydroelectric generation will only account for 80 MW (1.1 percent), of the projected capacity growth of 7,110 MW in the region between 2003 and 2012 (table 1-1) ([http://www.wecc.biz/2003\\_Summer\\_Assessment\\_Revised.pdf](http://www.wecc.biz/2003_Summer_Assessment_Revised.pdf)). If the project ceased generation, the area-wide diversity of the CA/MX would be reduced because the electric output of the project would not be completely replaced by other hydroelectric generation. With the project currently reducing greenhouse gas emissions by 100,000 metric tons of carbon/year compared with fossil-fuel generation, net emissions in the CA/MX would increase over the coming 10-year period if the project ceased to generate electricity.

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Table 1-1. Actual and projected generation resources in the California-Mexico Power Area. (Source: [http://www.wecc.biz/2003\\_Summer\\_Assessment\\_Revised.pdf](http://www.wecc.biz/2003_Summer_Assessment_Revised.pdf), as modified by staff.)

	Resources in 2003 (MW)	Resources in 2012 (MW)	Growth Over Period		Resource Growth as a Percent of Total Growth (%)
			(MW)	(%)	
Hydro - conventional	7,193	7,213	20	0.3	0.3
Hydro- pumped storage	3,840	3,900	60	1.6	0.8
Steam – coal	3,604	2,024	-1,580	-43.8	-22.2
Steam – oil	276	0	-276	-100.0	-3.9
Steam – gas	18,016	14,070	-3,946	-21.9	-55.5
Nuclear	4,450	4,450	0	0.0	0.0
Combustion turbine	6,787	6,749	-38	-0.6	-0.5
Combined cycle	6,600	19,438	12,838	194.5	180.6
Geothermal	2,184	2,184	0	0.0	0.0
Internal combustion	40	48	8	20.0	0.1
Other	1,013	1,037	24	2.4	0.3
Total	54,003	61,113	7,110	13.2	100

Peak summer demand and annual energy requirements for the CA/MX are projected to grow at an average of 1.9 and 1.8 percent, respectively, from 2003 through 2012 (table 1-2). Projected resource summer capacity margins (generating capacity in excess of demand) vary over the period, but overall decrease from 24.9 to 13.4 percent of firm peak demand ([http://www.wecc.biz/2003\\_Summer\\_Assessment\\_Revised.pdf](http://www.wecc.biz/2003_Summer_Assessment_Revised.pdf)). With available reserve in the CA/MX projected to decrease below generally accepted values of 15 to 18 percent, generation loss from this project could have a significant effect on the ability of the area to meet regional requirements for generation.

Due to its effect on the Feather River system, the lack of projected new hydroelectric resources in the system, and the projected growth in demand and lack of reserve capability in the region, we conclude that power from the UNFFR Project would help meet both short- and long-term needs for power and ancillary services in the CA/MX.

Table 1-2. Actual and forecasted generation, demand, and reserve capability for CA/MX and WECC. (Source: [http://www.wecc.biz/2003\\_Summer\\_Assessment\\_Revised.pdf](http://www.wecc.biz/2003_Summer_Assessment_Revised.pdf), as modified by staff)

	2003 Actual	2012 Forecasted	Annual Percentage Change
<b>CA/MX</b>			
Existing/planned generation (MW)	54,003	61,113	1.4
Summer peak demand (MW)	53,334	64,585	2.2
Winter peak demand (MW)	42,017	50,921	2.2
Annual energy load (GWh)	292,024	349,983	2.0
Summer reserve as percentage of firm peak demand	24.9%	13.4%	
Winter reserve as percentage of firm peak demand	19.8%	14.3%	
<b>WECC</b>			
Existing/planned generation (MW)	173,440	205,763	1.9
Summer peak demand (MW)	136,587	164,417	2.1
Winter peak demand (MW)	125,149	148,931	2.0
Annual energy load (GWh)	841,180	1,001,964	2.0
Summer reserve as percentage of firm peak demand (%)	31.6	21.2	
Winter reserve as percentage of firm peak demand (%)	36.3%	27.4%	

### 1.3 INTERVENTIONS

On December 26, 2002, the Commission issued a notice accepting PG&E's application to relicense the UNFFR Project. This notice set a 60-day period, which ended on February 24, 2003, during which interventions could be filed. In response to that notice, the following entities filed motions to intervene:

Intervenor	Date of Letter
U.S. Department of Agriculture, Forest Service	February 19, 2003
Biggs-West Gridley Water District	February 20, 2003
Butte Water District	February 20, 2003
U.S. Department of the Interior	February 20, 2003
Richvale Irrigation District	February 20, 2003
Western Canal Water District	February 20, 2003

