



U.S. DEPARTMENT OF  
**ENERGY**

Savannah River Site

2011 Facility Representative / Safety System Oversight Workshop

# Employee Puncture Wound at F Canyon TRU Facility

**Presentation By**

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Department of Energy

Savannah River Operations Office

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## TRU Mission

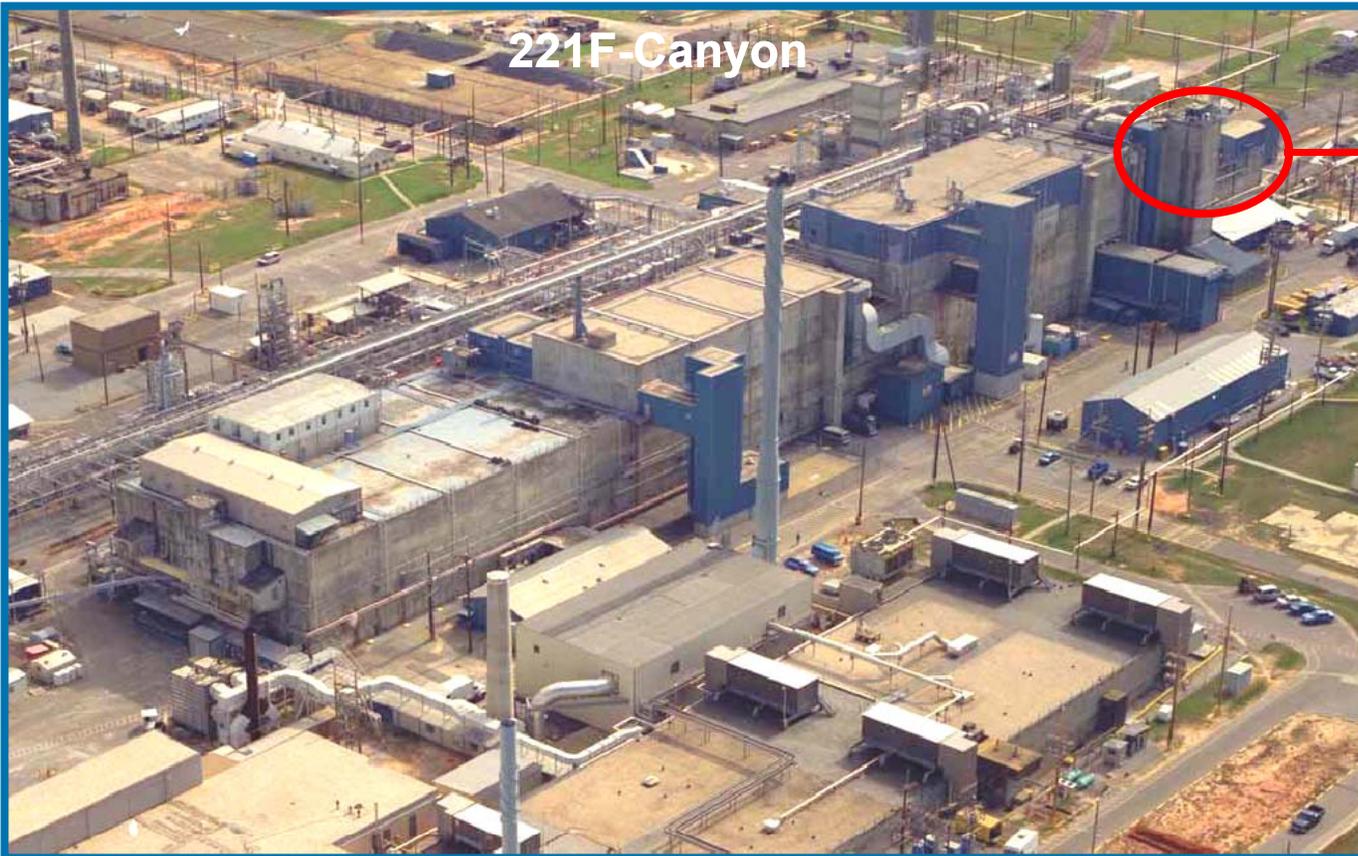
**Transuranic (TRU) waste drums at SRS are to be shipped to the Waste Isolation Pilot Plant (WIPP) in New Mexico for disposition.**

