

38 FERC P 62230 (F.E.R.C.), 1987 WL 430087

**1 Office Director Orders

Nelson Creek Power, Inc.

Project No. 9029-000
Order Issuing License (Minor Project)
(Issued March 11, 1987)

*63374 Richard T. Hunt, Director, Office of Hydropower Licensing.

Nelson Creek Power, Inc. has filed a license application under Part I of the Federal Power Act (Act) to construct, operate, and maintain the Grasshopper Flat Project, located on the East, West, and Main Forks of Nelson Creek in Shasta County, California. The project would affect the interests of interstate or foreign commerce.

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

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. 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.

Cumulative Environmental Analysis

The proposed Grasshopper Flat Project would not contribute to cumulative adverse impacts to dispersed recreation and associated visual quality, Native American cultural resources, and bald eagles which were identified by the staff as target resources for the Pit River Basin (Environmental Assessment of Potential Cumulative Impacts Associated with Hydropower Development in the Pit River Basin California, Docket No. EL85-19-107, February 13, 1987).

Recommendations of Federal and State Fish and Wildlife Agencies

Section 10(j) of the Act, as amended by the Electric Consumers Protection Act of 1986 (ECPA), Pub. L. No. 99-485, 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 EA for the Grasshopper Flat Project, which was prepared prior to ECPA, addresses most of the concerns of the federal and state fish and wildlife agencies, and provides recommendations consistent with those of the agencies.

The California Department of Fish and Game (CDFG) through the Resources Agency of California letter dated December 23, 1985, requests: (1) that the licensee arrange for a rare plant survey to be conducted by a *63375 qualified botanist prior to project construction; and (2) if any rare plants are found during the survey, then the licensee should prepare a mitigative plan to avoid or compensate for any adverse impacts to the rare plants.

**2 The development of the Grasshopper Flat Project would require the removal of 2.2 acres of vegetation, which may affect a particular state-designated rare plant or plants. Because project area lands have not been surveyed for rare plants, and since such baseline information is required to evaluate project impacts on rare plants, the licensee should arrange for a plant survey

by a qualified botanist and prepare a mitigative plan for any rare plants found on project-affected areas. Article 407 requires the licensee to conduct such a survey and prepare an appropriate mitigative plan.

The construction and operation of the Grasshopper Flat Project with the mitigative measures included herein is consistent with the recommendations on the project from the federal and state fish and wildlife agencies.

Comprehensive Plans

Section 10(a)(2) of the Act, 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 and 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 specific act of the state legislature and developed, implemented, and managed by an appropriate state agency.¹ No comprehensive plans of the types referred to in section 10(a)(2) of the Act relevant to this project have been identified. Three resource plans² 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 under section 10(a)(1) of the Act. No conflicts were found.

The Director, Office of Hydropower **Licensing** concludes that the Grasshopper Flat Project is best adapted to a comprehensive plan for Nelson Creek, taking into consideration the beneficial public uses described in section 10(a)(1) of the Act.

The Director orders:

(A) This **license** is issued to Nelson Creek Power, 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 Grasshopper Flat 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:

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

<i>exhibit</i>	<i>fERC No.</i>	<i>showing</i>
G-1	9029-5	Project Features and Vicinity Map

(2) Project works consisting of: (a) a 5-foot-high, 60-foot-long, diversion dam at elevation 2,332 feet on East Fork Nelson Creek; (b) a 22-inch-diameter, 700-foot-long pipe; (c) a 7-foot-high, 125-foot-long diversion dam at elevation 2,320 feet on West Fork Nelson Creek; (d) a 34-inch-diameter, 7,180-foot-long penstock; (e) a powerhouse with a total installed capacity of 1,035 kW, operating under a head of 350 feet; (f) a 1,500-foot-long, 12-kV transmission line connecting with an existing transmission line of Pacific Gas and Electric Company; and (g) other appurtenances.

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:

*63376 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 articles set forth in Form L-15, (October 1975) [reported at 54 FPC 1883], entitled "Terms and Conditions of **License** for Unconstructed Minor Project Affecting the Interests of Interstate or Foreign Commerce," except Article 15. The **license** is also subject to the following additional articles:

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

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 1,380 horsepower.

