

37 FERC P 62261 (F.E.R.C.), 1986 WL 79389  
\*\*1 Office Director Orders

McDowell Forest Products, Inc.

Project No. 6281-000  
Order Issuing License (Minor Project)  
(Issued December 23, 1986)

\*63312 Richard T. Hunt, Director, Office of Hydropower Licensing.

McDowell Forest Products, Inc. has filed a license application under Part I of the Federal Power Act (Act) to construct, operate, and maintain the Five Bears Power Project, located in Plumas County, California, on Ward Creek, a tributary to the Feather River. The project would occupy lands of the United States within the Plumas National Forest.

Notice of the application has been published. The motions to intervene that have been granted and the comments filed by agencies and individuals have been fully considered in determining whether to issue this license, as discussed below.

*Recommendations of Federal and State Fish and Wildlife Agencies*

Section 10(j) of the Federal Power Act, as amended by the Electric Consumers Protection Act of 1986 (ECPA), requires the Commission to include license conditions based on recommendations of federal and state fish and wildlife agencies for the protection, mitigation, and enhancement of fish and wildlife. The following recommendations from the California Department of Fish and Game were received on November 13, 1986, after the completion of the environmental assessment (EA).

1. For maintenance of aquatic resources in South Ward Creek, licensee will release the following flows:

March 2 through June 15—10 cfs or natural flow, whichever is less.

June 16 through March 1—3 cfs or natural flow, whichever is less.

2. Required streamflows will be released at all times from the diversion structure except when the water temperature, as measured by a recording thermograph located 100 feet upstream from the powerhouse tailrace, exceeds 19°C. At such time, additional water shall be released, up to the entire flow to the diversion, as is necessary to prevent water temperature from exceeding 19°C as measured 100 feet upstream from the powerhouse tailrace. If the water temperature at the diversion point exceeds 19°C, sufficient water shall be released, up to the entire streamflow, as may be necessary to maintain a 2°C or less difference between water temperature at the diversion point and at a point 100 feet upstream from the powerhouse tailrace.

3. All streamflow releases and temperature requirements shall be monitored by a continuous recording stream gage and recording thermograph at two sites approved by the Department of Fish and Game. Said recording devices shall be properly operated and maintained by licensee. The daily records of maximum and minimum flows, maximum water temperatures, and daily power generation records shall be provided to the Department of Fish and Game annually by December 31 of each year for the preceding October 1 to September 30 water year.

4. To prevent fish stranding, increases in the amount of water diverted shall be gradual and at a rate not to exceed 30 percent of the total streamflow per hour.

5. A fish screen acceptable to the Department of Fish and Game shall be installed on the intake structure, and shall be properly operated and maintained by the licensee.

\*\*2 6. Engineered drawings of the diversion structure, fish screen, and powerhouse tailrace \*63313 must be submitted to the

Department of Fish and Game for approval at least 90 days prior to any construction. These drawings shall be designed by a State **licensed** civil engineer. The diversion structure shall be designed to pass the 100-year flood flow, and the outlet of the fish flow release shall be constructed in such a manner that silt and debris do not obstruct the outlet. The powerhouse tailrace shall be designed to prevent streambank erosion when water is released from the powerhouse.

7. Licensee shall, by a method acceptable to the Central Valley Regional Water Quality Control Board and the Department of Fish and Game, remove sand and sediment from the pool immediately upstream from the diversion structure to a site acceptable to the aforementioned agencies. All accumulated materials greater than or equal to one-half inch in greatest dimension shall be returned in an approved manner to South Ward Creek downstream from the diversion structure. A self-cleaning diversion weir would be acceptable.

8. To prevent aggradation of the stream channel downstream of the diversion site, a 24-hour flushing flow at the annual 5% exceedence level should be made. This should occur once annually sometime during the first two weeks of March.

9. Evaluation of erosion potential and the development of an erosion control plan, which prevents sedimentation and siltation of South Ward Creek during construction, must be submitted to the Department of Fish and Game for approval 90 days prior to any construction.

10. All areas denuded by project construction shall be reseeded with native plant species valuable to wildlife. Denuded slopes shall be covered with a protective mulch or other protective reseeding techniques as soon as practical following active work at a specific site but before October 15. Slope protection shall be repeated as often as necessary to ensure erosion prevention.

11. Pursuant to [Section 1603 of the Fish and Game Code](#), licensee shall, prior to any construction, notify the Department of Fish and Game and enter into a Streambed Alteration Agreement with the Department to protect fish and wildlife resources during construction.

12. Licensee shall complete a survey of threatened or endangered plant and animal species in all areas to be affected by the project. Plant studies must be conducted in the spring months. A plan mitigating habitat losses must be submitted to the Department of Fish and Game for approval 90 days prior to any construction.

13. Licensee shall complete a survey of wildlife habitat affected by the project. A plan to compensate for habitat loss must be completed and submitted to the Department of Fish and Game for approval 90 days prior to any construction.

14. Transmission lines shall be designed and constructed in such a way that they are not a hazard to raptors.

15. Licensee shall, for the life of the project, permit access to the project by agents representing the California Department of Fish and Game and the U.S. Fish and Wildlife Service, and the Forest Service without prior notification, and the Federal Energy Regulatory Commission is requested to maintain jurisdiction over the project in order to correct any problems which may be identified in the future.

**\*\*3** 16. If unforeseen damages occur to fish and wildlife because of project construction and/or operation, licensee will modify the project as deemed necessary by the California Department of Fish and Game.

For the protection of fish and wildlife resources at the proposed project site and the downstream Ward Creek, the above recommendations should be included in the **license**. The Commission, however, may not delegate responsibility for the design, construction or operation of the proposed facility; final approval of project design, construction or operation must be retained by the Commission. Recommendations 3, 5, 6, 7, 9, 12 and 13 require that the California Department of Fish and Game (CDFG) approve aspects of project design, construction or operation. In order to maintain the Commission's responsibilities, the articles included herein require the licensee to consult with the CDFG prior to filing these plans with the Commission. This will provide CDFG the opportunity to recommend approval or alternative action.

In addition, the following modifications are also required to incorporate the above recommendations as **license** articles:

(a) *Item 1.* The CDFG and the Forest Service (FS) recommend similar minimum flow requirements for the bypassed natural

channel of Ward Creek. Both agencies recommend the following minimum flow regime: 10 cubic feet per second (cfs) during spring and early summer, and 3 cfs during the remainder of the year. The FS recommendation requires the 10 cfs flow to be maintained one day longer than the CDFG recommendation. The FS recommendations should be accepted for the protection of fish and wildlife in Ward Creek. Since the protection of fish and wildlife is achieved by the higher 10 cfs flow, and the \*63314 adoption of the FS recommendation extends the duration of these higher flows, it does not conflict with the CDFG recommendations. The FS conditions allow for modification of minimum flows based on the results of recommended studies. Article 401 would limit those modifications from reducing the amount or duration of minimum flows below those recommended by the CDFG. These flows are necessary for the protection of the aquatic life in Ward Creek.

(b) *Item 12.* The licensee contacted the U.S. Fish and Wildlife Service (FWS) on September 25, 1981, concerning federally listed, endangered or threatened species at the project site. The undated FWS response included in the application indicates that no known federally listed endangered or threatened species occur in the immediate project area. This fulfills the requirements under the Endangered Species Act. However, because of the CDFG's request to ensure that no threatened or endangered species exist at the project site, a survey of the project site should be required. Should threatened or endangered species be found during the survey, a listing of suitable habitat at the project site for the species should be compiled, and mitigation proposed for the loss of this habitat.

