

Hydropower Project Summary

MID-SNAKE RIVER, IDAHO

SHOSHONE FALLS PROJECT (P-2778)
UPPER SALMON FALLS PROJECT (P-2777)
LOWER SALMON FALLS PROJECT (P-2061)
BLISS PROJECT (P-1975)
C.J. STRIKE PROJECT (P-2055)



Photo: Idaho Power

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Hydropower Reform Coalition

and

River Management Society

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Snake River is the largest tributary of the Columbia River and is more than 1,000 miles long. The Snake River has more than 23 dams on its mainstem making it one of the most dammed rivers in the Northwest. The river is used for power generation, water supply and irrigation.

The Shoshone Falls, Upper and Lower Salmon Falls, and the Bliss projects are together referred to as the mid-Snake projects. The Federal Energy Regulatory Commission (FERC) issued licenses for the mid-Snake projects and the C.J. Strike project at once based on the multi-party settlement which encompasses all five projects.

The Mid-Snake Projects are located on the Snake River in south-central Idaho near the cities of Hagerman and Bliss, Idaho. The projects span more than 25 miles, from the main diversion dam at the Upper Salmon Falls Project downstream to the Bliss Dam. Between these facilities are the Lower Salmon Falls Dam and a free-flowing stretch of the Snake River known as the Wiley Reach.

A. SUMMARY

1. License Issued: August 4, 2004
2. Expiration: July 31, 2034
3. Waterway: Snake River
4. Capacity: Total for five projects: 264.8 MW
 - a. Shoshone- 12.5 MW
 - b. Upper Salmon Falls- 34.5 MW
 - c. Lower Salmon Falls- 60 MW
 - d. Bliss- 75 MW
 - e. C.J. Strike- 82.8 MW
5. Licensee: Idaho Power Company (IPC)
6. Counties:
 - a. Shoshone Falls- Jerome and Twin Falls Counties
 - b. Upper Salmon Falls- Gooding and Twin Falls Counties
 - c. Lower Salmon Falls- Gooding and Twin Falls Counties,
 - d. Bliss- Gooding, Twin Falls, and Elmore Counties
 - e. C.J. Strike- Owyhee and Elmore Counties
7. Federal Lands: Land owned by Bureau of Land Management (BLM)

8. Project

Website: <http://www.idahopower.com/AboutUs/EnergySources/Hydroelectric/hydroelec tric.cfm>

9. Brief Project Descriptions:

a. Shoshone (P-2778)

- 800-foot-long (average height of 16 feet) concrete diversion dam comprising four sections separated by rock islands at the crest of Shoshone Falls
- a 1.8-mile-long, 88-acre reservoir with gross storage capacity of 1,500 acre-feet
- a 450-foot-long concrete-lined water conveyance tunnel and a 120-foot-long, 10-foot-diameter steel-plate penstock
- a powerhouse containing three turbine/generator units totaling 12.5 MW installed capacity

b. Upper Salmon Falls (P-2777)

- a variable height concrete diversion structure (main diversion dam) composed of a 240-foot-long gated spillway section, a 610-foot-long gravity dam section with flashboards, a 275-foot-long intake structure, and two gravity sections at the abutments totaling 420 feet in length
- a 5.8-mile-long, 50-acre reservoir with a gross storage capacity of 600 acre-feet
- two powerhouses (Plants A and B), each containing two turbine-generator units totaling 34.5 MW of installed capacity
- a 1.8-mile long bypassed reach comprising the 1.3-mile-long North Channel and a 0.5-mile-long unnamed section; and a 0.25-mile-long bypassed reach known as Dolman Rapids

c. Lower Salmon Falls (P-2061)

- 983-foot-long dam
- A powerhouse containing four turbine/generator units totaling 60 MW installed capacity
- 180-foot-long, 38-foot-high overflow dam
- a 6.6-mile-long, 750-acre reservoir with a gross storage capacity of 10,900 acre-feet
- a 6-foot-wide, 510-foot-long fish ladder

d. Bliss (P-1975)

- 364-foot-long, 84-foot-high dam
- a 5-mile-long, 255-acre reservoir with gross storage capacity of 11,100 acre-feet
- a powerhouse at the base of the dam containing three turbines totaling 75 MW installed capacity
- approximately 203 miles of transmission lines

e. C.J. Strike (P-2055)

- 3,220-foot-long, 115-foot-high dam
 - a reservoir extending 32 miles upstream on the Snake River and 12 miles upstream on the Bruneau River, having a surface area of 7,500 acres and a storage capacity of 240,000 acre-feet
 - a powerhouse at the base of the dam containing three turbine generator units totaling 82.8 MW installed capacity
 - two transmission lines, one 65 miles long and the other 25 miles long.
10. Settlement Agreement: Idaho Power Company and US Fish and Wildlife Service (USFWS) entered into a settlement agreement (SA) in February 2004 for the five projects. In the SA, IPC and USFWS agreed to conduct studies on the effect of operation of the five projects on five species of ESA listed species. It was determined that three species- Idaho springsnail (*Pyrgulopsis idahoensis*), Snake River physa (*Physa ,atricina*), and the Bliss Rapids snail (*Taylorconcha serpenticola*) would be negatively affected by the hydro projects. Through the settlement they also agreed that the after the studies, IPC would develop a snail protection plan for approval by FERC.

