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IDAHO PUBLIC
UTILITIES COMMISSION

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION)
OF IDAHO POWER COMPANY FOR)
AUTHORITY TO RATE BASE THE)
INVESTMENT REQUIRED FOR THE)
REBUILD OF THE SWAN FALLS)
HYDROELECTRIC FACILITY)

CASE NO. IPC-E-90-2

IDAHO POWER COMPANY

DIRECT TESTIMONY

OF

JAN B. PACKWOOD

1 Q. Please state your name, business address and
2 present position with Idaho Power Company (Idaho
3 Power).

4 A. My name is Jan B. Packwood and my business address
5 is 1220 W. Idaho Street, Boise, Idaho. I am Vice
6 President of Power Supply for Idaho Power.

7 Q. What is your educational background?

8 A. I graduated in 1966 from the University of Nevada
9 with a degree in electrical engineering. In
10 August, 1984, I received the degree of Master of
11 Business Administration from Boise State
12 University.

13 Q. Please outline your business experience.

14 A. I served four years as a commissioned officer in
15 the United States Army, following graduation. My
16 military experience included assignments as a
17 Company Commander in the Federal Republic of
18 Germany and the Republic of Vietnam as well as
19 eight months of technical engineering with the
20 Army Material Command. I am registered as a
21 Professional Engineer in the States of Idaho and
22 Nevada.

23 I joined Idaho Power in 1970 as an Associate
24 Engineer in the Company's Central Division in
25 Boise. My duties included designing electrical

1 transmission and distribution systems to meet
2 customer and Company needs. In 1973, I advanced
3 to Division Engineering Supervisor where I oversaw
4 the design efforts of a 12 employee engineering
5 department.

6 In 1975, I was transferred to Twin Falls as
7 Assistant Electrical Superintendent. A year
8 later, I became the Electrical Superintendent and
9 was responsible for all construction, operation
10 and maintenance within the Company's Southern
11 Division. I moved back to Boise in 1980 and
12 assumed similar responsibilities as the Electrical
13 Superintendent of the Company's Central Division.

14 I became Manager of Substations in 1983 with
15 responsibility for the mechanical, electrical,
16 control, system protection and communication
17 functions of the Company's generation,
18 transmission and distribution stations. In 1985,
19 I became Superintendent of Engineering with
20 responsibility for all the non-generation
21 engineering functions of the Company.

22 In 1986, I assumed the position of Assistant
23 to the President and Chief Executive Officer with
24 special projects assigned by the CEO.

25 I returned to engineering and operations in

1 1988 as Senior Manager of Power Supply with
2 responsibility for resource planning, system
3 planning, high voltage lines and stations,
4 generation engineering, wholesale marketing and
5 contract development and administration. In 1989,
6 I was elected to my current position as Vice
7 President of Power Supply with added
8 responsibility for power production, power
9 operations, thermal generation and environmental
10 affairs.

11 Q. What is the purpose of your testimony in this
12 proceeding?

13 A. My testimony will explain Idaho Power Company's
14 proposal for the reconstruction of the Swan Falls
15 powerhouse and generating facilities. Questions
16 concerning the effect of rate basing the Swan
17 Falls Project should be directed to Mr. James L.
18 Baggs, Manager of Rates for Idaho Power Company.

19 Q. Please generally describe the Company's Swan
20 Fall's Project.

21 A. The existing 10.4-megawatt (MW) powerhouse at Swan
22 Falls will be retired and the Project will be
23 redeveloped. The redeveloped Project will consist
24 of a new powerhouse, containing two generating
25 units with a total rated capacity of 25 MW; a new

1 switchyard; a new transmission line; and other
2 existing project works.

3 The Project, upon completion, will consist of:

4 (1) the 25-foot- high, 1,218-foot-long concrete
5 and rockfill Swan Falls dam;

6 (2) the Swan Falls reservoir with a surface area
7 of 900 acres and a total storage capacity of
8 4,800 acre-feet;

9 (3) a spillway with crest elevation of 2,300 feet
10 above mean sea level with 12 bays, each
11 provided with radial gates 31 feet wide and
12 14.5 feet high;

13 (4) a powerhouse at the east abutment of the Swan
14 Falls dam containing two identical horizontal
15 pit turbine-generating units, each with a
16 rated capacity of 12.5 MW;

17 (5) a substation located on the upper deck of the
18 powerhouse, equipped with a 13.8/138-kilovolt
19 (kV), 30,000-kilovolt-ampere, 3-phase
20 transformer;

21 (6) a 1,400-foot-long, 120-foot-wide (bottom
22 width) tailrace;

23 (7) a 1.2-mile-long, 138-kV transmission line
24 connecting to an existing 138-kV transmission
25 line owned and operated by the licensee; and

1 (8) appurtenant facilities.

2 Q. Has the Company received an Order from the Federal
3 Energy Regulatory Commission amending the license
4 for the Swan Falls Hydroelectric Facility?

5 A. Yes, Exhibit 1 is a copy of the Order Amending
6 License issued by the Federal Energy Regulatory
7 Commission for the Swan Falls Project.

8 Q. Please describe the Company's recent efforts in
9 regard to the FERC license for the Swan Falls
10 Project.

11 A. The original Swan Falls license expired June 30,
12 1970. Idaho Power operated the Project on annual
13 license renewals until such time as the Project
14 was relicensed on December 22, 1982. The license,
15 as issued on December 22, 1982, provided for a
16 complete rebuild and uprate of the Project to 25
17 MW with an expiration date of June 30, 2010. In
18 January of 1985, Idaho Power proposed to postpone
19 the complete rebuild of the Project until such
20 time as the additional capacity would be needed.
21 On April 30, 1987, the FERC issued its Order
22 deleting the authorization to add the 14.6 MWS of
23 new capacity and reduced the license period by 10
24 years to June 30, 2000.

25 In January of 1989 a safety and operational

1 report prepared by an independent consultant
2 indicated that the old power plant facility needed
3 to be replaced by the year 1994. In response to
4 those safety concerns, in April of 1989 Idaho
5 Power filed an application to amend the License
6 and again requested authority from the FERC to
7 rebuild the Project. In its Application to FERC,
8 the Company requested and received a full 40-year
9 license which expires June 30, 2010. The Portland
10 Regional Office of FERC rates the Swan Falls
11 facility as having a high downstream hazard
12 potential.

13 Q. Please describe the status of the Company's water
14 rights for the Swan Falls Project.

15 A. In 1982, the Company applied for a permit for a
16 water right for the additional generation in
17 connection with the Project. On April 10, 1989,
18 the Idaho Department of Water Resources issued a
19 Memorandum Decision and Order issuing a permit for
20 a water right. Exhibit 2 is the Department's
21 Memorandum Decision and Order.

22 The Company's existing water rights at Swan
23 Falls, as well as the projects upstream, are
24 defined in the Swan Falls Agreement between the
25 State of Idaho and Idaho Power Company. A copy

1 was filed with this Commission in Case No. U-1006-
2 244. Basically, the rights are defined at a non-
3 subordinated level of 3900 cfs in the summer, and
4 5600 cfs in the winter, as measured at the Murphy
5 USGS gauging station downstream of Swan Falls Dam.
6 The Company's water rights above those flows are
7 subject to subordination to new depletionary uses
8 if they comply with state law, including new
9 criteria adopted as part of the Swan Falls
10 settlement. These new criteria are found in *Idaho*
11 *Code* § 42-203C.

12 As part of the Swan Falls settlement package,
13 the Idaho State Water Plan was amended to reflect
14 the 3900 cfs and 5600 cfs flows. The Water Plan
15 minimum flow carries a priority date of the year
16 it was imposed. Therefore, the Water Plan minimum
17 is a very junior priority.

18 The Swan Falls Agreement contemplates that
19 the State of Idaho will assert the Company's
20 rights as necessary to protect the minimum flows
21 established by the Agreement. As the oldest hydro
22 rights on the river, the water rights associated
23 with the Swan Falls Project are critical to the
24 ability of the state and the Company to protect
25 the minimum flows established by the Agreement and

1 the Water Plan. It is, of course, essential that
2 the Swan Falls' Project remain in existence.

3 Protection of flows at the Swan Falls site is
4 also of great importance to flows in the river
5 both above and below Swan Falls. While the
6 operation of FERC Project No. 1971 (the Hells
7 Canyon complex) is subordinated to upstream
8 depletion, there is little exposure to major
9 depletions above Brownlee and below Swan Falls.
10 Therefore, protection of the Company's rights at
11 the Project has the effect of assuring a water
12 supply at its downstream plants. The same is true
13 of the upstream plants, since the water rights at
14 those plants are defined by the Agreement in terms
15 of flows at the Murphy gauge.

16 Q. Please briefly explain the process by which Idaho
17 Power Company estimates the cost for the
18 construction of hydroelectric projects.

19 A. Large hydroelectric projects involve design and
20 construction which must be customized to the
21 particular site. As a result, preliminary
22 estimates contain many unknowns in both the final
23 project layout and scope. Detailed engineering to
24 finalize the layout and scope in order to obtain a
25 more precise estimate would result in extremely

1 high front end costs on all projects. In the
2 event a particular project was not built, a
3 significant expenditure would be lost and would
4 have to be written off. Changes required as part
5 of the environmental and regulatory review process
6 could also result in the need to completely
7 redesign a project, thus radically changing the
8 original preliminary estimate.

9 To avoid this, the FERC License Application
10 is prepared on the basis of preliminary layouts
11 and without final design or a precise calculation
12 of required materials (i.e. concrete, fill dirt,
13 etc.). This estimate which the Company has termed
14 the "FERC Application Estimate" is subject to
15 revision as the project is finally designed.

16 Q. Recognizing that the Idaho Public Utilities
17 Commission has stated that the Company must
18 provide a more accurate cost estimate than the
19 "FERC Application Estimate", how does the
20 Company's Application in this proceeding meet this
21 requirement?

22 A. For most hydroelectric projects, including the
23 Swan Falls Project, the first major expenditure of
24 funds, other than for engineering design, is the
25 purchase of the hydroelectric turbines and

1 generators. After completion of design and
2 solicitation of bids for the turbines and
3 generators, the Company is in a better position to
4 make a cost estimate for the project. This
5 estimate, which the Company has termed a
6 "Commitment Estimate", is the Company's best
7 estimate of cost before the award of any contract
8 plus an additional amount of 25% to establish a
9 cost ceiling for the project. The Company has
10 committed to building the project for either the
11 amount of the Commitment Estimate (as it may be
12 adjusted to account for documented changes in
13 escalation rates or scope) or the actual cost of
14 the facility, whichever is less. If the final
15 costs exceed the "Commitment Estimate", the
16 Company will absorb the extra costs, and will
17 include in its Idaho ratebase only the amount up
18 to the Commitment Estimate.

19 Q. You have stated that the Commitment Estimate may
20 be adjusted to account for documented changes in
21 escalation rates or scope. Please provide some
22 examples.

23 A. Examples of possible scope changes which could
24 affect the project ceiling are: (1) Force Majeure
25 or acts of God impacting the construction; (2)

1 Design optimization for which increased energy
2 more than offsets the increase in initial
3 investment; (3) Foundation or site conditions
4 significantly more expensive than indicated by
5 exploratory drilling.

6 Q. What is the Company's Commitment Estimate for
7 constructing the Swan Falls Hydroelectric
8 Facility?

9 A. Exhibit 3 is the Swan Falls Project Cost Estimate
10 and Commitment Estimate for (1) the
11 decommissioning of the old powerhouse, (2) FERC
12 required renovation of the old powerhouse
13 structure for historical purposes, and (3)
14 construction of the new powerhouse.

15 Q. As the Project is constructed, will the Commission
16 be provided with construction updates?

17 A. Updated Project cost estimates will be submitted
18 to the Commission as part of the Company's
19 Quarterly Report of Construction Projects and will
20 include any scope or escalation changes.

21 Q. Has Idaho Power Company been required to
22 accelerate its construction schedule due to the
23 physical deterioration of the Swan Falls Facility?

24 A. Idaho Power has been required by FERC to establish
25 an expedited construction schedule to insure

1 stabilization of the existing powerhouse by
2 April 1, 1994, with concentration on compressing
3 the schedule to January 31, 1994. Exhibit 4 is
4 Idaho Power's letter, dated March 16, 1990, that
5 submitted a revised schedule and plan, and Exhibit
6 5, FERC's letter, dated March 26, 1990, is the
7 approval of the revised schedule and plan.