(c) *Item 15.* The Federal Power Act (FPA) provides the Federal Energy Regulatory Commission (FERC) with continuing jurisdiction over the proposed project. This jurisdiction is Congressionally authorized and could not be granted or withdrawn with a **license** article. The California Department of Fish and Game request for the maintenance of FERC jurisdiction over the proposed project is ensured by the Federal Power Act and may be modified only by Congress.

\*\*4 The applicant is in agreement with the above modifications, as indicated in a telephone conversation of December 9, 1986.

For the protection of fish and wildlife resources, articles 401 through 418 incorporate the above CDFG recommendations. Article 419 is an additional article discussed in the environmental assessment for the Five Bears Power Project.

#### *Summary of Findings*

An Environmental Assessment (EA) was issued for this project. Background information, analysis of impacts, support for related **license** articles, and the basis for a finding of no significant impact on the environment are contained in the EA attached to this order. On October 26, 1983, the California State Water Resources Control Board (WRCB) filed an out-of-time petition to intervene on the proposed Five Bears Power Project. The Commission on December 22, 1983, issued an order denying late intervention to the WRCB.

The California Department of Fish and Game (CDFG) on November 19, 1982, filed a timely petition to intervene on the Five Bears Power Project. The CDFG's petition recommends that **licensing** of the project be postponed until the applicant completes an instream flow study, a fishery resource evaluation, and wildlife surveys, and develops a wildlife compensation plan. The recommendations of the CDFG received November 13, 1986, and discussed herein, which the applicant has agreed to implement, will satisfy the concerns raised by the CDFG. Issuance of this **license** is not a major federal action significantly affecting the quality of the human environment.

The design of this project is consistent with the engineering standards governing dam safety. The project will be safe if constructed, operated, and maintained in accordance with the requirements of this **license**. Analysis and support for related **license** articles are provided in the Safety and Design Assessment attached to this order.

#### *Comprehensive Plans*

Section 10(a)(2) of the FPA, as amended by ECPA, requires the Commission to consider the extent to which a project is consistent with comprehensive plans (where they exist) for improving, developing, or conserving a waterway or waterways affected by the project that is prepared by an agency established pursuant to federal law that has the authority to prepare such a plan or by the state in which the facility is or will be located. The Commission considers plans to be within the scope of Section 10(a)(2) only if such plans reflect the preparers' own balancing of the competing uses of a waterway, based on their

data and applicable policy considerations (i.e., consider and balance all relevant public use considerations). With regard to plans prepared at the state level, such plans are within the scope of Section 10(a)(2) only if they are prepared and adopted pursuant to a specific act of the state legislature and developed, implemented and managed by an appropriate state agency.<sup>1</sup>

No comprehensive plans of the types referred to in Section 10(a)(2) of the FPA relevant to this project have been identified. Three resource plans<sup>2</sup> that touch on various aspects of waterway management were brought to our attention and have been reviewed in relation to the proposed project as part of our broad public interest examination \*63315 under Section 10(a)(1) of the FPA. No conflicts were found.

**\*\*5** Based upon our review of the agency and public comments filed in this proceeding, and our independent analysis, as discussed herein, we conclude that the Five Bears Hydroelectric Project is best adapted to a comprehensive plan for Ward Creek, taking into consideration the beneficial public uses described in section 10(a)(1) of the Federal Power Act.

*The Director orders:*

(A) This **license** is issued to McDowell Forest Products, Inc. (licensee), for a period of 50 years, effective the first day of the month in which this order is issued, to construct, operate, and maintain the Five Bears Power Project. This **license** is subject to the terms and conditions of the Act, which is incorporated by reference as part of this **license**, and subject to the regulations the Commission issues under the provisions of the Act.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, enclosed by the project boundary shown by Exhibit G:

| Exhibit G- | FERC No. 6281- | Showing          |
|------------|----------------|------------------|
| 1          | 10             | Project Boundary |

(2) Project works consisting of: (a) a 10-foot-long, 4-foot-high concrete diversion structure; (b) a 16-inch-diameter, 7,000-foot-long steel penstock; (c) a powerhouse containing a generating unit with a rated capacity of 600 kW; (d) a concrete tailrace; (e) a 4,000-foot-long buried transmission line; and (f) appurtenant facilities.

The project works generally described above are more specifically shown and described by those portions of Exhibits A and F recommended for approval in the attached Safety and Design Assessment.

(3) All of the structures, fixtures, equipment or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) The Exhibit G described above and those sections of Exhibits A and F recommended for approval in the attached Safety and Design Assessment are approved and made part of the **license**.

(D) The following sections of the Act are waived and excluded from the **license** for this minor project:

4(b), except the second sentence; 4(e), insofar as it relates to approval of plans by the Chief of Engineers and the Secretary of the Army; 6, insofar as it relates to public notice and to the acceptance and expression in the **license** of terms and conditions of the Act that are waived here; 10(c), insofar as it relates to depreciation reserves; 10(d); 10(f); 14, except insofar as the power of condemnation is reserved; 15; 16; 19; 20; and 22.

(E) This **license** is subject to the following articles submitted by the United States Department of Agriculture, Forest Service under section 4(e) of the Act:

*Article 101.* Within 6 months following the date of issuance of this **license** and before starting any activities of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower **Licensing**, a special-use authorization from the Forest Service.

**\*\*6** The licensee shall not commence activities authorized in the **license** and Forest Service special-use authorization until after 60 days following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

*Article 102.* Each year on or before the anniversary date of the **license**, the licensee shall consult with the Forest Service with regard to measures needed to ensure protection and development of the natural resource values of the project area. Within 2 months following said meeting, the licensee shall file a report with the Commission of any recommendations made by the agency. The Commission reserves the right, after notice and opportunity for hearing, to require changes in the project and its operation that may be necessary to accomplish natural resource protection and development.

*Article 103.* During the construction and operation of the facilities authorized by this **license**, the licensee shall maintain, immediately below the point of diversion in Ward Creek, the following continuous, minimum flows or the natural flows, whichever are less, as measured immediately below the point of proposed diversion:

March 2 through June 16—10 cubic feet per second (cfs)

June 17 through March 1—3 cfs

After notice to and concurrence by the Forest Service, the licensee shall release the entire unrestricted flow in Ward Creek down the channel for 5 consecutive days during the peak runoff period to maintain channel competence and to aggregate and flush the gravel.

**\*63316** The licensee may temporarily modify minimum flows if required by operating emergencies beyond the control of the licensee. The licensee may also modify minimum flows for short periods upon written consent of the Forest Service.

These interim minimum in-stream flow requirements shall remain in effect until the date that the approved adjusted in-stream flows provided for in article 104 are implemented.

*Article 104.* Within 1 year of the date of issuance of this **license**, the licensee shall file with the Director, Office of Hydropower **Licensing**, a plan approved by the Forest Service for the study of in-stream flows. This study must address: (a) the effects of diverting different quantities of water on downstream aquatic and terrestrial habitats; (b) the water requirements of aquatic organisms in the areas affected by diversions, including existing organisms and those that may be introduced; (c) the effects of project discharges on streams' morphology and stability; (d) measures that will ensure the protection and enhancement of water quality and animal and vegetative habitats in the streams and environs; (e) requirements for recreation and aesthetics; and (f) recommendations for minimum in-stream flow and flow regimes that will achieve the identified measures of protection and enhancement. The plan must also include a schedule for implementing the adjusted in-stream flows.

The licensee shall not commence the study described in the plan until after 60 days following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

**\*\*7** Within 2 months following completion of the study, the licensee shall file with the Director, Office of Hydropower **Licensing**, the study results along with any recommended changes, approved by the Forest Service, in the interim minimum in-stream flows or flow regimes in article 103.

