



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Mital, Schlossberg, Helgeson, Brown and Carlson
FROM: Mike McCann, Generation Manager, Mark Zinniker, Generation Engineering Supervisor, Patty Boyle, CS License Deployment Supervisor
DATE: November 2, 2020
SUBJECT: Update on License Deployment and Powerhouse Refurbishment Projects
OBJECTIVE: Correspondence Only.

Issue

These materials have been prepared to share an update with the Board regarding the status and progress on major efforts at the Carmen-Smith Hydroelectric Project. These materials are generally organized based on efforts to refurbish the power generation systems and efforts to deploy the recently issued Carmen-Smith operating license.

Background

The refurbishment of power generation systems at Carmen-Smith continues in 2020, albeit a reduced scope of work relative to original plans for the year. Design issues and manufacturing impacts on facilities in China early in 2020 affected our contractor General Electric's (GE's) ability to deliver critical equipment for the scheduled March start date of the Unit 2 turbine-generator overhaul. The news of manufacturing delays in China was compounded by adverse findings regarding manufacturing quality of the new generator coils that GE was sourcing from a Canadian supplier. Though the coils were passing performance testing requirements, post-testing dissection of the coils revealed manufacturing defects which might reduce the longevity of the coils. Based on these manufacturing complications, EWEB directed GE to postpone the Unit 2 overhaul until their preparations for the work were completed in accordance with contract requirements. GE was unable to resolve the manufacturing problems in a timely manner, resulting in a minimum full one-year delay of the Unit 2 overhaul.

In lieu of the planned Unit 2 overhaul, EWEB staff re-directed attention to converting the governors from mechanical to electronic systems and replacing the outdated exciters for each unit. This work was originally scheduled for 2022. The first governor conversion for Unit 1 is currently underway and is expected to be commissioned by the end of October. The exciter replacement for Unit 1 was not possible in October due to late delivery of the equipment (another COVID related delay), so that work will most likely take place in January 2021. The second governor conversion in combination with an exciter replacement for Unit 2 will take place in November and is expected to be commissioned in early December 2020.

In addition to this work at the Carmen Plant, staff are making good progress on planning for reliability improvements necessary at the Trail Bridge Plant. These reliability improvements will

focus primarily on the outdated electrical and control systems, much of which is original. The Trail Bridge Plant will need to reliably convey water to the McKenzie River during major spillway/gate modifications that will take place in 2023 and 2024 for downstream fish passage. In addition to the upcoming construction period, the Trail Bridge Plant will also need to reliably convey flow to the McKenzie for the long-term whenever the spillway is out of service for inspections, maintenance, and improvements to the downstream fish passage facilities. And finally, the plant will need to continue to serve as the reliable low-level outlet for Trail Bridge Reservoir in the event of any possible dam safety concerns that necessitate lowering of the lake level below the elevation of the spillway.

In May 2019, the FERC issued a new 40-year operating license to the Project. The license requires EWEB to deploy the planned improvements in the seven management plans contained within the Settlement Agreement. Initial major efforts include.

- Design and construction of upstream and downstream fish passage at Trail Bridge Dam. Improvements to the existing spawning channel.
- Design and construction of aquatic habitat features in the reservoirs and reaches at the Project along with infrastructure to protect that habitat during high water flow periods.
- Relocation of the existing transmission line from Deer Creek.
- Refurbishment of the campgrounds and recreation facilities at and near the Project.
- Terrestrial habitat improvements along the length of the transmission line and in the Leaburg Forest.
- Vegetation management at the project and along the transmission corridor.

Additionally, the license requires many other smaller projects that provide environmental benefits, recreational opportunities and increased operational safety.

In 2018, prior to license issuance, a multi-disciplinary staff team was created to work full-time on license requirements. This team is supplemented by staff in public affairs, generation engineering, hydro operation and the environmental department. Since the license was issued, staff have been focused on design for fish passage, conceptual design of recreation improvements, deployment plans for improvements to roads, culverts, and other support areas. Additionally, staff retained consulting firms to complete activities where EWEB does not have the personnel or experience. For example, consultants with expertise in aquatic habitat design and botany have been selected.

