

STATE OF OREGON
COUNTY OF KLAMATH
PRELIMINARY PERMIT
FOR A HYDROELECTRIC PROJECT

SWAN LAKE NORTH HYDRO, LLC
1000 SW BROADWAY AVENUE, SUITE 1880
PORTLAND, OR 97205

is issued this preliminary permit to develop study plans and a final license application for a pumped storage hydroelectric project in the Swan Lake basin for a project with a total installed capacity of up to 400 Megawatts.

This preliminary permit is issued under application HE 609. The date of priority is July 17, 2014. The proposed upper and lower reservoirs would have storage capacities of about 5300 acres-feet each. The operating head between the two reservoirs is expected to be approximately 1500 feet.

The points of appropriation being considered for initial fill of the reservoirs are located at existing wells:

Well #1: 660 Feet North and 1690 Feet West from the SE Corner of Section 9, being within the SW $\frac{1}{4}$ SE $\frac{1}{4}$ Section 9, Township 37 South, Range 10 East, W.M.,

Well #2: 48 Feet North and 20 Feet East from the SW Corner of Section 8, being within the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 8, Township 37 South, Range 10 East, W.M.,

Well #4: 2020 feet North and 500 Feet East from the SW Corner of Section 8, being within the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 8, Township 37 South, Range 10 East, W.M.,

Well #5: 30 Feet North and 1300 Feet East from the SW Corner of Section 14, being within the SW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 14, Township 37 South, Range 10 East, W.M.

Appeal Rights

This is a final order in other than contested case. This order is subject to judicial review under ORS 183.484. Any petition for judicial review must be filed within the 60 day time period specified by ORS 183.484(2). Pursuant to ORS 536.075 and OAR 137-004-0080 you may either petition for judicial review or petition the Director for reconsideration of this order. A petition for reconsideration may be granted or denied by the Director, and if no action is taken within 60 days following the date the petition was filed, the petition shall be deemed denied.

This statement of judicial review rights does not create a right to judicial review of this order, if judicial review is otherwise precluded by law.

Initial filling of the reservoirs is proposed under a forbearance agreement of the irrigation uses under Water Rights Certificate No. 29530 (3446.4 acre-feet per year) and Certificate No. 87006 (3264.8 acre-feet per year). Water for reservoir maintenance is proposed from an existing well under a permanent change of irrigation use of approximately 800 acre feet per year to make-up water for hydroelectric use under a potential new hydroelectric license.

The reservoirs and powerhouse are proposed to be located in the north half of Township 37 South, Range 10 East, W.M.

The upper reservoir would be located on Swan Lake Rim. The lower reservoir site would be located north of the Swan Lake wetlands preserve.

The dams must be designed and constructed in compliance with FERC dam safety standards. Additional study will be required to identify a source for the core materials and shell materials.

Preliminary designs are for water to be exchanged between the reservoirs via a 13.8 foot diameter pipeline. At the top of the shaft, in the upper reservoir, there would be an intake/discharge structure with a trash rack to exclude debris. The pipeline is proposed to be installed above ground.

The tailrace would discharge into the lower reservoir during generation mode and the reservoir would be the source of intake water during pumping mode. At the end of the draft tube there would be an intake/discharge structure with a trash rack to exclude debris.

The proposed powerhouse would be located above ground. It would be about 150 feet wide and 555 feet long and contain 3 reversible pump-turbine units with a total installed capacity of about 400 megawatts (MW). Other factors contributing to the selection of the powerhouse location include minimizing disturbance to the residential and farming uses in the area and the proximity to quality bedrock.

Approximately 33 miles of 230 kilovolt transmission lines would be constructed to connect the project to the existing grid. The transmission corridor would have a right of way 150 feet on either side of the centerline for a total width of 300 feet along its entire length. A surface switchyard/substation would be constructed near the power plant site.

RESOURCE STANDARDS

All proposed hydroelectric projects in Oregon must meet the resource protection standards contained in Oregon Administrative Rule (OAR) 690-051-0170 to –0290. The applicant must show in a final hydroelectric application that the proposed project will be consistent with these standards.

- **Protection of Designated Resource Areas and Special Management Areas (OAR 690-051-0170)**

The major project structures are proposed to be located on property owned by JWTR LLC., the U.S. Bureau of Land Management or Jespersen-Edgewood Inc. Additional public and private landowners would be affected by the transmission lines.

