



A mock-up pit at HAMMER offered Central Plateau Remediation Project workers a testing and training opportunity on a pumping system that will filter solids and transfer liquid into a tanker truck for disposal.



Nuclear chemical operator Dale Sumsion works with a pumping system that was designed by student intern Jacob Nickoloff, who worked closely with operations and radiological control personnel.



The pump design by intern Jacob Nickoloff, right, met all established criteria in an engineering review. Here, nuclear chemical operator Debby Older helps Nickoloff check the flow.

## HAMMER's pit a big hit with Central Plateau workers

Ed Ham, *Fluor Hanford*

A team of workers with Fluor Hanford's Central Plateau Remediation Project found a concrete pit at the Volpentest HAMMER Training and Education Center to be just what they needed for training.

The 7-by-10-by-8-foot pit offered a crew of nuclear chemical operators, pipe-fitters, teamsters, a radiation control technician and a field-work supervisor the chance to mock up a pumping system designed to filter solids and then transfer liquid into a tanker truck for disposal. According to HAMMER program manager Det Wegener, this is the first time this particular pit has been used as a mock-up for a Hanford Site activity.

The 200 Area Facility Disposition Project has more than 200 deactivated facilities. These facilities are kept in a minimum safe surveillance mode until authorized for demolition. Through characterization, various waste streams of both solids and liquids requiring disposal have been identified. Being able to simulate field conditions helps workers to do the job more smoothly. In simulations and tabletop discussions they can work out any roadblocks that may have been overlooked.

Working closely with the operations and radiological control groups, student intern Jacob Nickoloff designed the pumping system. An engineering review determined that the new pumping design met all the established criteria. Then, through hands-on mock-up testing, the newly designed system was put to the test.

The mock-up testing provided an opportunity to operate the pump by circulating water through a manifold equipped with two filters in parallel and a sample valve. When one filter was in operation, the other remained on standby.

This configuration was based on lessons learned from the project team. It's expected to save one shift, or approximately 10 hours of work, that would have been required to change filters. Additionally, this configuration allows for continued operation without interruption when switching filters.

The expected result will be less time in the field, supporting the radiation-exposure principles of ALARA (as low as reasonably achievable). The system flow was measured by an in-line flow meter at approximately 83 gallons per minute, and up to 50 gallons per minute is suitable for most pumping applications.

The mock-up helped successfully identify ways to improve the instructions for operation of the system. It helped identify system leaks requiring repair, and provided hands-on experience for workers in a realistic field setting. ■