

Orr Affidavit

Exhibit 50

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DEPARTMENT OF
WATER RESOURCES

Idaho Power Company's Application for
License for Twin Falls Project (Feb. 1, 1922)

Third Orr Affidavit

EXHIBIT 4

18
Project No. 233

APPLICATION FOR LICENSE
(Act of June 10, 1920, 41 Stat., 1065)

WINE FALLS PROJECT
SNAKE RIVER, IDAHO
IDAHO POWER COMPANY

(1) The Idaho Power Company, a corporation organized and existing under and by virtue of the laws of the State of Idaho, and having its office and principal place of business at Boise in the State of Idaho, in pursuance of a preliminary permit asked for by this applicant on the seventeenth day of June 1920, does hereby make application to the Federal Power Commission for a license for a project described herein and shown on general and detailed maps signed by the applicant on the 1st day of February 1922, which maps are filed herewith and made a part hereof, said license to authorize the construction, operation and maintenance of certain project works, the principal ones of which are designated as follows on said maps:

(a) Dams and Reservoirs. Reinforced concrete dam approximately 897 feet long will be constructed at the site shown on Exhibit K, Drawing No. 3 to a final elevation of 3557 mean sea level. The initial construction will consist of raising the upstream cut off wall of the dam across the north channel to elevation 3507 mean sea level, this elevation being sufficient to divert the flow of water into the south channel. The ultimate construction will consist of building up from the preliminary dam a reinforced overflow section of dam to elevation 3557 mean sea level. This section of dam will have a spillway length of 757 feet, a maximum height of 47 feet and will be equipped with construction sluiceways in its base.

The reinforced concrete dam to be built across the south channel will be a non-overflow section and in its initial stage will be constructed to elevation 3522 mean sea level, equipped with two sluiceways in its base for the purpose of discharging sand and gravel which may collect in front of the penstock intake. The ultimate construction of the south channel dam will consist of extending the height of the initial dam to elevation 3545 mean sea level and equipping it with two radial drop gates for the purpose of wasting ice and floating debris which will collect in front of the intake. At its ultimate height this dam will have a top length of 160 feet and a maximum height of 50 feet.

The reservoir formed by the initial construction work on the dam will be very small as the normal water surface elevation will be only 3507 mean sea level. The reservoir formed by the construction of the dam to its ultimate height will extend up through the canyon a distance of approximately 2½ miles and its capacity will be in accordance with the following table:

<u>Contour</u>	<u>Acres</u>	<u>Total capacity in acre-feet</u>
5505	51.03	0
5510	53.28	203.25
5520	105.24	1007.10
5530	124.99	1950.25
5537	153.64	2956.56

The land affected by the construction of the dam and its resultant reservoir is outlined on Exhibits J and K drawing No. 1.

(b) Penstock. An intake having a capacity of 1140 sec ft will be constructed at the east end of the south channel dam and it will be equipped with screens and gates so as to control the flow of water into the penstock and remove ice, floating debris, gravel and sand before the water enters the penstock. There will be one penstock to conduct the water from the intake to the unit located in a power house directly at the foot of the falls. This penstock will be 11 feet inside diameter with a total length of 170 feet, the top third of which will consist of a concrete lined tunnel, the middle third a reinforced concrete lined tunnel and the lower third a steel plate lined tunnel, the plate steel section conducting the water from the tunnel to the turbine inlet. The lower end of this penstock which is in steel will be given such a shape that it can be used as a venturi meter for the measurement of water utilized through the unit. A sectional elevation of this penstock is shown on Exhibit L, Drawing No. 4.

(c) Power House. The power house for this project will be located directly at the foot of the present south channel falls and will be a building having a concrete substructure which will contain the generating and control equipment and a steel frame superstructure of such shape as to give easy access to the generating station from the top of the cliff.

This station will house one 17,000 hp vertical water turbine to operate at approximately 189.5 rpm under a normal head of 162 ft. The maximum head will be 168 ft., the minimum head during a short time in April and May may be as low as 144.5 ft. on account of the rise in tailwater during flood. This turbine will be direct connected to a vertical 12,000 kw. 6600 v., 3 phase, 60 cycle generator. The station substructure will contain all the auxiliary equipment necessary for the complete control and operation of this unit, such as switchboard, motor generator set, oil switches, instrument transformers, governor, lubricating oil and governor oil system, air washer and station transformers. Plans and sectional elevations of this power house are shown on drawings under Exhibit L, and these drawings are as follows:

- Exhibit L-41 - Plan of Power House, Intake and South Channel Dam (I.P.U.O.F-15124)
- " L-42 - Dam Profile and Sections (" F-15128)
- " L-43 - Power House Plans and Sections (" F-15125)
- " L-44 - Sectional Elevation through Power House, Penstock and Intake (" F-15126)
- " L-45 - Sectional Elevation through power house and Penstock (" F-15127)

The switchboard will be located at the top of the cliff on a plot of ground directly east of the south channel dam. It will contain the transformers, switching structure, high tension buses, switches, etc., for transforming the power and distributing it over the transmission lines extending from this station. The location and size of the switchyard and number of outgoing lines are shown under Exhibit "I" Drawing #3, General Plan of Development.