8 Q. Is it in the public interest for the Commission to
9 authorize the construction of the Swan Falls
10 Hydroelectric Facility?

11 A. Yes, the reconstructed Swan Falls facilities
12 should be added to the Company's ratebase upon
13 completion of the reconstruction. The Project has
14 been, and will continue to be, integral to Idaho
15 Power's Snake River hydroelectric system and will
16 continue to be used to serve retail and firm
17 wholesale load. Reconstruction of the Swan Falls
18 facilities is also integral to retention of
19 Idaho's water resources for the public interest of
20 the state. The Project is a non-deferrable
21 resource in that the physical state of the plant
22 requires current, not future, reconstruction and
23 rehabilitation of the resource to maintain safety
24 and operational standards.

25 Q. Does this complete your testimony.

26 A. Yes it does.

BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-90-2

IDAHO POWER COMPANY

EXHIBIT 1

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Idaho Power Company

Project No. 503-006
Idaho

ORDER AMENDING LICENSE
(MAJOR)

12-8-89

Idaho Power Company (IPC) filed an application under Part I of the Federal Power Act (Act) to amend its license for the Swan Falls Project, located on the Snake River, in Ada and Owyhee Counties, Idaho. The Snake River is a navigable waterway of the United States. The project partially occupies lands of the United States administered by the Department of the Interior.

IPC proposes to retire the existing 10.4-megawatt (MW) powerhouse and redevelop the project. The redeveloped project would consist of a new powerhouse, containing two generating units with a total rated capacity of 25 MW; a new switchyard; a new transmission line; and other existing project works.

On December 22, 1982, IPC was issued a new license for the Swan Falls Project.^{1/} The license authorized IPC, among other things, to replace the existing powerhouse and generating units, thereby increasing the total rated capacity of the project from 10.4 MW to 25 MW. In January 1985, IPC asked permission to postpone this work until the additional capacity is needed. An order amending license, issued on April 30, 1987, granted the request by deleting the project expansion from the license.^{2/}

The April 1987 amendment also reduced the license term from 40 years to 30 years, because the modification of project works was no longer authorized. Because this order reinstates that project expansion, the term of the new license will be returned to 40 years. This revision of the new license term is in accordance with the Commission's policy on relicensing, as stated in The Montana Power Company, 56 F.P.C. 2008 (1976).

Public notice of the application has been issued. The comments filed by agencies and individuals have been fully considered in determining whether to issue this order.

The Idaho Department of Water Resources, an intervenor, requests that any amendment of the Swan Falls license be

1/ Idaho Power Company, 21 FERC ¶ 62,519 (1982).

2/ Idaho Power Company, 39 FERC ¶ 62,114 (1987).

consistent with state law, with the provisions of the Swan Falls Agreement, with statewide comprehensive water resource development plans, and with the recommendations of state resource agencies. We address these concerns in the attached environmental assessment (EA) issued for the redevelopment of the Swan Falls Project.

Comprehensive Development

Section 4(e) of the Act states that in deciding whether to issue a license, the Commission, in addition to considering the power and development purposes of the project, shall give equal consideration to the following: the purposes of energy conservation; the protection of, mitigation of damage to, and enhancement of, fish and wildlife; the protection of recreational opportunities; and the preservation of other aspects of environmental quality. These purposes are considered in the comprehensive development section of the EA prepared for this project.

Section 10(a)(2) of the Act requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.

Under section 10(a)(2), federal and state agencies filed 24 comprehensive plans that address various resources in Idaho. Of these, the staff identified and reviewed seven plans relevant to this project.^{3/} No conflicts were found.

Based on our review of agency and public comments filed in this proceeding and on our independent analysis, the Swan Falls Project, as proposed to be modified, is best adapted to a comprehensive plan for the Snake River.

^{3/} Idaho fisheries management plan, 1986, Idaho Department of Fish and Game; Idaho water quality standards and wastewater treatment requirements, 1985, Idaho Department of Health and Welfare; Idaho outdoor recreation plan, 1983, Idaho Department of Parks and Recreation; State water plan, 1986, Idaho Water Resources Board; Northwest conservation and electric power plan, 1986, Northwest Power Planning Council; Columbia River Basin fish and wildlife program, 1987, Northwest Power Planning Council; Protected areas amendments and response to comments, 1988, Northwest Power Planning Council.

Conservation

The Idaho Public Utility Commission requires IPC to submit an annual plan for acquiring electric power conservation savings on IPC's electric power system.

In the April 15, 1989, conservation plan, IPC lists these features:

- (1) using short term acquisition programs of 2 to 3 years to acquire benefits from low-income customers;
- (2) using efficient appliances and construction standards in new buildings in the residential and commercial parts of the IPC's power system;
- (3) conducting research and analysis programs to build future conservation capability and to develop a better understanding of conservation resources in its service area;
- (4) producing an estimated 1,700,000 megawatthours of demand-side energy conservation by the year 2008.

This plan shows IPC is making a good-faith effort to improve the efficiency of electricity consumption on its system.

Recommendations of Federal and State Fish and Wildlife Agencies

Section 10(j) of the Act 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 attached EA for the Swan Falls Project addresses the concerns of the fish and wildlife agencies, made in response to the public notice, and provides recommendations consistent with those of the agencies.

Summary of Findings

The EA contains background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment. Issuance of this amendment 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 order. Analysis of related issues is provided in the Safety and Design Assessment (S&DA), also attached to this order.

The Director, Office of Hydropower Licensing, concludes that the modified Swan Falls Project would not conflict with any planned or authorized development and would be best adapted to comprehensive development of the waterway for beneficial public uses.

The Director orders:

(A) The license for the Swan Falls Project No. 503 is amended, effective the first day of the month in which this order is issued.

(B) Ordering paragraph (A) of the license for Project No. 503 is amended as follows:

(A) This license is issued to the Idaho Power Company (licensee), of Boise, Idaho, under Part I of the Federal Power Act (Act), for a period of 40 years from the expiration date of the original license, hence terminating on June 30, 2010, for the continued operation and maintenance of the Swan Falls Project No. 503, located in Ada and Owyhee Counties, Idaho, on the Snake River, a navigable waterway of the United States, and occupying lands of the United States within the Birds of Prey Natural Area, which is administered by the Department of the Interior. 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.

(C) Ordering Paragraph (B) (2) of the license for Project No. 503 is amended as follows:

(2) The project works consisting of: (1) the 25-foot-high, 1,218-foot-long concrete and rockfill Swan Falls dam; (2) the Swan Falls reservoir with a surface area of 900 acres and a total storage capacity of 4,800 acre-feet; (3) a spillway with crest elevation of 2,300 feet mean sea level with 12 bays, each provided with radial gates 31 feet wide and 14.5 feet high; (4) a powerhouse at the east abutment of the Swan Falls dam containing two identical horizontal bulb-type turbine-generating units, each with a rated capacity of 12.5 MW; (5) a substation located 200 feet from the powerhouse, equipped with a 13.8/138-kilovolt (kV), 30,000-kilovolt-ampere, 3-phase transformer; (6) a 1,400-foot-long, 120-foot-wide (bottom width) tailrace; (7) a 1.2-mile-long, 138-kV transmission line connecting to an existing 138-kV transmission line owned and operated by the licensee; and (8) 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 S&DA.

(D) Ordering paragraph (C) of the license for Project No. 503 is amended as follows:

(C) The exhibit G described in Ordering Paragraph (B)(1) of the new license, issued December 22, 1982, and those sections of exhibits A and F recommended for approval in the attached S&DA are approved and made part of the license.

(E) Article 42(a) is amended as follows:

(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 33,300 horsepower.

(F) The revised recreational plan, filed on September 19, 1989, consisting of pages 4 through 20, and providing for (a) an extension of the upstream boat ramp and additional docks at this location, (b) a public drinking water fountain at the upstream picnic area, (c) a walkway to accommodate the handicapped, and (d) a display of a turbine in the existing powerhouse, is approved and made part of this license.

(G) The license is also subject to the following additional articles:

Article 301. Within 90 days after completing construction, the licensee shall file for the Commission approval revised exhibits A, F, and G to describe and show the redeveloped project as-built, and to describe all facilities the Commission determines are necessary and convenient for transmitting all of the project power to the interconnected system.

Article 302. Before starting construction, the licensee shall review and approve the design of contractor-designed cofferdams and deep excavations and shall ensure that construction of the cofferdams and deep excavations is consistent with the approved design. At least 30 days before starting construction of the cofferdam, the licensee shall submit to the Commission's Regional Director and to the Director, Division of Dam Safety and Inspections, one copy of the approved cofferdam construction drawings and specifications and a copy of the letters of approval.

Article 303. At least 60 days before starting construction, the licensee shall submit one copy to the Commission's Regional Director and two copies to the Director, Division of Dam Safety and Inspections, of the final contract drawings and specifications and of a supporting design report for pertinent features of the project, such as water-retention structures, all necessary transmission facilities, the powerhouse, and water conveyance structures. The Director, Division of Dam Safety and Inspections, may require changes in the plans and specifications to assure a safe and adequate project.

Article 304. Within 60 days after issuance of this order, the licensee shall file for approval by the Director, Division of Dam Safety and Inspections, a plan and schedule for constructing the new powerhouse and for modifying the existing powerhouse.

Article 401. The Commission reserves the authority to require the licensee to construct, operate, and maintain, or provide for the construction, operation, and maintenance of, fishways prescribed by the Secretary of the Interior.

Article 402. The licensee shall implement the ramping rate gaging plan outlined on page 28 of the licensee's September 19, 1989, additional information filing with the Commission. The licensee shall make the gage operational within 6 months after beginning the operation of the powerhouse authorized by this order. The licensee shall determine the final location of the gage after consulting with the U.S. Fish and Wildlife Service and the Idaho Department of Fish and Game.

Article 403. The licensee shall implement the reclamation plan providing for the restoration of vegetative cover and wildlife habitat, consisting of pages E-6 through E-10 in the exhibit E of the application for amendment of license, filed on April 24, 1989. The measures shall be implemented according to the schedule outlined in the plan.

Article 404. The licensee, before starting any maintenance or repair work at the historic residences and buildings occupied and used by project employees next to Swan Falls Dam and Powerhouse and before starting any destruction, removal, or other alteration of these structures, shall consult with the Idaho State Historic Preservation Officer (SHPO) about work necessary to maintain the structures' historical integrity or to mitigate impacts to the structures. Any such work shall be undertaken in a manner satisfactory to the SHPO and in accordance with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

Within 1 year from the issuance of this order, the licensee shall file for Commission approval a cultural resources management plan, describing the standards and guidelines that

will be implemented to maintain and repair these residences and buildings, and a copy of a letter from the SHPO commenting on the acceptability of the plan.

If the licensee plans to alter or remove any structure, at least 90 days before any alteration or removal of the structure, the licensee shall file for Commission approval (1) a specific mitigative plan to document the significant information that would be lost and to minimize impacts to associated historic structures, and (2) a copy of a letter from the SHPO commenting on the acceptability of the plan. If the licensee and the SHPO disagree about the scope of maintenance, repair, or mitigative activities required at these structures, the Commission reserves the right to direct the licensee at its own expense to conduct any work found necessary.

Article 405. The licensee, before starting any land-clearing, land-disturbing, or spoil-producing activities within the project boundaries, other than those specifically authorized in this license, shall consult with the Idaho State Historic Preservation Officer (SHPO), shall conduct a cultural resources survey of these areas, and shall file for Commission approval a cultural resources management plan to avoid or mitigate impacts to any significant archeological or historic sites identified during the survey. The survey and plan shall be based on the recommendations of the SHPO and shall be conducted and prepared by a qualified cultural resources specialist.

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 land-clearing, land-disturbing, and spoil-producing activities in the vicinity of the sites, shall again consult with the SHPO, and shall file for Commission approval a cultural resources management plan, prepared by a qualified cultural resources management specialist, to avoid or mitigate impacts to significant resources.