Licensee may not implement the adjusted in-stream flow requirements, until approved by the Forest Service, and until 60 days after the filing date for the study results, unless the Director, Office of Hydropower **Licensing**, instructs otherwise. The approved adjusted in-stream flow requirements shall supersede those shown in article 103.

*Article 105.* Within 1 year from the issuance of this **license** and before starting any activities of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower **Licensing**, a fish and wildlife habitat mitigation plan approved by the Forest Service. This plan must identify requirements for construction and mitigation measures to meet Forest Service fish and wildlife habitat objectives and standards. The plan also must include a schedule for accomplishing these objectives and standards and must identify and schedule any needs for additional studies.

The licensee shall not commence activities affected by this plan until after 60 days following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

*Article 106.* Within 1 year following the date of issuance of this **license** and before starting any activities of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower **Licensing**, a plan approved by the Forest Service for accommodation of project-induced recreation.

The licensee shall not commence activities affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

*Article 107.* Within 1 year following the date of issuance of this **license** and prior to the engaging of any activities of a land-disturbing nature on National Forest System land, the licensee after consultation with the Forest Service, shall complete a water quality study to assess the impact of the project on the water quality of Ward Creek and file the study, along with comments from the Forest Service, with the Director, Office of Hydropower **Licensing**. The Director may approve the study or require its modification. If the results of the approved study indicate that changes in project structures or operations are necessary to maintain water quality standards of the State of California, the licensee shall file with the Commission a mitigation schedule, approved by the Forest Service, for implementing the specific changes in project structures or operations.

The licensee shall not commence activities affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

*Article 108.* Within 1 year following the date of issuance of this **license** and before starting any activities of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower **Licensing**, a plan approved by the Forest Service for the control of erosion, stream sedimentation, dust, and soil mass movement.

**\*\*8** The licensee shall not commence activities affected by the plan until after 60 days **\*63317** following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

*Article 109.* Within 1 year following date of issuance of this **license** and before starting any activities of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower **Licensing**, a plan, approved by the Forest Service, for the treatment and disposal of solid waste and waste water generated during construction and operation of the project. The plan must address, as a minimum, the estimated quantity of solid waste and waste water generated each day; the location of disposal sites and methods of treatment; implementation schedule; areas available for disposal of wastes; design of facilities; comparisons between on and offsite disposal; and maintenance programs.

The licensee shall not commence activities affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

*Article 110.* Within 1 year following the date of issuance of this **license** and at least 60 days before starting any activities of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower **Licensing**, a plan approved by the Forest Service for oil and hazardous substances storage and spill prevention and cleanup.

The plan must require, at a minimum, the licensee: (1) to maintain in the project area, a cache of spill cleanup equipment suitable to contain any spill from the project; (2) to periodically inform the Forest Service of the location of the spill cleanup equipment on National Forest System lands and of the location, type, and quantity of oil and hazardous substances stored in the project area; and (3) to inform the Forest Service immediately of the nature, time, date, location, and action taken for any

spill.

The licensee shall not commence activities affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

*Article 111.* Within 1 year following the date of issuance of this **license** and before starting any activities of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower **Licensing**, a plan approved by the Forest Service for the storage and/or disposal of excess construction/tunnel spoils and slide material. At a minimum, the plan must address contouring of any storage piles to conform to adjacent land forms and slopes, stabilization and rehabilitation of all spoil sites and borrow pits, and prevention of water contamination by leachate runoff. The plan also must include an implementation schedule and maintenance program.

The licensee shall not commence activities affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

**\*\*9 Article 112.** Within 1 year following the date of issuance of this **license** and before starting any activities of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower **Licensing**, a plan approved by the Forest Service for the design and construction of the project facilities in order to preserve or enhance its visual character. The plan must consider facility configurations and alignments, building materials, color, conservation of vegetation, landscaping, and screening. Project facilities of concern to this plan include, among other things, clearings, diversion structures, penstocks, pipes, ditches, powerhouse, other buildings, transmission lines and corridors, and access roads.

The licensee shall not commence activities affected by the plan until after 60 days following the filing date, unless the Director, Office of Hydropower **Licensing**, instructs otherwise.

*Article 113.* Prior to any changes in the location of any existing or proposed project features or facilities, or any changes in the proposed uses of project lands and waters, or divergence from any approved exhibits filed with the Commission, the licensee shall consult and cooperate with the Forest Service in regard to measures needed to ensure the protection and development of the natural resource values of the project area that could be affected by such changes or divergence. Following such consultations and at least 60 days prior to any such changes or divergence, the licensee shall file a report with the Commission describing the changes, the reasons for the changes, and showing the approval of the Forest Service for such changes. The licensee shall file an exact copy of this report with the Forest Service at the same time it is filed with the Commission. This does not relieve the licensee from the requirements of article 3 of this **license**. In the event that the licensee cannot secure Forest Service approval of the changes, the proposed changes or modifications are considered a substantial alteration and must be submitted to the Commission for approval in accordance with article 2.

**\*63318 Article 114.** The licensee shall bury the transmission line from the powerhouse to the private land boundary. The location and depth of burial of the line are subject to approval by the Forest Service.

*Article 115.* Within 1 year from the issuance of this **license** and before starting any activities of a land-disturbing nature on National Forest System land, the licensee shall file with the Director, Office of Hydropower **Licensing**, a detailed implementation plan approved by the Forest Service, for the mitigation of impacts to sensitive, threatened, and endangered plant and animal species located within the area to be disturbed.

(F) This **license** is subject to the articles set forth in Form L-17 (October 1975) (reported at 54 FPC 1896), entitled "Terms and Conditions of **License** for Unconstructed Minor Project Affecting Lands of the United States". The **license** is also subject to the following additional articles:

**\*\*10 Article 201.** The licensee shall pay the United States the following annual charges, effective the first day of the month in which this **license** is issued:

a. For the purpose of reimbursing the United States for the cost of administration of Part I of the Act, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time. The authorized installed capacity for that purpose is 800 horsepower.

b. For the purpose of recompensing the United States for the use, occupancy, and enjoyment of 23.16 acres of its lands, a reasonable annual charge as determined by the Commission in accordance with its regulations, in effect from time to time.

c. For the purpose of recompensing the United States for the use, occupancy, and enjoyment of 1.84 acres of its lands for transmission line right-of-way, a reasonable amount as determined in accordance with the provisions of the Commission's regulations in effect from time to time.

*Article 301.* The licensee shall commence construction of project works within two years from the issuance date of the **license** and shall complete construction of the project within four years from the issuance date of the **license**.

*Article 302.* The licensee shall at least 60 days prior to start of construction, submit one copy to the Commission's Regional Director and two copies to the Director, Division of Inspections, of the final contract drawings and specifications for pertinent features of the project, such as water retention structures, powerhouse, and water conveyance structures. The Director, Division of Inspections may require changes in the plans and specifications to assure a safe and adequate project.

*Article 303.* The licensee shall review and approve the design of contractor-designed cofferdams and deep excavations prior to the start of construction and shall ensure that construction of cofferdams and deep excavations is consistent with the approved design. At least 30 days prior to start of construction of the cofferdam, the licensee shall submit to the Commission's Regional Director and Director, Division of Inspections, one copy each of the approved cofferdam construction drawings and specifications and the letter(s) of approval.

*Article 304.* The licensee shall within 90 days of completion of construction file, for approval by the Commission, revised Exhibits A, F, and G to describe and show the project as built.

*Article 401.* The licensee shall maintain in the bypassed reach of Ward Creek, continuous minimum flows of 10 cubic feet per second from March 2 through June 16, and 3 cubic feet per second from June 17 through March 1, as measured immediately downstream from the project diversion or inflow to the reservoir, whichever is less, for the protection of fish and wildlife resources in Ward Creek. This flow may be temporarily modified if required by operating emergencies beyond the control of the licensee, as described in article 402, and for short periods upon mutual agreement between the licensee and the California Department of Fish and Game.

