



## Fall EFCOG Joint QA/ISM/CAS Meeting

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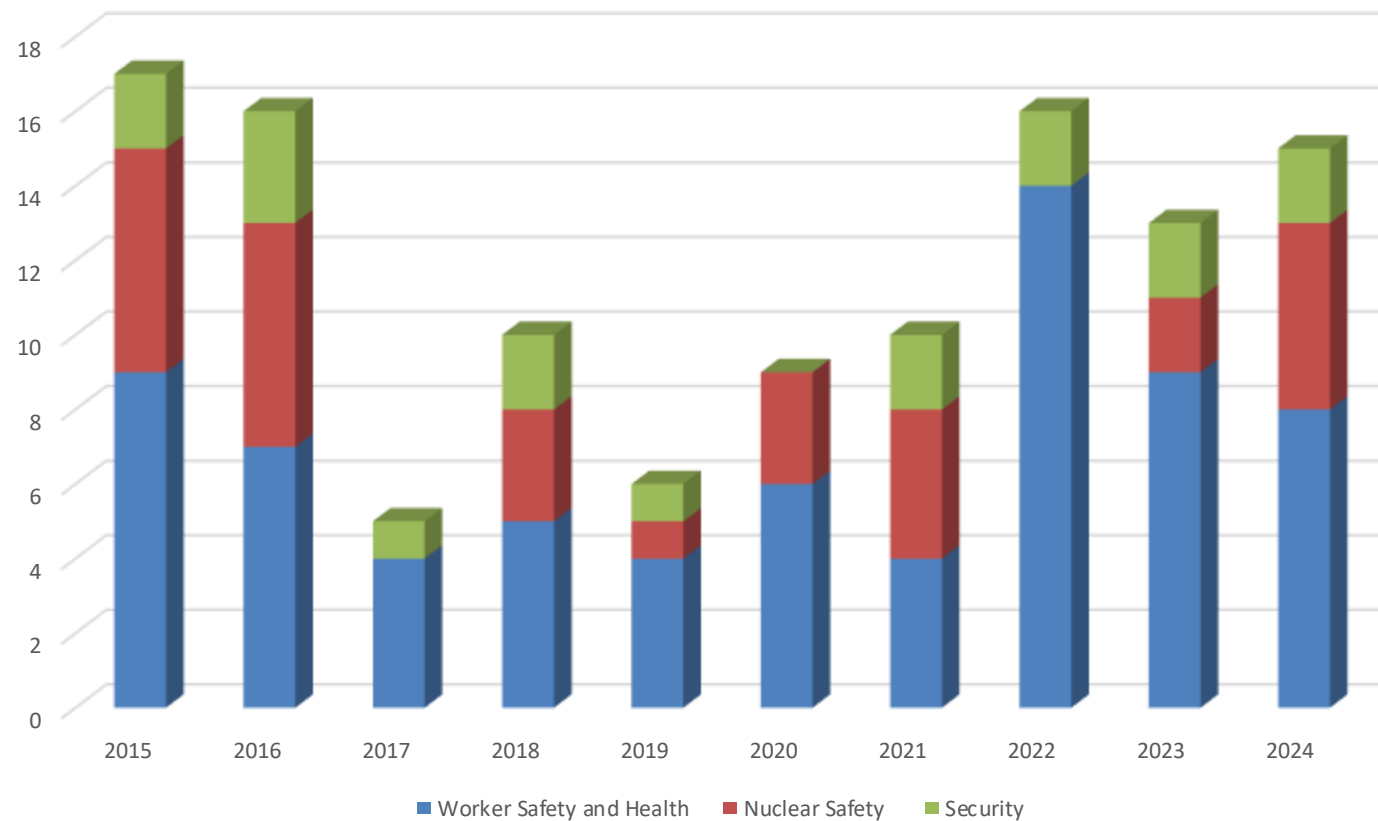
# Enforcement Activities

## FY 2024

- Enforcement Cases Closed - 15
  - Preliminary Notices of Violation – 8
  - Consent Orders/Settlement Agreements – 2
  - Enforcement Letters – 5
- New Cases – 9
  - Fatality
  - Confined Space
  - Radiological Contamination
  - Quality Assurance Program Implementation
  - Fire Suppression System Maintenance
  - Explosives
  - Unauthorized Device

# 10-Year Enforcement Case Trend

Enforcement Cases





## Enforcement Actions/Outcomes (FY 24)

Site   Contractor	Program Office	Title	Outcome
LANL   Newport News Nuclear BWXT Los Alamos	EM	Worker Heat Exhaustion Event	PNOV
SLAC National Accelerator Laboratory   Stanford University	SC	Arc Flash Injury Event	PNOV
SRS   Savannah River Nuclear Solutions, LLC	EM	Hand Injury (Finger Amputation) Event	CO
OREM   APTIM – North Wind Construction JV, LLC	EM	Hand Injury (Finger Amputation) Event	EL
ICP   Idaho Environmental Coalition, LLC	EM	Uncontrolled Exposure to Potentially Dangerous Levels of Carbon Monoxide	EL



