

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 21, 2007

TO: K. Fortenberry, Technical Director
FROM: R. Quirk and W. Linzau, Hanford Site Representatives
SUBJECT: Activity Report for the Week Ending December 21, 2007

Staff members D. Burnfield, S. Lewis, A. Gerlach, and M. Dunlevy, and outside expert D. Volgenau were on-site reviewing tank farms work planning and controls.

Tank Farms: As a result of questions raised by the site rep several weeks after the S-102 spill event, the Office of River Protection (ORP) and contractor are evaluating the adequacy of the Technical Safety Requirement for minimum staffing levels. In October, ORP directed the contractor to evaluate several aspects of minimum staffing, including a reexamination of the makeup and size of the staffing and the need to more formally designate the personnel who fulfill these requirements. The contractor presented proposed changes to ORP, but they have yet to reach consensus.

Cold Vacuum Drying Facility (CVDF): A Potential Inadequacy in the Safety Analysis (PISA) was declared at the CVDF based on the results of an evaluation done to review the as-built structural drawings. The evaluation was part of an extent of condition review for deficiencies found with a number of footings earlier this year (see Hanford Activity Report 2/9/07). The evaluation revealed many differences between drawings and the physical state of the facility, and the project has determined that 13 structural changes are needed prior to resuming operations in mid-2008. Examples of the deficiencies found were missing bolts between the steel frame and the concrete pre-cast panels and missing stiffener plates on braces.

Waste Treatment Plant: The project conducted a workshop to discuss the ongoing design effort for the control and mitigation of hydrogen in piping and ancillary vessels. Dr. J. Shepherd from the California Institute of Technology presented his plans to research the effects of detonations/deflagrations in long runs of pipe, including the forces that will be exerted on pipe supports. He envisions an experimental set-up using two-inch, schedule 40, stainless steel pipes with a number of bend and "T" connections with an overall length between 40 and 60 feet. The pipe section will be filled with a hydrogen mixture, and, once ignited, instruments will measure pipe strain, displacements, and forces. Details of the experimental set-up are being designed with input from the contractor to ensure the required data is collected to complete affected plant piping designs, including the designs of pipe supports. It is estimated that the work will take a total of 15 months with completion in February 2009.

Construction resumed on the Pretreatment facility with erection of structural steel on the south side of the facility. Most of the construction activities over the next year will be structural.

River Corridor Closure Project: The site rep observed the start-up review meeting for work at the 618-7 burial ground. There was a short list of items that required final signatures or Richland Operations Office (RL) concurrence and project management agreed to approve start-up once they were completed. Grubbing and grading of the burial ground was approved to start immediately and excavation will start early in January.