**\*\*11** *Article 402.* The licensee shall monitor water temperature in the bypassed reach and immediately above the point of diversion, as described in article 403. When the water temperature in the bypassed reach exceeds 19 degrees Centigrade and the water temperature at the point of diversion is below 19 degrees Centigrade, flows, up to the entire streamflow, shall be passed through the bypassed reach to prevent water temperature in the bypassed reach from exceeding 19 degrees Centigrade. When the water temperature at the point of diversion exceeds 19 degrees Centigrade, flows shall be maintained in the bypassed reach so that the difference between the water temperature at the point of diversion, and the water temperature in the bypassed reach does not exceed 2 degrees Centigrade.

*Article 403.* The licensee, in cooperation with the California Department of Fish and Game and the California Regional Water Quality Control Board, shall prepare a plan to monitor water temperature and flows in Ward Creek at the point of diversion and in the **\*63319** bypassed reach. The plan shall include reporting requirements and a method for periodically verifying the temperature and flow data. This plan along with agency comments shall be filed with the Commission within 9 months from the date of this **license**. The Commission reserves the right to make modifications to the plan.

*Article 404.* The licensee shall divert water from the natural stream channel at a rate not to exceed 30 percent of the total streamflow per hour for the protection of aquatic life in the natural stream channel.

*Article 405.* The licensee shall consult with the California Department of Fish and Game and the U.S. Fish and Wildlife Service on the final design and operation of the intake structure, powerhouse tailrace, and fish screening structure and, within 1 year from the date of issuance of this **license**, shall file with the Commission, for approval, functional design drawings of the intake structure, powerhouse tailrace, and fish screening structure for the intake of the Five Bears Power Project. The

licensee shall file as-built drawings with the Commission within 6 months after completion of construction.

*Article 406.* The licensee shall prepare a plan for the removal and disposal of sand and sediment from the project reservoir. Comments of the California Department of Fish and Game shall be included with the filing. The plan shall be filed with the Commission within 1 year from the date of this **license**. The Commission reserves the right to modify the proposed plan.

*Article 407.* The licensee shall prepare a plan to prevent aggradation in the bypassed stream channel. This plan should provide for annual flushing flows in the bypassed reach. The plan along with comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service shall be filed with the Commission within 1 year from the date of this **license**. The Commission reserves the right to modify the plan.

*Article 408.* The licensee shall file comments from the California Department of Fish and Game and the U.S. Fish and Wildlife Service along with the erosion control plan required under article 108 of the Forest Service 4(e) conditions.

**\*\*12 Article 409.** The licensee shall file with the Commission a plan to revegetate areas where the natural vegetation is lost or altered due to project construction or operation. Comments of the Forest Service, California Department of Fish and Game, and the U.S. Fish and Wildlife Service shall be included with the filing. This plan shall be filed within 9 months from the date of this **license**. The Commission reserves the right to modify the plan.

*Article 410.* The licensee shall consult with the California Department of Fish and Game in the preparation of a streambed alteration plan. This plan along with Agency comments shall be filed with the Commission prior to any construction activity that would modify the Ward Creek streambed. This plan shall be filed within 6 months from the date of this **license**. The Commission reserves the right to modify the plan.

*Article 411.* The licensee, after consultation with the California Department of Fish and Game and the U.S. Fish and Wildlife Service, shall prepare a plan for the survey of federally listed, threatened or endangered plant and animal species at the project site. The plan along with agency comments shall be filed with the Commission within 6 months from the date of this **license**. The results of the survey along with agency comments shall be filed with the Commission within 9 months from the date of this **license**.

*Article 412.* The licensee shall file a plan to mitigate habitat lost to any species identified in article 411. This plan shall be prepared in consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game and filed for Commission approval along with agency comments within 1 year from the date of this **license** and at least 60 days prior to any ground-disturbing activity.

*Article 413.* The licensee, after consultation with the California Department of Fish and Game, shall conduct a survey of wildlife habitat at the project site. This survey shall be filed with the Commission along with agency comments within 9 months from the date of this **license**.

*Article 414.* The licensee, after consultation with the California Department of Fish and Game, shall prepare a mitigative plan for the loss of wildlife habitat (identified in article 413) caused by project construction and operation. This plan along with agency comments shall be filed with the Commission within 1 year from the date of this **license** and 90 days prior to any construction activities at the site. The Commission reserves the right to make modifications to the mitigative plan.

*Article 415.* The licensee, after consultation with the U.S. Fish and Wildlife Service, the Forest Service, and the California Department of Fish and Game, and within 1 year from the date of issuance of the **license**, shall file with the Commission a transmission line design plan, prepared in accordance with the guidelines set forth in "Suggested Practices \*63320 Raptor Protection on Power Lines," Raptor Research Report No. 4, Raptor Research Foundation, Inc., 1981. The plan shall include detailed design drawings of the transmission line, clearly showing phase spacing, configuration, and grounding practices, a construction schedule, and agency comments on the adequacy of the design plan.

**\*\*13 Article 416.** The licensee shall provide access to the project for authorized personnel of the California Department of Fish and Game, the U.S. Fish and Wildlife Service, and the Forest Service without prior notification.

*Article 417.* The licensee shall notify the California Department of Fish and Game and the Commission immediately should unforeseen damages to fish and wildlife occur. The licensee shall follow any temporary solution recommended by the California Department of Fish and Game to reduce or eliminate damages to fish and wildlife until a permanent solution is directed by the Commission.

*Article 418.* The licensee, before starting any ground-disturbing or land-clearing activities within the project boundaries, other than that specifically authorized in this **license**, shall consult with the California State Historic Preservation Officer (SHPO) and the Forest Service, Plumas National Forest (FS) about the need for cultural resources survey and salvage work. The licensee shall file with the Commission documentation of the nature and extent of consultation, including a cultural resources management extent of consultation, including a cultural resources management plan and a schedule to conduct the necessary investigation, together with copies of any letters from the SHPO and the FS commenting on the plan and schedule, 60 days before starting any such ground-disturbing or land-clearing activities. The licensee shall make funds available in a reasonable amount for the required work. If the licensee discovers any previously unidentified archeological or historic sites during the course of constructing or developing project works or other facilities at the project, the licensee shall stop all construction and development activities in the vicinity of the sites, and shall consult a qualified cultural resources specialist, the SHPO, and the FS concerning the eligibility of the sites for listing in the *National Register of Historic Places*, and any measures needed to avoid the sites or to mitigate effects on the sites. Before starting to excavate or remove any archeological or historic resources located on National Forest System lands, the licensee shall secure a FS permit authorizing such excavation or removal. If the licensee, the SHPO, or the FS cannot agree on the amount of money to be spent for project-specific archeological and historical purposes, the Commission reserves the right to require the licensee to conduct the necessary work at the licensee's own expense.

*Article 419.* (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain other types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the uses and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, cancelling the permission to use and occupy the project lands and waters and requiring the removal of any non-complying structures and facilities.

**\*\*14** (b) The types of use and occupancy of project lands and waters for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) noncommercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 water craft at a time and where said facility is intended to serve single-family-type dwellings; and (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the uses and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect **\*63321** the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges and roads for which all necessary state and federal approvals have been obtained; (2)

storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69-kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the conveyance, and the nature of the use for which the interest was conveyed.

**\*\*15** (d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certificates or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from the edge of the project reservoir at normal maximum surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 45 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower **Licensing**, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked Exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved Exhibit R or approved report on recreational resources of an Exhibit E; or, if the project does not have an approved Exhibit R or approved report on recreational resources, that the lands to be conveyed do not have recreational value.

