



CEP Fuel Conversion at the James A. Haley Veterans Hospital



WMC/RSP JV-1 relied on in-house expertise for the development and execution of a demanding design-build proposal that would lead to an award. WMC, Inc. (Springfield, MO) was selected because of its ability to estimate, provide design assistance, construct technically demanding projects, and meet tough schedules. Locke/AMI (Olathe, KS) was chosen as a key subcontractor because of previous history with RSP Construction and excellent experience and reputation for boiler design, engineering and control work.

WMC/RSP Construction coordinated all proposal data to create a proposal that was deemed technically superior to our competitors. The Department of Veterans Affairs made the award on the basis of best value. RSP Construction, (SDVOSB) Managing Partner, is in overall charge of the project management with WMC, Inc. being primary lead in the Design Phase. WMC/RSP Construction provided all management to include Project Manager, QA/QC, and environmental monitoring. WMC/RSP JV-1 provided temporary office site facilities, office supplies, etc. WMC, Inc., also provided technical support and labor for the mechanical installation, electrical installation, and additional expertise/oversight as required. WMC/RSP JV-1 will perform as a company no less than 45% of actual construction. Along with management, CQC, safety, and design, WMC/RSP Construction has been responsible for the project performance to date.

Description of Project:

The Acting Resident Engineer informed WMC/RSP JV-1 that it was his desire to scrap the entire fuel oil conversion portion of the project and instead design/build a “Propane Farm Expansion” in order to comply with emergency alternate fuel back up requirements to the primary fuel (natural gas) to the Central Energy Plant (CEP) boilers. In addition, the base requirement of upgrading the CEP boiler controls remained. The goal of this change request was to move the facility toward a more “green” fuel source, and reduce consumption and emissions. This change was a significant deviation from the original scope of work and we immediately began design work utilizing Locke/AMI and structural engineering from Lutz, Daily & Brain, LLC (Kansas City, KS) to augment our in-house design team. WMC/RSP JV-1 in conjunction with Locke/AMI performed a cost/energy analysis of the three (3) existing boilers located in the CEP, and determined the addition of mud drum heaters and economizers would have a significant impact on fuel cost savings, with a 2.3 year payback for installation expense. In addition to the cost savings, greenhouse gas emissions would reduce significantly. Our initial design assessment quickly discovered the need for emergency boiler shutdowns at exit doorways, which have been included in our design.

The three existing CEP boilers provide steam for the entire facility. Our primary focus revolves around the upgrading of these boilers without causing any interruption of steam supply or condensate return. The boiler upgrades consist of: individual controls, installation of mud drum heaters and economizers for each boiler, modification of breeching, new access ladders to meet code requirements, and a new CEP Scada (Supervisor Control and Data Control System) that will interface with the existing Tridium system. Computer graphics and monitors will also be installed to accommodate the needs of boiler plant personnel and operation. The CEP work will be performed concurrently with the expansion of the propane tank farm.

The propane tank farm expansion includes, soils testing, permits, excavation and sheet-piling, the addition of two, buried, 30,000 gallon tanks, the removal and relocation of one existing 18,000 gallon tank, inspection of tanks, one new water bath vaporizer and concrete pad, re-piping of all interconnecting pipe and valves, all NFPA 59 applicable safety controls and alarms, interfacing controls to the existing DDC indicating propane levels, pressure, metered flow and alarms, perimeter safety fencing and bollards for crash protection and all applicable signage. A temporary fuel storage tank will be tied into the main gas supply and utilized as a redundant fuel source.

Our engineering goal was to accomplish the required task for the customer with no boiler down time and maintaining an emergency back-up fuel source throughout the construction phase. We achieved that goal and implemented the plan with minimal footprint.

This project clearly shows the WMC/RSP JV-1's ability to provide engineering solutions and evaluations for technically demanding projects involving civil, HVAC, electrical, general construction and steam boiler work. The engineering for the utilization of alternate fuel sources, combined with the additions and installation of fuel saving equipment and controls, while maintaining continuous operation, speaks to the heart of best value performance and the strength of our team.