## Enforcement Actions/Outcomes (FY 24) *(cont'd)*

Site   Contractor	Program Office	Title	Outcome
FNAL   Fermi Research Alliance LLC	SC	Serious Fall Injury	EL
FNAL   Whittaker Construction & Excavation, Inc.	SC	Serious Fall Injury	PNOV
FNAL   Nucor Harris Rebar Midwest, LLC	SC	Serious Fall Injury	No Action
FNAL   Harris Rebar Placing, LLC	SC	Serious Fall Injury	PNOV
Sandia   National Technology and Engineering Solutions of Sandia, LLC	NNSA	Prohibited Articles	EL
Y-12   Consolidated Nuclear Security, LLC	NNSA	Compromised Combinations	EL
LANL   Triad National Security, LLC	NNSA	Glovebox Release	PNOV



## Enforcement Actions/Outcomes (FY 24) *(cont'd)*

Site   Contractor	Program Office	Title	Outcome
SRS   Savannah River Nuclear Solutions, LLC	EM	Amputation	PNOV
Y-12   Consolidated Nuclear Solutions, LLC	NNSA	Absence of Documented Criticality Controls	PNOV
Fermi   Fermi Research Alliance, LLC	SC	Unplanned Radiation Exposure	CO
Sandia   National Technology and Engineering Solutions of Sandia, LLC	NNSA	Amputation	CO



## Notice of Intent to Investigate

Site   Contractor	Program Office	Title	NOI Issued
Paducah   Mid-America Conversion Services, LLC: Construction Safety Consultants, Inc.: Omni Services, Inc.	SC	Confined Space Entry	August 23, 2023
Oak Ridge   Davey Tree Company and ETMC	SC	Fatality	September 11, 2023
LLNL – Lawrence Livermore National Security, LLC	NNSA	Quality Assurance Program Implementation	November 14, 2023
LLNL – Lawrence Livermore National Security, LLC	NNSA	Radiological Contamination	January 26, 2024
Sandia   National Technology and Engineering Solutions of Sandia, LLC	NNSA	Prohibited Articles	March 26, 2024
Oak Ridge   The Whiting-Turner Contracting Company and BESCO-Engert	SC	Telehandler Injury	April 2-5, 2024
Hanford   Hanford Mission Integration Solutions, LLC	EM	Fire Suppression System Maintenance	August 1, 2024
Hanford   Central Plateau Cleanup Company, LLC	EM	Fire Suppression System Maintenance	August 1, 2024
KCNCS   Honeywell FM&T	NNSA	Classified Information	September 5, 2024
NNSS   Mission Support and Test Services, LLC	NNSA	Small Explosion	September 23, 2024

# Worker Safety and Health





# FERMI

## Serious Fall Injury

- Contractor – Site
  - Fermi Research Alliance (FRA)
  - Fermi National Accelerator Laboratory
  - 4 NOIs issued: FRA, Whittaker Construction, Nucor Harris, and Harris Rebar Placing
  - 2 PNOVs, 1 EL
- Event
  - Worker fall from height (approx. 23 feet) – May 25, 2023.
  - Ironworker was preparing to secure a rebar template bar to a concrete formwork wall and fell backwards, striking a diagonal brace before landing on the concrete slab below.
  - Air lifted to a local trauma center and sustained serious injuries, including head trauma.



# Sandia

## Worker Hand Injury (Finger Amputation) Event

- Contractor – Site
  - National Technology and Engineering Solutions of Sandia, LLC (NTESS)
  - Weapons Evaluation Test Laboratory (WETL);  
Located at Pantex
  - Consent Order
- Event
  - 4 workers were manually aligning a large 750-pound chamber cover after it had been lowered using a hoist - March 29, 2024.
  - Worker 1 was using their right middle finger to check if the cover was horizontally aligned with the chamber when the cover fell into place, pinching their finger.
  - Fingertip amputation.



# Paducah

## Potential Overexposure to Toluene Event

- Contractor – Site
  - Mid-America Conversations Services, LLC
  - Paducah Site
  - 3 NOIs issued: Mid-America Conversion Services, LLC, Construction Safety Consultants, & Omni Services, Inc.
- Event
  - Remove and replace the chlorobutyl rubber liner inside five HFS tanks – March 9, 2023.
  - Entrant was painting an adhesive for approx. 15 min when he began experiencing symptoms (dizzy, staggering, confused).
  - Entrant had to be retrieved from the tank.