The final application must provide a map clearly designating lands owned by the applicants, those owned by the federal government and those in other public or private ownership. Owners of land on which the lines would be located should be informed of the particular easements that would be requested for the transmission lines.

A final application must show that the project will not have effects on any designated resource areas listed in OAR 690-051-0030(1) or 690-051-0170(2).

The final application must discuss the alternatives that were considered to minimize impacts to the Swan Lake Wetlands Reserve Program easement area. The applicant must consult further with the National Resources Conservation Service about meeting the federal requirements to protect the wetlands easement, especially regarding the timing of water uses and the location of power lines.

- **Mitigation, No Net Loss (OAR 690-051-0180)**

The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards on mitigation and no net loss.

- **Water Resources (OAR 690-051-190)**

A new hydroelectric license is required under ORS 543 to authorize the construction of the reservoirs, the filing of the reservoirs and use of the water from the reservoirs for hydroelectric purposes for this proposed project.

In its preliminary permit application, Swan Lake North Hydro LLC proposes to initially fill the lower reservoir and to offset annual losses due to evaporation with groundwater from the wells identified above. Irrigation uses from these wells are expected to be halted while the reservoir is being filled, therefore water can be obtained without interfering with the beneficial uses of other

water right holders. Filling of the reservoir may be conducted over a one to two year period to reduce impacts to the aquifer or the nearby wetlands.

OWRD has analyzed data from the groundwater pumping and interference test that was conducted by GeoDesign Inc. in February 2011.¹ OWRD concluded that continuous pumping of the four existing wells causes only small impacts to other wells within the Swan Lake Valley down to the Poe Valley sub-area. Impacts are projected to be less than 0.15 feet after one full year of pumping and less than 0.24 feet after three full years of pumping.² No new impacts are expected to be seen for this use of water compared to the existing use of the wells. The initial fill of water for the reservoirs would be offset by foregoing the use of an equivalent amount of water for irrigation for a specified time. The water for maintenance of reservoir levels in later years would be offset by permanently giving up an equivalent amount of water from irrigation uses.

The water basin program that applies to the Klamath Basin is the Klamath River Basin Compact Oregon Revised Statute (ORS) 542.610 through 542.630 which is an agreement ratified by the States of California and Oregon and is consented to by Congress. ORS 542.620 Article IV Hydroelectric Power states:

“It shall be the objective of each state, in the formulation and the execution and the granting of authority for the formulation and the execution of plans for the distribution and use of water of the Klamath River Basin, to provide for the most efficient use of available power head and its economic integration with the distribution of water for other beneficial uses in order to secure the most economical distribution and use of water and lowest power rates which may be reasonable for irrigation and drainage pumping, including pumping from wells.”

Thus the Compact encourages the development of hydropower in locations where the power head and water are available without interfering with other beneficial uses. The reservoirs are proposed to be located such that there would be a difference in elevation greater than 1300 feet over a short distance. The North Swan Lake area has the potential for an excellent operating head that may be used to develop a hydroelectric project economically.

Construction and operation of the proposed project shall comply with water quality standards established in OAR Chapter 340, Division 41. The applicant shall comply with all water quality standards adopted by the Environmental Quality Commission pursuant to state and federal law, ORS 468B.048 and Section 303 of the Clean Water Act.

The final application must contain an Erosion Control Plan for all stages of construction and a Hazardous Substances Spill Prevention and Clean-Up Plan to prevent, reduce and contain the release of contaminants during all stages of construction and operation.

¹ Groundwater Interference Testing Report, Swan Lake North Pumped Storage Hydroelectric Project, GeoDesign Inc., May 18, 2011

² OWRD Groundwater Technical Review of the Swan Lake North Pumped-Storage Hydroelectric Project Aquifer and Interference Test Conducted by GeoDesign, Jerry Grondin, OWRD, November 18, 2011

The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards for water resources.

▪ **Fish Resources (OAR 690-051-0200)**

The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards on fish resources.

This project would consist of two man-made reservoirs working as a closed-loop system. The project would be entirely off stream; therefore no fish would be directly impacted by the project. Every reasonable precaution should be taken to ensure that fish and aquatic species are not introduced in either reservoir.

▪ **Wildlife (OAR 690-051-0210)**

The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards on wildlife resources.

The location, design, construction or operation of the proposed project shall not jeopardize the continued existence of animal species which have been designated, or officially proposed as threatened or endangered.