B. IMPORTANT PROVISIONS IN LICENSE

1. *Project Operation* [Reference: License Articles 401 for all licenses]
The license requires the IPC to operate the Bliss, Lower Salmon Falls, Shoshone Falls, and Upper Salmon Falls projects in a run-of-river mode. The operation may be altered during study period (to study the effects of project operations on federally listed snails) and in certain situations upon agreement between IPC, USFWS, and Idaho Department of Fish and Game (Idaho DFG). The licensee is required to notify the Commission of any changes to operation.

IPC is required to operate the C.J. Strike project so that the maximum daily project reservoir drawdown does not exceed 1.5 feet below the normal maximum full pool elevation of 2,455 feet above mean sea level. The maximum reservoir drawdown or other operations may be altered or temporarily modified during certain times upon agreement between IPC, USFWS, and Idaho DFG.

2. *Flows* [Reference: C.J. Strike License Articles 402, Shoshone Falls License Article 402]
The license for the C.J. Strike project requires IPC to release a minimum flow of 3,900 cubic feet per second (cfs) or inflow to the project reservoir, whichever is less, into the Snake River. Any temporary modification to the minimum flow needs to be agreed upon by IPC, USFWS, and Idaho DFG.

The license for Shoshone Falls project requires IPC to release a minimum flow of 300 cubic feet per second, or inflow to the project reservoir if less, over Shoshone

Falls during daylight hours from April 1 through Labor Day weekend to improve the aesthetic qualities of Shoshone Falls. This flow may be temporarily modified upon agreement by IPC, National Park Service, Idaho Department of Parks and Recreation, and Idaho Department of Environmental Quality (DEQ).

3. *Ramping Rates* [Reference: C.J. Strike License Article 403]
The license for the C.J. Strike Project requires that IPC limit changes in river stage (ramping rates) to 2.5 feet per hour and 4 feet per day, as measured downstream of the powerhouse, for the protection of fish, invertebrates, and federally listed snails in the Snake River. Any temporary modification to the ramping rate limits needs to be agreed upon by IPC, USFWS, and Idaho DFG.
4. *Dissolved Oxygen and Water Temperature Monitoring* [Reference: Bliss/Lower Salmon Falls License Articles 405, Upper Salmon Falls License Article 404, Shoshone Falls License Article 404]
The Water Quality Certification issued by Idaho DEQ requires IPC to install and operate permanent water quality monitoring equipment at Upper and Lower Salmon Falls, Bliss and Shoshone Falls facilities to monitor dissolved oxygen and temperature at twenty (20) minute intervals from April 1 to October 30 of each year. The monitoring information shall be reported to the DEQ on a monthly basis.
5. *Snail Study and Protection* [Reference: Bliss License Articles 402 & 403, Lower Salmon Falls License Articles 402 & 403, C.J. Strike License Article 410 & 411]
Per the settlement agreement, IPC will conduct studies of project operations on federally listed snails starting in 2004 and ending in 2009. IPC will file reports on the studies by 2009. IPC is required to prepare a Snail Protection Plan by 2010 in consultation with USFWS and Idaho DFG, and file with Commission for approval.
6. *Aquatic Vegetation Removal* [Reference: Bliss/Lower Salmon Falls License Article 406, Upper Salmon Falls License Article 405]
As required by the Water Quality Certification, IPS is required to install equipment at the Upper Salmon Falls, Lower Salmon Falls, Shoshone and Bliss Projects to remove aquatic vegetation from the intake structures. IPC shall submit a plan, in consultation with USFWS, NMFS, Idaho DFG, and Idaho DEQ that includes design drawings of the operating equipment, an operations plan, and an implementation schedule.
7. *White Sturgeon Conservation Plan* [Reference: Bliss/ Lower Salmon Falls/Upper Salmon Falls License Article 407, C.J. Strike License Article 408, Shoshone Falls License Article 405]
By August 2005, IPC shall file a White Sturgeon Conservation Plan to be prepared in consultation with multiple stakeholders, including state and federal resource

agencies, and the Nez Perce tribe. At a minimum, the plan shall include (1) specific descriptions of measures proposed for the protection, mitigation, and enhancement of white sturgeon and any associated construction and operation and maintenance costs; (2) an evaluation of the feasibility of providing upstream and downstream fish passage for white sturgeon at the project dam, including measures and designs that would concurrently provide upstream and downstream passage for adult rainbow trout in the project area; and (3) an implementation schedule.