(3) The instrument of conveyance must include covenants running with the land adequate to ensure that: (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; and (ii) the grantee shall take all reasonable precautions to ensure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project.

**\*\*16** (4) The Commission reserves the right to require the licensee to take reasonable **\*63322** remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised Exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised Exhibit G or K drawings would be filed for approval for

other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

(G) The Commission reserves the right to assess the **license** fees pursuant to section 30(e) of the Federal Power Act.

(H) This order is issued under authority delegated to the Director and is final unless appealed under Rule 1902 to the Commission by any party within 30 days from the issuance date of this order. Filing an appeal does not stay the effective date of this order or any date specified in this order. The licensee's failure to appeal this order shall constitute acceptance of the **license**.

### Environmental Assessment<sup>1</sup>

Division of Environmental Analysis, Office of Hydropower **Licensing**

Federal Energy Regulatory Commission

Date: August 8, 1986

Project Name: Five Bears Power Project

FERC Project No. **6281**-000

#### A. Application

1. Application type: Minor **License**, Unconstructed Project; Date filed: 5/03/82
2. Applicant: Frontier Land & Power, Incorporated
3. Water body: Ward Creek; River basin: North Fork Feather
4. Nearest city or town: Genessee
5. County: Plumas; State: California

#### B. Resource Development

1. Purpose: The proposed project would provide an estimated average of 1,710,000 kilowatthours (kWh) of electrical energy per year to the Pacific Gas and Electric Company (PG&E).
2. Need for power: The power from the project would be useful in meeting a small portion of the need for power projected by the Western Systems Coordinating Council (WSCC) for the California - Southern Nevada area of the WSCC region. From the time the project goes on-line (i.e., into commercial operation) it would be available to displace fossil-fueled electric power generation in the WSCC region and, thereby, conserve nonrenewable fossil fuels, and reduce the emission of noxious byproducts caused by the combustion of fossil fuels.
3. Hydroelectric power and resource utilization: The proposed project is economically feasible provided that its projected levelized cost is less than the long-term levelized cost of alternative energy in the region. The staff has calculated the projected alternative energy cost in the region to be 114.64 mills per kWh. This cost is based upon the cost of natural gas, as projected by the Energy Information Administration. Since the levelized cost of energy from the Five Bears Project is significantly less than this cost, the project is economically feasible.

**\*\*17** The applicant plans to sell the power generated by the project to PG&E. PG&E's projected levelized energy cost is 133.33 mills per kWh. The estimated levelized cost of energy from the Five Bears Project is estimated to be 71.0 mills per kWh. Therefore, the project would be financially feasible to the applicant.

The applicant estimates that the project would generate about 1,900,000 kWh annually based on a run-of-river operating regime (minimize the fluctuation of the reservoir surface elevation, i.e., maintain discharge from the project so that flow in Ward Creek, as measured immediately downstream from the project tailrace, approximates the instantaneous sum of inflow to the project reservoir) and the required continuous **\*63323** minimum bypass flow releases from the diversion dam of 6 cfs for the months of March through mid-June and 2 cfs for the rest of the year. The Forest Service (FS) has recommended continuous minimum instream flows of 10 and 3 cfs, respectively. Based on these minimum flows, the staff's estimate of annual project generation is 1,710,000 kWh.

Other agency comments would not affect the safety, adequacy, or economic feasibility of the project.

The Commission's Planning Status Report for the Feather River Basin discusses the existing water resource developments and reconnaissance level plans of possible future development within the basin. The proposed project does not conflict with any existing or planned developments or any pending applications for exemption, **license**, or preliminary permit.

In summary, the staff's analysis shows that the proposed project is properly designed to develop the hydropower potential of Ward Creek.

### *C. Proposed Project and Alternatives*

1. Description of the proposed action: The proposed new facilities would include: (1) a 10-foot-long, 4-foot-high concrete diversion structure; (2) a 16-inch-diameter, 7,000-foot-long steel penstock located on concrete pillars; (3) a cement block powerhouse containing 2 turbine-generator units with a combined hydraulic capacity of 10 cfs and a total rated capacity of 600 kW; (4) a concrete tailrace; and (5) a transmission line that would be buried alongside an existing dirt road.

2. Applicant's proposed mitigative measures.

a. Construction: The applicant would install culverts and provide proper drainage along the roadway, thereby limiting any soil erosion. The applicant would also implement construction work without the use of heavy equipment, thereby minimizing the amount of soil disturbance.

b. Operation: Screens at the penstock intake would prevent the entrainment of resident trout. The following continuous minimum flows would be maintained in Ward Creek below the project diversion: 10 cfs from March 2 through June 15, yearly; and 3 cfs from June 16 through March 1, yearly. The transmission line would be located adjacent to an existing dirt road. The penstock and powerhouse exteriors would be painted to blend with the surrounding landscape. To protect area wildlife, an earthen berm would be placed across the penstock every 500 feet.

**\*\*18** 3. Federal lands affected. Yes; agency: Forest Service; acreage = 25

Remarks: None.

4. Alternatives to the proposed action.

a. No other reasonable action alternatives have been found.

Action alternative: Because the applicant is not an electric utility, the available alternatives are to construct or not construct the project. If the **license** is not issued, the project would not be constructed, and the power that would have been developed from a renewable resource would be lost and eventually would have to be provided using nonrenewable fuels.

b. Alternative of no action.

No action would prohibit the applicant from constructing the proposed project. No action would involve no alterations to the existing environment and would preclude the applicant from producing electrical power at the site.

*D. Affected Environment*

1. Descriptions of the resources that would be impacted by the proposed project.

a. Geology and soils. Bedrock in the project area is predominantly greenstone. Soils range from moderately to highly erosive. Soils on steep slopes, such as along the proposed penstock and access road route, are typically unstable, often with landslides. Underground mining of gold, silver, and copper has occurred near the proposed project. Similar deposits may be present in the project area.

b. Streamflow.

low flow: 2 cfs; flow parameter: historical minimum

high flow: 80 cfs; flow parameter: historical maximum

average flow: 7 cfs; flow parameter: historical average

Remarks. None.

c. Water quality. Existing water quality in Ward Creek is excellent. The creek is a high-elevation drainage basin. Turbidity levels are low, and dissolved oxygen remains near 100 percent saturation.

d. Fisheries.

Anadromous: None.

Resident: Species include: rainbow trout and brown trout.

Remarks. Trout populations are self-sustaining.

e. Vegetation.

**\*63324** *Cover type—Dominant species*

riparian—white alder, bigleaf maple, black cottonwood, and willow

mixed coniferous forest—Douglas fir, ponderosa pine, sugar pine, and white fir

Remarks. Surveys of the project area, conducted during May and June 1984, did not locate any rare plant species.

f. Wildlife.

Species inhabiting the project area include: mule deer, coyote, black bear, mink, bobcat, mountain quail, blue grouse, and a variety of songbirds.

Remarks. Surveys of the project area did not locate any rare, sensitive, or endangered animal species.

g. Cultural.

There are properties listed on or eligible for listing on the *National Register of Historic Places* in the area of the project's potential environmental impact.

Description. None.

*National Register* (listed and eligible) properties have not been recorded.

Remarks. The FS reviewed archeological reports for the project and concluded that no archeological or historic sites eligible for inclusion in the *National Register* would be affected (letter from Lloyd R. Britton, Forest Supervisor, Plumas National Forest, Forest Service, Quincy, California, May 30, 1986).

h. Visual quality. The project site is in a remote, undeveloped area. The steep, heavily forested property is accessible by dirt roads, passable only with four-wheel-drive vehicles. Consequently, few persons visit the area.

