



**RESOLUTION No. 82-85**

**OF THE BOARD OF DIRECTORS OF THE NEVADA IRRIGATION DISTRICT**  
[ACCEPTING ORDER AMENDING LICENSE (MAJOR) ON PROJECT NO. 2266-005]

RESOLVED by the Board of Directors of the Nevada Irrigation District that all of the terms and conditions of the Federal Energy Regulatory Commission Order Amending License (Major) for Project No. 2266 be accepted; and be it further

RESOLVED that the President and Secretary of this Board be authorized to execute the acceptance of the Order on behalf of this District.

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ADOPTED by the Board of Directors of the Nevada Irrigation District at a regular meeting of said Board, held on the 22nd day of December 1982, by the following vote of said Board:

- AYES: Directors Friedrich, Bierwagen, Ferreira, Zahn
- NOES: None
- ABSENT: Williams
- ABSTAINING: None

*Dorothy P. Miller*  
Secretary

THE FOREGOING INSTRUMENT IS A  
CORRECT COPY OF THE ORIGINAL

ON FILE IN THIS OFFICE

ATTEST. DEC 22 1982  
*Dorothy P. Miller*  
DOROTHY P. MILLER  
Secretary of the Board of Directors  
NEVADA IRRIGATION DISTRICT

UNITED STATES OF AMERICA  
 FEDERAL ENERGY REGULATORY COMMISSION

Nevada Irrigation District )

Project No. 2266-005

## ORDER AMENDING LICENSE (MAJOR)

( Issued December 17, 1982 )

The Nevada Irrigation District (Licensee) filed on October 5, 1981, an application for amendment of license under Part I of the Federal Power Act (Act) to construct, operate, and maintain two hydroelectric power plants; one would be built at the existing Jackson Meadows Dam and the other at the existing Bowman Dam. Both developments are located within the licensed Yuba-Bear Hydroelectric Development. 1/ The Jackson Meadows Dam is located on the Middle Yuba-Bear River in Sierra and Nevada Counties, California, near Sierra City. The Bowman Lake Dam is located on Canyon Creek in Nevada County, California. At Jackson Meadows, the existing dam and proposed power facilities are located in Tahoe National Forest, on U.S. lands administered by the U.S. Forest Service. At Bowman Lake, the dams are located partially in Tahoe National Forest and partially on land owned by the Nevada Irrigation District, and the powerhouse will be located on U.S. lands.

Notice of the application has been published and comments have been received from interested Federal, State, and local agencies. Pacific Gas and Electric Company became an intervenor but did not object to issuance of the amendment. No protests have been received, and none of the agencies objected to issuance of the license amendment.

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1/ Authority to act on this matter is delegated to the Director, Office of Electric Power Regulation, under §375.308 of the Commission's regulations 18 C.F.R. §375.308 (1981), FERC Statutes and Regulations § 30,238. This order may be appealed to the Commission by any party within 30 days of its issuance pursuant to Rule 1902, 18 C.F.R. 385.1902, FERC Statutes and Regulations § 29,052, 47 Fed. Reg. 19014 (1982). Filing an appeal and final Commission action on that appeal are prerequisites for filing an application for rehearing as provided in Section 313(a) of the Act. Filing an appeal does not operate as a stay of the effective date of this order or of any other date specified in this order, except as specifically directed by the Commission.

Proposed Facilities:

No modifications to Jackson Meadows or Bowman Dams or their reservoirs are proposed. The major features of the developments will be the powerhouse structures at each dam. The Licensee proposes staged development; the Bowman development will be constructed first, followed by the Jackson Meadows development.

A. Jackson Meadows Powerhouse

At Jackson Meadows Dam, the powerhouse structure will be a reinforced concrete building containing one horizontal Francis type turbine/generator rated at 3,500 kilowatts. The powerhouse will cover an approximate area of 1,400 square feet and will be constructed in the old streambed of the Middle Yuba River approximately 200 feet downstream from the toe of the dam.

A penstock will be constructed to connect the turbine to the existing 24 and 42-inch outlet pipes. An existing Howell-Bunger valve will be removed from the 42-inch pipe and the two outlet pipes will be combined by a wye section. A 5-foot diameter steel penstock will extend from the wye, out of the tunnel to a bifurcation about 20 feet below the existing outlet works. At this bifurcation, water will either continue in the 5-foot diameter steel penstock to the powerhouse or discharge through a 36-inch Howell-Bunger valve into the existing outlet channel. From the bifurcation the 5-foot diameter penstock extends 240 feet and drops 90 feet to the powerhouse. The penstock will lie to the south of the existing outlet channel. The powerhouse tailrace will be excavated into bedrock in the present stream channel, and will be 125-foot-long with a width ranging from 8.5 to 11 feet. The turbine will be rated at 4,850 horsepower with an effective design head of 190 feet. Operating speed of the unit will be 600 rpm.