<b>Intervenor</b>	<b>Date of Letter</b>
California Department of Fish and Game	February 21, 2003
U.S. Department of Commerce, National Marine Fisheries Service	February 21, 2003
Plumas County and Plumas County Flood Control and Water Conservation District	February 21, 2003
State Water Resources Control Board	February 21, 2003
California Trout, Trout Unlimited, and California Sportfishing Protection Alliance	February 24, 2003
California Trout and Trout Unlimited	February 24, 2003
Lassen Municipal Utility District	April 17, 2003
Maidu Cultural and Development Group	May 15, 2003
Anglers Committee Against Artificial Whitewater Flows	September 5, 2003
State Water Contractors	January 8, 2004
California Department of Water Resources	January 7, 2005

#### **1.4 SCOPING PROCESS**

Before preparing the draft EIS, we conducted scoping to identify issues and alternatives. Scoping Document 1 was distributed to interested agencies and other parties on April 25, 2003. We held one scoping meeting on May 20, 2003, in Chester, California, and one scoping meeting on May 21, 2003, in Chico, California, to receive oral comments on the project. A court reporter recorded all comments and statements made at the scoping meetings, and these comments are part of the Commission's public record for the project. In addition to oral comments received at the scoping meetings, the following agencies, representatives, individuals, and non-governmental organizations (NGOs) provided written comments.

<b>Commenting Entity</b>	<b>Date of Letter</b>
Bridget Johnston	June 7, 2003
National Park Service	June 11, 2003
Lake Almanor Fishing Association	June 14, 2003
Anglers Committee Against Artificial Whitewater Flows	June 17, 2003
California Department of Fish and Game	June 17, 2003

<b>Commenting Entity</b>	<b>Date of Letter</b>
Plumas County Board of Supervisors	June 17, 2003
American Whitewater Affiliation, Shasta Paddlers, and Chico Paddleheads	June 18, 2003
California State Water Resources Control Board	June 19, 2003
U.S. Fish and Wildlife Service	June 19, 2003
Maidu Cultural Development Group	June 20, 2003
U.S. Department of Commerce, National Marine Fisheries Service	June 19, 2003
Plumas County Flood Control and Conservation District	June 20, 2003 and July 7, 2003
U.S. Department of the Interior	October 16, 2003

We issued the revised Scoping Document 2 on August 7, 2003, which addressed these comments.

## **1.5 AGENCY CONSULTATION**

The Commission's regulations require applicants to consult with appropriate state and federal environmental resource agencies, Indian tribes, and the public before filing a license application. This consultation is the first step in complying with the Fish and Wildlife Coordination Act, the Endangered Species Act (ESA), the National Historic Preservation Act (NHPA), and other federal statutes. Pre-filing consultation must be completed and documented in accordance with Commission regulations. The Commission issued a public notice on August 25, 2003, that the application for the UNFFR Project was ready for environmental analysis (REA), and that comments should be filed by December 1, 2003. The following entities commented:

<b>Commenting Entity</b>	<b>Date of Letter</b>
Maidu Cultural and Development Group	November 24, 2003
California Department of Fish and Game	November 26, 2003
U.S. Department of Commerce, National Marine Fisheries Service	November 26, 2003
American Whitewater Affiliation, Shasta Paddlers, and Chico Paddleheads	December 1, 2003
U.S. Department of the Interior	December 1, 2003
U.S. Department of Agriculture, Forest Service	December 1, 2003

PG&E filed reply comments on the recommended terms and conditions by letter dated January 15, 2004. All comments become part of the record and are considered during our analysis of the proposed action. We discuss the comments and recommendations in section 3.3, *Proposed Action and Action Alternatives*.

## **1.6 SETTLEMENT AGREEMENT**

On January 24 and 25, 2001, PG&E met with several resource agencies in Sacramento to begin a series of discussions on environmental topics relating to project relicensing. Eventually, NGOs were involved in this series of discussions, which ultimately developed into a broad group of UNFFR Project relicensing stakeholders. PG&E referred to this group as the 2105 Collaborative, and it included PG&E, the FS, the California Department of Fish and Game (CDFG), the U.S. Fish and Wildlife Service (FWS), Plumas County and the local 2105 Committee, the U.S. National Park Service (NPS), the National Oceanographic and Atmospheric Administration's National Marine Fisheries Service (NOAA Fisheries), American Whitewater (AW) and local recreation interests, the California Sportfishing Protection Alliance, the Anglers Committee, Native American interest groups, the California Hydro Reform Coalition, and the California State Water Resources Control Board (SWRCB). The 2105 Collaborative had a goal of reaching mutually acceptable protection, mitigation, and enhancement (PM&E) measures for inclusion in a new license that could be issued for the project.