\*\*19 i. Recreation. There are no developed recreational facilities. Recreational use includes some deer hunting and trout fishing.

j. Land use. Land uses in the project vicinity include limited outdoor recreation and timber harvesting.

k. Socioeconomics. The economy of Plumas County is based on logging, cattle ranching, the manufacturing of lumber and other wood products, and outdoor recreation.

l. Ambient noise. Because the project area is remote and undeveloped, the ambient noise level is low.

m. Ambient air quality. The lack of paved roads limits traffic. Thus, air quality is good.

n. Other resources. None.

#### *E. Consultation and Compliance*

1. Fish and wildlife consultation (Fish & Wildlife Coordination Act).

(a) Fish & Wildlife Service (FWS): Yes

(b) State(s): Yes

(c) National Marine Fisheries Service (NMFS): No

Remarks. None.

2. Section 7 consultation (Endangered Species Act).

(a) Listed species. None.

(b) Not required.

Remarks. No threatened or endangered species are known to occur in the project area (letter from James J. McKeivitt, Field Supervisor, U.S. Fish and Wildlife Service, Sacramento, California, March 18, 1986).

3. Section 401 certification (Clean Water Act). Waived: 07/16/82

4. Cultural resource consultation (Historic Preservation Act).

(a) Register status: None.

(b) State Historic Preservation Officer (SHPO): Yes

(c) National Park Service (NPS): Yes

(d) Council: Not required.

(e) Further consultation: Not required.

Remarks. None.

5. Recreation consultation [Federal Power Act, §10(a)].

(a) U.S. Owners: Yes

(b) NPS: No

(c) State(s): Yes

Remarks. None.

6. Wild and scenic rivers (Wild and Scenic Rivers Act).

Status: None.

Remarks. None.

7. LWCF lands and facilities affected (Land and Water Conservation Fund Act).

Status: None.

Remarks. None.

*F. Comments*

1. The following entities provided comments on the application in response to the public notice dated 09/15/82.

*Commenting entity—Date of letter*

California Department of Fish and Game\*—11/17/82

The California Resources Agency—11/24/82

Department of the Interior—11/29/82

Forest Service—12/07/82; 12/06/85; 05/16/86

Corps of Engineers—02/03/83

\***63325** California State Water Resources Control Board\*—10/26/83

\* Indicates a petition to intervene.

2. The applicant responded to the comments by letters dated 12/10/82, 12/22/82, 02/14/83, and 3/11/85.

*G. Environmental Impacts and Recommendations*

Mitigative measures recommended by the staff are in addition to those proposed by the applicant, Section C(2), and those conditions identified in Section C(3), as appropriate. There are 3 issues addressed below.

1. Issue: Detailed design of applicant's proposed fish screens.

(a) Comments: None.

(b) Applicant's response: None.

(c) Conclusions and recommendations: The licensee should submit functional design drawings of the proposed screens for Commission approval and construct the approved fish screens prior to project operation.

2. Issue: Archeological and historic sites identified during ground-disturbing and land-clearing activities, or affected by changes in the design or location of project facilities.

**\*\*20** (a) Comments: None.

(b) Applicant's response: None.

(c) Conclusions and recommendations: If the licensee encounters unidentified archeological or historic sites during the development of project works or related facilities, the licensee should stop ground-disturbing and land-clearing activities in the vicinity of the sites and consult with the SHPO and the FS. Before starting any ground-disturbing or land-clearing activities within the project boundaries, other than that specifically authorized in this **license**, the licensee should consult with the SHPO and the FS. In these instances, the licensee should file a plan, including a schedule for the necessary studies, and the SHPO's and the FS's written comments concerning the plan.

3. Issue: Cumulative Impact Analysis

(a) North Fork Feather River Basin:

The North Fork Feather River (NFFR), which drains a 1,953-square-mile area, originates on the slopes of Mt. Lassen in the Sierra Nevada, and flows southeast across a plateau-like landform (figure 1). Below Lake Almanor, the river plunges into a rugged canyon, flows southwest through a series of small impoundments, including Rock Creek, Cresta, and Poe Reservoirs, and empties into Lake Oroville, located at the confluence of the NFFR with the Middle and South Forks Feather River. Major tributaries of the NFFR include the East Branch, which flows into the NFFR just upstream of Rock Creek Reservoir, and the West Branch, which flows into the headwaters of Lake Oroville. Flows of the East Branch are regulated by releases from Antelope Lake; flows of the West Branch are regulated by releases from Round Valley and Philbrook Reservoirs.

Soils are generally fine textured and rocky, and are characterized by high erosion hazards, rapid runoff, and low fertility. Soil mass movement and landslides commonly occur throughout the basin.

Rainbow trout, suckers, and sculpin populate the NFFR and its tributaries. No anadromous fish species occur in the basin. The CDFG stocks selected stream reaches with catchable-sized trout. The CDFG has implemented the California Wild Trout Management Program in selected watersheds, including Yellow Creek, which discharges into the NFFR at the confluence with the East Branch. The CDFG also manages the East Branch of the NFFR as a trophy trout fishery.

(b) Existing and proposed hydroelectric development:

Lake Almanor provides the principal storage for existing hydropower generation at the Upper North Fork Feather River Project, FERC Project No. 2105; the Rock Creek-Cresta Project, FERC Project No. 1962; and the Poe Project, FERC Project No. 2107, located along the mainstem NFFR. Other components of this integrated system include the Hamilton Branch Project, FERC Project No. 2627, and the Bucks Creek Project, FERC Project No. 619. Nine powerplants are associated with these projects (Table 1). Additional development proposed by the PG&E is indicated in Table 1, following. A major **license** application, FERC Project No. 3223, filed by the Sacramento Municipal Utility District, competes with the relicensing of the

Rock Creek-Cresta Project, FERC Project No. 1962.

\*\*21 Existing projects located on small tributaries to the lower mainstem NFFR include the Camp Creek Project, FERC Project No. 6120; the Stony Creek Project, FERC Project No. 6791; the Mill Creek Project, FERC Project No. 6792; the Dogwood Creek Project, FERC Project No. 6793; and the Mosquito Creek Project, FERC Project No. 6794. Proposed projects include the French Creek Project, FERC Project No. 5601, and the Grizzly Creek Project, FERC Project No. 6781.

Table 1. Existing and proposed hydropower development in the North Fork \*63326 Feather River Basin operated as an integrated system by Pacific Gas and Electric Company.\*

*FERC Project No.—Powerplant name—Status*

619—Bucks Creek—Existing  
619—Grizzly Forebay—Proposed  
1962—Cresta Unit 3—Proposed  
1962—Cresta—Existing  
1962—Cresta Diversion—Proposed  
1962—Rock Creek Unit 3—Proposed  
1962—Rock Creek—Existing  
1962—Jackass-Chance Creek Diversion—Proposed  
1962—Rock Creek Diversion—Proposed  
2105—Beldon/Oak Flat—Existing  
2105—Beldon—Proposed  
2105—Caribou 2—Existing  
2105—Caribou 1—Existing  
2105—Butt Valley—Existing  
2107—Poe—Existing  
2627—Hamilton Branch—Existing

\* Source: the staff.

There are no existing or proposed projects on the East Branch. Two issued exemptions, the Gansner Creek Project, FERC Project No. 7919; and the Peter Ranch Project, FERC Project No. 6919; are located on tributaries to Spanish and Indian Creeks, respectively, which join to form the East Branch. The proposed Five Bears Project is located on a tributary to Indian Creek.