The switchyard and vehicle parking area will be located adjacent to the powerhouse on a 25-foot by 35-foot graveled area. Site access will be provided by a new 300-foot long by 8-foot wide road connected to the existing road.

B. Bowman Powerhouse

The Bowman powerhouse will be a 1,295 square-foot reinforced concrete structure containing one horizontal Francis type turbine/generator rated at 3,000 kilowatts. The powerhouse will be located between the toe of the rockfill dam and the existing outlet works.

A new 4 1/2-foot diameter penstock will be joined to the existing 6-foot penstock (outlet works penstock) with a wye section. The wye will be located 60 feet below the toe of the dam and 80 feet above the existing outlet works building. The existing outlet works will continue to bypass flows at certain times. The new penstock will convey the water to the powerhouse which is located 30 feet from the wye. The tailrace will be 10 to 12 feet wide with a length of 35 feet.

Site access will be provided by the existing road to the present outlet works. A small graveled area 100 feet long and 20 to 40 feet wide will be constructed adjacent to the existing road and will be used for the switchyard and parking area. The turbine will be rated at 4,150 horsepower with an effective design head of 140 feet. Operating speed of the unit will be 450 rpm.

Safety and Adequacy

The proposed modifications to the Jackson Meadows Dam and Bowman Dam developments have been reviewed and are considered safe and adequate. The proposed powerhouses, if constructed in accordance with this license and with sound engineering practices, will be safe and adequate.

Water Quality

The California Department of Fish and Game (CDFG) stated that the discharges from each powerhouse must have a minimum dissolved oxygen (DO) concentration of 7 parts per million as measured 200 feet downstream of each tailrace. CDFG further stated that the Licensee must enter into a Streambed Alteration Agreement with CDFG for protection of water quality during the construction period.



The Licensee stated that, although its studies indicated that DO concentrations below the project tailraces would be adequate to maintain the existing aquatic resources, it would add air in the draft tubes to bring DO concentration to levels required by CDFG. Article 64 requires the Licensee to monitor DO concentrations for one year, and to effect measures to increase levels if found too low to maintain the aquatic resources. Concerning the requested Streambed Alteration Agreement, the Licensee stated its agreement. Article 36 of the license requires the Licensee to take necessary precautions during construction operations to prevent the entry into project streams of various materials injurious to fish and wildlife or their habitat.

#### Wildlife Resources

CDFG requested that the Licensee conduct a wildlife habitat inventory to identify any critical habitat, which could be impacted by the project, and to provide mitigative measures for any projected habitat loss. The Licensee replied that the project would have no impact on wildlife resources.

Approximately 4,400 square feet of land would be utilized for powerplants, switchyard, and maintenance parking areas. Any disturbance of habitat considered important to area wildlife should be short term and minor in nature. Project operation would not alter stream flows or reservoir operation levels and thus should not significantly impact riparian vegetation.

#### Fishery Resources

CDFG stated that if reservoir water levels are reduced below the minimum pool levels during construction and if such levels adversely impact reservoir trout populations, the Licensee would be required to stock each reservoir as compensation. CDFG further requested that the Licensee install approved fish screens on intake structures.

The Licensee agreed with CDFG on the reservoir stocking issue, but opposed the installation of fish screens on intake structures. The Licensee noted that there is no known entrainment of fish in the present outlet structures, and that installation, operation, and maintenance of the screens would be difficult. Article 27 of the existing license provides for the protection of fish and wildlife resources and the installation of fish screens if entrainment is found to be significantly impacting reservoir fish populations.

### Cultural Resources

The California State Historic Preservation Officer, and the U.S. Forest Service (FS) indicated, and the Licensee concurred, that cultural resources protection measures should be implemented to protect any archeological sites that may be discovered during construction of the project. In accordance with standard Commission practice 2/, Article 65 of this license amendment requires cultural resources protection measures in the event of any future construction or development at the project, other than the original project development considered and authorized here.

### Land Use

The U.S. Forest Service (FS) is concerned that the three existing roads providing access to the projects may not be adequate for simultaneous use by the public and contractor during construction. The FS also states that the roads may not be suitable for construction traffic alone, depending on the amount of traffic, size of loads, time of year, and other factors. The FS recommends, and the Licensee agrees with the recommendation, that a transportation plan covering requirements applicable to each road be prepared in advance of contract advertisement to ensure that the information is available to the contractor prior to beginning construction. Article 66 is being included herein to ensure that transportation planning is provided for in each project area.