It is the applicant's intention in the future to make this station a switching and sectionalizing point in the system to meet the normal growth which may occur in the next ten or fifteen years. In the future 132 kv lines may be built connecting the now separated portions of the applicant's power system and several additional 44 kv lines may be required for local distribution.

(d) Transmission Lines. The transmission lines included in this project will consist only of the short lines needed to connect this station to the Applicant's general transmission system.

(2) The location of the project applied for is as follows:

- (a) In the State of Idaho.
- (b) In the Counties of Twin Falls and Jerome.
- (c) On the following named stream: Snake River; navigable and carrying commerce to the following extent: none.
- (d) In the region of the following named cities and towns: The territory served by the applicant lies generally along the Snake River Valley from Blackfoot, Idaho, on the east to Homestead, Oregon, on the west. The system is now in two parts which are to be connected by transmission lines in the future; the eastern part comprises the towns and cities of Pocatello, Blackfoot, American Falls, Aberdeen and Fort Hall; while the western part contains the towns and cities of Oakley, Milner, Twin Falls, Jerome, Wendell, Hagerman, Gooding, Mountain Home, Boise, Emmet, Kempt, Caldwell, Payette, Weiser and Huntington, with other small villages.

(3) The proposed scheme of the development of the project is as follows:

A concrete reinforced dam across the Snake River which shall form a reservoir with 2900 acre feet capacity. From an intake located at the east end of this dam the water will be conducted through an 11 ft. penstock, 170 ft. long, to a power house located at the foot of the cliffs forming the south pool of the Twin Falls. The water will be utilized under an average head of 162 ft. to develop a maximum of 12,00 kw. of power. Transform this power and transmit it into the applicant's distribution system as outlined under Exhibit "J" No. 2.

- (4) The proposed use of power to be developed is for light, general power and traction purposes; also for irrigation pumping, eleven large irrigation districts now being served under the applicant's system.

- (5) The location and capacity of all power projects operated by the applicant, the markets supplied thereby and the relation thereof to the project applied for are briefly described as follows:

Name of Plant	Geographic Location	Kva Rated Capacity
American Falls	Payette River Irrigation District, in Payette County, Idaho	
East Side Plant	Payette River, near American Falls	5,000
West Side Plant	Payette River, near American Falls	500
Island Plant	Payette River, near American Falls	1,040
Shoshone Falls	Shoshone River, near Shoshone Falls	11,000
Lower Salmon Falls	Salmon River, near Lower Salmon Falls	6,500
Thousand Springs	Thousand Springs, near Thousand Springs	8,500
Maeda	Maeda, near Maeda	5,500
Swan Falls	Swan Falls, near Swan Falls	9,900
Horseshoe Bend	Horseshoe Bend, near Horseshoe Bend	1,500
Oakley	Oakley, near Oakley	2,000
Barber	Barber, near Barber	500

Note: Leased

Idaho Towns and Vicinities Served.

American Falls	Boise	Kimberly	Pocatello
Abundant	Fort Hall	King Hill	Payette
Amsterdam	Filer	Kuna	Parma
Boise	Spokane	Marion	Patuxent
Blackfoot	Gooding	Mountain Home	Rockland
Barber	Eleman Ferry	Markey	Richfield
Brunson	Hagerman	Kiddletown	Roswell
Bliss	Hammatt	Meridian	Shoshone
Buhl	Hazelton	Miner	Star
Berger	Hollister	Hampton	Silver City
Caldwell	Hansen	New Plymouth	Twin Falls
Clover	Homedale	Notus	Wendell
Emett	Horseshoe Bend	Oakley	Weiser
Eagle	Jerome	Peavey	Wilder

Oregon Towns and Vicinities Served.

Copperfield	Ontario
Gypsum	Robinette
Huntington	Nyssa

Exhibit K - Detail map of entire project
Irrigation Pumping Plants Served

Gen Irrigation District, in Owyhee County, Idaho.
 Snake River Canal Company, in Owyhee County, Idaho.
 Ontario-Kysa Irrigation Company, in Malheur County, Oregon.
 Wilson Irrigation District, in Owyhee County, Idaho.
 India Cove Irrigation District, in Owyhee County, Idaho.
 Snake River District Improvement Company in Owyhee County, Idaho.
 North Side Pumping Company, Ltd., in Jerome County, Idaho.
 Payette-Oregon Slope Irrigation District, in Malheur County, Oregon.
 High Line Canal Company, in Twin Falls County, Idaho.
 Owyhee Ditch Company, in Malheur County, Oregon.
 Payette Heights Irrigation Company, in Payette County, Idaho.

