



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Brown, Mital, Helgeson, Manning and Simpson
FROM: Roger Kline, Generation Manager, and Mike McCann, Carmen-Smith Project Manager
DATE: July 11, 2014
SUBJECT: Carmen-Smith Project Update

Issue

This memorandum provides an update on the relicensing and re-capitalization efforts at EWEB's Carmen-Smith Hydroelectric Project. It describes a revised schedule developed for implementation of needed power system improvements and current expectations regarding new license implementation. The schedule and cost assumptions described herein are reflected in the 2015 capital budget and CIP update.

Background

The Carmen-Smith Project, which is located 71 miles east of Eugene on the upper McKenzie River, represents almost half of EWEB's total owned generation capacity. EWEB received an initial federal license for the Carmen-Smith Project in 1958, and the project went online in 1963. The original 50-year license expired in November 2008, and EWEB has been operating under an annual license from the FERC since that time. The annual license renews automatically until EWEB receives a new license for the Project from the FERC.

EWEB has been engaged in a process to relicense the Carmen-Smith Project since 2002. This relicensing process resulted in the development of draft and final license applications that were submitted to the FERC in 2006. In October 2008, EWEB entered into a Settlement Agreement that was filed with the FERC in support of and as a supplement to EWEB's 2006 license application. In late 2010 and early 2011, the FERC received a Clean Water Act Section 401 Certification from the Oregon Department of Environmental Quality (ODEQ) and biological opinions (BiOps) from the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) in support of the license application and settlement agreement. In May 2011, EWEB confirmed that the FERC had in its possession all of the requisite pieces to process the new license for the Carmen-Smith Project.

In March 2012, the FERC convened a Technical Conference on EWEB's license application. At that meeting the FERC identified several concerns that FERC staff had with the Carmen-Smith Settlement Agreement related to the McKenzie Wild & Scenic River boundary. In addition, FERC staff identified survey errors that dated back to the original McKenzie Wild & Scenic designation by the USDA Forest Service. The Forest Service corrected those survey errors in November 2012. The

Forest Service subsequently revised their analysis of potential project effects (termed a “Section 7 Determination” after Section 7 of the Wild & Scenic Rivers Act), and EWEB filed with the FERC, in October 2013, a letter on behalf of all settlement parties proposing resolution of the W&S River issue and asking the FERC to proceed with licensing of the Carmen-Smith project consistent with the Settlement Agreement.

In the interim, in November 2012, the USFWS finalized a designation of critical habitat for the northern spotted owl, and parts of the Carmen-Smith Project were included in the critical habitat designation (roughly Smith and Trail Bridge Reservoirs and the forests and stream reaches nearby). This designation requires further consultation between FERC and USFWS before the FERC can issue the Carmen-Smith license. EWEB, acting as FERC’s designated representative, prepared a revised Biological Assessment (BA) Amendment for the FERC, in January 2014, to address the critical habitat designation.

Discussion

While EWEB has again met all of the obligations required by the process, the FERC must initiate and conclude consultation with the USFWS on the critical habitat designation for the northern spotted owl before a license can be issued. Because the consultation process generally takes four to six months to conclude and the FERC has yet to initiate the process, staff do not believe that the Carmen-Smith license will be issued by the FERC in 2014. Staff understand, from discussions with FERC staff, that the FERC intends to proceed with license issuance upon conclusion of the consultation. It now appears that this will occur in 2015.

Based on the information requested by the FERC on the proposed projects within the Wild & Scenic corridor, staff believe that the FERC may be treating the Carmen Smith License differently than other recently issued and similarly situated licenses. If that occurs, there is a high likelihood that the Carmen-Smith license will be challenged in federal court following issuance by one or more parties. While EWEB is not obligated to participate in a legal challenge to the license, any court challenge could further delay, by two to five years, implementation of the new license and the requirements of the 2008 Settlement Agreement.

Because of the ongoing delay in license issuance and the potential for additional delay resulting from a legal challenge to the license, EWEB staff have developed a revised implementation schedule that focuses on maintaining EWEB’s ability to generate high-value peaking power and meeting EWEB’s load with the Carmen-Smith facility. Recall that the Carmen powerhouse has been operating for more than 50 years without a substantial re-capitalization effort, and EWEB has planned to invest in the plant by repairing, replacing and upgrading most of the operating components in the plant as part of the relicensing process. Several recent operational issues with primary components of the power plant have led staff to conclude that EWEB needs to move forward with the re-capitalization effort now, rather than wait for the licensing issues to be resolved.

