

## Hanford WTP Laboratory Process Vacuum System

MCE was contracted to design, fabricate, test, and deliver a process vacuum system (PVA) for the Hanford Waste Treatment and Immobilization Plant (WTP). The PVA is designed to meet specific requirements for providing process vacuum services to the WTP Laboratory. The vacuum service will be uninterrupted with two of three 30 scfm dry rotary vane vacuum pumps operating at all times, while a third remains on standby. The pumps exhaust to a C3 ventilation system for gas and particulate treatment.

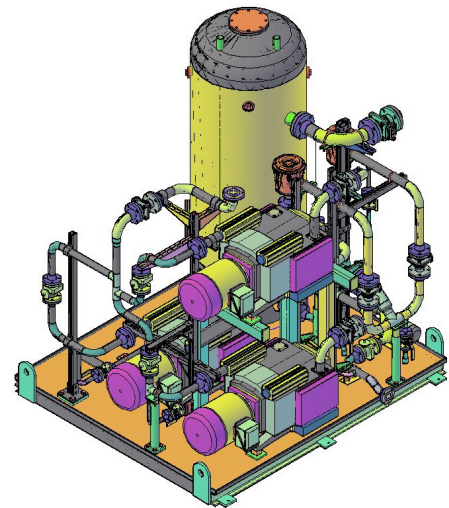
The sloped piping headers, air receiver, and in-line filters remove any entrained liquid upstream of the vacuum pumps. A drain from the receiver transfers the condensed liquid to the plant radioactive liquid waste disposal system. Silencers built into the vacuum pump assembly dampen noise from the pump discharge. Two suction filter systems are provided with one operational and one on stand-by if either of the active systems requires maintenance.

Valving is provided to allow filter replacement on either suction line while the other train is in service.

Key PVA components included the following:

- PVA skid and assembly
- Dry rotary vane vacuum pump systems (3)
- Suction filter systems (2)
- Receiver vessel
- Pressure transmitter
- Level transmitter
- Differential pressure transmitter.

The PVA fabrication and testing is being performed at the MCE Fabrication Shop in Richland, Washington.



**Client: Bechtel National, Inc.  
Richland, Washington**