The survey and the plan shall be documented in a report containing the following: (1) a description of each discovered site, showing whether it is listed or eligible to be listed on the National Register of Historic Places; (2) a description of the potential effect on each discovered site; (3) proposed measures for avoiding or mitigating the effects; (4) documentation of the nature and extent of consultation; and (5) a schedule for mitigating effects and conducting additional studies. The Commission may require changes to the plan or the report.

The licensee shall not begin any land-clearing, land-disturbing, or spoil-producing activities, other than those specifically authorized in this license, or resume such

activities in the vicinity of a site discovered during construction, until informed by the Commission that the requirements of this article have been fulfilled.

Article 406. The licensee shall construct, operate, and maintain, or arrange for the construction, operation, and maintenance of, recreational facilities and improvements proposed in the revised recreation plan. Within 3 months after completing these facilities or improvements, the licensee shall file with the Commission as-built drawings, showing the type and location of the facilities or improvements.

Article 407. During the first 2 years of operation of the new powerhouse, the licensee, after consulting with the Bureau of Land Management (BLM), the National Park Service (NPS), and the Idaho Department of Parks and Recreation (IDPR), shall monitor the effects of siltation caused by powerhouse flow releases on the downstream canoe-raft launching facility.

Within 3 months after completing monitoring studies, the licensee shall file with the Commission monitoring results, including a description of the methodology used to monitor the project's impacts on the canoe-raft launch facility.

If monitoring shows operation of the new powerhouse is adversely affecting the canoe-raft launch facility, the licensee shall include in this filing, for Commission approval, an amendment to the recreational plan, prepared after consulting with BLM, NPS, and IDPR, to relocate or to modify the canoe-raft launch facility to avoid adverse effects from powerhouse releases. The licensee also shall document consultation with the agencies in the filing.

(H) The licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to the Commission filing. Proof of service on these entities must accompany the filing with the Commission.

(I) This order is issued under authority delegated to the Director and is final unless appealed 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 terms of this amendment of license.


Fred E. Springer
Director, Office of
Hydropower Licensing

ENVIRONMENTAL ASSESSMENT

FEDERAL ENERGY REGULATORY COMMISSION
OFFICE OF HYDROPOWER LICENSING
DIVISION OF PROJECT REVIEW

Date: December 1, 1989

Project name: Swan Falls FERC Project No. 503-006

A. APPLICATION

1. Application type: Amendment of license
2. Date filed with the Commission: April 24, 1989
3. Applicant: Idaho Power Company (IPC)
4. Water body: Snake River River basin: Upper Snake River
5. Nearest city or town: Kuna, Idaho (See figure 1.) 4/
6. County: Ada, Owyhee State: Idaho

B. PURPOSE AND NEED FOR ACTION

1. Purpose.

IPC proposes to redevelop the Swan Falls Project by retiring the existing powerhouse that has a an installed capacity of 10.4 megawatts (MW) and constructing a new powerhouse with a total installed capacity of 25 MW.

The proposed project would annually produce about 166.1 gigawatthours (GWh) of power. IPC would use the renewable energy from the project to meet its system load requirements.

2. Need for power.

Our review of the need for power shows it is in the public interest to amend the Swan Falls license as proposed.

IPC plans to use the additional project power on the IPC system and to market excess power until all the amended project power can be used. IPC plans the development of their electric power system on the basis of median water conditions, even though most power producers in the Pacific Northwest plan system development on the basis of critical water conditions.

4/ Illustrations and attachments referenced in the text are omitted from this document because of reproduction requirements.

IPC's March 1989 Resource Management Report shows peak-load electric power resource deficits on its electric power system about 2001, under median water and medium load conditions. It shows energy deficits about 2003 under the same conditions. The report also shows peak-load power deficits occurring under high load and median water conditions about 1996. Under medium load and critical water conditions, a peak-load deficit would occur as early as 1989.

The IPC report does not show a resource deficit until 2001 under the medium load conditions. But IPC's most recent economic forecast--developed after it made the report--forecasts economic growth in the applicant's service area. IPC says the increased economic growth will let it absorb the additional Swan Falls capability close to the 1993 on-line date for the project amendment.

This is a reasonable position, because increased economic growth would bring IPC's projected medium load closer to the high load IPC projects in the report. The high load in the report produced a resource deficit in 1996.

IPC is located in the Northwest Power Planning Council (Council) Area. The Council's 1989 supplement to the 1986 power plan shows a need for power could exist in the Council area any time from the early to late 1990's. The Council projects an area resource deficit under medium-high load in 1995 and says a deficit could occur on the investor-owned utility (IOU) systems in the Council area in 1992.

The supplement shows power-resource deficits would occur in the Council area in 1995 under the medium-high load and in the year 2004 under the medium-low load. The medium load would create a power resource deficit about 1998 and the high load would cause a deficit in 1992. The Council projects deficits on IOU systems by about 1992 with medium-high loads and by about 1998 with medium-low loads.

The supplement also projects a surplus of only 400 to 800 average megawatts in 1990. The Council notes that this level of surplus requires action in the next few years in order to meet the area electrical requirements.

In March 1989, the Pacific Northwest Utility Conference Committee (PNUCC) issued the Northwest Regional Forecast of Power Loads and Resources. This report shows resource deficits in the Council area in 1993 under medium-load conditions. PNUCC shows an IOU power-resource deficit could occur as early as 1991.

PNUCC says comparing loads and resources for the entire area is academic at best. They note that the picture of each utility can be quite different from the area-wide perspective.

Hydropower, coming on-line in 1993, could be useful in meeting a small part of the above need for power. When operational, IPC's proposed additional capacity and energy would be available to displace thermal generation in the Western Systems Coordinating Council--which encompasses the Council area--until needed to serve load directly on IPC's system. Displacing of thermal generation would conserve fossil fuels and reduce atmospheric pollution.

C. PROPOSED PROJECT AND ALTERNATIVES

1. Description of the proposed action. (See figure 2.)

IPC proposes to do the following: (a) replace the existing powerhouse, which contains generating units with a total rated capacity of 10.4 MW, with a new powerhouse on the east bank, containing two identical generating units with a total rated capacity of 25 MW; (b) remove all equipment from the existing powerhouse and fill the draft tubes and turbine pits with concrete to elevation 2,315 feet mean sea level (msl); (c) construct a new switchyard on the east bank, 200 feet downstream from the powerhouse; and (d) build a new, 1.2-mile-long, 138-kilovolt (kV) transmission line. The existing powerhouse would be left in place.

IPC currently releases flows over the spillway about 60 percent of the time. The turbine capacity would increase from the current 8,000 cubic feet per second (cfs) to about 14,000 cfs, and spillway releases would occur only about 15 percent of the time. There would be no change in the maximum and minimum operating levels of the reservoir.

The existing Swan Falls dam impounds a reservoir about 12 miles long. At the normal maximum surface elevation of 2,314.0 feet msl, the reservoir has a surface area of approximately 900 acres and a total storage capacity of about 4,800 acre-feet. The upper 4 feet of the Swan Falls reservoir is used to reregulate the discharge from the C.J. Strike Project, about 38 miles upstream.

IPC releases a minimum flow of 5,000 cfs from April 1 through September 30, except when the average daily inflow is less than 5,000 cfs; then IPC releases the average inflow. From October 1 through March 31, IPC releases 4,000 cfs or the average daily inflow, whichever is less. IPC controls changes in the existing powerhouse discharge so that tailwater elevation changes

- b. Consultation: Not required;
 Required; completed: / / .

Remarks: As many as 12 bald eagles have been reported in the project area during the winter. We discuss the effects of the proposed amendment on bald eagles and other raptors in section G.

3. Section 401 certification (Clean Water Act).

Not required.

Required; IPC requested certification on 04/17/89.

Status : Granted by the certifying agency on 06/28/89.

4. Cultural resource consultation (Historic Preservation Act).

- a. State Historic Preservation Officer (SHPO): Yes. No.
b. National Park Service (NPS): Yes. No.
c. National Register status: None. Eligible or listed.
d. Council: Not required. Completed: / / .
e. Further consultation: Not required. Required.

Remarks: Swan Falls Dam and Powerhouse (Dam and Powerhouse) is listed on the National Register of Historic Places. An archeological site near the dam (site 10AA17) is a component of the Guffey Butte-Black Butte Archeological District, which is also listed on the National Register. Next to the Dam and Powerhouse, IPC's project operators have residences and other buildings that are eligible for inclusion in the National Register. No other National Register listed or eligible sites are located in the immediate vicinity of the project.

The SHPO only recently designated the project operators' residences and buildings as eligible for inclusion for the National Register (letter from Dr. Thomas Green, Deputy State Historic Preservation Officer, Boise, Idaho, March 16, 1989). These structures would not be affected by IPC's proposed land-clearing or land-disturbing activities at the project (Idaho Power Company, 1989a).

5. Recreational consultation (Federal Power Act).

- a. U.S. Owners: Yes. No.
b. NPS: Yes. No.
c. State(s): Yes. No.

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

Status: None. Listed. Determination completed: / / .

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

Status: XX None. Designated.

8. Pacific Northwest Power Planning and Conservation Act

Under section 4(h) of the Pacific Northwest Power Planning and Conservation Act, the NPPC developed the Columbia River Basin Fish and Wildlife Program to protect, mitigate, and enhance fish and wildlife resources associated with development and operation of hydroelectric projects within the Columbia River Basin. Section 4(h) states that responsible federal agencies should provide equitable treatment for fish and wildlife resources, in addition to other purposes for which hydropower is developed, and that these agencies shall take into account, to the fullest extent practicable, the program adopted under the Act.

The program directs agencies to consult with federal and state fish and wildlife agencies, appropriate Indian Tribes, and the NPPC during the study, design, construction, and operation of any hydroelectric development in the basin. At the time the application was filed, our regulations required applicants to initiate prefiling consultation with the appropriate federal and state fish and wildlife agencies, the Tribes, and after filing, to provide these groups with opportunities to review and to comment on the application. IPC has followed this consultation process.

The program states that authorization for new hydroelectric projects should include conditions for development that would mitigate the impacts of the project on fish and wildlife resources. The relevant federal and state fish and wildlife agencies have reviewed and commented on the application. In addition, any order amending the license would require IPC to take mitigative measures to protect fish and wildlife resources, and therefore is consistent with section 1103 of the program. Further, article 44 of the license gives the Commission the authority to require future alterations in project structures and operation so as to take into account, to the fullest extent practicable, the applicable provisions of the program.

E. COMMENTS

1. The following agencies and entities provided comments on the application or filed a motion to intervene in response to the public notice dated 08/04/89.

<u>Commenting agencies and other entities</u>	<u>Date of letter</u>
Department of the Interior	10/20/89

<u>Motions to intervene</u>	<u>Date of motion</u>
Idaho Department of Water Resources	9/13/89

2. XX The applicant responded to the comments or motion(s) to intervene by letter(s) dated 09/18/89.

F. AFFECTED ENVIRONMENT

1. General description of the locale.

a. Description of the Upper Snake River Basin.

The Upper Snake River Basin comprises an area of about 70,000 square miles, extending from the river's headwaters in Wyoming at Yellowstone National Park downstream to Weiser, Idaho.

The Snake River is the largest tributary of the Columbia River, and the Upper Snake River Basin makes up about 28 percent of the Columbia River Basin. Major tributaries within the Upper Snake River Basin are the Henry's Fork, Teton River, Big Wood River, Bruneau River, Boise River, Owyhee River, Payette River, and Weiser River. The water resources of the basin have been developed extensively for irrigation, flood control, power, municipal and industrial supplies, livestock water, pollution abatement, recreation, and fish and wildlife enhancement (Federal Power Commission, 1967).

b. Existing licensed projects and exempted projects in the river basin, as of 12/01/89.

There are 49 licensed projects and 63 exemptions from licensing in the Upper Snake River Basin.

c. Pending license and amendment to license applications in the river basin, as of 12/01/89.

<u>Project No.</u>	<u>Project name</u>	<u>Water body</u>
18	Twin Falls	Snake River
4797	Auger Falls	Snake River
5090	Shelley	Snake River
5797	Star Falls	Snake River
6329	Oxbow Bend	South Fork Payette River
8497	Mesa II	Middle Fork Weiser River
9452	Hardy Box Canyon	Box Canyon Creek, Snake River

d. Target resources.