Article 202. The licensee shall clear and keep clear to an adequate width all lands along open conduits and shall dispose of all temporary structures, unused timber, brush, refuse, or other material unnecessary for the purposes of the project which result from maintenance, operation, or alteration of the project works. In addition, all trees along the periphery of project reservoirs which may die during operations of the project shall be removed. Upon approval of the clearing plan all clearing of lands and disposal of unnecessary material shall be done with due diligence to the satisfaction of the authorized representative of the Commission and in accordance with appropriate federal, state, and local statutes and regulations.

4 *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 with the Commission revised Exhibits A, F and G to describe and show the project as built.

Article 401. The licensee, after consultation with the U.S. Soil Conservation Service and the State of California Department of Fish and Game, and within 1 year from the date of issuance of this **license**, shall file a detailed, site specific plan to control erosion, stabilize slopes and streambanks, and minimize the quantity of sediment or other potential water pollutants resulting

from construction and operation of the project, including removal of sediments from the stream and spoil disposal. The plan shall also include functional design drawings and map locations of control measures; an implementation schedule; and monitoring and maintenance programs for project construction and operation. Documentation of agency consultation on the plan and copies of any agency comments or recommendations shall be included in the filing.

In the event the licensee does not concur with any agency recommendations, licensee shall provide a discussion of the reasons for not concurring based on actual site geological, soil, and groundwater conditions. The Commission reserves the right to require changes to the plan. Unless the Director, Office of Hydropower **Licensing**, directs otherwise, the licensee may commence ground-disturbing or spoil-producing activities at the project 90 days after filing the above plan.

Article 402. The licensee shall provide an automatic shut-off valve device at the penstock intake structure to operate in the event of a penstock rupture. The licensee shall file as-built drawings within 3 years from the date of issuance of this **license**.

****5 Article 403.** The licensee shall discharge from the Grasshopper Flat Project, a continuous minimum flow of 25 cubic feet per ***63377** second, as measured immediately downstream from the project diversion dam on West Fork Nelson Creek or inflow to the reservoir, whichever is less, for the protection and enhancement of fish and wildlife resources in Nelson Creek. This flow may be temporarily modified if required by operating emergencies beyond the control of licensee, and for short periods upon mutual agreement between licensee and the California Department of Fish and Game.

Article 404. The licensee shall consult with the California Department of Fish and Game, and the U.S. Fish and Wildlife Service on the final design of the penstock intake structure and fish screening and, within 6 months from the date of issuance of this **license**, file with the Commission, for approval, functional design drawings of the fish screening for the intake structure of the Grasshopper Flat Project. The licensee shall file as-built drawings with the Commission within 3 years from the date of issuance of this **license**.

Article 405. The licensee, after consultation with the U.S. Fish and Wildlife Service and the California Department of Fish and Game, and within 1 year from the date of issuance of this **license**, shall file a transmission line design plan, prepared in accordance with the guidelines set forth in “Suggested Practices for 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.

Unless the Director, Office of Hydropower **Licensing**, instructs otherwise, licensee may commence construction of the transmission line 90 days after filing the plan.

Article 406. The licensee, prior to any future construction at the project, shall consult with the California State Historic Preservation Officer (SHPO) about the need for a cultural resources survey and salvage work. Documentation of the nature and extent of consultation, including a cultural resources management plan, a schedule to conduct any necessary investigation prior to such construction, and a copy of a letter from the SHPO accepting the plan, shall be filed with the Commission within 6 months of any construction activity. Licensee shall make available funds in a reasonable amount for any such work as required. If any previously unrecorded archeological or historic sites are discovered during the course of construction or development of any project works or other facilities at the project, construction activity in the vicinity shall be halted, a qualified archeologist shall be consulted to determine the significance of the sites, and licensee shall consult with the SHPO to develop a mitigative plan for the protection of significant archeological or historical resources. If licensee and the SHPO cannot agree on the amount of money to be expended on archeological or historical work related to the project, the Commission reserves the right to require licensee to conduct, at its own expense, any such work found necessary.

****6 Article 407.** The licensee, after consultation with the CDFG, and within 1 year from the date of issuance of this **license**, shall arrange for a rare plant survey of state-listed species by a qualified botanist on all lands to be affected by project construction or operation. Further, the licensee shall provide for a review of the survey with the CDFG. If it is determined from the survey that rare species will be adversely affected by project construction or operation, the licensee shall cooperate with the CDFG in developing and implementing a mitigative plan to minimize adverse impacts to such species. The results of the survey and any mitigative plan developed shall be filed with the Commission. The Commission reserves the right to make changes to the plan.