The headwaters of the West Branch have been developed by the DeSabra-Centerville Project, FERC Project No. 803. This project diverts flows from Round Valley and Philbrook Reservoirs, through two powerhouses located on Butte Creek, which flows into the Sacramento River. Flows from the lower West Branch are diverted just upstream from Lake Oroville, through

the Lime Saddle and Coal Canyon powerhouses, and into a canal system. Proposed projects include Robley Point, FERC Project No. 7728, located on the mainstem West Branch, and the Concow Project, FERC Project No. 3795, located on a tributary to the West Branch downstream of Robley Point.

(c) Target resources:

The staff has determined that the target resources in the NFFR are: (1) resident rainbow trout; (2) water quality; and (3) recreation. The staff identified the target resources by reviewing documents related to existing hydropower projects, applications for proposed hydropower projects in the basin, and comments from federal and state natural resource agencies and the public concerning these projects. The results of a public hearing, held on September 21, 1983, in Sacramento, California, were also used to identify important environmental issues related to potential cumulative effects of hydropower development in the NFFR Basin (Federal Energy Regulatory Commission, 1983).

Rainbow trout recruitment from the tributaries of the basin is very important in maintaining the fishery of the mainstem NFFR. The presence of an internal parasite, *Ceratomyxa shasta*, which causes significant losses of resident rainbow trout, was discovered by the CDFG during the initial 3 years of a 6-year fishery study on the Rock Creek-Cresta section of the NFFR. The CDFG states that very few of their hatchery strains of trout are resistant to the parasite and that it is important to protect wild trout in the tributaries that have built up resistance to the parasite (Federal Energy Regulatory Commission, 1983).

**\*\*22** Land-disturbing activities associated with the construction of the proposed projects may result in increased sediment loads from project-related erosion, slope failure, or mass movement. These activities would degrade water quality by increasing suspended sediment and turbidity, and might increase streambank erosion and degrade aquatic habitat. Construction on granitic soils is especially likely to generate large amounts of sediment.

Much of the land along the NFFR and its tributaries is located in the Plumas National Forest and is managed by the FS. Although the recreational potential in the basin is largely untapped, the FS records indicate that recreational use is steadily increasing. The streams in the upper NFFR basin support good trout populations, but generally receive only light to moderate use (California Department of Water Resources, 1977).

The recreational resources of the basin are closely related to the visual quality of the landscape. Visual quality along the mainstem NFFR has been adversely affected by existing hydropower development, through reduced streamflows and the presence of project components that contrast with the natural landscape character. No main river segments remain with natural flows. Reduced streamflows have also eliminated opportunities for whitewater boating on the NFFR. Existing transmission lines run the length of the North Fork Feather River Canyon, and are visible from State Highway 70, which is well travelled. Additional hydroelectric development could affect recreational resources by disrupting or eliminating existing recreational opportunities and by reducing **\*63327** visual quality through the construction of facilities that would detract from the existing landscape character.

(d) Cumulative impacts to target resources:

The proposed Five Bears Project is geographically isolated from the other proposed projects in the NFFR Basin. This project is also located about a mile upstream from an earthen dam on Ward Creek, which is used as an irrigation diversion. This dam is put in place in late spring and stays in place until it is washed out by high flows the following spring. In a low water year, the dam stays in place all year.

The entire flow of Ward Creek is diverted for irrigation during the summer. While the dam is in place, there is also no downstream movement of resident rainbow trout into Indian Creek. Therefore, Ward Creek does not currently provide a significant contribution to rainbow trout recruitment in Indian Creek or the NFFR, and the proposed Five Bears Project would not affect placement or removal of the downstream irrigation dam.

Mitigative measures to protect the resident rainbow trout fishery in Ward Creek have been specified by the CDFG and the FS, and agreed to by the applicant. In addition, the CDFG does not expect the proposed Five Bears Project to contribute to any cumulative impacts to fish and wildlife in the NFFR Basin, provided the applicant implements the agency's

recommended conditions (letter from Paul Jenson, Regional Manager, California Department of Fish and Game, Rancho Cordova, California, February 26, 1986). Therefore, the proposed Five Bears Project would not contribute to cumulative adverse impacts to resident rainbow trout recruitment in the mainstem NFFR fishery.

**\*\*23** No major active or dormant areas of mass movement occur in the immediate vicinity of the proposed project. However, the access road to be used for the project is the prime contributor of sediment into this branch of Ward Creek (letter from Denny Churchill, Soil Scientist, Plumas National Forest Greenville Ranger District, Greenville, California, April 7, 1986).

Construction activities would cause localized erosion and sedimentation, and a temporary increase in suspended sediment in Ward Creek. Sediment generated from project construction would tend to initially accumulate behind the downstream earthen diversion dam, and be flushed into Indian Creek when the dam is washed out during high flows. However, with implementation and maintenance of proper erosion and sediment control measures, impacts to water quality from project construction should be minor and temporary. In addition, if the access road is brought up to the FS standards by the applicant, it would reduce the amount of sediment currently being generated by this road, and eventually lower existing sediment loads of Ward Creek. Therefore, construction and operation of the proposed Five Bears Project would not contribute to cumulative adverse impacts to water quality.

No developed recreational facilities would be affected by the proposed Five Bears Project. The steep, heavily forested project area is accessible by dirt roads that are passable only with four-wheeled vehicles. The project would also not be visible from State Highway 70. With implementation of a recreation plan and a plan to protect visual resources, recommended by the FS, the proposed Five Bears Project would not contribute to cumulative adverse impacts to recreation.

For the reasons stated above, the staff concludes that the construction and operation of the Five Bears Project, as conditioned, would not contribute to cumulative adverse impacts to resident rainbow trout, water quality, and recreation in the NFFR Basin.

#### *H. Summary of Environmental Impacts*

1. Assessment of adverse and beneficial impacts expected from the project as proposed by the applicant (P); the proposed project with the staff's recommended mitigation(Ps) [Section G]; and any other alternative considered (A). \*

a. Geology/Soils—P: 1AL

Remarks: a. The project would increase the potential for erosion and localized mass movement.

b. Streamflow—P: 1AL

Remarks: b. The project would divert up to 10 cfs from a 1.3-mile-long segment of Ward Creek.

c. Water quality: Temperature—P: 0; Dissolved oxygen—P: 0; Turbidity and sedimentation—P: 1AS; Other: None.

d. Fisheries: Anadromous—P: 0; Resident—P: 0

Remarks: d. Minimum flows and fish screens would protect the fishery resource of Ward Creek.

e. Vegetation—P: 1AL

Remarks: e. Project facilities would result in the permanent loss of approximately 4 acres of vegetation, primarily mixed coniferous forest.

f. Wildlife—P: 1AS

g. Cultural: Archeology—P: 0; History—P: 0

\*63328 h. Visual quality—P: 1AL

h. Project facilities would represent a permanent intrusion to the natural landscape.

\*\*24 i. Recreation—P: 0

j. Land use—P: 0

k. Socioeconomics—P: 1BL

Remarks: k. Earnings of onsite construction personnel, and their subsequent spending at retail trade and service establishments in Plumas County, would benefit the local economy. The completed project facilities would generate annual local property taxes.

l. Ambient noise—P: 1AS

m. Ambient air quality—P: 1AS

n. Cumulative impacts—P: 0

\* The assessment reflects the adoption of any federal land management agency's conditions, in addition to the applicant's proposed mitigation. Assessment symbols indicate the following impact levels:

O = No impact; 1 = Minor impact; 2 = Substantial impact; 3 = Major impact; A = Adverse; B = Beneficial; L = Long-term impact; S = Short-term impact.

