

## Standard Hydrogen Monitoring Systems for Tank Waste Remediation System

MCE designed, fabricated, and supported the deployment of Standard Hydrogen Monitoring Systems (SHMS) for the Tank Waste Remediation System Project. These systems are used for continuous emission monitoring on single- and double-shell waste tanks; most notably, hydrogen emissions for the Flammable Gas Safety Program. The SHMS design used standard effluent monitoring design characteristics with enhanced process variable measurement and analytical instrumentation.

The MCE Team was tasked with using an existing Hanford design and enhancing the device with additional analytical gas monitoring capabilities. MCE personnel were responsible for identifying and testing candidate instrumentation and upon final selection, adapting this instrumentation into the SHMS for field deployment.

These advanced monitoring cabinets presented numerous technical design and fabrication challenges and an extremely aggressive design and fabrication schedule. Challenges were also compounded by the fact that the required analytical instrumentation had to be installed, tested, and calibrated to laboratory standards. To meet this challenge, MCE deployed a team of

skilled technicians, whose skill cross-cut the electrical, mechanical, control, and analytical disciplines required. This Team, working alongside engineers and more traditional craft, were able to meet all project objectives ahead of schedule.

Following successful acceptance testing and field installation of the initial cabinets, contract options were exercised for additional cabinets. MCE provided a total of seventeen SHMS, for a contract total of \$1.7 million.



**Client: Lockheed Martin Hanford, Inc.  
Richland, Washington**