DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Steven Stokes, Technical Director
FROM: William Linzau and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending April 18, 2014

R. Tontodonato was on site to observe site rep activities.

Emergency Management: This week, the site reps observed B&W's second emergency management exercise for fiscal year 2014. The exercise scenario involved a hydrogen fluoride (HF) leak from the dock that houses the HF supply for the Oxide Conversion Facility (OCF). In general, the response to the event was in accordance with B&W Emergency Management Program Organization requirements and guidance. However, an issue with the site pager system delayed the activation of the Emergency Response Organization by approximately 20 minutes. B&W plans to finalize the report for the exercise in the next several weeks.

OCF: After discussions with the vendor, B&W has determined that last week's HF leak likely could not be addressed by tightening one of the isolation valves on the HF supply cylinder. As a result, Enriched Uranium Production (EUP) management has determined that the best course of action is to return the HF cylinder to the vendor. B&W is working with the vendor to establish the actions needed to place the HF cylinder in a Department of Transportation-certified configuration. EUP management is planning to bring the vendor on site to complete this work by the middle of next week with the goal of shipping the cylinder off site by next Friday.

Building 9212/Nuclear Criticality Safety (NCS): This week, the NPO Assistant Manager for Nuclear Safety and Engineering (NPO-10) issued a letter to the B&W Deputy General Manager for Operations expressing concern regarding the frequency of abnormal NCS-related events during E-Wing casting operations in Building 9212. The letter cites eight mis-pour, failed pour, or stack tip-over events in the last 17 months. Four of the eight events involved a quantity of fissile material in excess of the ANSI/ANS-8.1 single parameter limit of 20.1 kg ^{235}U. Some of the casting operations that exceed this limit involve a single pour that casts multiple parts. As an NCS risk-reduction measure, NPO-10 questioned whether current production rates could accommodate the elimination of certain multi-part pours.

The letter also expresses concerns regarding E-Wing chip processing activities. Specifically, the letter points to EUP's difficulty producing enriched uranium (EU) briquettes (pressed chips recovered from Building 9215 EU machining operations) that provide adequate feed stock for casting operations (i.e., do not produce an undesirable quantity of EU oxide when cast). This difficulty relates to the presence of an excess hydrogenous material in EU briquettes, an NCS concern that led to the suspension of briquetting operations in December (see 1/31/14 and 12/13/13 reports). The letter indicates that, although there are key differences between this briquetting issue and the abnormal pour events, the underlying concern is similar in that B&W continues to operate a problem-prone process with significant quantities of EU. NPO-10 requested a briefing in 30 days regarding the actions B&W is taking to address these concerns.

Uranium Processing Facility (UPF): This week, the UPF Federal Project Director sent a letter directing B&W to only advance a UPF design that utilizes multiple buildings that have been appropriately sized, categorized, and separated for safety and security requirements. The multi-building option is one of the options being considered by the ORNL Director's team currently evaluating project alternatives (see 1/24/14 report). The letter also directs B&W to discontinue and archive evaluation and design efforts associated with other options.