Santa Clara Valley Water District

File No.: 20-0918

Agenda Date: 1/26/2021
Item No.: 5.1.

BOARD AGENDA MEMORANDUM

SUBJECT:
Consider Decommissioning of the Anderson Hydroelectric Facility.

RECOMMENDATION:

A. Receive the cost-benefit analysis for the Anderson Hydroelectric Facility (Facility);
B. Concur with staff's determination, based on results from the cost-benefit analysis, that it would be justified for Valley Water to pursue the surrender and decommissioning of the Facility; and
C. Direct staff to take the necessary steps to seek approval from the Federal Energy Regulatory Commission (FERC) to surrender and decommission the Facility, including, but not limited to:
    i. Evaluate the surrender of the license exemption and decommissioning of the Facility in the Anderson Dam Seismic Retrofit Project (ADSRP) Environmental Impact Report (EIR); and
    ii. Coordinate with FERC and other regulatory agencies to submit all applications and obtain any necessary approvals to implement decommissioning of the Facility as part of the ADSRP.

SUMMARY:
The Santa Clara Valley Water District (Valley Water) has been operating the Anderson Hydroelectric Facility (Facility) at Anderson Dam for over 30 years. The Facility has been generating renewable energy as part of the overall energy portfolio of Valley Water. Over the last several years, staff has made significant strides in diversifying our energy portfolio towards much more economically favorable and greener solutions to the point that almost 100% of Valley Water's energy use is from carbon-free sources at a very competitive cost. As with any aging infrastructure, the cost of Operations and Maintenance (O&M) has been increasing over the years and, in the last 18 years, exceeded the revenues from power generation at the Facility. Revenues are projected to keep declining over the years and the O&M cost will continue to increase as we reach the end of useful life of the assets at this Facility. Given the negative return on investment as well as the fact that the overall energy portfolio for Valley Water is already at 100% renewable through the Power and Water Resources Pooling Authority (PWRPA), staff recommends discontinuing operations and decommissioning of the Facility. In order to proceed with those actions, Valley Water would need to surrender the license exemption to the Federal Energy Regulatory Commission (FERC).

Background

In April 1984, Valley Water submitted to FERC an application for exemption of the Facility from licensing and has been operating the Facility since January 1988 under the FERC license exemption. The Facility was constructed in the mid-1980s to generate energy from water released from Anderson Dam through its outlet pipe. The Facility consists of two 500-kilowatt (kW) Francis turbines and two 470-kW induction generators. Throughout the lifetime of the Facility, it has generated approximately 39,700,000 kilowatt-hours (kWh) of renewable energy, valued at approximately $2,910,000, at an O&M cost of $3,450,000. In recent years, the operational restrictions placed on the Facility have resulted in decrease of revenues while the maintenance costs have increased as the assets continue to age and are reaching their end of useful life.

Utility Agreements and Revenue

In order to sell power from the Facility to the utility grid, Valley Water entered a 30-year Qualifying Facilities Power Purchase Agreement (PPA) with the Pacific Gas and Electric Company (PG&E). The terms of the PPA included a rate schedule that was designed to be higher in the first 10 years to accelerate the capital recovery, whereas the rate was variable during the remaining 20 years of the PPA and was based on wholesale market rates. Valley Water received an average of $0.10 per kWh generated during the initial 10-year period of the agreement, and an average of $0.05 per kWh in the subsequent 20 years.

In November 2018, at the conclusion of the original 30-year PPA, staff worked with a consultant to evaluate multiple transition options. Valley Water transitioned the Facility to PG&E's new Renewable Energy Self-Generation Bill Credit Transfer program, which allows Valley Water to export renewable energy generated at the Facility to the grid and receive generation credits to up to fifty (50) of Valley Water's PG&E electrical services. During calendar year 2019, the hydroelectric generation data and resulting bill credit (savings) from the facility came out to an average of $0.06 per kWh.

O&M Costs

From fiscal year (FY) 2010 through FY 2019, Valley Water expended an average of $118,000 in annual Facility O&M costs. In comparison, the average annual revenue for the same 10-year period was only $42,000. On the other hand, the average O&M costs over the 32-year life of the Facility was $108,000 per year, whereas the annual revenue was $91,000.

Cost-Benefit Analysis

The data for the last 18 years shows that the Facility has been running a deficit. Figure 1 reflects that 17 out of the last 18 years of operating the Facility resulted in an annual financial loss.