We have identified riparian vegetation, wintering waterfowl, and nesting raptors as target resources in the basin based on their regional importance, existence of these resources in the project area, and the effect of past development on these resources.

The construction of water projects that have flooded lowlying areas and diverted water from the river accounts for much of the past losses of riparian vegetation in the basin. Significant losses of riparian vegetation are closely associated with the conversion of free-flowing reaches of the Snake River to pools and impoundments. About 30 percent of the Snake River, from its headwaters to Weiser, Idaho, has been converted from its former free-flowing conditions as the result of dam construction (Federal Energy Regulatory Commission, 1987). Wildlife populations associated with the riparian communities have been reduced.

The creation of impoundments have also negatively affected waterfowl wintering habitat. Increases in ice cover during severe winters reduces winter resting habitat. Conversely, cereal grain crops associated with agricultural development provides feeding areas for ducks and geese.

Nesting raptors have been adversely affected by the conversion of large areas of native rangeland to agriculture. Raptor nesting has also been affected by loss of suitable nest sites and mortality from electrocution.

e. Cumulative impacts.

Because the proposed action would not alter the flow regime of the Snake River, no impacts to riparian communities or wintering waterfowl would occur. The project could have long-term impacts on nesting raptors if the project transmission line is not designed to minimize electrocution hazards. Appropriate raptor protection measures are discussed in Section G.

2. Descriptions of the resources in the project impact area
(Source: Idaho Power Company, 1981, application, exhibit E, unless otherwise indicated).

a. Geology and soils: The project lies within the Columbia Intermountain geomorphic province, commonly referred to as the Columbia Plateau. The area is characterized by thick accumulations of nearly horizontal sheets of basalt.

The portion of the Snake River that is affected by the existing project generally flows in a narrow canyon several hundred feet below the surrounding plateau. The Swan Falls dam lies 650 feet below the rim of the canyon; the canyon is about

1,400 feet wide at the damsite. The canyon walls decrease in height at the upper end of the reservoir.

Throughout the length of the reservoir, basalt is interbedded with volcanic tuff and sedimentary deposits. A reservoir shoreline stability survey conducted in 1989 revealed no serious erosion or slope stability problems; no areas in need of stabilization were identified.

b. Streamflow:

low flow: 7,421 cfs; flow parameter: average monthly low flow.
high flow: 18,999 cfs; flow parameter: average monthly high flow.
average flow: 10,878 cfs.

These flows are based on the period of record from 1928 to 1985.

c. Water quality: Water quality of the Snake River in the project vicinity is of poor to fair quality, impaired by high nutrient concentrations and elevated summer temperatures. IPC's water quality sampling of Swan Falls reservoir during July to September 1981 showed dissolved oxygen levels to be between 6.4 and 10.8 milligrams per liter and water temperature between 16° and 23° Celsius.

d. Fisheries:

Anadromous: XX Absent. ___ Present.

Resident: ___ Absent. XX Present.

The fish populations of Swan Falls reservoir is made up almost exclusively of nongame species, primarily largescale sucker, carp, and northern squawfish. These nongame fish and smallmouth bass, black crappie, mountain whitefish, and white sturgeon are found in the Snake River, downstream of Swan Falls dam.

e. Vegetation:

Cover type

Annual grassland

Shrub-grassland

Dominant species

Cheatgrass brome.

Big sagebrush,
shadscale saltbush,
black greasewood,
rubber rabbitbrush,
cheatgrass brome,

Herbaceous riparian

inland saltgrass,
broom snakeweed.

Small willows,
beggarticks, common
cocklebur, sneeze-
weed, goldenrod.

Riparian woodland

Willows and common
cottonwood.

f. Wildlife: Mammals in the project area are mule deer, coyote, badger, mountain cottontail, black-tailed jack rabbit, yellow-bellied marmot, and Townsend's ground squirrel. California quail is the most abundant upland game bird in the project area. Other upland game birds are ring-necked pheasant, chukar, gray partridge, and mourning dove. Many of these species depend on riparian vegetation for part of the year.

Substantial numbers of ducks and geese use the project area for nesting, wintering, and resting during migration. The stretch of the Snake River between Grandview and the Swan Falls reservoir typically contains 10,000 to 15,000 wintering ducks. Islands within the project area are valuable nesting areas for Canada geese, mallards, and other ducks.

The project is located within the Snake River Birds of Prey Area (BOPA), administered by BLM. Over 700 pairs of raptors nest in the BOPA each year. Prairie falcons are the most abundant; approximately 5 to 10 percent of the entire North American prairie falcon population nests in the BOPA. Other raptors are bald eagles, golden eagles, red-tailed hawk, ferruginous hawk, Swainson's hawk, marsh hawk, and great horned owl (Idaho Power Company, 1989a).

g. Cultural:

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

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: The Swan Falls Dam and Powerhouse (Dam and Powerhouse) was built in the early 1900's. Since 1920, there've been four significant modifications of the facility: (1) replacing a section of the original dam at the west abutment and extending the concrete spillway (1936); (2) replacing two 750-kW generating units with two 1,100-kW units (1944); (3) improving a project access road (1983); and (4) building a new spillway (1986). At the time it was constructed, the Dam and Powerhouse

was an important source of power for southwestern Idaho, contributing significantly to the early economic development of the area.

Archeological site 10AA17 contains the remains of a prehistoric dwelling and several layers of refuse. The site is significant as a contributing component of the Guffey Butte-Black Butte Archeological District. The District contains more than 114 archeological sites along a 35-mile section of the Snake River within the Snake River Birds of Prey Area. The District's sites are relatively undisturbed, giving archeologists a unique data base for determining in some detail the prehistory of a large section of southern Idaho and the arid West.

h. Visual quality:

The proposed project would replace a section of the existing Swan Falls dam with a new powerhouse. The existing dam is situated in the broad Snake River Canyon, carved into an open, predominantly grass-covered landscape.

Canyon walls are mostly high, steep, and grass-covered at the lower slopes, rock talus in the steeper slopes, and capped with dark, vertical rock at the top. Cottonwood trees and other riparian vegetation occur only on the east side of the river, near the dam. The existing dam has a powerhouse with attractive architecture characteristic of the early 1900's. This powerhouse is a valuable visual resource of the project site.

i. Recreation: Fishing, hunting, powerboating, canoeing, rafting, picnicking, and nature study are the primary recreational uses that occur in the project area. Recreational facilities at the project are: a picnic area just above the dam; restrooms on the north end of the dam; a boat launch and docks on the reservoir; a canoe-raft launch downstream of the dam; a walkway around the exterior of the existing powerhouse to allow recreationists to cross the river; and a portage trail around the south end of the dam for boaters. In 1987, approximately 11,000 people visited the project area.

The primary access to the Swan Falls dam area is by the Swan Falls Road, which originates in the town of Kuna.

j. Land use: Land in the project area is used for irrigated agriculture, cattle grazing, and wildlife management.

k. Socioeconomics: The project area is thinly populated. In 1980, the town of Kuna, 18 road miles north of Swan Falls, had a population of 1,765 and the community of Melba, 5 miles northwest of the Swan Falls dam, had a population of 276.

G. ENVIRONMENTAL ISSUES AND PROPOSED RESOLUTIONS

There are nine issues addressed below.

1. Reintroduction of anadromous fish: Construction of fishways at Swan Falls dam may be desirable in the future. FWS is evaluating the possibility of returning anadromous fish to the Snake River basin, upstream of Brownlee reservoir. To make any reintroduction attempts easier, the Department of the Interior (Interior) wants to reserve authority under section 18 of the Federal Power Act to prescribe fishways if needed in the future.

If the agencies find anadromous fish can be reintroduced to the basin, fish passage at Swan Falls may be needed. Fish passage would enhance the use of the middle and upper Snake River basin by anadromous fish. Reserving to Interior the authority to prescribe fishways would ensure appropriate facilities are constructed, if needed.

2. Gaging: Proper gaging is necessary to ensure compliance with the ramping rates required by article 39 of the license. IPC proposes to install a recording gage, downstream of the dam, that would allow accurate monitoring of the ramping rates. FWS and the Idaho Department of Fish and Game (IDFG) agree with IPC's proposal.

IPC's proposed ramping rate gaging plan is sufficient to ensure compliance with article 39. Therefore, IPC should install the proposed gage at a suitable location downstream of the dam, determined after consultation with FWS and IDFG.

3. Revegetation: Constructing project facilities would cause the temporary loss of about 23 acres of vegetative cover at areas used for equipment laydown and assembly, temporary construction offices, and spoil disposal. This vegetative cover, primarily grasses and scattered shrubs, prevents soil erosion and provides food and cover for wildlife. IPC has a reclamation plan for areas disturbed in the course of the proposed construction. The plan, prepared after consulting with FWS, BLM, and IDFG, provides for disking compacted soils, seeding, and monitoring the success of revegetation.

Game and nongame animals use the grasslands and shrub-grasslands that the proposed construction would affect. Revegetating disturbed areas after construction would speed the restoration of the wildlife habitat value of the area and would minimize erosion. IPC's reclamation plan would ensure the revegetation of disturbed areas and the plan should be approved.

4. Raptor protection: Raptors found in the project area include bald eagles, golden eagles, prairie falcons, ferruginous hawks, and owls. Transmission lines may constitute an electrocution

hazard for raptors and other birds large enough to simultaneously touch two energized wires or other hardware. IPC proposes to install a new, 1.2-mile-long, 138-kV transmission line. As required by article 42 of the license, IPC developed a plan to prevent the accidental electrocution of raptors. This plan, approved on January 13, 1984, would adequately protect bald eagles and other raptors using the project area. Therefore, IPC should construct the new, 1.2-mile-long transmission line according to its approved raptor protection plan.

5. Consultation with the Advisory Council on Historic Preservation on the impacts to site Swan Falls Dam and Powerhouse and site 10AA17: The SHPO says that his office has no record of a memorandum of agreement between the Commission and the Advisory Council on Historic Preservation on the measures necessary to mitigate the project's impacts to the Swan Falls Dam and Powerhouse and site 10AA17. The SHPO says the Advisory Council should be allowed to comment on the project's effects on these sites. In his comments, the SHPO includes a draft memorandum, which contains the conditions required in article 40 of the project license, noting that no changes in mitigative measures are necessary (letter from Dr. Thomas Green, Deputy State Historic Preservation Officer, Idaho State Historical Society, Boise, Idaho, March 16, 1989).

Before the Commission issued the license for the project, we consulted the Advisory Council on Historic Preservation on the project's effect on the Dam and Powerhouse and on site 10AA17. With minor revisions, the Council agreed with our recommended mitigation (letter from Louis Wall, Chief, Western Project Review, Advisory Council on Historic Preservation, Golden, Colorado, December 16, 1982). The impacts to the Dam and Powerhouse and to site 10AA17 of IPC's proposed license amendment are the same as those we addressed when the project was licensed.

Article 40 of the project's license contains our mitigation and the Advisory Council's revisions. The SHPO states, and we agree, that the conditions in article 40 are adequate to mitigate the effects of the amended project and do not need to be updated (letter from Dr. Thomas Green, Deputy State Historic Preservation Officer, Idaho State Historical Society, Boise, Idaho, March 16, 1989). We told the Advisory Council we've included article 40 in the license for the project and that it addresses their concerns (letter from Lawrence Anderson, Director, Office of Electric Power Regulation, Federal Energy Regulatory Commission, Washington, D.C., May 26, 1983). Because the effects of the proposed action on the Swan Falls Dam and Powerhouse and site 10AA17 are the same as those previously reviewed by the Advisory Council, we conclude that further consultation is unnecessary.

Article 40 requires the protection of site 10AA17 by fencing; the archeological excavations cited in the article have

been completed since issuance of the license. The article requires the following mitigative work at the Dam and Powerhouse: (a) restoration of the external appearance of the existing powerhouse; (b) documentation of the impact areas according to the standards of the Historic American Engineering Record (HAER) of the National Park Service; (c) filing of copies of the existing engineering drawings with the SHPO; (d) construction of a public educational display concerning the historical significance of the facility; and (e) offering of the historical electrical equipment that will be disposed of to the Smithsonian Institution or other appropriate institution. This work shall be undertaken in a manner satisfactory to the SHPO and the HAER.