Using HydroAMP, a hydroelectric facility condition assessment tool, and other asset management protocols, staff are in the process of developing a plan and schedule for addressing the most critical needs within the Carmen power generation system within the next five years using existing Type 3

Capital funds. This plan and schedule is reflected in the 2015 capital budget and updated CIP. It calls for an investment of approximately \$20 M between 2014 and the end of 2018 for replacement or repair of most major powerhouse components, including new transformers, switchgear, turbine shutoff valves, compressors, pumps and motors. The electrical and control systems will be upgraded. The two unit generators will be re-wedged, providing an estimated additional 8 to 10 years of life before a more substantial rewinding of the generators is necessary. The turbine runners will similarly be inspected and repaired to provide additional life before they need to be replaced. The Carmen gantry crane will be repaired and made operational to support the work. Staff believe that with these repairs and replacements in place, EWEB will be able to operate the Carmen powerhouse for an additional 8 to 10 years (2023-2025) before turbine runner replacement work and generator rewinding will be necessary.

The 2015 capital budget and updated CIP also reflect staff's belief that new license implementation will be delayed until 2020 due to the potential legal challenge described above, and staff's belief that the FERC will grant a stay of the license during the legal challenge¹. The 2015 capital budget includes no money for license implementation and only minimal funds for maintenance of the relicensing effort and work already underway. The anticipated capital costs associated with license implementation have been moved out until 2020 and beyond. As a result, additional borrowing that will be needed for license implementation has also been moved out in the schedule.

As described previously, EWEB has very little influence over the course and schedule for the relicensing process, which is the primary reason for scheduling the powerhouse work independent of FERC's action. If the FERC issues the Carmen-Smith license in 2015 and the anticipated legal challenge fails to materialize or the FERC denies EWEB's request for a stay of the license during a legal challenge, EWEB would be required to begin license implementation within 30 days of license issuance in accordance with the implementation schedule submitted as part of the Settlement Agreement. This would necessitate another re-evaluation of Project schedules and budgets.

Recommendation

This memorandum is being provided for the Board's information only.

Requested Board Action

None.

¹ Once a license is issued by the FERC, the Licensee and others party to the license have 30 days to request an administrative rehearing before the FERC. The FERC then has 30 days to grant or reject the rehearing request. The license is not automatically stayed during the rehearing process. A stay, in full or in part, must be separately sought by the Licensee and granted by the FERC. Following the administrative rehearing or denial of the rehearing request, the Licensee, or any party to the license, may file a challenge to the license, in full or in part, with the Federal Circuit Court of Appeals. Again, a stay of the license must be sought and granted during any legal challenge to the license.



MEMORANDUM

EUGENE WATER & ELECTRIC BOARD

Rely on us.

TO: Commissioners Brown, Mital, Helgeson, Manning and Simpson
CC: Mel Damewood, Roger Kline, Steve Newcomb
FROM: Frank Lawson, Mike McCann, Bo Mackey, Jared Rubin
DATE: July 14, 2014
SUBJECT: New Carmen-Smith Transformers Update
OBJECTIVE: Information Only

Issue

Management is moving forward with the production and delivery of two (2) transformers for the Carmen Smith Hydro-Electric Project. This is necessary due to the age of the existing transformers (>50 years) and current state of the transformers.

Background

In July 2012, the Board approved a contract with CG Power Systems (CG) for the purchase of two (2) transformers for the Carmen-Smith Hydro-Electric Project in anticipation of receiving the FERC License. The contract allowed EWEB to stage the procurement to match the anticipated license schedule. In early 2013, following CG's submittal of the equipment design, EWEB chose to place a "hold" on the construction of the transformers pending approval of the license.

Release for Manufacture & Delivery

At this time, based on the perpetual delay in the FERC licensing process and deteriorating conditional assessments of at least one of the Carmen-Smith transformers, EWEB staff is recommending the release and delivery of the transformers for installation on the Carmen-Smith powerhouse deck in the next 1-2 years. Depending on the delivery schedule, EWEB can commission the units in coordination with other powerhouse work at the site. Mitigating the risks associated with placement on the powerhouse deck include the use of a natural ester fluid in the new transformers. In the recent past, an alternative that was considered to mitigate the risk of an oil release, was to relocate the transformers off of the powerhouse deck to a site nearby. This alternative would take years to implement due to the necessity of federal environmental and permitting work and would cost at least several million dollars more than the recommended approach. Staff believes that the recommended approach achieves the necessary mitigation of environmental risk while allowing EWEB to move forward on a more timely and cost-effective basis. Staff believes that the alternative or waiting several years to move the transformers creates unnecessary operational risk (transformer failure) and financial risk (replacement power costs) while doing little to mitigate environmental risk compared to the recommended approach of using soybean oil.

The recommended approach will allow EWEB to move forward with transformer replacement without adverse impact to the current license schedule which remains in a state of perpetual delay. In-other-words, transformer replacement can place “de-coupled” from relicensing.