Discussion

EWEB plans to complete the remaining power generation system improvement work over the next three years. Presuming GE is able to resolve their coil manufacturing issues to EWEB's satisfaction, the Unit 2 overhaul will commence in March of 2021 and complete the work in November 2021. The overhaul of Unit 1 would follow in 2022, again taking place March through November. Also, in 2022, EWEB plans to implement the reliability improvements necessary at the Trail Bridge Plant. With the major improvement work at Carmen-Smith complete in 2022, EWEB would only need to clean up outstanding loose ends at the power plants in 2023.

A discussion of the current status of major license deployment efforts follows:

Fish Passage Facilities at Trail Bridge Dam – Jacobs Engineering has progressed the design to the 90% stage for both upstream and downstream passage. Upstream passage will be accomplished via a trap and haul system located at the tailrace of the Trail Bridge Plant. Downstream passage will occur via the existing spillway utilizing a new radial gate that is designed to meet both fish passage criteria and be able to pass flood flows when needed. The completion of fish passage in a timely manner remains an important issue to regulators and EWEB, and we are working to shorten the construction schedule with their cooperation.

High Flow Bypass Facilities for the Smith Bypass Reach -- As design of fish passage nears completion, the design of infrastructure to allow EWEB to be able to bypass the Smith reach below Smith Dam will ramp up. This bypass will protect important habitat structures and spawning gravel for Chinook salmon and bull trout in the Smith Bypass reach during very high flow periods. This bypass is being designed in coordination with improvements to the Smith Spillway to both increase the capacity to pass flood flows and to release a constant small amount of water for fish habitat in the reach.

Spawning Channel Improvements -- Design for the required improvements to the spawning channel were submitted to the FERC in May. Work to complete those improvements is scheduled to be completed prior to the 2021 spawning season pending FERC's approval.

Relocation of the Transmission Line at Deer Creek -- In the spring of 2020, the new route for the transmission line was cleared by a specialty contractor who went on to work with EWEB's line crews to install the foundations for some of the poles for the new line. EWEB's line crew will finish the relocation in the spring of 2021. This project was a completed in close coordination with the Forest Service's efforts to complete habitat improvements in Deer Creek.

Recreation Improvements at the Campgrounds and Day Use Areas – The conceptual plans for improvements to the Trail Bridge Campground are being finalized. The refurbished campground will modernize the campground with universally accessible features with both tent and rv camping available. The water system that supports the campground as well as the project campus has been installed and made operational. The majority of campground construction will take place in 2021 and 2022 but Trail Bridge Campground will remain closed until the Carmen Powerhouse improvements projects progress to the point where safe access to the campground can be maintained.

Terrestrial Habitat Management Plan – The license obligates EWEB to manage 343 acres for the benefit of terrestrial species. Prior to the Holiday Farm Fire, we were planning that approximately 120 of the managed acres would be in the Leaburg Forest and the balance were in the transmission line corridor. Before making a firm commitment to the acres in the Leaburg Forest, we will also consider areas impacted by the fire to see if there are better restoration and management opportunities.

While nearly all the work to refurbish the Carmen Powerhouse is under contract for completion, there will be several upcoming consent items for Board review. Anticipated Board consent items for the efforts described above will include:

- Equipment purchases for Trail Bridge Reliability Improvements (Late 2021)
- Design services for aquatic habitat (December 2020)
- Construction services task orders under our existing CMGC contract with Wildish Building Co. for:
 - Spawning Channel Improvements (early 2021)
 - recreation improvements (2021)
 - Trail Bridge reliability improvement construction (2022).

Additional consent items will be included in Board materials as projects are scheduled for completion in accordance with purchasing policies.

Recommendation

Staff has no recommendation. These materials are provided for information only.

Requested Board Action

No Board action is being requested.