



MEMORANDUM

TO: _____ John Paul Castro, Utilities -Director City of Key West

COPIES: John Bartelmo CH2MHILL / OMI Inc.

FROM: Ricky Collins CH2MHILL / OMI Inc.

DATE: March 5, 2015

SUBJECT: Effluent Pump Variable speed drive replacement

Background:

The Wastewater facility utilizes two 500 h.p. Aurora centrifugal pumps to discharge treated effluent to deep injection wells. The pumps and all components were installed in the Effluent pumping station upgrade in 1997.

Purpose and Justification:

One of the Variable Frequency Drives (VFD) has failed. These pumps are critical to the operation of the facility in that any failure will result in overflowing treated wastewater to the ground and near shore water violating the City's National Pollutant Discharge Elimination System (NPDES) permit. We are currently operating with one VFD. A failure of the remaining pump / VFD would be unsafe to environment and to operations of the facility.

The VFD failed and various attempts were made to attempt repairs by staff and hours of phone conversations to technical support calls resolution, there were some comments on replacing each individual component that pointed to the failure, but the 18 year old parts have to be purchased through wholesale liquidated service companies whose costs are astronomical and the parts are typically used or refurbished and unreturnable. This does not guarantee a safe and reliable system.

Options:

1. Purchase the parts and start changing which could become extremely costly; the average cost is seven to eight thousand dollars which will add up very quickly with no guarantee of success.
2. Pursue another manufacturer which would include removing the entire VFD including the incoming power section and cost would be significantly higher because a contractor will have to be hired for removal of the old cabinet and install new.
3. Replace the drive section of the existing VFD leaving the incoming power and monitoring section in place. This option will be performed in house.

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Financial Impact:

Cost of the new drive is \$ 53,706.00

Recommendation:

Staff recommends Option three. Replace the drive section of the existing VFD leaving the incoming power and monitoring section in place. Replacing the drive section of the existing VFD limits the purchase to the existing manufacturer, but reduces the cost of repair significantly.