



U.S. DEPARTMENT OF  
**ENERGY**

OFFICE OF  
**ENVIRONMENTAL  
MANAGEMENT**

# **New Waste Calcining Facility Ventilation Upset**

## **Citizens Advisory Board**

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# Event Summary

On Thursday afternoon, October 23, 2014, a ventilation system upset occurred at the New Waste Calcining Facility (NWCF—CPP-659) that resulted in a spread of radioactive contamination within the building.





- Remote Handled Transuranic (RH-TRU) waste repackaging
- RH-TRU waste characterization
- RH-TRU waste transport loading
- Transfer and blending of Sodium Bearing Waste from the Tank Farms to the Integrated Waste Treatment Unit (IWTU)

On October 23, 2014, Waste Management Operators were removing a cell port cover from Decontamination Cell 308 to load material out of the cell following RH-TRU repackaging activities



Removing the cell port cover (above the cell) significantly increased ventilation flow through Decontamination Cell 308 and reduced the vacuum in the cell, which maintains contamination confinement



- Increased ventilation through Cell 308 and reduced vacuum in the cell caused the NWCF ventilation system to automatically shut down the NWCF Supply Blower
- Waste Management Operators immediately replaced the Cell 308 cell port cover
- Vacuum improved in Cell 308 when the cell port cover was reinstalled
- To restore the normal ventilation flow, NWCF operators restarted the NWCF Supply Blower

## Event Description (continued)

- With Cell 308 at a reduced vacuum, restarting the NWCF Supply Blower slightly pressurized Cell 308 with respect to external corridor pressure
- Airborne radioactivity continuous air monitors located in the corridor outside Cell 308 alarmed, causing personnel to evacuate the immediate area as trained
- Once the Supply Blower was restarted, NWCF operators then adjusted the exhaust dampers to stabilize pressures and flows, restoring vacuum to Cell 308

As a result, contamination migrated outside of Cell 308 within the NWCF building Corridors, but was limited to the corridors immediately adjacent to and below Cell 308



- There was no spread of contamination outside of the NWCF building due to the overall design flow of the NWCF building ventilation system through High Efficiency Particulate Air (HEPA) filters
- Although no external contamination was found on workers, one worker did receive a low level of detectable internal contamination

- The NWCF Operator did not adequately prepare the NWCF ventilation system for removal of the cell port cover from Cell 308
  - This was due to miscommunication between the Waste Management Operators and the NWCF Operator
- The NWCF Operator's rush to restart the NWCF Supply Blower momentarily compounded the situation

# Corrective Actions

- Revised the technical procedure to require specific actions for both Facility Operations and Waste Management Operations to prepare for and respond to removal of the Cell 308 cell port cover
- Provided training to Waste Management and NWCF Operations on the lessons learned from this event; this included detailed building ventilation system parameters and responses to the event, and management expectations for clear and concise communications
- Engineering evaluated the NWCF ventilation system control logic to ensure adequate and effective control of system parameters
- Radiation Protection: conducted detailed surveys to identify the extent of contamination; decontaminated affected areas

- Due to the radioactive contamination spread from this event, the following impacts occurred:
  - One individual received a low level of detectable internal contamination
  - The RH-TRU repackaging schedule was delayed by seven weeks due to decontamination efforts

Any Questions?