

**HSS Independent Activity Report - Rev. 0****Report Number:** HIAR-RL-2012-05-14**Site:** DOE-Richland  
Operations Office**Subject:** Office of Enforcement and Oversight's Office of Safety and Emergency  
Management Evaluations Activity Report for Criticality Safety Information  
Meeting for the Plutonium Finishing Plant**Dates of Activity :** May 14, 2012**Report Preparer:** Ivon Fergus**Activity Description/Purpose:**

The U.S. Department of Energy's (DOE) Office of Enforcement and Oversight, within the Office of Health, Safety and Security (HSS), conducted a criticality safety information meeting with Hanford site criticality safety engineers on May 14, 2012, to discuss criticality safety issues and experiences principally with respect to the Decontamination and Decommissioning (D&D) activities at the Plutonium Finishing Plant (PFP). These discussions also included aspects of Non-Destructive Assay (NDA) in support of criticality safety evaluations.

**Result:**

PFP continues to be a hazard category 2 facility while undergoing D&D. D&D down to slab grade is scheduled to be completed in 2016. At present, most plutonium material has been removed from the site, but the material remaining is still projected to comprise more than several minimum critical masses. Thus, presently, criticality accidents must still be considered credible.

The D&D of PFP faces many unique challenges. These include, among others, the development of advanced robotics to dismantle certain equipments in high radiological dose areas, the minimization of the aggregate number of waste containers while maintaining a substantial margin to criticality safety mass limits, and the mechanical removal ("scabbling") and development of a system to safely remove and process leaked plutonium material on the floors and walls of certain equipment spaces.

Available criticality safety and NDA expertise onsite at Hanford may be reduced as budget limitations impact resources but will be managed to ensure retention of appropriate criticality safety expertise.

**HSS Participants**

1. Ivon Fergus

**References**

- DOE Order 420.1B, *Facility Safety*.
- ANSI/ANS 8 series of standards for criticality safety.

Were there any items for HSS follow up?  Yes  No**HSS Follow Up Items**

- HSS will continue to follow PFP activities.