### Environmental Considerations

Construction activities would result in localized disturbances to fishery, wildlife, and botanical resources. These impacts, however, would be minor in nature and end upon completion of construction. Further, the project would not affect any Federally-listed threatened or endangered species. On the basis of the record, and the Commission staff's independent analysis, we conclude that issuance of this amendment of the project license will not constitute a major Federal action significantly affecting the quality of the human environment.

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2/ See S.D. Warren, Project No. 2897, Order Denying Rehearing (issued February 19, 1980).

Transmission Lines

The licensee anticipates that all energy produced at the Jackson Meadows and Bowman Powerplants will be sold to an electric utility or governmental agency. The energy will be transmitted along a new transmission line tying into Pacific Gas & Electric Company's transmission facilities at the Spaulding No. 3 (Rim) powerplant. This transmission line will be constructed and maintained by the power purchaser and will be the subject of a separate license application.

Other Aspects of Comprehensive Development

The proposed Jackson Meadows Powerplant would produce an estimated 9,300 MWh annually and the Bowman Powerplant would produce an estimated 16,000 MWh annually. The combined estimated generation is equivalent to the electric energy that could be produced from 40,000 barrels of oil or 12,000 tons of coal annually. Based on staff analysis, the developments are economically feasible.

The proposed Jackson Meadows and Bowman developments are part of the planned development of the Yuba-Bear River Development and would be best adapted to the comprehensive development of the Canyon Creek and Middle Yuba River Basins upon compliance with the terms and conditions of the license, as amended.

It is ordered that:

(A) The license for Project No. 2266 is amended to authorize the Licensee, Nevada Irrigation District, to construct, operate and maintain the proposed Jackson Meadows Dam and Bowman Dam powerplants.

(B) The following portions of Exhibit A of the application filed October 5, 1981, are included in the license:

Exhibit A

Section 2: Jackson Meadows Powerhouse, page A-4, paragraph 2,  
Section 3: Bowman Powerhouse, page A-5, paragraph 2, and  
Section 4: Common Facilities, page A-5, paragraphs 3 and 4,  
and page A-6, paragraphs 1, 2, 3, and 4.

*Should be A-3*

(C) The following Exhibit F drawings conform to the Commission's rules and regulations and are included in the license:

Exhibit F

<u>FERC No. 2266-</u>	<u>Showing</u>
332	Jackson Meadows Powerplant Jackson Meadows Reservoir, California
333	Bowman Powerplant, Bowman Lake, California

(D) Subparagraph (ii) of Paragraph (B) of the license for Project No. 2266 is hereby amended by adding the following paragraphs:

Jackson Meadows Powerplant - consisting of a powerhouse located 200 feet below the toe of the Jackson Meadows Dam, a 240-foot-long penstock extending from the outlet pipes structure of the dam to the powerhouse, a 125-foot-long tailrace below the powerhouse, one turbine/generator unit with an installed capacity of 3,500 kW, and switchyard equipment and vehicle parking area located adjacent to the powerhouse.

Bowman Dam Powerplant - consisting of a powerhouse located between the toe of the rockfill section of Bowman Dam and the outlet works, a 30-foot-long penstock that extends from the outlet works of the dam to the powerhouse, a 35-foot-long tailrace, one turbine/generator unit with an installed capacity of 3,000 kW, and switchyard equipment and vehicle parking area located adjacent to the powerhouse.

(E) Subparagraph (i) of Article 43 of the license for Project No. 2266 is hereby revised, effective the first day of the month in which this order is issued, to read as follows:

(i) For the purpose of reimbursing the United States for the costs 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 104,400 horsepower.

(F) The following special articles are included in the license for Project No. 2266:



Article 58. The License shall within six months of completion of construction of the Bowman Dam Powerplant file in accordance with the Commission's rules and regulations revised Exhibit F drawings showing the project as-built.

Article 59. The Licensee shall commence construction of Bowman Dam Powerplant within two years from the effective date of this amendment and shall thereafter in good faith and with due diligence prosecute such construction and shall complete construction of such project works within four years from the effective date of the amendment.

Article 60. The Licensee shall commence construction of the Jackson Meadows Powerplant within five years from the effective date of this amendment and shall thereafter in good faith and with due diligence prosecute such construction and shall complete construction of such project works within seven years from the effective date of the amendment.

Article 61. The Licensee shall within six months of completion of construction of the Jackson Meadows Powerplant file in accordance with the Commission's rules and regulations revised Exhibit F drawings showing the project as-built.

Article 62. The Licensee shall file with the Commission's Regional Engineer and the Director, Office of Electric Power Regulation, one copy each of the contract drawings and specifications for pertinent features of the Jackson Meadows and Bowman Projects such as water retention structures, powerhouse and water conveyance structures, 60 days prior to start of construction of each project. The Director, Office of Electric Power Regulation, may require changes in the plans and specifications to ensure a safe and adequate project.