Article 408. (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 ***63378** and waters and requiring the removal of any non-complying structures and facilities.

(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 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.

****7** (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 for 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.

(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 opposed 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.

****8** (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 ***63379** 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.

(4) The Commission reserves the right to require the licensee to take reasonable 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.

(F) 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. The licensee's failure to appeal this order shall constitute acceptance of the **license**.

Environmental Assessment

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

Federal Energy Regulatory Commission 2/18/86

Project Name: Grasshopper Flat Hydro FERC Project No. **9029-000**

A. Application

****9** 1. Application Type: Unconstructed Minor; Date Filed: 3/18/85

2. Applicant: Nelson Creek Power, Incorporated
3. Water Body: Nelson Creek; River Basin: Pit
4. Nearest city or town: Big Bend, California
5. County: Shasta; State: California
6. Federal Lands Affected (If yes, specify land management agency.) No

B. Purpose and Need for Power

1. Purpose: The proposed project would provide an estimated 2.9 Gigawatt-hours (GWh) of electrical energy per year to Pacific Gas and Electric Company (PG&E).

2. Need for power: The project could meet a small part of the area requirements being met by proposed resource addition. Staff's economic analyses show that benefits are possible through installation of the project and therefore show a need for the project. From the time the project goes on line until needed to serve load directly, it would be available to off-load existing fossil-fueled electric generating plants located in the California-Nevada and adjacent areas, and thereby, to conserve nonrenewable resources, and to reduce the emission of noxious by-products caused by the combustion of fossil fuels.

3. Hydroelectric power and resource utilization: We have made an independent study of the hydropower potential at the Grasshopper Flat Project site. Our study found ***63380** that the Applicant's proposed installed capacity, estimated average annual generation, selection of size and type of generation unit, and construction cost estimate are reasonable for adequate development at the site. The project would have an installed capacity of 1,035 kilowatts (kW). The powerplant would generate an estimated average 2.9 GWh annually at a plant factor of 32 percent based on the Applicant's proposed minimum instream flow release of 25 cubic feet per second (cfs), total for the two creek branches or the natural flow, whichever is less. The powerplant would operate run-of-river under a gross head of 370 feet and would utilize creek flows up to 50 cfs. The creek flows exceed the hydraulic capacity of the plant approximately 26 percent of the time.

C. Proposed Project and Alternatives

1. Description of the proposed action: Project facilities would include: two small, concrete and rock, diversion dams; a 22-inch-diameter, 700-foot-long, steel pipeline that would convey water diverted from East Fork Nelson Creek to the project diversion at West Fork Nelson Creek; a 34-inch-diameter, 7,180-foot-long, steel penstock; a 1,050-square-foot, concrete block powerhouse containing one, two, or three turbine-generator units with a combined hydraulic capacity of 50 cubic feet per second (cfs) and a total rated capacity of 1,035 kilowatts (kW); and a 1,500-foot-long, 12-kilovolt, overhead, transmission line. All project facilities would be located on land that is currently owned by the Applicant. The project, which would be operated in a run-of-river mode, would divert from 7.5 cfs to 50 from a 7,700-foot-long section of Nelson Creek.

****10** 2. Applicant's Proposed Mitigative Measures

a. Construction: Applicant would develop and implement a plan to control erosion and sedimentation, and would revegetate with native grasses and shrubs all areas disturbed by project construction that are not required for permanent facilities or project access.

b. Operation: To prevent massive erosion resulting from penstock failure, Applicant would install an automatic shutoff valve on the penstock intake. To prevent turbidity resulting from sluicing operations, Applicant would initiate sluicing only when flows are sufficient to handle the additional silt, gravel, and rock. In order to accomplish this, sluicing would occur when flows are greater than 120 cfs. To avoid fish stranding resulting from flow fluctuations in Nelson Creek, Applicant would use a 30-minute period for full project startup or shutdown. Applicant would provide a 7 cfs minimum instream flow to maintain fishery habitat in Nelson creek. To prevent fish entrainment, Applicant would install a self-cleaning fish screen at the entrance to the project penstock. To protect area wildlife and visual resources, the applicant would bury most of the penstock

alongside an existing logging road and would paint or treat the above-ground portions of the penstock and the powerhouse using colors that maintain or enhance the area's existing visual qualities. The Applicant also would design and install the project transmission line to avoid electrocution of raptors.

3. Section 4(e) Conditions

Not applicable.