(e.g., 1BL = Minor, beneficial, long-term impact)

2. Impacts of the no-action alternative.

Under the no-action alternative, there would be no construction of project facilities or changes to the existing physical, biological, or cultural components of the area. Electrical power that would be generated by the proposed hydroelectric project would have to be generated from other available sources or offset by conservation measures.

3. Recommended alternative (including proposed, required, and recommended mitigative measures): Proposed project.

4. Reason(s) for selecting the preferred alternative.

The proposed project would generate electrical energy from a renewable resource without significantly affecting the existing environmental conditions of the project area.

*I. Summary of Unavoidable Adverse Environmental Impacts*

Project-related vehicles and onsite construction would produce noise, dust, and exhaust emissions, which would result in the temporary disturbance or displacement of area wildlife. Excavation activities would cause some minor sedimentation and turbidity in Ward Creek below the diversion and powerhouse sites. The project would necessitate the permanent removal of 4 acres of vegetation, primarily mixed-coniferous forest. Operation of the project would reduce flows in a 1.3-mile-long reach of Ward Creek, but the provision of minimum flows and fish screens would protect the existing trout fishery.

*J. Conclusion*

Finding of No Significant Impact. Approval of the recommended alternative [H(3)] would not constitute a major federal action significantly affecting the quality of the human environment; therefore, an environmental impact statement (EIS) will not be prepared.

*K. List of Preparers*

*Name—Position title*

James Haimes—Economist (Coordinator)

Peter A. Leitzke—Geologist

Ann Miles—Environmental Protection Specialist

Alan D. Mitchnick—Wildlife Biologist

Kathleen L. Sherman—Soil Conservationist

John P. Warner—Fishery Biologist

Edwin Slatter—Archeologist

Mary Nowak—Writer/Editor

Martin Thorpe—Electrical Engineer

Ronald Kowalewski—Civil Engineer

*L. Literature Cited*

1. Brown, A. 1984. Letter report of a wildlife survey of Ward Creek, Indian Creek, and Red Clover Creek hydroelectric project sites. 3 pp.
2. California Department of Water Resources. 1977. Instream water use study of the North Fork Feather River. Sacramento, California. 13 pp.
- \*\*25 3. Federal Energy Regulatory Commission. 1983. Transcript of the public meeting held on September 22, 1983, regarding cumulative impacts of hydroelectric development in the North Fork Feather River Basin. Sacramento, California. 90 pp.
4. Henton, D. 1986. Addendum to the archeological reconnaissance of the proposed Five Bears Hydroelectric Project. 4 pp.
5. Jokerst, J. D. 1984. A botanical survey and rare plant inventory of the proposed Ward Creek small hydroelectric project. Oroville, California. 9 pp. plus 1 appendix.
6. McDowell, B. 1982. Minor **license** application for the Five Bears Power Project, FERC Project No. **6281**-000, filed May 3, 1982.

**\*63329 Safety and Design Assessment**

Five Bears Project

FERC Project No. **6281**-000, CA

*Dam Safety*

The rockfill diversion dam for the Five Bears Project would be less than four feet high impounding virtually no storage in a rural undeveloped area. Failure of the dam and appurtenant structures would not pose a hazard to downstream property or human life.

### *Project Design*

Streamflow would be diverted from the South Branch of Ward Creek into a concrete intake structure at elevation 5,180 feet. A 16-inch-diameter steel penstock would convey power flows 7,000 feet to two generating units located in a concrete block powerhouse at elevation 3,950 feet. Flow from the impulse turbines would be discharged via a tailrace to a tributary of Ward Creek.

The proposed powerhouse, diversion structure, and penstock designs comply with acceptable engineering design criteria governing dam safety. The Commission's staff concluded that project construction can be completed within two years after commencement provided there are no unforeseen delays.

### *Water Resource Planning*

The proposed project would have two equal-sized generating units with a total installed capacity of 600 kW. The powerplant would operate run-of-river under a design head of 1,000 feet and would utilize creek flows up to 10 cfs. The probability of occurrence of streamflows 10 cfs or greater is approximately 0.28.

The applicant estimates that the project would generate about 1,900,000 kWh annually based on proposed minimum continuous bypass flow releases from the diversion dam of six cfs for the months of March through mid-June and two cfs for the rest of the year. The U.S. Forest Service, pursuant to Section 4(e) of the Federal Power Act, has stipulated interim minimum continuous instream flows of 10 and 3 cfs, respectively. Based on the minimum flows specified by **license** condition, our estimate of annual project generation is 1,710,000 kWh.

Staff has reviewed the California Water Plan-Sacramento Hydrologic Study Area. Based on review of the plan and federal and state agency comments, the proposed project would not conflict with any existing or planned water resource developments in the basin. No specific comments or recommendations were made addressing flood control, water supply, or irrigation requirements for Ward Creek.

The Commission staff's Feather River Basin Planning Status Report includes no hydroelectric projects, either proposed or constructed on Ward Creek that this project would impact and the project would not conflict with any pending applications for exemption, **license**, or preliminary permit. In addition, the report shows no existing or potential flood control, water supply, or irrigation projects in close proximity to the Five Bears Project site.

**\*\*26** In summary, our analysis shows that the proposed project is properly designed to develop the hydropower potential of Ward Creek.

### *Economic Feasibility*

A proposed project is economically feasible so long as its projected levelized cost is less than the long-term levelized cost of alternative energy to any utility in the region that can be served by the project.

Staff has calculated the projected alternative energy cost in the region to be 114.64 mills per kilowatt hour. This cost is based upon the cost of natural gas, as projected by the Energy Information Administration. Since the levelized cost of energy from the Five Bears Project is significantly less than this cost the project is economically feasible.

The applicant plans to sell the power generated by the project to Pacific Gas and Electric Company based on their Standard Offer #1 weighted average energy rates. Staff has calculated the projected levelized energy costs to be 133.33 mills per kilowatt hour. The estimated levelized cost of energy from the Five Bears Project is estimated to be 71.0 mills per kilowatt hour. Therefore, the project would be potentially financially feasible to the applicant. Any further determination on the financial feasibility must be governed by the applicant's efforts to secure a power sales contract and project financing.

### *Exhibits*

The following parts of Exhibit A and the following Exhibit F drawings conform to the Commission's rules and regulations and should be included in the **license**:

*Exhibit A*, Section entitled "Power Plant"; Items 1, 2, 3, and 4 of the application for **license** filed May 3, 1982. The project should include the 0.48-kV generator leads, the 0.4<sup>8</sup>/<sub>12</sub>.47-kV step-up transformer, and the 1.0-mile-long, 12.47-kV transmission line.

| <b>Exhibit F FERC No.</b> | <b>Title</b>                    |
|---------------------------|---------------------------------|
| <b>6281-1</b>             | Diversion Dimensions            |
| <b>6281-2</b>             | Sediment and Debris Filter Tank |
| <b>6281-3</b>             | Vertical Penstock Cross Section |
| <b>6281-4</b>             | Penstock Section                |
| <b>6281-5</b>             | Penstock Vent                   |
| <b>6281-6</b>             | Powerhouse Plan View            |
| <b>6281-7</b>             | Powerhouse Floor Plan           |
| <b>6281-8</b>             | Powerhouse Elevations           |
| <b>6281-9</b>             | Impulse Wheel                   |

Federal Energy Regulatory Commission

Footnotes

- <sup>1</sup> 99 CONG. REC. S4140 (remarks by Senator McClure, April 11, 1986).
- <sup>2</sup> California Department of Parks and Recreation, *Recreation in California, Issues and Actions: 1981-1985*; California Department of Water Resources, *1983 California Water Plan*; and California Regional Water Quality Control Board, Central Valley Region, *Water Quality Control Plan Report - 1975*.

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37 FERC P 62261 (F.E.R.C.), 1986 WL 79389