8. *Rainbow Trout Stocking* [Reference: Bliss/ Lower Salmon Falls/Upper Salmon Falls License Article 408]

By August 2005, IPC shall file for Commission approval, a plan to annually stock 4,000 pounds of rainbow trout in the Snake River downstream of the Bliss project, 14,000 pounds in the Lower Salmon Falls project reservoir and 3,000 pounds in the Upper Salmon Falls and Snake River upstream of Shoshone Falls for purposes of improving sport fishing in the project area.

9. *Fish Stocking Plan at C.J. Strike Project* [Reference: C.J. Strike License Article 409]

The license for the C.J. Strike project requires the IPC to file a plan that describes:

(a) a provision to annually stock 50,000 catchable-sized (3 fish per pound) rainbow trout and 7,500 8-inch channel catfish in the project reservoir after high spring flows have receded but before the first of July;

(b) a provision to annually stock 25,000 catchable-sized (3 fish per pound) rainbow trout in the project reservoir after the fall turnover of the reservoir;

(c) a provision to annually monitor trout catch rates in the project reservoir;

(d) a provision to file with the Commission by December 31, an annual report evaluating the success of the stocking program, including any proposals to increase, decrease, or terminate stocking. The report shall include copies of any comments and recommendations provided by Idaho Department of Fish and Game (Idaho DFG) and U.S. Fish and Wildlife Service (FWS). The licensee shall allow a minimum of 30 days for the Idaho DFG and FWS to comment and to make recommendations on the completed report before filing it with the Commission. At the same time the completed report is filed with the Commission, the licensee shall provide copies to Idaho DFG and the FWS; and

(e) an implementation schedule.

10. *Middle Snake River Land Management Plan* [Reference: Bliss/ Lower Salmon Falls License Article 413, Upper Salmon Falls License Article 412, Shoshone Falls License Article 409]

By February 2005, the licensee shall file for Commission approval a final Middle Snake River Land Management Plan. The Plan shall be prepared in consultation with National Park Service, USFWS, BLM, U.S. Bureau of Reclamation, Idaho

DFG, Idaho Department of Parks and Recreation, and Idaho DEQ. The plan shall identify and explain the policies, standards, guidelines, and land use designations that shall be followed to protect and manage environmental resources and public use.

11. *Recreation Management Plan* [Reference: Bliss/ Lower Salmon Falls License Article 414, Upper Salmon Falls License Article 416, C.J. Strike License Article 417, Shoshone Falls License Article 410]
By August 2005, the licensee shall file a Recreation Management Plan for Commission approval. The plan will provide guidance for implementation of recreation enhancement measures and for management of recreation resources.
12. *Riparian Habitat Acquisition Plan* [Reference: C.J. Strike License Article 412]
By August 2005, IPC shall prepare a plan to acquire and manage at least 170 acres of riparian, wetland, and/or spring habitat to mitigate the effects of flow fluctuations on riparian habitat along the Snake River downstream of the C.J. Strike Project. This plan shall be filed for Commission approval.
13. *C.J. Strike Wildlife Management Area Operations and Maintenance Agreement* [Reference: C.J. Strike License Article 413]
By February 2005, IPC shall file for Commission approval, a long-term C.J. Strike Wildlife Management Area (WMA) operations and maintenance agreement with Idaho DFG for the management of licensee-owned lands within the WMA. The agreement would ensure proper funding and implementation of measures for the continued benefit of fish and wildlife resources associated with the project.
14. *Wetland Construction Plan* [Reference: Shoshone Falls License Article 406]
The license for Shoshone Falls requires IPC to construct, operate and maintain a 30-acre wetland system above treat agricultural waste water to improve water quality in the Snake River and provide wetland habitats. IPC shall file the plan by August 2005 after consultation with USFWS, Bureau of Land Management, Idaho Department of Fish and Game, and the Twin Falls Canal Company.

C. MAP OF PROJECTS

There are two convenient ways to become familiar with this project on the Hydropower Reform Coalition website, www.hydroreform.org.

1. Go to the project pages for each project:
 - a. [Shoshone](#)
 - b. [Upper Salmon Falls](#)
 - c. [Lower Salmon Falls](#)
 - d. [Bliss](#)
 - e. [C.J. Strike](#)

2. To understand the geographical context of the project, visit the *On Your River* section of the site. [This link](#) will take you to section for rivers in the Northwest. Zoom in to the south western Idaho towards the city of Twin Falls. Then look for the series of blue markers in the Hagerman Fossil Beds National Monument northwest of Twin Falls, Idaho.