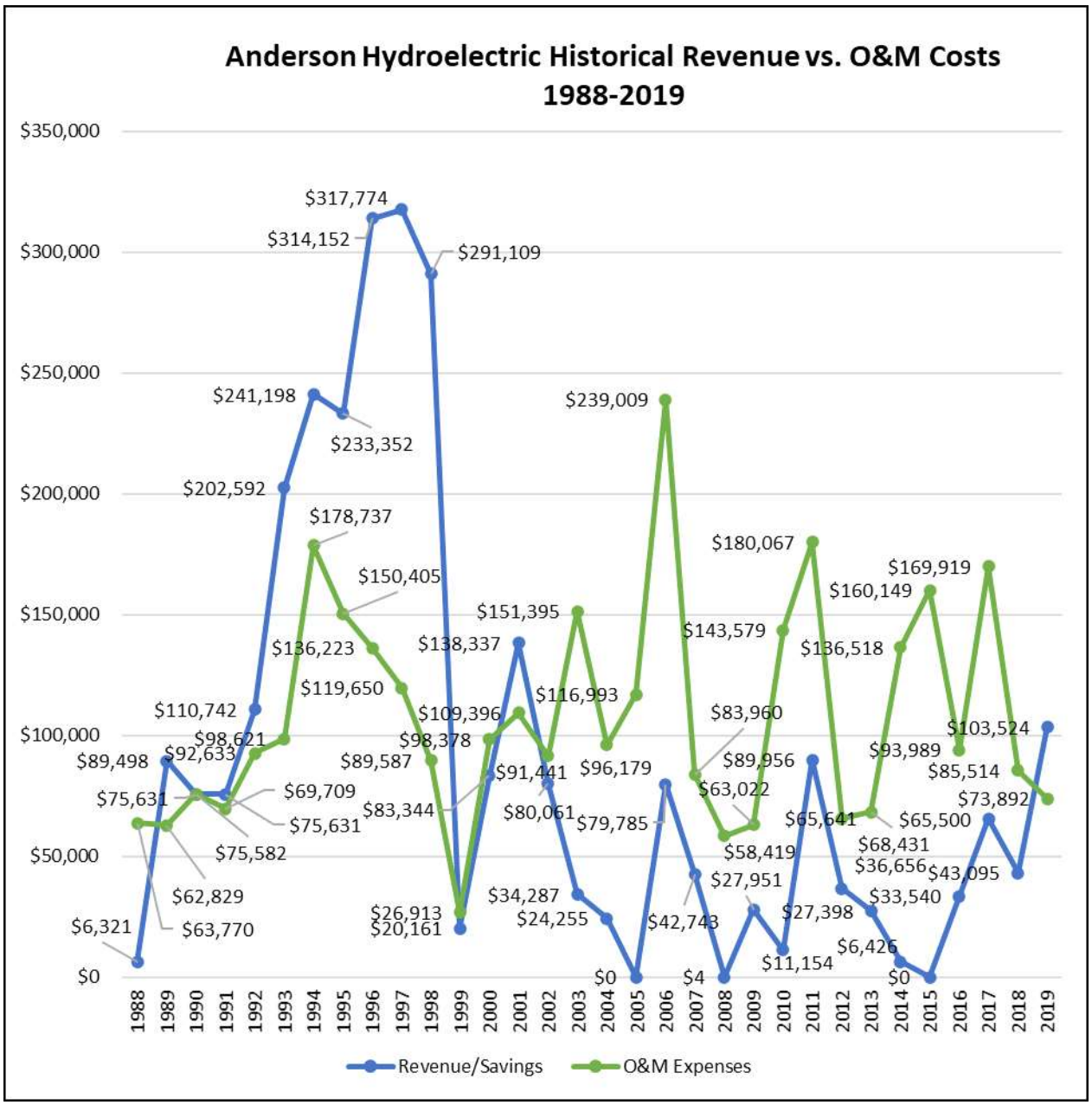

Figure 1: Facility Cost and Revenue

In addition, the Facility currently relies on aging infrastructure to generate energy. In recent years, the Facility has experienced unforeseen downtime or partial downtime due to equipment failure.

When equipment is available, multiple constraints have hindered the potential generation and revenue from the Facility. Recent California drought conditions have led to periods of low reservoir levels and seismic restrictions have limited the maximum amount of water that can be stored in Anderson Reservoir. The lower reservoir levels decrease the head pressure available to drive the turbines and limit power generation. The downstream environmental flow regulations of Coyote

Creek also dictate the amount of flow available for power generation at the Facility. Depending on creek conditions, the flows to Coyote Creek may not meet the minimum flow requirement to operate the turbine generators at the Facility. As a result, the generation of power at the Facility has been - and will likely continue to be- much lower than what is necessary to recoup the O&M cost.

The Facility would cost about $2,950,000 in rehabilitation and components replacement during the next 20 years, per Valley Water's asset management plan. The cost covers upgrades to the turbines, the electrical and SCADA systems, and the building that houses the Facility. The changes to the Facility to account for rehabilitation of aging equipment and the changing operating conditions are subject to FERC coordination and approval.

Instead of operating the Facility at a loss, staff believes Valley Water is better off investing in green energy projects elsewhere. Renewable energy can be generated at large-scale solar projects that have a much better cost-benefit outlook.

Conclusion

Based on the cost-benefit analysis, staff recommends that Valley Water should file an application with FERC to surrender its license exemption and to decommission the Facility. FERC is expected to condition the surrender of the license exemption on Valley Water's completion of the ADSRP to FERC's satisfaction. If the Board concurs with this recommended "conditional surrender" approach, the decommissioning activities would be evaluated along with the seismic retrofit activities in the ADSRP EIR. Once the draft ADSRP EIR is completed, staff would file a surrender application with FERC to implement the ADSRP. After completion of the ADSRP EIR, our Board will consider the final EIR for certification prior to approving the ADSRP activities including decommissioning of the Facility.

FINANCIAL IMPACT:
Staff estimates an annual saving of about $75,000 on average associated with approval of this item. On the other hand, there is an immediate cost of about $5,000 to place flanges on the pipe and decommission the Facility. Funding for this last item is included in the FY202-21 budget of the Local Reservoir/Diversion Planning and Analysis project (# 91761001).

CEQA:
Should the Board concur with staff's recommendations, the decommissioning of the Facility will be included in the project description of the ADSRP EIR. The EIR will be completed and presented to the Board for review and certification prior to the Board deciding whether to approve the ADSRP, which will include decommissioning of the Facility.

ATTACHMENTS:
None.

UNCLASSIFIED MANAGER:
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