

SNAKE RIVER



HYDRO POWER

IDAHO POWER COMPANY

16873

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Idaho Public Utilities Commission
Office of the Secretary
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SEP 24 1990

September 24, 1990

Boise, Idaho

Mrs. Myrna J. Walters
Secretary
Idaho Public Utilities Commission
Statehouse
Boise, Idaho 83720

RE: Case No. IPC-E-90-8
Milner Proceeding

Dear Mrs. Walters:

Please find enclosed eight (8) copies of the Testimony and Exhibits of Messrs. Packwood, Keen, and Baggs regarding the Milner Proceeding.

If you have any questions, please feel free to call me.

Sincerely,

Larry D. Ripley
Attorney

LDR:mka

Enclosures

CERTIFICATE OF SERVICE

I HEREBY CERTIFY that I have this 24th day of September, 1990, served the **DIRECT TESTIMONY AND EXHIBITS OF WITNESSES PACKWOOD, KEEN, AND BAGGS** to all parties of record by hand delivering a copy thereof, to the following:

Afton Energy, Inc.
c/o Owen H. Orndorff
Orndorff & Peterson
1087 West River Street - Ste. 230
Boise, Idaho 83707-0027

David H. Hawk, Director
Energy Natural Resources
J. R. Simplot Company
P.O. Box 27
Boise, Idaho 83707-0027

R. Scott Pasley
Assistant General Counsel
J. R. Simplot Company
P.O. Box 27
Boise, Idaho 83707-0027

Peter Richardson
DAVIS, WRIGHT, TREMAINE
350 North Ninth Street
Suite 400
Boise, Idaho 83702

R. Michael Southcombe, Esq.
CLEMONS, COSHO & HUMPHREY
815 West Washington
Boise, Idaho 83702-5590

Michael S. Gilmore (2)
Brad M. Purdy
Idaho Public Utilities Commission
472 West Washington
Boise, Idaho 83720

and by causing a copy thereof to be delivered by Federal Express to:

James N. Roethe, Esq.
PILLSBURY, MADISON, SUTRO
225 Bush Street
San Francisco, CA 94140

Grant E. Tanner
DAVIS, WRIGHT, TREMAINE
2300 First Interstate Bank Tower
1300 SW Fifth Avenue - Ste. 2300
Portland, Oregon 97201

and due to the fact Mr. Miles had another commitment I have caused the copy to be mailed to Mr. Miles at the following address:

Harold C. Miles, Chairman
Idaho Consumer Affairs, Inc.
316 15th Avenue South
Nampa, Idaho 83651


By /s/ Larry D. Ripley
Attorney for Idaho Power Company

Idaho Public Utilities Commission
Office of the Secretary
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SEP 24 1990

Boise, Idaho

BEFORE THE IDAHO PUBLIC UTILITIES COMMISSION

IN THE MATTER OF THE APPLICATION)
OF IDAHO POWER COMPANY FOR A)
CERTIFICATE OF PUBLIC CONVENIENCE)
AND NECESSITY FOR THE RATE BASING)
OF THE MILNER HYDROELECTRIC PROJECT))
OR IN THE ALTERNATIVE)
A DETERMINATION OF EXEMPT STATUS)
FOR THE MILNER HYDROELECTRIC)
PROJECT)

CASE NO. IPC-E-90-8

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 Army
20 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 to
3 Division Engineering Supervisor where I oversaw the
4 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 later,
8 I became the Electrical Superintendent and was
9 responsible for all construction, operation and
10 maintenance within the Company's Southern Division.
11 I moved back to Boise in 1980 and assumed similar
12 responsibilities as the Electrical Superintendent
13 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, transmission
18 and distribution stations. In 1985, I became
19 Superintendent of Engineering with responsibility
20 for all the non-generation engineering functions of
21 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 responsibility
8 for power production, power operations, thermal
9 generation and environmental affairs.

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

12 A. My testimony will explain Idaho Power Company's
13 participation in the Milner Hydroelectric Project.
14 I will also explain the Company's request for the
15 issuance of a Certificate of Public Convenience and
16 Necessity for the rate basing of the Milner
17 Hydroelectric Project, or in the alternative, a
18 determination of exempt status by the Commission.
19 Questions concerning the financial arrangements
20 with the Canal Companies should be directed to Mr.
21 LaMont Keen, Controller, Idaho Power Company.
22 Questions concerning the effect of rate basing the
23 Milner Project should be directed to Mr. James L.
24 Baggs, Manager of Rates for Idaho Power Company.