4. Alternatives to the Proposed Action

a. No other reasonable action alternatives have been found.

b. Alternative of no action: No action would constitute denial of a minor **license** for the proposed project.

D. Affected Environment

1. Brief descriptions of the resources are given below.

a. Geology and Soils

Significant features include: None.

b. Streamflow

low flow: 13.2 cfs; flow parameter: Average monthly flow for August.

high flow: 217 cfs; flow parameter: Average monthly flow for February

average flow: 80 cfs; Remarks:

c. Water Quality

The existing water quality conditions are: The water quality of Nelson Creek is high quality and meets all current state water quality standards. The water is suitable for domestic consumption. A June 1985 sampling indicated that the DO level was 9.0 mg/l, turbidity equaled 0.7NTU, pH equaled 7.8, and temperature was 11 degrees Centigrade.

d. Fisheries

Anadromous: None.

Resident: Species include: rainbow trout.

Significant features include: None.

e. Vegetation

Cover Type--Dominant Species

Mixed Forest (northern exposure): Douglas fir, ponderosa pine, canyon live oak

Brushland: Deerbrush, manzanita

Mixed Forest (southern exposure): Canyon live oak, California buckeye, manzanita, deerbrush

***63381** Riparian: White alder, willows, creek dogwood

Significant features include: None.

****11** f. Wildlife

Species inhabiting the project area include: mule deer, western gray squirrel, California ground squirrel, porcupine, red-tailed hawk, sharp-shinned hawk, California quail, Stellar's jay, mountain chickadee, dipper, and common kingsnake.

Significant features include: None.

g. Archeological

There are no known prehistoric sites in the project impact areas.

h. Historical

There are no sites of historical significance in the project impact areas.

i. Visual Quality

The significant visual features of the area include: None.

j. Recreation

The existing recreational use(s) of the area include: None. The property, which is privately owned, is currently used for timber harvesting.

k. Land Use

Land use in the project area includes: timber harvesting and cattle grazing.

l. Socioeconomics

The economic and social well-being of the area is influenced by: manufacturing of lumber and wood products; farming, particularly livestock, dairy products, and nursery products; and outdoor recreation and tourism.

m. Ambient noise quality is: low.

n. Ambient air quality is: good.

o. Other resources include: 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

(d) Remarks:

2. Terms and Conditions for Exemptions from **Licensing** [18 CFR § 4.106(b) or 4.94(b)] ... § Not applicable

3. Section 7 Consultation (Endangered Species Act)

(a)--Listed Species: *None*.

(b) Not required.--

(c) Remarks: *USFWS letter dated 12/23/85 indicates that the project would not affect any federally listed or candidate, threatened or endangered species.*

4. Section 401 Certification (Clean Water Act)

Waived: 2/28/85 and 6/03/85 (date of letter)

5. 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 requirements: Not required

(f) Remarks: SHPO letter dated 1/30/85 indicates that the proposed project would not affect cultural resources.

6. Recreation Consultation [Federal Power Act, § 10(a)]

(a) U.S. Owners: No

(b) NPS: Yes

(c) State(s): No

(d) Remarks:

7. Wild and Scenic Rivers (Wild and Scenic Rivers Act)

(a) Status: None.

(b) Remarks:

F. Comments

1. The following entities provided comments on the application in response to the public notice dated 10/23/85.

Commenting Entity--Date of Letter

California Department of Fish and Game (CDFG)^{nl}--12/19/85

U.S. Department of the Interior (DOI)--12/23/85

The Resources Agency of California--12/23/85

****12** 2. The Applicant responded to the comment by letter dated 6/18/85.

G. Discussion of Environmental Issues

Mitigative measures recommended by Staff are in addition to those proposed by the applicant, Section C(2), and those conditions identified in Sections C(3) and E(2), as appropriate. There are 6 issues addresses below.

1. Issue: A plan is needed to control erosion, sedimentation, and the stability of slopes.

***63382** Comments: *None.*

Applicant's Response: *None.*

Conclusions and Recommendations: Project construction activities would increase the potential for erosion, sedimentation, and the instability of slopes and streambanks. Erosion and sedimentation would occur during: construction of the diversion structures, penstock, and powerhouse; and the removal and disposal of stream sediments and excavated soil materials. Therefore, the applicant should develop and implement a plan to control erosion, sedimentation, and the stability of slopes.