6. Maintenance of the historical integrity of the operator's village adjacent to the Swan Falls Dam and Powerhouse: The SHPO recommends that IPC develop a long-term preservation plan for the historical residences and buildings used by the project operators (letter from Dr. Thomas Green, Deputy State Historic Preservation Officer, Idaho State Historical Society, Boise, Idaho, March 16, 1989). Such a plan would maintain the historical integrity of these structures.

We agree with the SHPO. Although these residences and buildings would not be affected by proposed land-clearing and land-disturbing activities, use of the structures and maintenance and repair work associated with continued operation of the project could alter the historical integrity of these structures. Removing or destroying a structure also could result in the loss of historic information and could affect the historical integrity of the structure and other structures in the area. We therefore recommend that IPC maintain, repair, and document the historic residences and buildings identified by the SHPO, if removal or destruction would occur, in accordance with the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation. Such work should be undertaken in a manner satisfactory to the SHPO.

IPC should file for Commission approval a cultural resources management plan, describing the standards and guidelines it would follow in maintaining or repairing historic structures, together with the comments of the SHPO on the plan.

If IPC plans to alter or remove any structure, at least 90 days before any alteration or removal of the structure, IPC should file for Commission approval: (a) a specific mitigative plan to document the significant information that would be lost and to minimize impacts to associated historic structures, and (b) a copy of a letter from the SHPO, commenting on the acceptability of the plan.

7. Archeological or historic sites discovered during construction or operation of the project, or that may be impacted from changes

in the location of project facilities: Although article 40 of the license requires mitigative work to protect archeological sites that may be discovered during land-clearing and land-disturbing work associated with project construction, it does not outline the specific procedures that should be undertaken to protect such sites or require cultural resources investigations in previously unsurveyed areas that are affected by changes in the location of project facilities. We therefore recommend the inclusion of a more comprehensive article to include such procedures and to mitigate impacts from changes in the location of project facilities. Here is our rationale for such mitigative work.

The SHPO's comments on the proposed project are based on the premise that the project would be constructed as described in the application without significant changes. Changes to the project, especially changes in the proposed location and design of a project, are occasionally found to be necessary after a license has been issued, and may require an applicant to amend a license. Under these circumstances, whether or not an application for amendment of license is required, the SHPO's comments would no longer reliably depict the cultural resources impacts that would result from developing the project. Therefore, before beginning land-clearing or land-disturbing activities within the project boundaries, other than those specifically authorized in the license and previously commented on by the SHPO, IPC should consult with the SHPO about the need to conduct a cultural resources survey and to implement avoidance or mitigative measures.

Also, land-clearing and land-disturbing activities could adversely affect archeological and historic sites not identified in the vicinity of the proposed project. Therefore, if IPC encounters such sites during the development of project works or related facilities, IPC should stop land-clearing and land-disturbing activities in the vicinity of the sites, should consult with the SHPO on the eligibility of the sites, and should carry out any necessary measures to avoid or to mitigate impacts to the sites.

Either before starting land-clearing or land-disturbing activities associated with any changes to the project, both proposed and necessitated, or before resuming land-clearing and land-disturbing activities in the vicinity of any previously undiscovered sites, IPC should file with the Commission a plan and a schedule for conducting the appropriate studies, along with copies of the SHPO's written comments on the plan and the schedule. IPC should not start or resume land-clearing or land-disturbing activities, other than those specifically authorized in any order amending the license and commented on by the SHPO, or resume such activities in the vicinity of an archeological or historic site discovered during construction, until informed by

the Commission that the requirements discussed above have been fulfilled.

8. Recreational facilities: Providing improvements at existing project recreational facilities would enhance recreational opportunities at the project site. In its revised recreational plan, IPC proposes to provide the following: (a) an extension of the upstream boat ramp and additional docks at this location, (b) a public drinking water fountain at the upstream picnic area, and (c) a display of a turbine in the existing powerhouse. In addition, IPC proposes to renovate the powerhouse walkway and upgrade the restrooms to accommodate the handicapped. Providing these improvements would enhance existing opportunities and better accommodate recreational use at the project site. Therefore, IPC's revised recreational plan should be approved.

9. Impacts of powerhouse releases on downstream canoe-raft launching facility: Water releases during operation of the proposed project powerhouse could adversely affect the existing downstream canoe-raft launching facility. Over time, changes in streamflow could cause silt to collect in the launch area and interfere with normal operation of the facility. This could adversely affect recreational use of the river by reducing downstream access for canoeing and rafting.

IPC proposes to monitor effects of tailrace discharges on the launching facility within the first 18 months after project operation begins; if adverse effects are found, then IPC proposes either to modify or to relocate the launching facility. Several sites downstream of the dam would be suitable for relocating the facility (personal communication, John Barnes, Idaho Department of Parks and Recreation, Boise, Idaho, October 11, 1989). To ensure that downstream recreational opportunities are maintained and existing use is accommodated, IPC, after consulting with the appropriate agencies, should monitor the project's effects on the launching facility during the first 2 years of operation of the new powerhouse. If monitoring shows project operation is having an adverse effect on canoe and raft launching, IPC should relocate or modify the facility to avoid adverse impacts from powerhouse releases.

H. ENVIRONMENTAL IMPACTS

1. Assessment of impacts expected from the applicant's proposed project (P), with the applicant's proposed mitigation and any conditions set by a federal land management agency; the proposed project with any additional mitigation recommended by the staff (Ps); and any action alternative considered (A). Assessment symbols indicate the following impact levels:

0 = None; 1 = Minor; 2 = Moderate; 3 = Major;

A = Adverse; B = Beneficial; L = Long-term; S = Short-term.

Resource	Impact			Resource	Impact		
	P	Ps	A		P	Ps	A
a. Geology-Soils	1AS			f. Wildlife	1AS		
b. Streamflow	0			g. Cultural: Archeological	1AL		
c. Water quality: Temperature	0			Historical	2AL	1AL	
Dissolved oxygen	0			h. Visual quality	1AL		
Turbidity and sedimentation	1AS			i. Recreation	1BL		
d. Fisheries: Anadromous	0			j. Land use	0		
Resident	0			k. Socioeconomics	0		
e. Vegetation	1AS						

Remarks:

a. Constructing the new powerhouse and switchyard would require the disposal of 70,000 cubic yards of spoil materials. Existing roads, supplemented by short, temporary construction roads, would give access to construct the new powerhouse.

e., f. Constructing the new facilities would necessitate the short-term loss of about 23 acres of annual grassland and shrub-grassland habitat.

i. The downstream canoe-raft launch and the powerhouse walkway couldn't be used during the proposed construction; this would be an unavoidable adverse impact on recreation in the immediate dam area. Improvements to existing recreational facilities would enhance recreation opportunities in the project area.

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 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):

XX Proposed project. ___ Action alternative. ___ No action.

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

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

I. UNAVOIDABLE ADVERSE IMPACTS OF THE RECOMMENDED ALTERNATIVE

Excavation for the proposed powerhouse would generate spoil materials, consisting mostly of rock fragments. Wildlife would experience a minor, short-term adverse impact as a result of human disturbance and the loss of 23 acres of habitat during the 3.5-year construction period. Use of the downstream canoe-raft launch and the powerhouse walkway would be precluded during construction, causing a moderate, short-term impact on recreational use in the immediate area of the dam.

J. COMPREHENSIVE DEVELOPMENT

Section 4(e) of the Federal Power Act (Act) states that in deciding whether to issue a license, the Commission, in addition to considering the power and development purposes of the project, must give equal consideration to the purposes of energy conservation for the protection of, mitigation of, damage to, and enhancement of fish and wildlife, the protection of recreational opportunities, and the preservation of other aspects of environmental quality.

In section 10(a), the Act further requires that the project adopted, in the judgment of the Commission, must be best adapted to a comprehensive plan for improving or developing a waterway for the use or benefit of interstate or foreign commerce; improving and using water power development for the adequate protection, utilization, and enhancement of fish and wildlife (including related spawning grounds and habitat), and other beneficial public uses, including irrigation, flood control, water supply, and recreational and other purposes discussed in section 4(e).

As we said, the proposed redevelopment would generate 166.1 GWh of electrical energy per year. The project also would provide for displacement of fossil-fueled electric power plant generation, improved air quality, and conservation of fossil fuels.

We've evaluated the effects of project redevelopment on the resources of the project area and discussed mitigative and enhancement measures that should be implemented.

The mitigative measures we recommend are: (1) installing a streamflow recording gauge, downstream from the project; (2) reclaiming areas disturbed during construction; (3) raptor-proofing the new transmission line; (4) developing a cultural resource management plan; (5) developing additional recreational facilities; and (6) monitoring siltation at an existing canoe-raft launching facility and, if necessary, modifying or relocating the facility.

Based on our review under sections 4(e) and 10(a), we conclude that the proposed amendment, with proposed and recommended mitigative and enhancement measures, would be best adapted to a comprehensive plan for developing the Snake River.

K. CONCLUSION

XX 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.

___ Intent to Prepare an EIS. Approval of the recommended alternative [H(3)] would constitute a major federal action significantly affecting the quality of the human environment; therefore, an EIS will be prepared.

L. LITERATURE CITED

Federal Energy Regulatory Commission. 1987. Draft environmental impact statement for the Twin Falls (FERC No. 18), Milner (FERC No. 2899), Auger Falls (FERC No. 4797), and Star Falls (FERC No. 5797) Hydroelectric Projects on the mainstem of the Snake River, Idaho. Washington, D.C. November 1987.

Federal Power Commission. 1967. Planning status report for the Upper Snake River Basin: Wyoming, Idaho, Utah, Nevada, and Oregon. Washington, D.C. 23 pp.

Idaho Power Company. 1981. Second amended application for new license for the Swan Falls Project, FERC Project No. 503, Idaho. October 30, 1981.

Idaho Power Company. 1989a. Application for amendment of license for the Swan Falls Project, FERC Project No. 503, Idaho. April 24, 1989.

Idaho Power Company. 1989b. Response to staff request for additional information for the Swan Falls Project, FERC Project No. 503, Idaho. September 19, 1989.

M. LIST OF PREPARERS

<u>Name</u>	<u>Position title</u>
Dianne Rodman	Ecologist (Coordinator)
Suzanne Brown	Environmental Protection Specialist
Thomas C. Camp, Jr.	Landscape Architect
Timothy Looney	Civil Engineer
John Mitchell	Writer-editor
Alan Mitchnick	Supervisory Ecologist
Kathleen Sherman	Soil Conservationist
Edwin Slatter	Archeologist
Martin Thorpe	Electrical Engineer

SAFETY AND DESIGN ASSESSMENT
SWAN FALLS PROJECT
FERC NO. 503, IDAHO

Project Design

The existing Swan Falls Project is on the Snake River, in Ada and Owyhee Counties, Idaho about 40 miles southwest of Boise.

Idaho Power Company (IPC) proposes amending the license to do the following:

- (1) retire the existing powerhouse, remove the turbines and generating equipment, and fill the draft tubes and turbine pits with concrete;
- (2) remove the existing fish ladder, sluiceway, and part of the gravity dam to construct the new powerhouse;
- (3) construct a new powerhouse on the east bank containing two generating units with a rated capacity of 12.5 megawatts (MW) each;
- (4) construct a new switchyard on the east bank;
- (5) construct a new 1.2-mile-long, 138-kilovolt transmission line; and
- (6) construct appurtenant facilities.

For the last few years, the project has produced an average annual energy of about 83 gigawatthours (GWh) with a total rated capacity of 10.4 MW. With the proposed new turbines, the project would produce about 166.1 GWh of electrical energy per year.

Determination of Licensable Transmission Facilities

The new primary transmission line segment included in the license would extend from the project generators, through voltage transformation, to an interconnection with an existing Idaho Power Company (IPC) 138 kV transmission line. The primary line segment would include about 1.2 miles of single circuit, 138 kV overhead transmission line to connect the project switchyard to the IPC's existing transmission line between the Strike power plant and the Bowmont and Caldwell substations, and appurtenant facilities.

Dam Safety

The hazard potential of a dam is the potential for loss of human life or property damage that would result from failure of the dam. Our Portland Regional Office (PRO) rates the Swan Falls dam as having a high downstream hazard potential.

In a letter of April 13, 1989, to IPC, PRO raised the hazard potential from low to high, basing the change on IPC's revised probable maximum flood levels, in the 1987 safety inspection report to the Commission. The studies show that at flows up to the probable maximum flood, a dam failure would significantly inundate several downstream residences.

