

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Timothy Dwyer, Technical Director
FROM: Wayne Andrews and David Kupferer, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending December 23, 2011

ORNL Building 3019/Uranium-233 Disposition. DOE and Isotek recently completed the readiness review process for initiating the transfer of programmatic Zero Power Reactor (ZPR) material from Building 3019 to the Nevada Nuclear Security Site (see the 12/9/11 report). All pre-start findings were closed. This week site representatives observed operations in Building 3019 and the first shipment of ZPR material was successfully executed.

Maintenance/Work Planning/Conduct of Operations. The safety-significant power distribution system for the Highly Enriched Uranium Materials Facility includes a diesel generator that provides backup power to safety systems in the event of loss of normal power. On Tuesday, after operations personnel entered the appropriate Limiting Condition of Operation, maintenance personnel initiated corrective maintenance to replace the engine coolant heater associated with the subject diesel generator. Rather than de-energizing the main control panel that powers both the diesel generator and the associated heater as reportedly directed by the lockout/tagout issuing authority, maintenance personnel decided to both remove the heater from the generator and the electrical cover from the heater in order to access the wiring to the heater and identify which live circuit could be opened to only de-energize the heater. During this evolution, the plastic casing of the heater ignited. Maintenance personnel then de-energized the main control panel, extinguished the fire, and continued to install the replacement heater (i.e., did not suspend work in response to the fire). Approximately 20 minutes after the fire was extinguished (and after the heater had been replaced), a quality engineer inquired about the status of the fire with the shift manager who was unaware that the fire had occurred. Approximately 20 minutes later (40 minutes after the fire was extinguished), the shift manager notified the fire department of the event (this was the only notification the fire department received). The fire department responded to the scene and confirmed that the fire had been extinguished. B&W conducted a formal critique of this event on Thursday. Follow-up actions identified during the critique include: (a) performing an independent investigation of the event to include formal causal analysis and extent of condition reviews, (b) conducting a 'safety pause' briefing for all maintenance, operations, and engineering personnel that emphasizes expectations on making proper and timely notifications upon encountering unexpected conditions, and (c) evaluating whether other near-term actions (e.g., standing order or training) are necessary with regards to execution of the lockout/tagout process.

Transuranic Waste Processing Center (TWPC). DOE Order 425.1D, *Verification of Readiness to Start Up or Restart Nuclear Facilities*, states that DOE must perform a readiness assessment prior to startup of an activity or operation after "substantial process, system, or facility modification." The Order also states that local site implementing procedures must provide a process for determining whether a modification is substantial based on the impact of the changes in the safety basis, equipment, and operating procedures. DOE-ORO's procedures include criteria for making this determination including evaluating whether the change requires a structural addition to an existing building that will require a revised safety basis. This week, the site representatives walked down the construction site of the Cask Processing Enclosure (CPE). Despite the significant scope of the CPE project (see the 12/16/11 report), DOE-ORO has determined that the CPE project does not constitute a "substantial modification" and therefore, a DOE readiness assessment is not required. However, in response to questions raised by the site representatives, DOE-ORO is planning to request additional guidance from DOE Headquarters regarding application of the term "substantial modification."