2. Issue: Potential for massive erosion and sedimentation in the event of failure of the project penstock.

Comments: CDFG, by letter dated 2/5/85, recommends that an automatic shutoff valve be installed to prevent massive erosion in case of penstock failure.

Applicant's Response: The applicant in its 8/1/85 filing agreed to include an automatic shutoff on the penstock intake to reduce shutoff time in the event of penstock failure from 20-30 minutes to approximately 5 minutes.

Conclusions and Recommendations: An automatic shutoff valve on the penstock intake would protect aquatic resources from massive sedimentation in case of a penstock failure. Therefore, the applicant should provide an automatic shutoff valve at the penstock intake.

3. Issue: The minimum instream flow required to protect resident trout habitat in the 7,700-foot-long bypassed reach of Nelson Creek.

Comments: DOI and the CDFG, by letters dated 12/23/85 and 12/19/85, respectively, recommend a minimum flow of 25 cfs or the reservoir inflow, whichever is less, be released on a continuous basis past the diversion points to protect fishery resources in Nelson Creek.

Applicant's Response: The applicant proposes to release a minimum flow of 7 cfs.

Conclusions and Recommendations: The 8/1/85 Addendum to Instream Flow Incremental Methodology submitted by applicant identifies the predicted habitat availability for rainbow trout in Nelson Creek under 7 cfs and 25 cfs minimum flow regimes. The applicant's proposed 7 cfs flow is approximately 50% of the lowest without-project average monthly flow (13 cfs) and would result in a 14 to 21% loss of usable habitat area for adult rainbow trout. A (25 cfs flow would result in a reduction of only 8 to 10% in adult fish habitat, would provide a small increase in fry habitat, and would maintain the natural flow in most years during the critical low-flow period from July through September. Both 7 cfs and 25 cfs have been determined to be economically feasible. Therefore, staff recommends that 25 cfs or inflow to the project reservoirs, whichever is less, be released on a continuous basis to the bypassed areas of Nelson Creek for the protection of fishery resources.

****13** 4. Issue: Project operation could cause fish entrainment in the project penstock, and subsequent turbine-caused injury

and mortality.

Comments: CDFG, by letter dated 7/9/85, stipulates that screening needs to be incorporated into the project design and that final screening design must be approved by the CDFG.

Applicant's Response: The Applicant proposes to install a fish screen at the intake to the penstock below the west diversion and to submit final design plans to the CDFG.

Conclusions and Recommendations: The installation of a fish screen would adequately protect Nelson Creek's fishery from entrainment during project operations.

5. Issue: A potential exists for electrocution of raptors on new project electrical transmission facilities.

Comments: None.

Applicant's Response: Although the resource agencies have not expressed any concerns regarding the potential impact of transmission lines on raptors, the Applicant has recognized this potential impact and is recommending a transmission line design that provides for the protection of raptors.

Conclusions and Recommendations: Designing the project's electrical transmission facilities to avoid electrocution of raptors would provide adequate protection for raptors in the project area.

6. Issue: Buried archeological or historic sites discovered during construction could be impacted, and significant cultural information lost.

Comments: None.

Applicant's Response: None required.

Conclusions and Recommendations: The licensee should have construction personnel monitor ground-disturbing activities associated with construction to determine if buried archeological or historic sites are present in these areas. Construction activity should be halted in the vicinity of any discovered site, the SHPO should be consulted concerning the significance of such sites and necessary avoidance or mitigative measures, and measures should be implemented to protect significant archeological or historic sites.

***63383 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 Staff's recommended mitigation (Ps) [Section G]; and any other alternative considered (A).^{a2}

a. Geology/Soils--P: 1AS

b. Streamflow--P: 2AL; Ps: 1AL

Remarks: b. See item d, below.

****14 c. Water quality: Temperature--P: 0; Dissolved Oxygen--P: 0; Turbidity and sedimentation--P: 1AS**

d. Fisheries: Anadromous--P: 0; Resident--P: 2AL; PS: 1AS

Remarks: d. The Applicant has proposed a 7 cfs minimum instream flow, whereas staff believes that a 25 cfs flow is needed to protect resident rainbow trout habitat in the 7,700-foot-long bypassed reach of Nelson Creek.

e. Vegetation--P: 1AL

Remarks: e., f. Approximately 2 acres of vegetation would be removed during construction of the project.

f. Wildlife--P: 1AL

g. Archeological--P: 0

h. Historical--P: 0

i. Visual quality--P: 1AL

Remarks: i. Above-ground portions of the penstock and the powerhouse would contrast with the existing visual character of the area.