For the 1987 safety inspection report, IPC hired a consultant to study the underwater concrete and rock foundation of the powerhouse discharge area. Leakage through the wicket gates of the powerhouse forms currents that make it hard to inspect the downstream side of the powerhouse. Because the consultant couldn't determine the condition of the powerhouse foundation--other than erosion--he recommended:

- (1) investigating the structural condition of the powerhouse, and
- (2) making a plan to deal with the erosion of the powerhouse foundation.

On April 11, 1989, IPC told PRO that they'd seen a new crack in the powerhouse section that contains units 7 through 10. IPC's consultant reviewed the safety of the powerhouse, said that the powerhouse could be unstable under normal loading conditions, and told IPC it should not let the reservoir water surface elevation exceed 2,312.5 feet mean sea level until it completes foundation repairs.

On May 18, 1989, IPC sent the Commission a report from the consultant, recommending that IPC repair voids beneath the powerhouse before the end of the year.

To insure a safe and adequate project, we recommend including license article 303 in any order issued. The article requires the licensee to file final contract drawings and specifications and a supporting design report for the new powerhouse and for modifying the existing powerhouse.

To allow us to review and approve the sequence of the construction of project features, we also recommend including license article 304 in any order issued. The article requires the licensee to file a plan and schedule for constructing the new powerhouse and for modifying the existing powerhouse.

Water Resource Planning and Comprehensive Development

The existing powerhouse was built in three different sections, housing a total of 10 turbine-generating units with a total installed capacity of 10.4 MW. Units 1 and 2 have been in service for more than 40 years and are fast approaching the end of

their serviceable life. Units 3 through 10 have been in service for more than 70 years and have reached the end of their serviceable life.

IPC's expenditures for operation and maintenance of the existing project are much greater than the system average and are increasing annually. IPC estimates overall plant efficiency is presently about 74 percent--about 16 percent lower than the efficiency of a modern plant--and therefore proposes to replace the existing powerhouse with a new powerhouse containing two bulb-turbine generating units.

The two proposed bulb-turbine units would have a total installed capacity of 25 MW--an increase of 14.6 MW for the project. The bulb-turbines would have a total hydraulic capacity of 14,000 cubic feet per second (cfs), an increase of 6,000 cfs. The project's hydraulic capacity would be exceeded about 15 percent of the time, and the project would generate about 166.1 GWh annually with a plant factor of about 75 percent.

Section 10(a)(2) of the Act requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.

We reviewed IPC's proposed license amendment to see if it is consistent with the Northwest Power Planning Council's (Council) Northwest Conservation and Electric Power Plan. The Council's plan envisions meeting the growing regional energy requirements in the most economical manner with environmentally acceptable resources. The Council considers any environmentally acceptable resource that is less expensive than coal-fueled steam electric generation as an acceptable resource for development before the development of coal-fueled power plants (the Council's planned marginal resource).

We developed life-cycle costs of power from the Council's planned generic coal plant, which we assume would be needed about the year 1998, for determining if proposed hydroelectric projects are, in the long term, consistent with the Plan, as required by section 10(a)2 of the Act. Our determination that the region, when treated collectively, would need new coal-fueled steam generating plants about 1998, is based on the Council's projection of regional power needs under the medium-high load forecast in its 1989 supplement to the 1986 plan.

Since the life-cycle levelized cost of IPC's proposed project addition, as of its projected on-line date, is less than the levelized life-cycle cost of the least-cost or marginal long-term alternative, in the plan, IPC's proposed license amendment is not inconsistent with the Council's plan and is economically beneficial within the long-term objectives of the plan. On

September 14, 1989, the Idaho Department of Water Resources (IDWR) filed a motion to intervene arguing that the Swan Falls Project should be consistent with statewide comprehensive plans for developing the water resources of the state. We find that the proposed addition to the Swan Falls Project is consistent with the Idaho State Water Plan.

IDWR also said we should require IPC to do the following:

- (1) consider the potential for future water development upstream from the project and consider the need to assure that project operation will not interfere with the current and future beneficial uses of water;
- (2) address any effects on the project of IPC's complying with comprehensive statewide plans, recommendations of state resource agencies, and applicable Idaho laws. In a September 19, 1989, response to IDWR, IPC says they considered items 1 and 2 in preparing their application 5/ for amendment.

5/ IPC says the proposed license amendment does not conflict with the following state and regional comprehensive water resource development plans and programs:

- o The Idaho State Comprehensive Outdoor Recreation Plan, Idaho Department of Parks and Recreation, 1983.
- o The Snake River Birds of Prey Area Management Plan, Bureau of Land Management, 1985.
- o The Idaho Department of Fisheries Management Plan; 1986-1990, Idaho Department of Fish and Game, 1986.
- o The Northwest Conservation and Electric Power Plan, Northwest Power Planning Council, 1987.
- o The Columbia River Basin Fish and Wildlife Program, Northwest Power Planning Council, 1987.
- o The Idaho State Water Plan, Idaho Department of Water Resources, 1988.
- o The Idaho Protected Rivers Bill, Idaho Legislature, 1988.
- o Existing Land Use Policies and Plans of the Counties of Ada, Elmore and Owyhee.

Federal and state agencies filed 24 comprehensive plans discussing various resources in Idaho. We have reviewed these plans and have determined the proposed license amendment does not conflict with any of these plans or with any existing or planned water resource development in the Snake River Basin.

In the letters of comment, no other state agency, federal agency, or individual says the proposed expansion conflicts with any existing or planned water resource developments in the basin. No one made specific comments or recommendations about flood control, water supply, or irrigation requirements for the Snake River.

Our Planning Status Report for the Upper Snake River Basin and our Hydroelectric Site Data Base show no existing or proposed projects that would conflict with the proposed expansion of the Swan Falls Project.

Economic Evaluation

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

IPC plans to use the additional power from the redeveloped project on their system and to market excess power until all the project power can be used. Our economic analysis of IPC's license amendment is based on IPC's marketing of project power in the Pacific Northwest Region.

We calculate the 50-year levelized alternative power cost in the region in 1993 will be about 89.4 mills per kilowatthour (kWh).

The alternative cost is the levelized unit cost of power from coal-fueled steam electric plants we assumed will be needed in the region by 1998 and the value of only displaced fuel consumption in existing coal-fueled, steam-plants until that time. Based on the Council's projected collective regional need for additional generating resources in the Pacific Northwest, as shown for the medium-high load forecast in the Council's 1989 supplement to the 1986 Power Plan, we assume that new coal plant generating resources will be required within the region by 1998.

The 89.4 mills/kWh value includes an average capacity-value-reduction component equal to the cost of adding combustion turbine capacity to a hydro project to allow it, under critical water conditions, to perform at the level of a coal plant.

As we stated, IPC proposes to redevelop the Swan Falls Project by retiring the existing powerhouse and constructing a new powerhouse containing two 12.5 MW bulb-turbines.

The existing powerhouse and generating units are in poor condition. In the amendment application, IPC estimates the development cost of the new powerhouse would be \$45.3 million. On September 19, 1989, IPC filed additional information showing the estimated cost to repair or replace the civil, mechanical, and electrical systems in the existing powerhouse to be \$37.4 million. The 14.6 MW increment of capacity would cost \$7.9 million to develop.

The refurbished project would generate about 112.5 GWh annually; the new powerhouse would generate about 166.1 GWh annually. Building the new powerhouse, would increase the annual generation of the project by 53.6 GWh annually.

Using the regional power value, we examined the economics of the proposed increase in installed capacity. We estimate the levelized annual cost of power from the project would be 32.5 mills/kwh and the levelized net benefit would be 56.9 mills/kwh.

Because the added capacity of the new powerhouse would be economically beneficial, we recommend that IPC build it.

Exhibits

The following parts of exhibit A and the following exhibit F drawings conform to the Commission's Rules and Regulations are approved and made a part of the license:

Exhibit A 6/: New Power Plant section on page A-9, Substation section on page A-10 and Transmission Line section on page A-11.

Exhibit F:

<u>Sheet 6/</u>	<u>FERC No.</u>	<u>Showing</u>
	<u>503 -</u>	
1 of 6	105	General Plan
3 of 6	107	Existing Powerhouse Structure Plan and Section
4 of 6	108	Existing Powerhouse Structure Sections
6 of 6	109	New Powerhouse Plan and Sections

6/ Filed with the Commission on April 24, 1989.

List of Preparers

Timothy Looney, Civil Engineer.

Martin Thorpe, Electrical Engineer.

BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-90-2

IDAHO POWER COMPANY

EXHIBIT 2

BEFORE THE DEPARTMENT OF WATER RESOURCES
OF THE
STATE OF IDAHO

In the matter of Application for)
Permit No. 02-7379 in the Name of)
Idaho Power Company)

MEMORANDUM DECISION
AND
ORDER

This matter having come before the Idaho Department of Water Resources (department) as a result of reviewing Application for Permit 02-7379 for approval, the department Finds, Concludes and Orders as follows:

FINDINGS OF FACT

1. On March 31, 1982, the Idaho Power Company (applicant) filed an application for permit with the department proposing the diversion of 6,550 cubic feet per second (cfs) of water of the Snake River at a point within lots 10 and 11, Section 18, T2S, R1E, BM, Ada and Owyhee counties. The proposed use of the water is for power generation purposes at the existing Swan Falls dam site located in Lot 11, Section 18, T2S, R1E, BM and the proposed season of use is January 1 through December 31 of each year.
2. The application was published on May 5 and 12, 1982 in the Owyhee Nugget, a newspaper of general circulation in Owyhee County, Idaho and on May 6 and 13, 1982 in The Idaho Statesman, a newspaper of general circulation in Ada County, Idaho.
3. On May 20, 1982, the application was protested by the South Board of Control, Owyhee Project. On October 25, 1982, the protest was withdrawn.
4. The appropriation sought is for a run-of-river project and there will be no change in the upstream or downstream flow of the river. Storage will not be increased over the storage impounded for the existing project.
5. On December 22, 1982, the Federal Energy Regulatory Commission (FERC) issued a new license (Major) in connection with the existing Swan Falls Project (No. 503). The license authorized redevelopment of the project including a new spillway, a new powerhouse and an increased total installed capacity of 25 MW, replacing the existing capacity of 10.4 MW.
6. On April 30, 1987, FERC issued an amended license deleting authorization to add 14.6 MW of new capacity to the existing facility.
7. The applicant is in the process of submitting a second application to amend the FERC license which would allow the applicant to again add 14.6 MW of new capacity to the existing facility.
8. Section 42-203A(5), Idaho Code, provides that an application may be rejected or partially approved if the proposed use is such:

- a) that it will reduce the quantity of water under existing water rights, or
- b) that the water supply itself is insufficient for the purpose for which it is sought to be appropriated, or
- c) where it appears to the satisfaction of the department that such application is not made in good faith, is made for delay or speculative purposes, or
- d) that the applicant has not sufficient financial resources with which to complete the work involved therein, or
- e) that it will conflict with the the local public interest.

9. The applicant is a party to the contract and agreement affecting rights to water use at Swan Falls dam and to use of water tributary to the Snake River upstream from Swan Falls dam.

CONCLUSIONS OF LAW

1. The proposed use of water is non-consumptive in nature and will not increase or decrease the flows of the Snake River which exist in connection with the existing project.

2. The proposed use will not increase the amount of water stored over the amount already stored in connection with the existing project.

3. The proposed use is non-consumptive in nature and will not reduce the quantity of water under existing water rights.

4. The flows of the Snake River are sufficient at times to provide the water to increase the power generation capability of the Swan Falls facility.

5. The application is made in good faith, since the applicant is in the process of obtaining other permits needed to construct and operate the project.

6. The applicant has sufficient financial resources with which to complete the project.

7. The application is in the local public interest.

8. The department should approve the application and issue a permit, provided, however, such permit should include conditions as necessary to acknowledge certain agreements and contracts.

ORDER

It is therefore, hereby, ORDERED that Application for Permit No. 02-7379 be approved subject to the following conditions:

1. The Idaho Power Company (permit holder) shall either install a measuring device or provide a certified measurement or flow computation prepared

by a professional engineer based upon system design to show the amount of water beneficially used in the power generating facility.