**TRU drums identified as “potentially containing items prohibited by WIPP” are processed in SRS’s F Canyon to remediate and repackage the waste.**





## TRU Mission



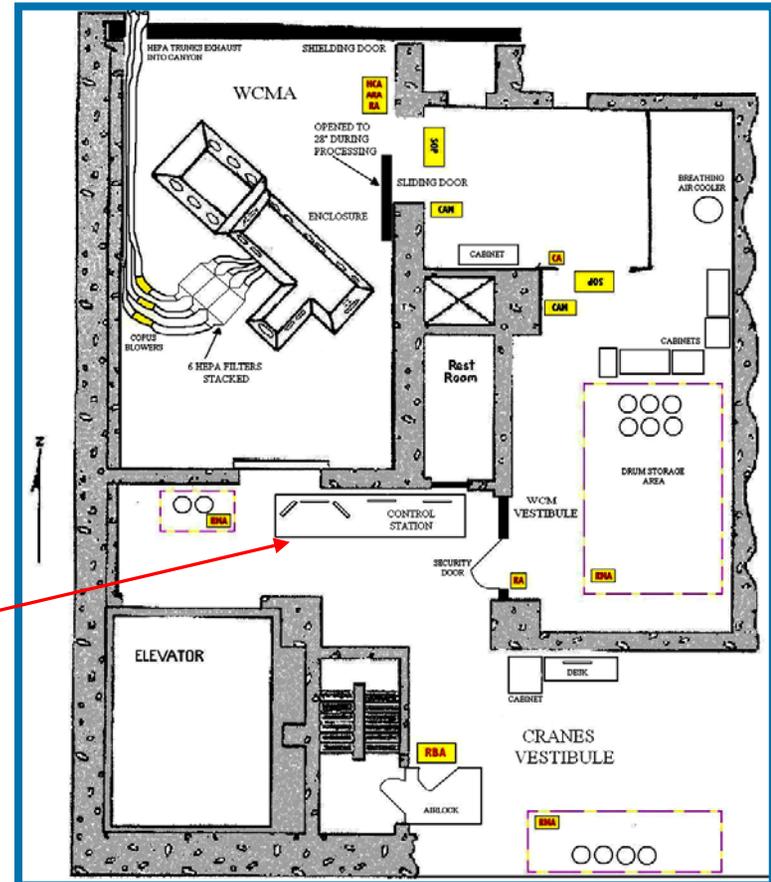
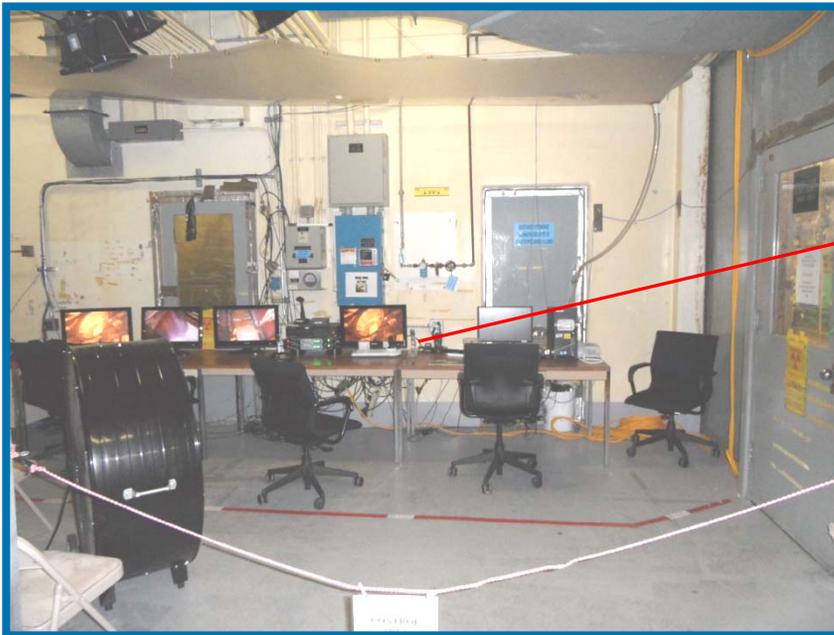
**TRU activities are performed in the Warm Crane Maintenance Area of 221-F Canyon**





