

Tri-Lakes Facility Joint Use Committee, Feb. 10

New emergency electric power generator bid option dropped

By Jim Kendrick

On Feb. 13, Tri-Lakes Wastewater Treatment Facility Manager Bill Burks said the facility's engineering firm, Tetra Tech RTW, had reversed its position on the necessity of immediately installing an emergency backup electric power generator to avoid total phosphorus discharge permit violations during an extended electric utility failure. Last June, Tetra Tech RTW initially estimated that the overall cost of designing and constructing the emergency generator system was roughly \$200,000. The Joint Use Committee (JUC) subsequently decided to make the generator a bid option to have the ability to control part of Tetra Tech RTW's escalating total project cost, which has grown from \$1 million to \$2.87 million. After converting the generator and several other proposed parts of the proposed project to bid options, the cost of all the basic components needed to remove total phosphorus to meet the 1 milligram per liter discharge limit under the state Health Department's new Control Regulation 85 was reduced to \$2.32 million.

At the 90 percent design completion briefing on Feb. 4, Tetra Tech RTW engineer Steve Tamburini said that his original estimated cost of \$11,000 for creating two separate total phosphorus expansion designs, with and without an emergency backup electric generator, was too low. The differences in the electrical systems for both options were far more extensive than he originally estimated to be able to provide emergency generator electrical power to every major treatment component in the facility except the ultraviolet disinfection building, which already has its own separate small emergency backup electric generator. The proposed emergency generator would have provided backup power to one of the two existing parallel wastewater treatment trains of aeration basins and their attached secondary clarifiers. The activated sludge lagoons use electrical aeration blowers to sustain bacteria that digest biosolid wastes via alternating aerobic processes supported by this aeration immediately followed by anaerobic processes when the blowers are turned off. The gravity secondary clarifiers mechanically separate the biosolid sludge produced by the aeration basin bacteria from the treated water.

The emergency generator would have also provided power to one of the two parallel treatment trains in the new tertiary chemical phosphorus removal clarifier. This new clarifier will remove total phosphorus using a occulation and sedimentation process that will rapidly mix the injected polymers into the wastewater from the existing secondary clarifiers. The total phosphorus coated with the polymers will clump together and settle to the bottom of the new tertiary chemical clarifiers and then be continuously swept by mechanical rakes at the bottom of the clarifier tanks to sump pumps that will send these captured phosphorus solid clumps via new transport pipes to the facility's existing sludge lagoon. As noted above, Tamburini originally thought at least one of the these two tertiary chemical total phosphorus clarifiers would have had to be powered by the emergency generator in the event of a public electric utility failure by Mountain View Electric Association.

On Feb. 10, there was JUC consensus to abandon all further preparations for Tetra Tech RTW's backup generator. The

\$200,000 cost for this backup generator is not included in the \$2.32 million estimated basic cost for the total phosphorus removal tertiary clarifier expansion project and is not eligible for state nutrient design and construction grant reimbursement.

The other bid option Tetra Tech RTW has proposed for installing a new high speed turbine blower for greater electrical power efficiency, at an additional cost of roughly \$300,000, will remain in the overall total phosphorus plant expansion bid package to be put out to bid. However, this new high technology blower installation is not being mandated by the state, is not eligible for reimbursement from the state's \$1 million nutrient treatment design and construction grant, and is not included in the \$2.32 million estimated basic cost for the total phosphorus removal tertiary clarifier expansion project.

New discharge permit still not issued

Burks also reported that he still not had received the facility's new five-year discharge permit from the state Health Department. The Water Quality Control Division has provided no explanation for the delay or an expected date for issuing the permit. The facility approved the final draft of the discharge permit last fall. The state demanded that Tri-Lakes apply for this new discharge permit early even though the current discharge permit does not expire until the end of 2016 so that the five-year permit cycle will align with the five-year review cycle for the Arkansas River basin standards, www.colorado.gov/pacific/sites/default/ files/Regulation-32.pdf.

Design approvals still pending Burks reported that Tetra Tech RTW had advised him that the regional 208 plan review by the Pikes Peak Area Council of Governments staff had been successfully completed. Burks said Tetra Tech RTW had sent the design and construction documents to the state engineers in the Pueblo regional office 60 days ago for their review and approval. Once the state approves these documents, Tetra Tech RTW will go out for bid on the \$2.32 million project and the sole remaining \$300,000 high speed turbine bid option.

Once this approval is received, Tetra



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