2. The diversion and use of water under this permit is subject to the control of the watermaster of any water district established on the reach of the Snake River which includes Swan Falls dam.

3. This permit is subject to the provisions of Sections 42-205 through 42-210, Idaho Code, restricting the sale, transfer, assignment, or mortgage of this permit. Failure to comply with these provisions is cause for immediate cancellation of this permit.

4. The diversion and use of water under this permit and any license subsequently issued is subject to review by the director on the date(s) of expiration of any license issued by FERC. Upon appropriate findings relative to the interest of the public, the director may cancel all or any part of the use authorized herein and may revise, delete or add conditions under which the right may be exercised.

5. The water right acquired under this permit shall be junior and subordinate to all rights to the use of water from the Snake River and sources tributary thereto upstream from Swan Falls dam within the state of Idaho that are initiated later in time than the priority date of this permit and shall not give rise to any right or claim against future rights to the use of water within the state of Idaho initiated later in time than the priority of this permit.

6. The director retains jurisdiction of this permit in order to limit the use of water for hydropower generation purposes to a specific term of years as required by Section 42-203B(7), Idaho Code.

7. Use of water under this permit shall be non-consumptive.

8. This permit is specifically subject to the agreement among the state of Idaho, the Governor, the Attorney General and Idaho Power Company dated October 25, 1984. It is also subject to the Contract between the state of Idaho and the Idaho Power Company dated October 25, 1984.

9. Without regard to the right granted to the permit holder to the beneficial use of 6,550 cfs pursuant to Permit 02-7379, water may only be claimed and used thereunder if and when the water is physically available and such permit shall not give rise to any claim on the part of the permit holder to a flow requirement in the Snake River which exceeds 3,900 cfs during the summer season and 5,600 cfs during the winter season as specified in the above described agreement and contract.

10. Diversion and use of water by the reconstructed Swan Falls power project shall be pursuant to water rights held by the permit holder (including Permit 02-7379) and as such rights are modified by the agreement and contract and not otherwise.

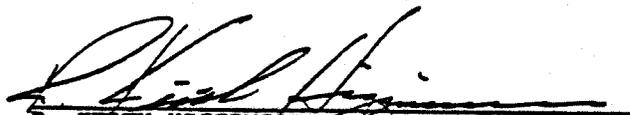
11. Approval of this permit is subject to the requirement that the permit holder shall advise the FERC through its licensing process [Section 9(b) FPA] that the permit holder has been issued a water right permit for the flow required to operate the planned power project subject to conditions.

12. The failure of the permit holder to comply with the conditions of the permit or to obtain appropriate approvals from the FERC to construct and operate this proposed project pursuant thereto is cause for the department to cancel this permit.

13. Plans of the proposed redevelopment of the project shall be submitted to the department for review and approval pursuant to provisions of Sections 42-1709 through 42-1721, Idaho Code, and the Safety of Dams Rules and Regulations before construction is authorized.

14. Proof of construction of works and application of water to beneficial use shall be submitted to the department on or before April 1, 1994.

Dated this 10th day of April, 1989.


R. KEITH HIGGINSON
Director

CERTIFICATE OF MAILING

I HEREBY CERTIFY That on this the 11th day of April, 1989, a true and correct copy of the foregoing MEMORANDUM DECISION AND ORDER was mailed postage prepaid to:

Idaho Power Company
P. O. Box 70
Boise, ID 83707


RITA I. FLECK
Secretary/Records Manager

BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-90-2

IDAHO POWER COMPANY

EXHIBIT 3

IDAHO POWER COMPANY
SWAN FALLS HYDROELECTRIC PROJECT

COMMITMENT ESTIMATE

(IN THOUSANDS OF DOLLARS)

	PROJECT ESTIMATE 1/
1 NEW POWERHOUSE:	
2 DIRECTS:	
3 GENERAL CONSTRUCTION CONTRACTS	\$ 23,065
4 PROCUREMENT CONTRACTS	19,192
5 OTHER CONTRACTS & FACILITIES	926
6 TOTAL DIRECTS	\$ 43,183
7 INDIRECTS	404
8 OVERHEADS	9,504
9 AFUDC	6,843
10 TOTAL NEW POWERHOUSE	\$ 59,934
11 DECOMMISSION OLD POWERHOUSE:	
12 DIRECTS:	
13 GENERAL CONSTRUCTION CONTRACTS	\$ 2,900
14 PROCUREMENT CONTRACTS	0
15 OTHER CONTRACTS & FACILITIES	9
16 TOTAL DIRECTS	\$ 2,909
17 INDIRECTS	0
18 OVERHEADS	435
19 AFUDC	108
20 TOTAL DECOMMISSION OLD POWERHOUSE	\$ 3,452
21 RESTORATION OLD POWERHOUSE:	
22 DIRECTS:	
23 GENERAL CONSTRUCTION CONTRACTS	\$ 668
24 PROCUREMENT CONTRACTS	0
25 OTHER CONTRACTS & FACILITIES	0
26 TOTAL DIRECTS	\$ 668
27 INDIRECTS	0
28 OVERHEADS	155
29 AFUDC	19
30 TOTAL RESTORATION OLD POWERHOUSE	\$ 842
31 TOTAL SWAN FALLS PROJECT 2/	\$ 64,228
32	1.25
33 TOTAL COMMITMENT ESTIMATE	\$ 80,285

- 1/ COST ESTIMATE REPORTED IN DOLLARS AT COMPLETION.
2/ COST ESTIMATE EXCLUDES 'REMOVAL COSTS' OF \$804,000.

ATTACHMENT 3
SUPPLEMENT TO INITIAL APPLICATION

BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-90-2

IDAHO POWER COMPANY

EXHIBIT 4



IDAHO POWER COMPANY

BOX 70 • BOISE, IDAHO 83707

March 16, 1990

Mr Ronald A Corso
Director
D-D-S-I
Federal Energy Regulatory Commission
825 North Capital Street, NE
Washington, DC 20426

Subject: Swan Falls Hydroelectric Project
Project No. 503, Idaho

Dear Mr Corso:

This is in reference to our March 12, 1990 meeting with you and staff on the schedule and existing powerhouse stabilization plans for the Swan Falls Project.

As agreed, the presented schedule, option 2, will be adopted. During the progress of the design and construction, our effort will be concentrated on finishing the stabilization of the existing powerhouse one year earlier than our previous schedule, dated January 22, 1990.

Resubmitted for your approval under Article 304 of the Swan Falls Amended License are an original and fourteen (14) copies of the revised schedule, dated March 14, 1990, with a revised plan. The plan also includes these additional features as agreed in our meeting:

- ° Prior to the new powerhouse excavation:
 - Piezometers for monitoring existing powerhouse uplift under the east bay adjacent to unit #10, and under the wall between units #8 and 9 will, be installed.
 - Concrete backfill will be placed in the east bay adjacent to unit #10. Concrete backfill will also be placed in the bay between units #6 and #7 if it will not interfere with access and operation of the powerhouse.
- ° The current monitoring program for the existing powerhouse includes:

EXHIBIT 4
CASE NO. IPC-E-90-2
PACKWOOD, IPCO
PAGE 1 OF 8

ATTACHMENT 4
SUPPLEMENT TO INITIAL APPLICATION

Mr Ronald A Corso
Page 2
March 16, 1990

- Continuation of the current crack monitoring that consists of:
 1. Read and record the Avongard monitors at least once per month. Additional measurements shall be taken prior to, during, and immediately after any dewatering activity or a reservoir drawdown in excess of 3.5 feet. There are two monitors located below the generator floor; one on the right wall of unit #10, and one on the left wall of unit #7.
 2. Measure and record the generator floor longitudinal crack at locations in units 3, 4, 5 and 10 every three months.
 3. Survey and record horizontal and vertical movement of points located on the generator floor over each wall between all units every six months.

These monitoring intervals are in accordance with FERC's regional director's letter of January 26, 1990, our letter of February 22, 1990, and the March 13, 1990 confirmation phone discussion with Mr Norm Weseloh of the regional office.

- o Monitoring of the existing powerhouse during the new powerhouse excavation includes:
 - The current monitoring will be continued until the existing powerhouse is stabilized, except during blasting for the new powerhouse excavation. During this period, the monitoring interval will be increased to daily for monitoring numbered (1), every week for monitoring numbered (2), and monthly for monitoring numbered (3). However, if conditions change for the numbered (1) or (2) monitoring, then more frequent interval for monitoring numbered (3) will be established consistent with need. Intervals for monitoring numbered (1) and (2) will also be adjusted to reflect any changed condition.
 - Read and record piezometers daily during blasting for the new powerhouse excavation and existing powerhouse stabilization. Monitoring intervals will be adjusted to reflect any changed condition. At other times during new powerhouse construction, monitoring will be less frequent, but responsive to encountered conditions.
 - Seismic monitoring of the existing powerhouse for each blast during new powerhouse excavation.
 - Monitoring by one person and prompt dissemination of the information to those designated.

Mr Ronald A Corso
Page 3
March 16, 1990

- ° Pool lowering elevations during blasting for the new powerhouse excavation will be established to satisfy requirements for the existing powerhouse stability. The pool levels will be coordinated with headwater concerns including irrigation.
- ° As-built drawings for the entire project, including the previously constructed new spillway and tailrace channel, will be submitted after project completion.
- ° Monitoring data will be summarized and provided to the Portland Regional Office at the end of each month unless unusual instrumentation data develops. When unusual readings of the instrumentation data occurs, it will be reported to the regional office immediately, along with plans for assessing the significant of the data as it may affect the projects structural integrity.

Correspondence on Swan Falls was received on March 13, 1990, from your regional office relative to Part 12, Safety of Water Power Projects. However, our response to this matter will be addressed by separate letter.

Sincerely,

J. L. Herndon /snk

Steven L Herndon
Attorney

SLH:EOG:cy
Encs

cc: Arthur Martin, FERC
Lee S Sherline, Leighton & Sherline
L E Lanham
E O Groff

SWAN FALLS PROJECT
IDAHO POWER COMPANY

FERC Project No 503
Idaho

PLAN AND SCHEDULE
Revised March 16, 1990

Subject

Plan and schedule for constructing the new powerhouse and for modifying the existing powerhouse.

Reference

Order Amending License issued December 8, 1989, Project No 503-006, Article 304.

Schedule

Attached is a detailed schedule showing each activity of work. Also, attached is a summary schedule showing the project by major feature.

Plan

- ° Work began on January 22, 1990, to actively pursue the design, construction and begin operation of the new 25 MW powerhouse as scheduled.
- ° The earlier 1980s design effort expended toward building the new plant at that time is being utilized to the fullest extent feasible. However, a review of each feature is being made to take advantage of recent experience of similar plants and the latest technology for the most efficient and safe construction and plant operation. The bulb turbine with a speed increaser and high-speed generator has been determined to be most cost effective and efficient for operation.
- ° The initial critical item is to develop specifications for a single supply contract for the two 12.5 MW turbines with speed increasers, generators and governors. Information from the turbine supplier for turbine setting, water intake and waterway configurations is needed earlier to finalize the powerhouse bid solicitation drawings. The powerhouse contractor will install the turbines and associated equipment with direction from the turbine erection engineer.
- ° The powerhouse contract will be awarded by April 15, 1991. The overall excavation and concrete placing durations allow for winter weather in 1991-92 and 1992-93. Installation of the first turbine will begin by February 1, 1993.
- ° Major accessory equipment will be supplied by individual contracts and furnished to the powerhouse contractor for installation.
- ° Power on-line is scheduled for the first unit on November 1, 1993, and the second unit on January 1, 1994.

- The existing powerhouse will be operated until the first unit in the new powerhouse is on line. Then the existing powerhouse will begin decommissioning, turbine/generators and accessory equipment will be removed, draft tubes and scroll cases will be filled with concrete, one complete generating unit will be prepared for public exhibit, and the powerhouse superstructure will be repaired and preserved.
- The existing powerhouse is near the new powerhouse, some cracks have developed in the structure, and stability of the structure is a concern especially during excavation for the new powerhouse. Therefore, this program is established.