j. Recreation--P: 0

k. Land use--P: 0

l. Socioeconomics--P: 1BL

Remarks: 1. Earnings of on-site construction personnel, and their subsequent spending at retail and service establishments in Shasta County, would benefit the local economy. The completed project facilities would generate annual local property tax revenues.

m. Noise quality--P: 1AS

n. Air quality--P: 1AS

2. Impacts of the No-action Alternative

If the **license** were denied, the Applicant would have to abandon the project. If the project were abandoned, the energy that would have been generated from a renewable resource would have to be generated from other sources, such as coal, gas, oil, or nuclear-fueled electrical generation facilities.

3. Recommended Alternative (including proposed, required, and recommended mitigative measures): -- Proposed Project

4. Reason(s) for the Selection of 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 and Beneficial Impacts

During project construction, construction-related vehicles and on-site machinery would cause noise, dust, and exhaust emissions, which would result in the temporary displacement of area wildlife. Also, excavation work would result in some minor sedimentation and turbidity in Nelson Creek downstream of the two diversion dam sites and the powerhouse site. Construction of the proposed facilities would necessitate the permanent removal of a relatively small amount (2.2 acres) of vegetation. Project operation would result in the diversion of 7.5 cfs to 50 cfs from a 7,700-foot-long section of Nelson Creek. The proposed project would not have any major, long-term, adverse, environmental impacts. Beneficial impacts would include: the earnings of on-site construction personnel and their subsequent spending at retail and service establishments in Shasta County; and the annual local property tax revenues that would be generated by the project.

J. Conclusion

Finding of No Significant Impact. Approval of the recommended alternatives [[[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)

**15 James Haines--Economist (Coordinator)

Angelo Colianni--Soil Conservationist

*63384 Patrick K. Murphy--Wildlife Biologist

John D. Ramer--Ecologist

David C. Starkie--Landscape Architect

Ronald S. Kowalewski--Civil Engineer

Martin J. Thorpe--Engineer

L. Literature Cited

1. Nelson Creek Power, Inc. 1985. Application for **license** for the Grasshopper Flat minor water power project. Redding, California. 57pp plus attachments.

Safety and Design Assessment Grasshopper Flat Project

FERC project No. **9029**-000, California

I. Evaluation of Design, Construction and Performance

The Grasshopper Flat Water Power Project would be located on the East, West, and Main Forks of Nelson Creek approximately 12 miles northwest of the Town of Burney in Shasta County California. It would consist of two diversion dams, two intakes, a conveyance pipeline from the East to West Fork dams, a penstock, an indoor type powerhouse containing a 1035-kW impulse unit, a tailrace, and a 12-kV transmission hook-up to the PG&E system. An alternative three-unit powerplant scheme with the same installed capacity will be considered by the licensee during the final design phase.

Our review indicates that there are no engineering problems which would make construction, operation or maintenance of the project infeasible.

The proposed project structures would impound an insignificant amount of water and are not a hazard to downstream property or human life. They will be safe if constructed using sound engineering practices and upon compliance with the terms and conditions of the **license**.

II. Exhibits

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

Exhibit A; Section II entitled *Project Description*, Subsection E, Configuration I: Items 1, 2, 3, 4, 5, 7, 8, and 11 of the application filed March 18, 1985.

<i>exhibit F Drawing</i>	<i>fERC No.</i>	<i>title</i>
1	9029-1	East Fork Nelson Creek Diversion Weir Plan, Elevation, Profile, and Section
2	9029-2	West Fork Nelson Creek Diversion Weir Plan, Profile and Section
3	9029-3	West Fork Nelson Creek Diversion Weir Elevation
4	9029-4	Powerhouse and Transformer Yard Plan, Elevation, Profile, and Section

Federal Energy Regulatory Commission

Footnotes

¹ 99 Cong. Rec. §4140 (remarks by Senator McClure, April 11, 1986).

² 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.

^{a1} Indicates an intervention

^{a2} For **licenses**, the assessment reflects the adoption of any federal land management agency 4(e) conditions, in addition to the Applicant's proposed mitigation. For exemptions, the assessments reflect any terms and conditions set by the agencies, in addition to the Applicant's proposed mitigation. Assessment symbols indicate the following impact levels:
0 = 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)

38 FERC P 62230 (F.E.R.C.), 1987 WL 430087