Article 63. The Licensee shall review and approve the design and construction procedures for contractor-designed cofferdams and deep excavations prior to the start of construction of the Jackson Meadows and the Bowman Projects. The Licensee shall file with the Commission's Regional Engineer and Director, Office of Electric Power Regulation, one copy of the approved construction drawings and specifications, and a copy of the letter of approval.

Article 64. Licensee shall, in consultation with the California Department of Fish and Game (CDFG) and the California Regional Water Quality Control Board (CRWQCB), monitor dissolved oxygen concentrations and maintain records of the monitoring data for a period of one year of project operation, and shall file with CDFG, CRWQCB, and the Commission, a seasonal data summary, within 6 months from the completion of the study, that shall include observed daily minimum, maximum and average dissolved oxygen concentrations.

Further, if the results of the one-year-study indicate that changes in project structures or operations are necessary to maintain minimum dissolved oxygen concentrations necessary for maintenance of the aquatic resources, Licensee shall also file for approval by the Commission, within 6 months from the date of completion of the study, a schedule for implementing the specific changes in project structures or operations.

Article 65. The Licensee shall, prior to the commencement of any future construction at the project, consult with the California State Historic Preservation Officer (SHPO), and the U.S. Forest Service (FS) about the need for any cultural resource survey and salvage work. The Licensee shall make available funds in a reasonable amount for any such work as required. If any previously unrecorded archeological or historical 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 the Licensee shall consult with the SHPO, and FS to develop a mitigation plan for the protection of significant archeological or historical resources. If the Licensee, SHPO, and FS, 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 the Licensee to conduct, at its own expense, any such work found necessary.

Article 66. The Licensee shall, prior to advertisement of contracts for project construction, prepare a Transportation Plan for the Jackson Meadows and Bowman developments in cooperation with the U.S. Forest Service and Sierra County. The plan shall address, at a minimum, the roads which may be used during construction, the requirements for construction or reconstruction of roads used, traffic management principles and procedures to be used, and the appropriate maintenance

standards, schedules, and responsibilities related to roads used. The Licensee shall file a copy of this plan with the Commission's Regional Engineers in San Francisco, California. The Commission reserves the right to require modifications to this plan if deemed necessary.

(G) This Licensee's failure to file a petition appealing this order to the Commission shall constitute acceptance of this license amendment. In acknowledgment of acceptance of this license amendment and its terms and conditions, it shall be signed for the Licensee and returned to the Commission within 60 days from the date of issuance of this order.

Lawrence R. Anderson  
Director, Office of Electric  
Power Regulation

Project No. 2266-005

IN TESTIMONY of its acknowledgment of acceptance of all of the terms and conditions of this Order, the Nevada Irrigation District of Grass Valley California this 22nd day of December, 1982, has caused its name to be signed hereto by Carole B. Friedrich its ----- President, and hereto attested by Dorothy P. Miller its ----- Secretary, pursuant to a resolution of its Board of Directors duly adopted on the 22nd day of December, 1982, a certified copy of the record of which is attached hereto.

By Carole B. Friedrich  
President

Attest:

Dorothy P. Miller  
Secretary

(Executed in quadruplicate)



## RESOLUTION No. 82-85

OF THE BOARD OF DIRECTORS OF THE NEVADA IRRIGATION DISTRICT  
[ACCEPTING ORDER AMENDING LICENSE (MAJOR) ON PROJECT NO. 2266-005]

RESOLVED by the Board of Directors of the Nevada Irrigation District that all of the terms and conditions of the Federal Energy Regulatory Commission Order Amending License (Major) for Project No. 2266 be accepted; and be it further

RESOLVED that the President and Secretary of this Board be authorized to execute the acceptance of the Order on behalf of this District.

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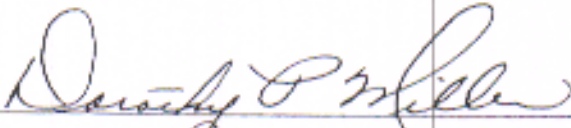
ADOPTED by the Board of Directors of the Nevada Irrigation District at a regular meeting of said Board, held on the 22nd day of December 1982, by the following vote of said Board:

AYES: Directors Friedrich, Bierwagen, Ferreira, Zahn

NOES: None

ABSENT: Williams

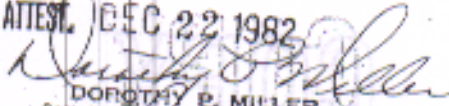
ABSTAINING: None

  
Secretary

THE FOREGOING INSTRUMENT IS A  
CORRECT COPY OF THE ORIGINAL

ON FILE IN THIS OFFICE

ATTEST DEC 22 1982

  
DOROTHY E. MILLER  
Secretary of the Board of Directors  
NEVADA IRRIGATION DISTRICT