A. Prior to the new powerhouse excavation:

- Piezometers for monitoring existing powerhouse uplift under the east bay adjacent to unit #10, and under the wall between units #8 and 9 will be installed.
- Concrete backfill will be placed in the east bay adjacent to unit #10. Concrete backfill will also be placed in the bay between units #6 and #7 if it will not interfere with access and operation of the powerhouse.

B. The current monitoring program for the existing powerhouse includes:

- Continuation of the current crack monitoring that consists of:
 1. Read and record the Avongard monitors at least once per month. Additional measurements shall be taken prior to, during, and immediately after any dewatering activity or a reservoir drawdown in excess of 3.5 feet. There are two monitors located below the generator floor; one on the right wall of unit #10, and one on the left wall of unit #7.
 2. Measure and record the generator floor longitudinal crack at locations in units 3, 4, 5 and 10 every three months.
 3. Survey and record horizontal and vertical movement of points located on the generator floor over each wall between all units every six months.

These monitoring intervals are in accordance with FERC's regional director's letter of January 26, 1990, our letter of February 22, 1990, and the March 13, 1990 confirmation phone discussion with Mr Norm Weseloh of the regional office.

C. Monitoring of the existing powerhouse during the new powerhouse excavation includes:

- The current monitoring will be continued until the existing powerhouse is stabilized, except during blasting for the new

powerhouse excavation. During this period, the monitoring interval will be increased to daily for monitoring numbered (1), every week for monitoring numbered (2), and monthly for monitoring numbered (3). However, if conditions change for the numbered (1) or (2) monitoring, then more frequent interval for monitoring numbered (3) will be established consistent with need. Intervals for monitoring numbered (1) and (2) will also be adjusted to reflect any changed condition.

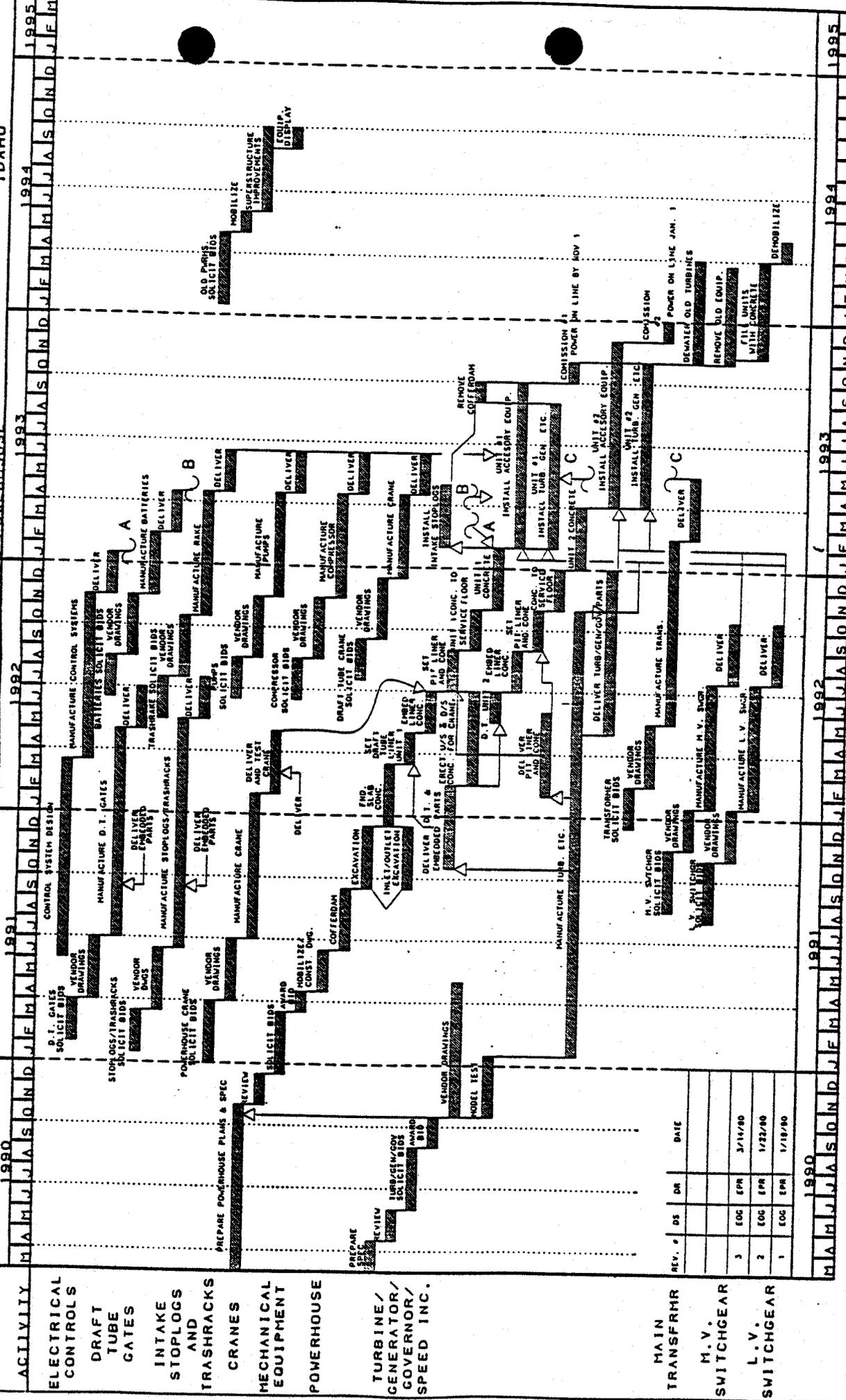
- Read and record piezometers daily during blasting for the new powerhouse excavation and existing powerhouse stabilization. Monitoring intervals will be adjusted to reflect any changed condition. At other times during new powerhouse construction, monitoring will be less frequent, but responsive to encountered conditions.
- Seismic monitoring of the existing powerhouse for each blast during new powerhouse excavation.
- Monitoring by one person and prompt dissemination of the information to those designated.

D. Pool lowering elevations during blasting for the new powerhouse excavation will be established to satisfy requirements for the existing powerhouse stability. The pool levels will be coordinated with headwater concerns including irrigation.

- ° As-built drawings for the entire project, including the previously constructed new spillway and tailrace channel, will be submitted after project completion.
- ° Monitoring data will be summarized and provided to the Portland Regional Office at the end of each month unless unusual instrumentation data develops. When unusual readings of the instrumentation data occurs, it will be reported to the regional office immediately, along with plans for assessing the significant of the data as it may affect the projects structural integrity.
- ° The entire project will be completed by October 1, 1994.

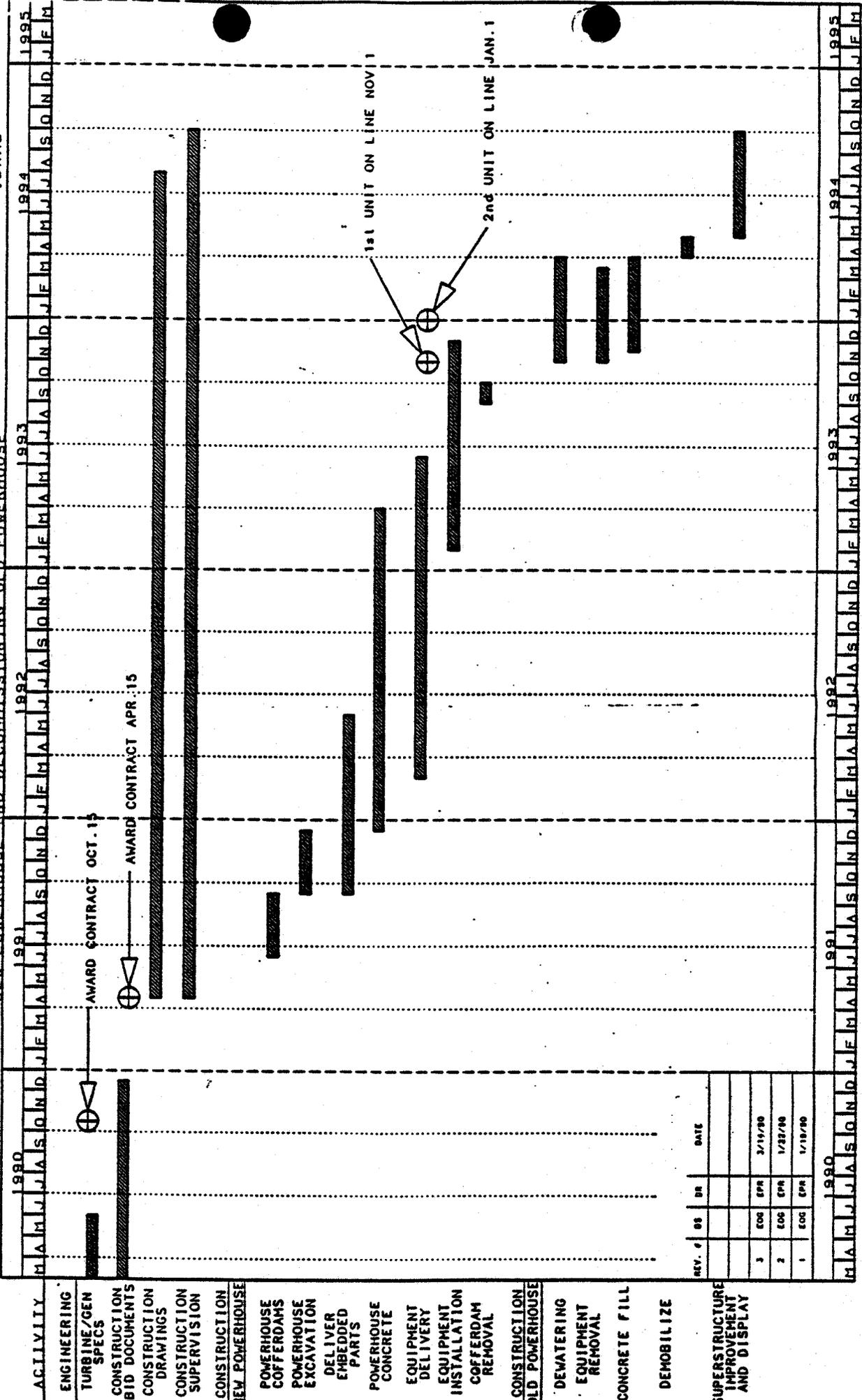
SWAN FALLS PROJECT DEVELOPMENT SCHEDULE NEW POWERHOUSE AND DECOMMISSIONING OLD POWERHOUSE

PROJECT NO. 503
IDAHO



REV. #	DS	DR	DATE
3	EOC	EPR	3/11/90
2	EOC	EPR	1/22/90
1	EOC	EPR	1/19/90

SWAN FALLS PROJECT DEVELOPMENT SCHEDULE
 NEW POWERHOUSE AND DECOMMISSIONING OLD POWERHOUSE
 PROJECT NO. 503
 IDAHO



REV. #	DATE
3	3/19/90
2	1/22/90
1	1/19/90

BEFORE THE

IDAHO PUBLIC UTILITIES COMMISSION

CASE NO. IPC-E-90-2

IDAHO POWER COMPANY

EXHIBIT 5

FEDERAL ENERGY REGULATORY COMMISSION

WASHINGTON, D. C. 20426

MAR 26 1990

Project No. 503
Swan Falls Dam
Idaho Power Company

Mr. Steven L. Herndon
Attorney
Idaho Power Company
P.O. Box 70
Boise, Idaho 83707

Dear Mr. Herndon:

We have received your letter dated March 16, 1990 submitting your revised plan and schedule for construction of the new powerhouse and stabilization of the existing powerhouse at the Swan Falls Project No. 503. The revised schedule and the features of the revised plan are acceptable.

The revised schedule, presented as Option 2 in our March 12, 1990 meeting, indicates completion of the powerhouse stabilization one year earlier than that presented in the previous schedule of January 22, 1990. The revised plan adequately addresses instrumentation and monitoring programs during construction, concrete backfilling in the east bay and the bay between units no. 6 and 7 during the early phases of construction, and reservoir drawdown during blasting for the new powerhouse.

Sincerely,

Ronald A. Corso

Ronald A. Corso, Director
Division of Dam Safety and
Inspections

EXHIBIT 5
CASE NO. IPC-E-90-2
PACKWOOD, IRCO
PAGE 1 OF 1

ATTACHMENT 5

SUPPLEMENT TO INITIAL APPLICATION