25 Q. Please generally describe where the Project is

- 1 located.
- 2 A. The Project is located in Idaho on the Snake River
3 about 130 miles southeast of Boise, between the
4 cities of Burley and Twin Falls. The Project
5 facilities extend from the existing Twin Falls Main
6 Canal Headworks in Milner Reservoir to the
7 powerhouse site where most of the new facilities
8 are to be located.
- 9 Q. When was the Milner Dam originally constructed?
- 10 A. Milner Dam was constructed in 1905 to provide
11 irrigation storage and diversions.
- 12 Q. Who owns the Milner Dam?
- 13 A. The Dam is owned jointly by the Twin Falls Canal
14 Company, the North Side Canal Company and the
15 American Falls Reservoir District Number Two.
16 Three canals with their headworks adjacent to the
17 Dam are fed from Milner Reservoir. The Twin Falls
18 Main Canal (or South Side Main Canal) constructed
19 in 1905 will be utilized for the Project. Its
20 headworks is located near the left (south) abutment
21 of the dam and it flows west near the Snake River
22 for about 12 miles.
- 23 Q. What water flows will be used to produce power?
- 24 A. The proposed Milner Project will use Snake River
25 flows that presently pass through the Milner Dam

1 Spillway. Such flows occur during the non-
2 irrigation season and at times during the
3 irrigation season when there are flows in excess of
4 irrigation diversions. The water will be conveyed
5 in an enlarged Twin Falls Canal and diverted into a
6 forebay and an intake structure, penstock and
7 powerhouse. Head will be obtained through
8 utilization of the difference in elevation between
9 the Twin Falls Canal and the Snake River.

10 Q. What facilities other than a powerhouse are
11 required for the Project?

12 A. Other facilities required for the Project include
13 modifications to the existing headworks, canal and
14 bridge and a new control structure, tailrace
15 channel, access road and transmission line.

16 Q. When was the project originally licensed by the
17 Federal Energy Regulatory Commission (FERC)?

18 A. On December 15, 1988, the Canal Companies were
19 granted a license under Part I of the Federal Power
20 Act (FPA) to construct, operate, and maintain the
21 Milner Project to be located at the existing Milner
22 Dam and Twin Falls Main Canal on the Snake River.
23 The Project as licensed consisted of the Milner Dam
24 and Reservoir, modifications to 6,500 feet of the
25 Twin Falls Main Canal to increase its capacity, a

1 control structure on the canal that would divert
2 the additional flow into a forebay, a penstock, a
3 powerhouse located on the Snake River 1.6 miles
4 downstream of the dam and containing a single
5 generating unit rated at 43,650 kilowatts, and a
6 1.4-mile-long transmission line.

7 The Canal Companies had informed the Federal
8 Energy Regulatory Commission (FERC) that there was
9 a serious concern for the structural integrity of
10 the 85-year-old Milner Dam and that failure of the
11 dam during the irrigation season could result in
12 near total crop failure on the 440,000 acres served
13 by the dam. Following a meeting with Canal
14 Companies and an inspection of Milner Dam, the
15 FERC's Division of Dam Safety and Inspections
16 concluded that there was a high risk of failure at
17 the Milner Dam in the event of a seismic event
18 (earthquake). A complete dam failure could lead to
19 partial or total crop failure, since such a failure
20 would prevent diversion of water into the
21 irrigation canal. The Canal Companies intended to
22 use the revenues from the sale of electric power to
23 be generated by the Project to obtain the funds
24 necessary to strengthen Milner Dam and upgrade its
25 spillway. The Canal Companies contended that,

1 absent these revenues, funding repair of the dam
2 would result in severe economic hardship to many of
3 the 7,500 Canal Companies' shareholders who depend
4 on irrigation water from Milner Dam for their
5 livelihood.

6 Q. Did FERC require further investigation as to the
7 capacity of the Milner Project, even though a
8 license was issued?

9 A. Yes. Although the FERC issued a license to the
10 Canal Companies based upon the construction of a
11 single generating unit rated at 43,650 kilowatts to
12 be located on the Twin Falls main canal, the FERC
13 ordered that within one year of issuance of the
14 license, the Canal Companies were required to
15 submit a report evaluating the feasibility of also
16 constructing a power plant at Milner Dam to utilize
17 the power potential of the flows released to the
18 bypass reach of the river below the dam and
19 therefore not usable by the power plant to be
20 located approximately 1.6 miles downstream. If the
21 feasibility study showed that also developing a
22 power plant at the dam would be economically
23 beneficial, the Canal Companies were required to
24 submit a schedule and plans for also developing a
25 power plant at the dam.

