



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

New Waste Calcining Facility Ventilation Upset

Citizens Advisory Board

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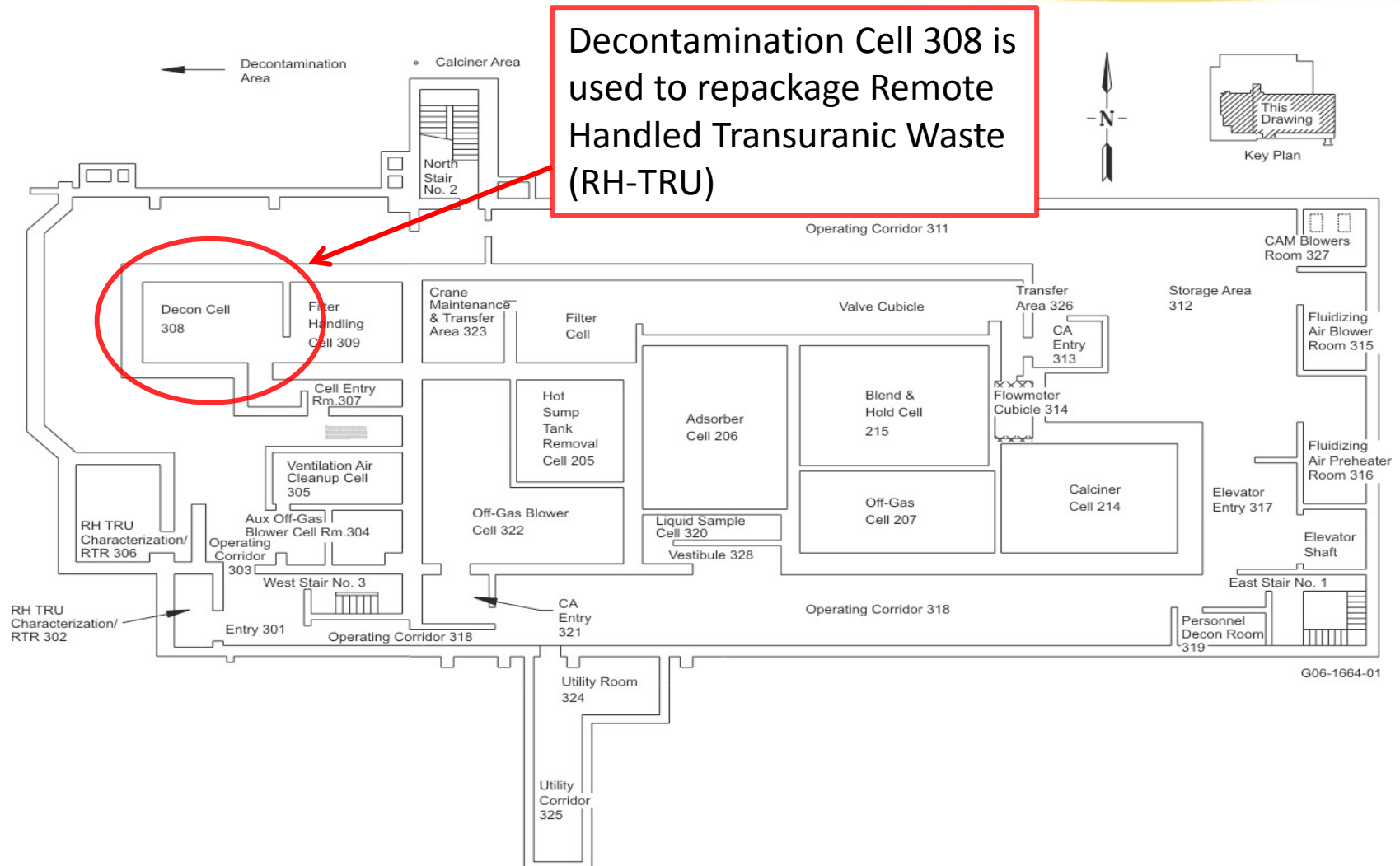
Event Summary

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.



New Waste Calcining Facility (NWCF)

CPP-659

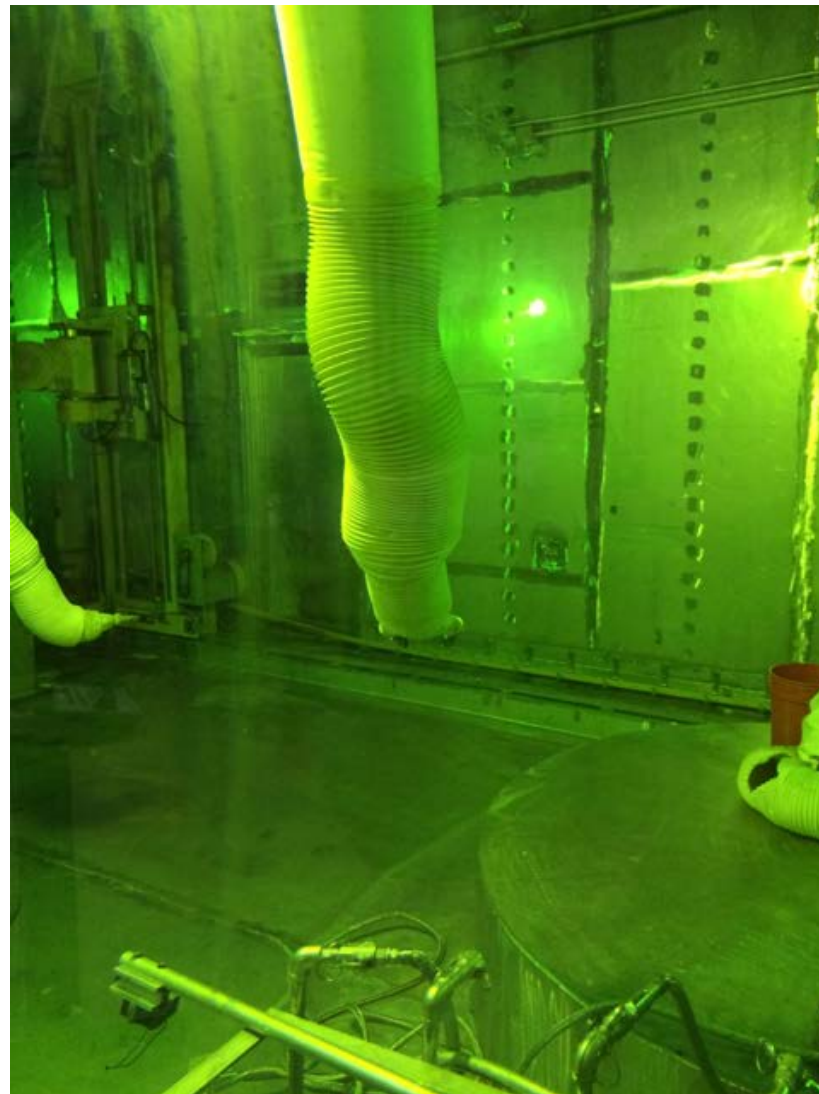


NWCF Current Uses

- 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)

Event Description

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



Event Description

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



Event Description

- 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

Event Description

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



Event Description (continued)

- 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

Event Causes

- 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

Questions

Any Questions?