## TRU Mission

- **Activities being performed in an Airborne Radioactivity Area / High Contamination Area / Radiation Area**
- **Required PPE**





## TRU Mission

### “Special Process Enclosure” for Pu Remediation



**Operator Glove Ports  
(Enclosure Side View)**

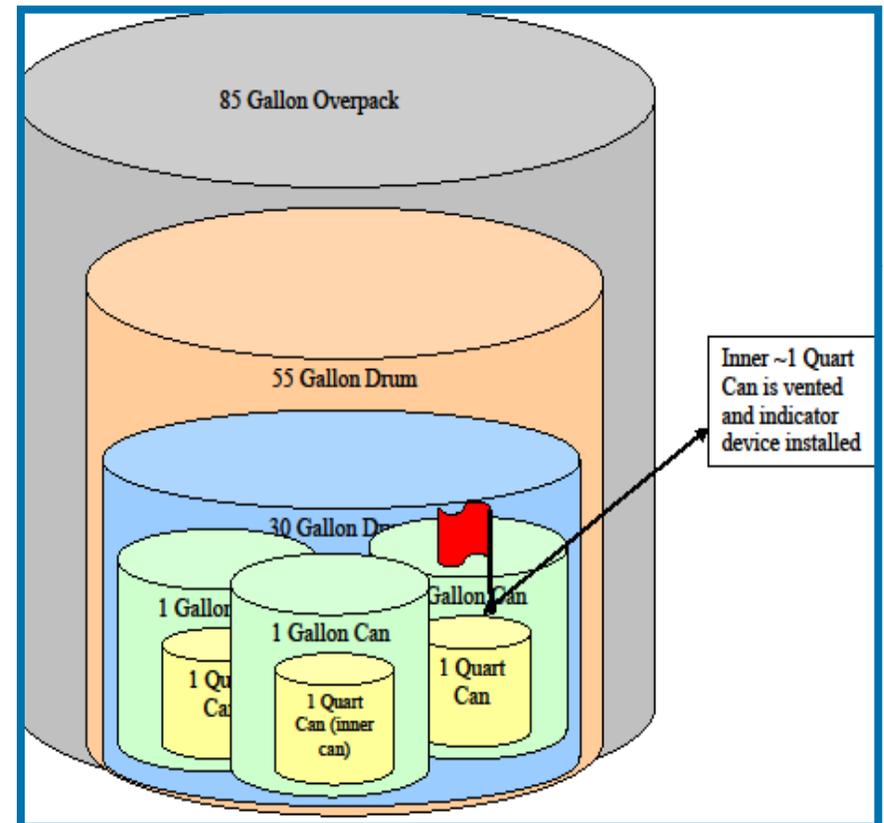
**Drum Unloading Area  
(Enclosure End View)**





- Drum stored at SRS in 1970; the inner container originated from the DOE Mound facility
- Contained 328 curies of plutonium; isotope of concern is Pu-238
- Drum configuration: 85-gallon overpack; a single 55-gallon inner; a 30-gallon inner within the 55-gallon drum; five one-gallon inner containers; a single quart can inside each of the five one-gallon cans
- Operator punctures each gallon and quart can with a “shielded” puncturing tool and installs flag

## Drum Configuration





## Event Summary – June 14, 2010

- **Purpose of inserting landscaping flag**
- **Method to install flag**
- **Belief that Flag wouldn't stay in can**
- **Workers developed “work-arounds” without management involvement**





## Event Summary – June 14, 2010

- Worker surveyed - 300 dpm alpha on wound
- Chelation therapy administered within ~83 minutes
- Three tissue excisions
- Five billion dpm alpha on glove; 40  $\eta$ Ci Pu238 (88,800 dpm) injected into wound
- Estimated dose between 15 – 45 rem CED after 71 chelations





# Tissue Excisions





# Lessons Learned

## 1. Overall ConOps for performing high hazard work

- Experience level
- Procedure revisions
- Culture of workforce



## 2. Distractions

## 3. Oversight and documentation of assessments / issues

- Contractor management oversight
- DOE Oversight





# Questions





## Contact Information

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