The markets noted in the foregoing statement, and others in adjacent municipalities, which are shown on a map accompanying this application, are adjacent to this power project and are within practical transmission line distance from it. The continued agricultural, industrial and social growth of the territory served creates an increased demand for electric energy, the production of which depends upon water power development and the project applied for will play an important part in meeting this growth.

The applicant being a Public Service Corporation and being bound to provide the necessary electric energy for the continued growth and prosperity of the territory which it serves, makes this application with a view to supplying the immediate power demand.

(6)

The following exhibits are filed herewith and are hereby made a part of this application:

- Exhibit A - Reference to certificate of organization.
- Exhibit B - Statement of organization and list of officers and directors.
- Exhibit C - Field notes and Description of Project Boundaries and Transmission Lines.
- Exhibit D - Evidence that applicant has complied with requirements of the Laws of the State within which the project will be located.
- Exhibit E - Statement of the nature, extent and ownership of water rights.
- Exhibit F - Statement regarding government dams or other structures involved.
- Exhibit G - Statement concerning ability of applicant to finance project.
- Exhibit H - Statement of effect of project on stream flow.
- Exhibit I - Statement of power capacity of project (P-13255).
- Exhibit J - General map of entire project (P-13250) and general map of applicant's transmission system (P-13254).

Exhibit E - Detail maps of entire project (F-151250)

(F-15122)

(F-15123)

Exhibit I - General design drawings (F-15126)

(F-15124)

(F-15125)

(F-15126)

(F-15127)

Exhibit M - Statement of mechanical, electrical and transmission equipment.

Exhibit N - Estimate of cost of developing project

Exhibit O - Statement of time desired to complete initial construction and date of beginning and final completion of the project.

IN WITNESS WHEREOF, the applicant has caused its name and corporate seal to be hereunto signed and affixed by E. W. Hill, its Vice-President, thereunto duly authorized this 1st day of February 1928.

(SEAL) IDAHO POWER COMPANY
By: E. W. Hill
Vice-President

Attest:

E. P. Summerson
Assistant Secretary

EXHIBIT "B"

Statement of the effect of the proposed operation of the project works on the normal flow of the stream.

The project covered by this application is located approximately 16 miles below Milner, Idaho. Stream flow at the proposed site is, therefore, materially affected by the diversion of water at Milner into the North Side and South Side Twin Falls Irrigation districts. Also by the diversion into the North Side and South Side Canals at Minidoka.

The effect of the Milner diversion is to completely stop the natural flow of water at Milner during a part of the irrigation season so that the only water available at Twin Falls is the make-up which amounts to about 400 sec.ft. This condition exists for about two months in a year of normal stream flow and approximately four months in a year of minimum flow. During the non-irrigating season there would be more than enough water to run the proposed power unit to capacity. The above outlines in general the present conditions of stream flow.

In the near future the flow will be further affected by the construction of a storage reservoir at American Falls by the U. S. Reclamation Service, to have an initial capacity of 1,500,000 acre feet and an ultimate capacity of 3,000,000 acre feet. Therefore, upon completion of the reservoir to its initial stage the only natural flow available at the site from the beginning of the irrigation season in April until the reservoir begins to spill, which in an average year will be about December 1st, and in a minimum year not until March or April, will be make-up from Milner to Twin Falls.

On account of the above situation there is an agreement pending between the United States of America represented by the Secretary of the Interior and Director of the Reclamation Service and the Idaho Power Company, whereby the Power Company retains the right to certain waters in the proposed reservoir to permit proper operation of its power plants located on the Snake River at American Falls and all sites below. Copies of this agreement are on file in the office of the Secretary of the Interior, but in the following paragraphs is an abstract from those parts of the agreement, which define certain of the water rights to be retained by or granted to the applicant for rights and property conveyed to the U. S. The numbers preceding these paragraphs are the same numbers which precede corresponding paragraphs in the agreement.

- (10) The company reserves a primary right at American Falls to use the following amounts of water during the following periods of each year: 100 sec ft beginning April 1st, increasing uniformly to 2500 sec ft on May 1st, and continuing at that amount to Sept. 15th inclusive, then decreasing uniformly to 100 sec ft on October 31st, and none except that hereinafter provided from Nov. 1st to March 31st inclusive.