1 Q. When was Idaho Power officially included in the
2 project by FERC?

3 A. On May 2, 1989, the FERC issued an order adding
4 Idaho Power as a co-licensee for the Milner
5 Project. From and after that date the license for
6 the Milner Project is now jointly held by Twin
7 Falls Canal Company, North Side Canal Company,
8 Ltd., and Idaho Power with all conditions of the
9 previous license being applicable to the three
10 licensees. The license is attached as Exhibit 1.

11 Q. Have Idaho Power and the Canal Companies
12 investigated the feasibility of increasing the
13 capacity of the Milner Project?

14 A. Yes. Idaho Power and the Canal Companies prepared
15 the analysis required to determine the feasibility
16 of increasing the capacity of the Milner Project.
17 Based upon that analysis, Idaho Power and the Canal
18 Companies have proposed to the FERC that a new
19 powerhouse be constructed near the north abutment
20 of Milner Dam and that a second unit be added to
21 the main powerhouse 1.6 miles downstream of the
22 dam. The powerhouse at the dam will consist of a
23 single-propeller turbine which will discharge a
24 constant 200 CFS when in operation with a net head
25 of 50 feet. It will be coupled to a 1000 kVA

1 induction generator. Maximum output will be about
2 770 kW.

3 The turbine will be fed through a steel
4 penstock coming off of an intake located on the
5 reservoir. Gates to allow start-up and to unwater
6 the unit for maintenance will be included.
7 Provisions for release of the 200 CFS target flow
8 when the plant is not being operated will be
9 provided in the spillway.

10 Based upon the new analysis, the turbines
11 located at the Main Powerhouse 1.6 miles downstream
12 will be vertical shaft Kaplan type directly coupled
13 to the generators. The large unit will have a
14 rated output of 46,000 kilowatts (kW) at a net head
15 of 150 feet, a discharge of 4,000 CFS and a speed
16 of 200 revolutions per minute (RPM). The small
17 unit will have a rated output of 11,500 kilowatts
18 (kW) at a net head of 157 feet, a discharge of
19 1,000 CFS, and a speed of 400 revolutions per
20 minute (RPM).

21 Q. As a result of the revised feasibility analysis,
22 what action was taken?

23 A. An Application to amend the license to conform the
24 license to the feasibility analysis has been
25 prepared, sent to relevant state and federal

1 resource agencies for their review and comment, and
2 filed with FERC.

3 Q. When did Idaho Power first become involved in the
4 Milner Project?

5 A. Idaho Power and the Canal Companies initially
6 entered into an agreement to explore the
7 feasibility of power generation at Milner Dam in
8 1981. The Canal Companies were guaranteed a
9 royalty with a net present value over the life of
10 any development equal to approximately \$5,638,000.
11 At that time, the Parties were concerned about the
12 integrity of the Dam itself and agreed to negotiate
13 a common solution to the repair issue if necessary
14 at a later date.

15 Q. Was the Milner Dam in need of repairs?

16 A. Yes. As a result of various inspections, it was
17 determined that immediate repair was required to
18 insure the structural integrity of the dam. The
19 cost of necessary repairs to the Milner Dam is
20 approximately \$11,700,000.

21 Q. What are the financial arrangements between Idaho
22 Power Company and the Canal Companies?

23 A. Mr. LaMont Keen will address the financial
24 agreement between Idaho Power Company and the Canal
25 Companies.

- 1 Q. What is the Milner Project ownership arrangement?
- 2 A. Idaho Power and the Canal Companies have entered
3 into an Agreement Regarding the Ownership,
4 Construction, Operation and Maintenance of The
5 Milner Project. The Canal Companies will maintain
6 the ownership of the dam, and Idaho Power will own
7 the generation facilities. A copy of the Agreement
8 is attached as Exhibit 2.
- 9 Q. Please discuss the timing of this project.
- 10 A. The Canal Companies were required by FERC to
11 rehabilitate the Milner Dam during the 1989
12 construction season and the source of funds
13 available for that rehabilitation was to be the
14 revenues derived from power sales. The Canal
15 Companies had already received a license from FERC.
16 Since the Project had to be constructed, Idaho
17 Power was presented with a unique opportunity to
18 participate with the Canal Companies in the
19 rehabilitation of the dam, thus securing the hydro
20 power for the benefit of its customers. The timing
21 of the Project, however, could not be deferred.
- 22 Q. The Commission has required that Idaho Power
23 Company submit cost estimates on large projects.
24 Please comment on this requirement.
- 25 A. Large hydroelectric projects involve design and

1 construction which must be customized to the
2 particular site. As a result, preliminary
3 estimates contain many unknowns for both the final
4 project layout and scope. Detailed engineering to
5 finalize the layout and scope in order to obtain a
6 more precise estimate would result in extremely
7 high front end costs on all projects, and
8 significant expenditures would be made even if a
9 particular project is not built. Changes required
10 as part of the environmental and regulatory review
11 process could also result in the need to completely
12 redesign a project, thus radically changing the
13 original preliminary estimate.