On October 1, 2003, PG&E filed a letter with the Commission that provided an update on its efforts to reach agreement on behalf of the 2105 Collaborative. Attached to the letter was a flow issues settlement proposal, which included draft settlement language tentatively agreed to at a meeting on September 29, 2003, on the subjects of streamflow management, recreation flow management, reservoir operation, and water year type. At that time, PG&E anticipated that it would have a final fully, executed Settlement Agreement (SA) filed with the Commission by December 1, 2003.

NPS, the FS, and Plumas County, all filed letters with the Commission in support of the 2105 settlement process and the general settlement language submitted by PG&E. CDFG submitted a letter to PG&E expressing its agreement with the terms and conditions defined in the draft SA, and Jerry Mensch of the California Sportfishing Protection Alliance sent an email to William Zemke of PG&E supporting both the collaborative process and the draft agreement process. PG&E filed both the letter from CDFG and the email from Jerry Mensch with the Commission on October 16, 2003.

In response to the Commission's REA notice, on November 28, 2003, CDFG submitted its recommendations pursuant to Section 10(j) of the Federal Power Act (FPA). In its recommendations, CDFG indicated its support of the PM&E measures outlined in the draft SA and attached to CDFG's recommendations was a copy of the draft SA dated October 31, 2003.

On March 5, 2004, PG&E filed a letter with the Commission with an updated version of the draft SA. PG&E stated that this version reflected the 2105 Collaborative's progress from meetings held on February 20, March 1, and March 4, during which they reviewed the draft line-by-line. In its letter, PG&E stated that the 2105 Collaborative was optimistic that a consensus could be reached on final language in the near future. PG&E also indicated that a date for all of the parties of the 2105 Collaborative to sign the SA had not yet been set, but that it could realistically occur in early April 2004.

Also in its March 5, 2004, letter, PG&E disclosed that the issue of water temperature control was not resolved in the draft SA, but that it is recognized as an important topic by the 2105 Collaborative. PG&E acknowledged that study results and modeling information critical to this issue have only recently been available. It stated that additional studies and data synthesis would be necessary before any decision-making on water temperature by the Collaborative and indicated its willingness to continue discussions in hopes that an addendum to the current SA addressing this issue could be completed; PG&E chose to not estimate a date for the completion of the addendum.

On April 30, 2004, PG&E filed the SA, with the Commission (PG&E, 2004a; see appendix A of this EIS). In its transmittal letter, PG&E indicated that the SA represented the concerted effort of a broad-based group of resource agencies, public entities, and NGOs and that it addressed many key issues concerning the project and its operation. PG&E also acknowledged that agreement on appropriate measures for the control of water temperatures in the NFFR was not included in the settlement. PG&E stated that discussions with the Collaborative were continuing and that its goal is to reach a collaborative settlement on this issue, if possible. PG&E intends to keep the Commission informed of the status of these discussions.

The April 30, 2004, SA includes measures pertaining to minimum streamflows, pulse flows, ramping rates, recreation flows, reservoir operations, water quality monitoring, wildlife habitat enhancement, recreation facilities development, maintenance and monitoring, adjustments to the project boundary, an interpretation and education (I&E) program, and land management and visual resources. We consider the SA to represent the proposed measures of PG&E and the other signatory parties<sup>8</sup> to the agreement, superseding previous recommendations made by these respective entities.<sup>9</sup>

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<sup>8</sup> Signatory parties to the SA include PG&E, U.S. Forest Service, Plumas National Forest, Lassen National Forest, CDFG, Plumas County Board of Supervisors, CA Sportfishing Protection Alliance, American Whitewater, Shasta Paddlers, Chico Paddleheads, and Mountain Meadows Conservancy.

<sup>9</sup> In section 3.1 of the SA, the parties to the settlement requested that FERC accept and incorporate, without material modification, as license articles all of the PM&E measures included in appendix A of the SA.

## **1.7 COMMENTS ON THE DRAFT EIS**

The Commission sent the draft EIS to the U.S. Environmental Protection Agency (EPA) and made the draft EIS available to the public on September 17, 2004. The Commission requested that any written comments on the draft EIS be filed by November 1, 2004. In addition, the Commission accepted oral testimony on the draft EIS at two meetings: one held on October 19, 2004, in Chester, California, and one held on October 20, 2004, in Chico, California. We modified the text of the EIS in response to oral and written comments received, as appropriate. Appendix C lists the commenters, summarizes the comments, and presents our responses to those comments. Also, in response to the draft EIS, the FS filed its final Section 4(e) conditions for the UNFFR Project by letter dated November 4, 2004 (appendix B).

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