

**Metropolitan Domestic Water Improvement District  
Board of Directors Meeting**

**March 10, 2014**

**Award for the Magee/La Cholla Booster Pump VFDs**

**Synopsis**

The Board of Directors is requested to approve and award the Magee/La Cholla Booster Pump VFD project to Kelly Energy Inc.

**Background**

The Magee/La Cholla Booster Station was upgraded in 1996. The upgrade included a new 1,000,000 gallon storage tank, new boosters, a variable frequency drive, piping, and related electrical. The booster was designed with one variable frequency drive as a multiplexor setup to select one booster and control it until the demand increased enough to lock it at full speed and select another booster. The VFD and electrical contactors required to perform this function are located on one electrical panel. This work predated the current regulation of the National Fire Protection Agency that requires ARC Flash potential to be determined and mitigated. An ARC Flash is the light and heat produced from an electrical arc with sufficient energy to cause severe damage.

**Issues**

The District had an arc flash analysis performed on all of its well sites to determine the potential arc flash potential. Once the study was completed the electrical panels were labeled with the safety precautions and the recommended personal protective equipment (PPE) to be worn by employees working on the equipment. The Magee/La Cholla facility is labeled “No Safe PPE Exists”, which prevents District staff from working on the electric panels. In addition, if a maintenance or replacement issue arises with the VFD, staff would not be able to work on the existing VFD because of the arc flash issue.

The maintenance of electrical equipment as well as the determination of a failure requires some energized testing of components. The high arc flash rating of the Magee/La Cholla facility prevents any energized testing or troubleshooting for staff safety. In order to mitigate the safety risks associated and reduce the arc flash potential, staff is recommending that the current electrical and variable frequency drive be replaced with three new variable frequency drives and the appropriate breaker protection be installed for each. The separation of the VFDs and the

individualized breakers will lower the arc flash potential to allow the proper personal protective equipment to be worn by staff in the maintenance of the facility.

The District utilized its Miscellaneous Consulting contract to have an engineering firm design the new electrical equipment and VFDs. Staff solicited proposals from the three electrical contractors it currently has on a Job Order Contract to provide proposals for the work. Sealed bids were opened on February 27, 2014 with Gilbert Electric, Kelly Energy and Sabino Electric all submitting proposals. Each contractor submitted a proposal with two bid alternatives representing two different variable frequency drive manufacturers. Kelly Energy was the lowest responsible bidder meeting all the requirements of the request for proposals. The bid summary is attached for your review. On the bid summary, Gilbert Electric is the apparent low bidder; however, Gilbert Electric excluded tax from their bid where the other bidders did not. The inclusion of taxes was required in the request for proposals. Kelly Energy is the low bidder with a proposal of \$146,737.67. This project was originally approved in the 2013-2014 Budget at \$150,000. However, the Board approved to have this project completed with remaining WIFA funds per Board action at the July 8, 2013 meeting.

### **Staff Recommendation**

It is recommended that the Board of Directors award the Magee/La Cholla Booster Pump VFD work to Kelly Energy Inc. in the amount of \$146,737.67. It is also recommended that the General Manager be authorized to approve additional funding in a cumulative amount not to exceed \$7,500 (approximately 5% of bid) should any unforeseen changes be encountered during construction. Any changes in excess of the above limited will be submitted to the Board of Directors for approval.

### **Suggested Motion**

I move to award the Magee/La Cholla Booster Pump VFD work to Kelly Energy Inc. in the amount of \$146,737.67 and authorize the General Manager to approve additional funding a cumulative amount not to exceed \$7,500 should any unforeseen conditions be encountered during construction. Any changes in excess of the above limits will be submitted to the Board of Directors for approval.

Respectfully submitted,

Steven D. Shepard,  
Utility Superintendent

I concur with the recommendation.

Respectfully submitted,

Joseph Olsen, P.E.  
General Manager