Soybean Oil

Another recommendation is to use a “natural ester” fluid made from soybean oil in the new transformers (e.g. FR3™ Envirotemp™ from Cargill). The fluid has several advantages including the following:

1. Twice the flash point as mineral oil lowers fire risk and allows for tighter equipment spacing. These factors offer distinct advantages for the deck of the Carmen-Smith generating site.
2. The non-toxic and biodegradable qualities of the fluid reduce the potential impact of spills. The fluid is carbon neutral, and contains no petroleum, halogens, silicones, or sulfurs.
3. High saturation point and temperature capability allows increased overload potential and extends the life of equipment.

The EPA has designated the fluid to be ultimately biodegradable, and has published an environmental technology report in 2002. EWEB is presently evaluating the use of this fluid in other new transformers and in some refill applications.

Action Required

No action is required of the Board, this is for information only. If you have any questions please contact Frank Lawson, 541-685-7621 or email at frank.lawson@eweb.org



MEMORANDUM

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TO: Commissioners Brown, Mital, Helgeson, Manning and Simpson
FROM: Brad Taylor, Water Operations Manager
DATE: July 11, 2014
SUBJECT: Operation of EWEB-owned shut-off valves
OBJECTIVE: Information Only

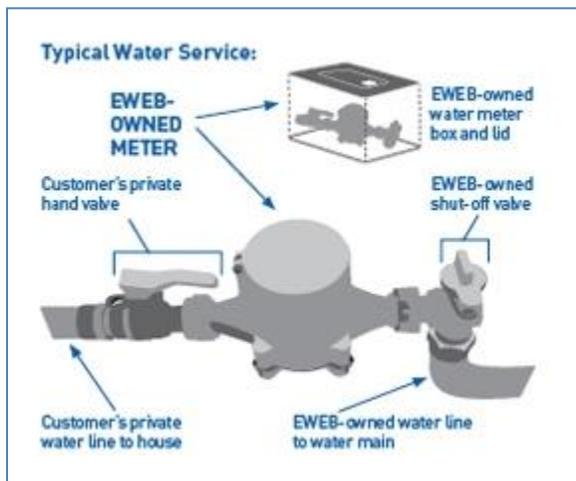
Issues

Current EWEB policy and State law (ORS 30.182) prohibits anyone other than EWEB authorized personnel from operating any portion of the water system infrastructure including EWEB-owned shut-off valves. A large percentage of customers do not have private hand valves located on the customer side of the meter and thus have no way to stop the flow of water from the EWEB system without calling and requesting assistance. This results in significant resources from EWEB to operate the EWEB-owned shut-off valve for customers to perform work on their plumbing systems. In addition, customers and customer's agents (licensed journeyman plumbers) are often frustrated by the EWEB process.

Background

National Uniform Plumbing Code has had a requirement for this valve since 1946. A typical (code compliant) installation is shown below in Figure 1. It is not clear when State/ local plumbing officials formally adopted/enforced this requirement, but from field observation it appears that it happened sometime in the early 1970's.

Figure 1. Code Compliant Water Service



EWEB Process

The primary reason behind State law and EWEB Policy is to protect the water system from being operated by inexperienced, untrained individuals whose actions can compromise water system integrity and consequently public health.

EWEB does not currently charge the customer for operation of the EWEB owned shut-off valve during normal business hours. On April 1, 2013 EWEB implemented a Water-Related After Hours call out fee (Water Policy W-III(A), currently \$75 dollars).

EWEB has replaced damaged valves and documented unauthorized accidental valve operation resulting in turned off fire protection systems and neighborhoods losing water service.

EWEB personnel acknowledge that EWEB owned shut-off valves are likely operated daily by customers and agents of customers.

The policy has had controversy with both customers and the plumbing community. EWEB personnel have no way to enforce the policy and it is often difficult to have conclusive proof of who has caused damage to the EWEB system.

The policy requires significant resources to manage and can result in inefficiencies for EWEB Operations and for our Customer owners. In 2013 EWEB staff performed over 1600 turn off/on's. To date in 2014 (through July 10th) staff have done over 700. We estimate on average a minimum of one hour of staff time per activity.

Discussion

Staff believes that the existing policy can be refined.

Staff will be developing a pilot program starting no later than January 2015. EWEB will engage with the local plumbing community in the development of the pilot program. The primary objectives of the pilot will be to reduce the risk of damaging the integrity of the EWEB water distribution system, reduce EWEB resources needed to perform the activity, and to increase the number of customers who have customer hand valves.

The pilot program may allow authorized personnel to operate the EWEB shut off valve. Authorized personnel may include journeyman plumbers, who have gone through EWEB training and agree to follow EWEB protocols and take responsibility for actions including the cost of repairs for EWEB damaged infrastructure.

Staff is also considering initiating a more comprehensive incentive program to encourage customers without a customer hand valve to have a valve installed. Staff will also be evaluating additional fees and charges to reinforce the need for a customer hand valve.

Recommendation and Requested Board Action

This item is information only and accordingly there is no requested Board action.