14 For most hydroelectric projects, the first
15 major expenditure of funds, other than for
16 engineering design, is the purchase of the
17 hydroelectric turbines and generators. The design
18 and acceptance of bids for the Milner Project's
19 turbines and generators has been accomplished and
20 Idaho Power is now able to make a cost estimate.
21 This estimate, which has been termed a "Commitment
22 Estimate", is the best estimate of the Project's
23 cost after the award of the contracts for the
24 turbines and generators plus an additional amount
25 of 5% to establish a cost ceiling for the Project.

- 1 Q. What is the effect of the commitment estimate under
2 the Company's proposal?
- 3 A. Idaho Power will commit to building the Project for
4 the Commitment Estimate, as it may be adjusted to
5 account for documented changes in escalation rates
6 or scope. If the final costs exceed the
7 "Commitment Estimate", Idaho Power will absorb the
8 extra costs, and will include in its Idaho rate
9 base only the actual construction costs up to the
10 Commitment Estimate.
- 11 Q. Please explain what you mean when you state the
12 Commitment Estimate may be adjusted for changes in
13 escalation rates or scope.
- 14 A. If major inflation occurs, resulting in higher cost
15 indices, the Commitment Estimate would be adjusted
16 to reflect these inflated cost indices. Examples
17 of possible scope changes which could affect the
18 project ceiling are Force Majeure or acts of God
19 impacting the construction, design optimization for
20 which increased energy more than offsets the
21 increase in initial investment, and foundation or
22 site conditions significantly more expensive than
23 indicated by exploratory drilling.
- 24 Q. What is the current Milner cost projection?
- 25 A. The Milner Project's costs are currently projected

1 to be \$60,333,900 at completion in 1992, with a dam
2 reconstruction cost of \$11,700,000. With an
3 additional 5%, Idaho Power's Commitment Estimate
4 for the powerhouse is \$63,350,600. The cost
5 estimates are shown in Exhibit 3. Updated Project
6 cost estimates will be submitted to the Commission
7 as part of the Company's Quarterly Report of
8 Construction Projects and will include any scope or
9 escalation changes. The final cost report on the
10 Project will still compare the actual costs to the
11 Commitment Estimate.

12 Q. What is the Company's proposal if the Commission
13 determines it will not issue an Order approving the
14 Milner Project for rate basing?

15 A. If the Commission determines that Idaho Power's
16 investment in the Milner Project should not be rate
17 based for revenue requirement purposes, the
18 Commission should issue an order determining that
19 the Milner Project has an exempt status.

20 Q. Please explain the Company's proposal.

21 A. The order determining the exempt status should be
22 effective for a period of 20 years from the date of
23 commercial operation to permit Idaho Power to enter
24 into a long term sale of the energy to another
25 utility.

1 Idaho Power would propose that two years prior
2 to the expiration of the order determining the
3 exempt status, Idaho Power would apply for a
4 redetermination of the status of the exempted
5 Milner Plant. The Commission, after notice, would
6 determine if the Order of Exemption should be
7 continued or if a Certificate of Public Convenience
8 and Necessity for the rate basing of the Milner
9 Project should be issued at that time. The order
10 determining the status of the generating plant
11 would be issued by the Commission within one year
12 of the date the application for redetermination is
13 filed.

14 If the Commission determines in the second
15 proceeding that a Certificate of Public Convenience
16 and Necessity for the rate basing of the Milner
17 Project should be issued, the Commission should
18 issue a Valuation Order for revenue requirement
19 purposes within three months of the order issuing a
20 Certificate of Public Convenience and Necessity.
21 The value of the plant for revenue requirement
22 purposes in the 20th year will be based upon the
23 then reproduction cost new less depreciation. Mr.
24 Baggs will explain the rate making effect of this
25 proposal.

1 Q. Does this complete your testimony.
2 A. Yes it does.
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