# Oak Ridge

## Telehandler Event

- Contractor – Site
  - UT-Battelle
  - Oak Ridge National Laboratory
  - 3 NOIs issued: UT-Battelle, Whiting-Turner Contracting Company, and BESCO-Engert
- Event
  - Lifting materials to an exterior roof access point – July 14, 2023.
  - Unsecured 585-lb Extendable Truss Boom (jib) attachment, came loose from the telehandler, and slid off the forks, striking and pinning a pipefitter on the roof by their pant leg.
  - Multiple traumatic fracture injuries to bones (ankle and pelvis).



# NNSS

## Two Ground Fall Events

- Contractor – Site
  - Principal Underground Laboratory for Subcritical Experimentation (PULSE) facility
  - Nevada National Security Sites
- Events
  - Two ground fall events – June 29 and August 22, 2023.
  - Loose and unsecured soil and rocks fell onto and significantly injured multiple miners.



## Notable Observations

- Subcontractor safety
- Inadequate work planning and control
- Job/process hazard analysis ineffective/absent
- Non-routine and skill of the craft tasks
- Worker training & qualifications
- Amputations

# Nuclear Safety



Image of Workstation Set Up

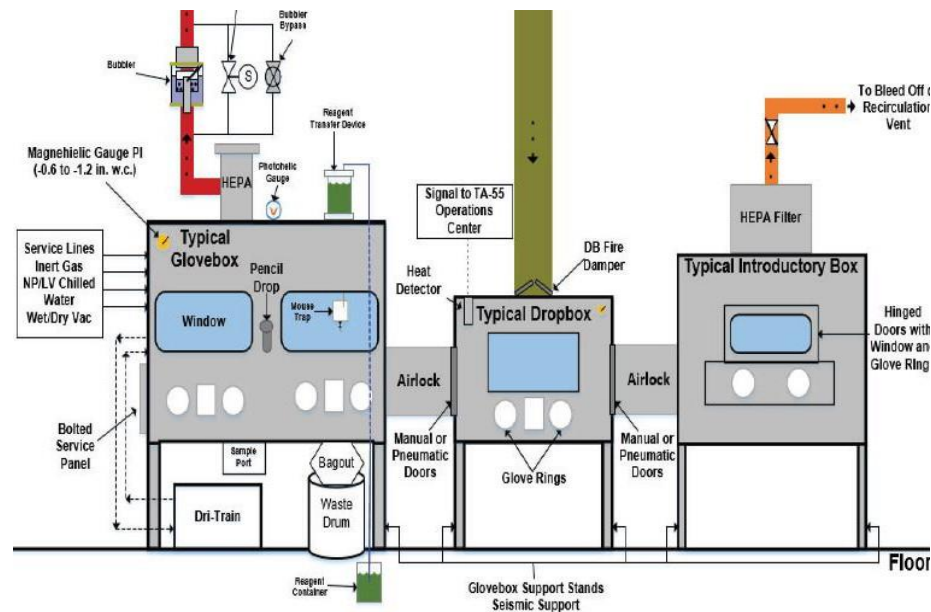


The desk can be seen in line with the beam.

# LANL

## Plutonium Glovebox Release

- Contractor – Site
  - Triad National Security, LLC
  - Los Alamos National Laboratory
- Conditions:
  - Pu glovebox breach and release - January 7, 2022.
  - Multiple individuals contaminated;
  - Continuous Air Monitors (CAMs) alarmed
  - Field indicators of potentially significant internal uptake.
  - Multiple areas of interest with nuclear safety and radiological safety barriers.





## Plutonium Glovebox Release Outcome - PNOV

- **Areas of Violation**
  - Hazard Identification and Control
    - Inadequate identification and implementation of controls to protect safety function
  - Unreviewed Safety Question Process
    - Failure to enter the PISA process for inability to meet safety function
  - Quality Improvement
    - Inadequacies in identifying and correcting issues before they resulted in an event
    - Inadequacies with prevent recurrence of similar issues
  - Work Processes
    - Failure to adequately implement work processes to maintain the glovebox's confinement safety function
    - Loss of configuration management resulting in failure of safety function
  - Occupational Radiation Protection
    - Failure to implement controls to prevent releases to the workplace atmosphere or control the inhalation of such materials



## Unplanned Worker Radiation Exposure

- Contractor - Site
  - Fermi Research Alliance, LLC (FRA)
  - Fermi National Accelerator Laboratory
- Conditions:
  - Unplanned Worker exposure of 530 mrem – NTS Report October 18, 2022.
  - Worker operating a Radiation Generating Device in an unposted radiation area.
  - Expired memorandum for operation (RWP).
  - Workstation in line with the source (x-ray radiation).
  - Worker stopped checking his pocket dosimetry and recording his dose.
  - Identified via quarterly dosimetry results months after completion of project.

