



# **EA 2006-05: LANL Operational Performance Deficiencies**

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# Overview



- Enforcement Background
- Events/Deficiencies
- Enforcement Approach
- Change Analysis
- Key Factors
- Enforcement Outcome



# Enforcement Background

## *Prior Actions*



### ➤ **EA-2003-02 – Multiple events**

- Work process, radiological control and safety basis deficiencies
- Quality improvement citation for ineffective corrective actions
- Seven SL II, one SL III (\$385K)
- New LANL senior management to provide quarterly briefings to NNSA and Office of Enforcement on progress in ten areas

### ➤ **EA-2004-05 – Worker overexposure**

- Work process, safety basis, quality improvement
- Seven SL I violations (escalated based on long-standing nature of deficiencies) (\$770K)
- No mitigation for corrective actions based on history



# Enforcement Background



- Site stand-down (July 2004) based on security and safety events - phased resumption
  
- TA-55-06 Contamination event (March 2005)
  - Office of Enforcement briefed by LANL management
  
- July 2005 Sigma Facility americium contamination event
  - Appropriate for enforcement
  - Type B completed January 2006



# Enforcement Background

*(cont'd)*



- ✦ Office of Independent Oversight ES&H Inspection (November 2005)
  - ✦ Numerous findings associated with essential system functionality, hazard analysis, feedback and improvement



## Events/Deficiencies



- TA-50-66 worker uptake during decontamination activities (March 2005)
- Americium contamination event at Sigma Facility (July 2005)
- Results of Independent Oversight Inspection (November 2005)



## TA-50-66 Event



- