
*Bowman Dam Hydroelectric Project
FERC - 14791
Joint Agency Meeting Brief
April 2nd, 2019*

Jim Holeman of JRHoleman Consulting started the meeting stating that the meeting would be recorded and will be submitted to the Federal Energy Regulatory Commission (FERC) as part of the project record, and asked everyone to be sure to sign the attendance sheet.

Mr. Holeman explained that the purpose of the meeting is to initiate consultation with State and Federal agencies, Native American Tribes and the public to identify issues or concerns regarding the project.

Mr. Holeman introduced the project team Bruce Scanlon – Ochoco Irrigation District (OID) Manager, Brian Barney – Crook County Commissioner, Eric Klann – City of Prineville, Steve Forrester – City of Prineville, Kevin Crew – Black Rock Consulting, Inc., Marty Vaughn – Biota Pacific Consulting and himself, as well as the other affiliated agencies.

Mr. Holeman provided an overview of the meeting agenda.

Bruce Scanlon introduced himself and welcomed everyone to the meeting. Mr. Scanlon went through the project history beginning with that a hydropower project was previously studied by PGE for this site. OID filed for a preliminary permit on July 1, 2016 for a 4-megawatt hydroelectric project at the outlet of Bowman Dam. By December 22, 2016 FERC issued the preliminary permit with an expiration of December 1, 2019. OID will be requesting a two year extension of the permit to perform environmental studies and prepare an application for license for a major waterpower project of 5 MW or less. In October of 2018 OID distributed the pre-application document (PAD), a notice of intent to file and application for license, a request to use the traditional licensing process, a request for authorization to consult with U.S. Fish and Wildlife Service along with the National Marine Fisheries Service regarding Endangered Species Act Section 7, and a consult with the State Historic Preservation Officer (SHPO) in regards to the National Historic Preservation Act.

Mr. Scanlon continued with an overview of the FERC Orders and Approvals in February, 2019 that included an Order issued approving the use of the Traditional Licensing Process, authorization for OID as the Non-Federal Representative to conducted information consultations with Fish and Wildlife Serve, and National Marine Fisheries. FERC also authorized OID as the Non-Federal Representative to consult with SHPO regarding the National Historic Preservation Act.

Kevin Crew provided a project description and pictures that included a map of the area, and the proposed location of the power house near the bottom of the dam spillway. Existing features of Bowman Dam identified were a zoned earth embankment with a crest elevation of 3,264 feet, a 35 foot wide crest that is 800 feet long; maximum dam height of 240 feet and an unregulated spillway that has a capacity of up to 8,120 cubic feet per second. The intake structure is protected by a trashrack at the upstream toe of the dam on the north side of the original river channel, the intake structure is a 20 foot high hexagonal design and is at an elevation of 3,112 feet and has a level gauge pipe embedded in it. The intake sits on a 9 foot diameter pad with a 15 foot high vertical shaft with a 90 degree elbow that transitions to the 11 foot diameter tunnel located at an elevation of 3,080 feet. The outlet is an 11 foot diameter tunnel located upstream of a gate chamber, has an 11 foot modified horseshoe tunnel downstream of the gate chamber, a stilling basin that is shared with the spillway and a capacity of 3,300 cubic feet per second. The stilling basin shared with the outlet works and the spillway is designed to provide a hydraulic jump and is divided into three longitudinal sections made of concrete divider walls with a center section that provides the bay for the flow from the outlet releases.

Mr. Crew stated that the current dam operations are governed by Bureau of Reclamation. The Crooked River Collaborative Water Security and Jobs Act of 2014 established the upstream boundary of the Wild and Scenic River to ¼ mile below the center crest of the dam, specified that hydropower development shall not impede the free flowing nature of the river below the dam and requires any hydropower development to analyze project impacts in the ¼ mile reach below the dam. The Bowman Dam releases water to meet downstream water rights and irrigation demands, a minimum instream flow is provided to maintain aquatic resources and releases were established by the Act to meet water delivery obligations.

Mr. Crew provided the proposed project details that includes restoring the access road located at the southern end of the dam, install a valve chamber and 10 foot diameter penstock, the powerhouse will contain a 2 MW unit and 1 MW unit located on the south side of the spillway, there will be energy dissipation valve(s) with a connection to the existing CEC circuit and a distribution tap. The valve(s) will aerate and discharge the water. The 10 to 10 ½ foot diameter, 340 foot long pipe will bring the water down to two Francis turbines. Having two turbines will help with efficiency in varying flows and step up volts. The project will be a run of release operation which means it will not control reservoir levels or dam release rates.

Mr. Crew explained the need for power being based on Crook County growth increasing the demand for clean renewable energy and said that there is already energy being dissipated from the chamber and is a great sustainable resource. The project at 3 MW would generate approximately 15 GWH annually of clean renewable energy. Some other points regarding the dam is that the drainage area for this basin is 2,635 square miles and is a very large area, the property is Federal so the property there is Bureau of Land Management (BLM), U.S. Bureau of Reclamation has a reservation for the dam site, the dam was built in 1961, the data on the flow releases has been collected since 1975, and in a four year period we have seen flows from a 20 cfs to

3000 cfs, very rarely seen over 3300 cfs, the Security and Jobs Act bumped up from 20 cfs to 80 cfs when water is available, and so 90% of the time flows are between 80 cfs and 775 cfs.

Mr. Crew explained that this dam heavily disturbed materials there, and the power house is going to be installed next to the energy dissipation area which will have some fairly tall walls next to it. They expect this material to be fairly well disturbed and then re-compacted material for the implementation of the wall and during the course will be adding geotechnical studies. The power house foundation will be designed to withstand the load.

Marty Vaughn, biologist and studying environment resources on the project explained that this is going to be a low impact design and will be minor construction which will utilize existing areas that had already been disturbed in the past. There cannot be any changes to the existing reservoir and dam and the project will not interfere with existing use of the water or impede any future adjustments. They are hopeful to finish the Habitat Conservation Plan (HCP) with a few minor adjustments by the end of the year. He has been doing hydro licensing for about 40 years now and of all the projects he has seen, this is one of the least impactful. An old road will be re-established for access and any power lines will be using the existing corridor. There will not be any changes to the water quality or temperatures. There is an opportunity to reduce or eliminate total dissolved gasses (TDS's) by plunging water which can be toxic to fishes. The project will not displace any fish habitat. Bowman Dam has always blocked fish passage. There are two ways to address this, either provide fish passage however economically would not allow the project to move forward. The other way would be to ask for a waiver from fish passage. The project would be able to provide other benefits to the habitat that does not currently exist. New plantings would be from the native plant list and the county maintains a noxious weed. PGE already surveyed the project area in 2011 and do not anticipate any species being affected by the project. A wetlands delineation has already been done and we will re-verify the delineation. There is not historical significance to the dam other than the age, and will be consulting with SHPO through process. A visual impact will be present during construction, and will not be any changes afterwards. There is no impact to any socioeconomics. There is a recreational resource which will be addressed during the licensing application.

Mr. Holeman went over the planned project schedule, explaining that the 60 day comment period begins today and comments will be due by June 3, 2019. Any agency or public concerns or issues will be identified. There will be a series of meetings held to try to resolve any of those concerns or issues and any studies that will be needed will be covered during the licensing draft application process and comment period to submit final application.

Mr. Holeman talked about requests for studies and plans and that they should address the criteria outlined in CFR 18 § 5.9 (b) and went through the criteria. There is also a template available to request studies.

Mr. Holeman explained that there will be a lot of communications. There are many ways to stay informed about the project, by contacting Bruce Scanlon at OID, the

project website is at www.cityofprineville.com, the FERC E-Library at ferc.gov Docket P-14791 and you can even subscribe on that website for any updates to the project.

The meeting was opened up for questions and answers.

Mary Grainey of Oregon Water Resources Department in Salem asked how much water handling will be needed during construction, if there are any alternative rehabilitation or mitigation measures and if we are thinking about any riparian improvements.

Mr. Crew explained that installation of the tunnel will require by-passing the outlet works and some time will be spent determining the most appropriate time of the year to by-pass water and it will be figured out early in the design process.

Mr. Vaughn responded regarding mitigation and explained that it has not been determined yet and referred to the statute. It will be evaluated and the approach will be to identify the opportunities that exist and get together with state folks and others to narrow those down to the ones that are most logical. There are a lot of other organizations already making improvements in the basin and bottom line is to do as much good as possible.

Bill Nashem – Oregon Water Resources (didn't sign in) asked about the valves and gates of the dam and how water flow is controlled and what kind of automation we can expect with the valves, what kind of impact it will have on the flows and how will it be regulated.

Mr. Crew responded saying that the valves in the chamber will be automated so that it can effectively pass through the valve and will be determined during the design process. The chamber is an expensive part of the project and it will be evaluated carefully. Range in flows are a key component to the entire project.

Mr. Scanlon talked about the efficiencies of the gates are now and how he has to drive a ½ hour to manually operate the gates and how he hopes to be able to automate them.

Tom Beaucage of Bureau of Land Management (BLM) asked about the road and power lines in reserved area for the dam.

Mr. Crew explained that he would have to see the reserved block boundaries and that they hope to reuse the circuit already there.

Mr. Vaughn responded that the project boundary is very likely within, and the utility upgrade will definitely need to be tracked.

Smita Mehta, Oregon Department of Environment Quality asked about the flows and the relative benefit to reducing gasses.

Mr. Crew estimated that utilizing flows to 400 cfs or lower with 100 cfs running through the turbin and the other turbin will kick in for the other 300 cfs. The combination of

running through turbines will reduce the water plunging thereby improving the total dissolved gases (TDG's). It will be post project before it is known exactly how much improvement has been made in the reduction of TDG's.

Florence Webster of U.S. Bureau of Reclamation (BOR) Regional Office, asked how we anticipate operating during emergency and normal operations, and what communications with BOR will look like.

Mr. Holeman explained that BOR is already involved including all agencies and any interested parties can be involved and spoke regarding how the project has been communicated so far. Some agencies will require special permits to conduct studies.

Mr. Scanlon responded that they have standard operating procedures for operation.

Mr. Crew added that they have a long standing history of working with BOR and hope to bounce the design off of BOR staff.

Ken Homolka of Oregon Department of Fish and Wildlife wanted to be sure that the water is non-pressurized once it passes through the gates, and Mr. Crew shook his head yes. Mr. Homolka asked about what the baseline is and if there is an attraction of fish.

Mr. Crew responded to question one on how we are specifically regulating flows through the gate. Right now the two gates in the middle of the structure are cracked open to release into the tunnel. Behind the gates there are two emergency gates to the two primary gates. The plan is to open it up and make a free flow path from what used to be the pressurized tunnel. All inside the tunnel will regulate flows and turbines will operate up to their capacity. Then the additional flows will go and the valves will dissipate energy and the higher will go into the energy displacer. Mr. Crew explained the electrical trip on a Francis turbine and wicket gates.

Mr. Vaughn responded to the fish attraction question and explained that will need to be addressed during design. Downstream migrants need to be worked out because there are some non-native species that may not be good downstream and so those will need to be addressed for desired outcome.

Peter of Fish and Wildlife Services (didn't sign in) said that he feels we are right on target with operational continuity and that he has always been a fan of hydro and it is nice to see it come to fruition after 10 years of working on this.

Discussions continued regarding coordination with agencies and having three departments of Department of the Interior (DOI) present, which will be required to coordinate among themselves before a joint statement can be issued to FERC. There will be all kinds of cross over in authority and this process will help initiate that coordination.

Scott Carlon of NOAA Fisheries explained that they are ramping up rates to make sure fish do not get trapped in between flows and they will be looking for that.

Mr. Vaughn responded that the project cannot alter the ramping rates coming down and that the project may even have opportunities to improve on the ramping rates that could benefit everyone.

Mr. Crew added where the water transitions and when everything is cycled that it is a little more complicated in detail than what he discussed earlier and that it should operate better than a manual gate.

Mr. Scanlon talked about the two large existing gates and how they work now and that he is looking forward to gates with more precision.

No one else came forward.

Mr. Holeman said the meeting can be concluded and please return here to assemble for the site visit which will be departing at 1:00 P.M. sharp, and then thanked everyone for participating.