Image of Workstation Set Up



The desk can be seen in line with the beam.



# FERMI

## Unplanned Worker Radiation Exposure Outcome – Consent Order

- **Areas of Concern:**
  - Radiological monitoring was not adequate to detect changes in radiological conditions and verify the effectiveness of engineered and administrative controls
  - Radiological postings were not adequate and conflicted with local operational guidance
  - Operational procedures were not commensurate with the radiological hazards and were expired
  - Measures to maintain exposure ALARA were not adequately developed or implemented

## Y-12

# Loss of Multiple Criticality Controls During Removal of a Legacy Machine

- Contractor – Site
  - Consolidated Nuclear Security, LLC
  - Y-12 National Security Complex
- Conditions:
  - Removal of a Legacy Machine - April 14, 2023.
  - No documented criticality controls available.
    - Use of unapproved container
    - Sufficient mass of fissile material
    - Presence of unapproved materials
  - Weaknesses in procedures and compliance.



## Loss of Multiple Criticality Controls Outcome - PNOV

- **Areas of Violation**
  - Establishment of Management Processes
    - Inadequate interfaces between nuclear criticality safety, maintenance, and operations personnel.
  - Training and Qualification
    - Inadequate to enable workers to recognize fissile material and handle it appropriately.
  - Prevention and Detection of Quality Problems
    - Inadequate to detect and prevent quality problems.
  - Identification, Control, and Correction of Processes that do not meet Established Requirements
    - Deficient conditions when handling the fissile material
  - Development and Management of Documents to Prescribe Processes and Specify Requirements
    - Documents inadequately prescribed processes to prevent nuclear criticality
  - Work Processes
    - Failure to perform work consistent with technical procedures and instructions
  - Safety Basis Requirements
    - Failure to ensure adequate criticality safety requirements were established prior to performing work

# LLNL

## Quality Assurance Program Deficiencies

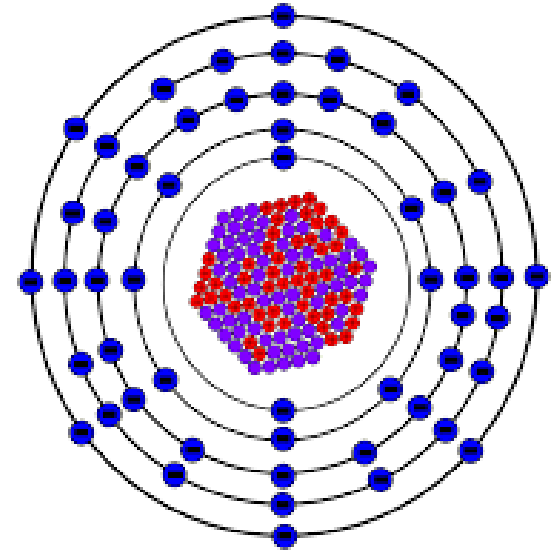
- Contractor – Site
  - Lawrence Livermore National Security, LLC (LLNS)
  - Lawrence Livermore National Laboratory
- Conditions:
  - LFO identified quality assurance discrepancies – NTS Report December 21, 2022.
    - Unevaluated supplier of SS SSCs.
      - Duration over 10 years
    - Software quality assurance.



# LLNL

## Loss of Contamination Control

- Contractor – Site
  - Lawrence Livermore National Security, LLC (LLNS)
  - Lawrence Livermore National Laboratory
- Conditions:
  - Total Contamination (10 CFR 835 limit 500 disintegrations per minute [DPM]) – March 2023.
    - Personal items (offsite) – 400,000 DPM I-125
    - Work items (onsite) – 10,000 DPM I-125





# Hanford

## Fire Suppression System Maintenance

- Contractor – Site
  - Hanford Mission Integration Solutions, LLC (HMIS)
  - Hanford Site
- Conditions:
  - NFPA 25 maintenance not being performed between 2021 and 2023.
    - Multiple contractors and nuclear and nonnuclear facilities
    - Safety Significant Fire Suppression System inoperable





# Hanford

## Fire Suppression System Maintenance

- Contractor – Site
  - Central Plateau Cleanup Company, LLC (CPCCo)
  - Hanford Site
- Conditions:
  - NFPA 25 maintenance not being performed between 2021 and 2023.
    - Safety Significant Fire Suppression System inoperable
    - Operated nuclear facility in this condition for unknown period



# Nuclear Safety Top Five Areas of Violation 2019-2024