The location design, construction, or operation of the proposed project must minimize adverse impacts on wildlife habitat, nesting and wintering grounds, and wildlife migratory routes. Unavoidable adverse impacts on wildlife or wildlife habitat must be mitigated in the project vicinity.

The final application must include a plan to construct the new transmission line in accordance with avian protection guidelines and design intake structures to avoid entrainment of waterfowl and other birds.

The proposed project must be consistent with ODFW management programs and construction activities must be scheduled to avoid or minimize adverse effects on wildlife species. The final application must include a Revegetation Management and Weed Control Plan. The final application must include a commitment: if at any time, unanticipated circumstances or emergency situations arise in which fish or wildlife are being killed, harmed or endangered by any of the project facilities, the Project owner/operator shall immediately take appropriate action to prevent further loss and notify the nearest ODFW office within 24 hours.

- **Plant Life (OAR 690-051-0220)**

The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards on plant resources. The final application must include a Revegetation Management and Weed Control Plan.

The location, design, construction or operation of the proposed project shall not jeopardize the continued existence of plant species which have been designated, or officially proposed as threatened or endangered.

- **Recreation (OAR 690-051-0230)**

The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards on recreation resources.

Project facilities must be designed, located and operated to substantially avoid visible or audible intrusion on the natural setting. The proposed project may not reduce the abundance or variety of recreational facilities or opportunities available in the vicinity.

- **Historic, Cultural, and Archaeological Resources (OAR 690-051-240)**

The applicant must complete a cultural resources survey and must show in a final hydroelectric application that the proposed use will be consistent with the standards on historic, cultural, and archaeological resources.

The project may not result in significant adverse impacts on any historic district, site, building, structure, or object included in or eligible for inclusion in the National Register of Historic Places.

The project must comply with state laws to protect Indian graves (ORS 97.740-97.760), historical materials (ORS 273.705-273.711, and archaeological objects and sites (ORS 358.905-358.955).

- **Land Resources (OAR 690-051-0250)**

The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards on land resources.

Adverse impacts on prime forest lands, high value or important farmlands or agricultural lands, or wetlands shall be avoided, minimized or offset by acceptable mitigation.

The location, design, construction or operation of the project may not disturb fragile or unstable soils, or cause soil erosion.

Project facilities shall be designed with appropriate safety standards with regards to geological hazards and naturally occurring conditions or hazards, such as flooding or ice formation.

Land Use (OAR 690-051-260)

The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards of Acknowledged Comprehensive Plans from the local county government.

▪ **Need for Power (OAR 690-051-280)**

The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards of Need for Power.

▪ **Consolidated Review (OAR 690-051-290)**

There are 9 other hydroelectric projects in sub-basins of the Klamath basin. Two projects are located in the Upper basin above Upper Klamath Lake, 2 projects are located at the head of Link River at the mouth of Upper Klamath Lake, the J.C. Boyle project is located on the Klamath River below Keno, Oregon, and 3 small projects are in Jackson County on tributaries to the lower Klamath River. The Klamath Irrigation District has a project at the C-Drop on its existing irrigation canal in the Lost River subbasin. There are no other proposed projects in the Klamath basin at this time.

There are no other existing, approved or proposed projects in the Swan Lake sub-basin at this time. The applicant must show in a final hydroelectric application that the proposed use will be consistent with the standards of avoiding individual and cumulative impacts to natural resources when considered with other existing, approved, or proposed hydroelectric projects in the same river basin.

PRELIMINARY PERMIT CONDITIONS


This Preliminary Permit does NOT convey the right to construct any project facilities for hydroelectric purposes. A preliminary permit allows the applicant to gather streamflow and groundwater data; pursue the necessary use permits; assess environmental impacts of the proposed action, develop mitigation measures, complete detail design plans and associated cost estimates, and file draft and/or final water right applications. Issuance of a preliminary permit does not assure approval of any subsequent license application for hydroelectric use.

As discussed above, a final application must show that the resource protection standards contained in ORS 543.017(1), 543.225, and OAR 690-051-0170 to -0290 will be met by the project.

If the Applicant fails to file an application for hydroelectric water right within two years, the permit may be subject to termination by the OWRD.

Issuance of the permit does not absolve the Applicant from compliance with the requirements and enforcement of the requirements under other applicable local, state, and federal laws.

Dated: November 24, 2015



Dwight French,
Administrator, Water Right Services, for
Thomas M. Byler, Director
Oregon Water Resources Department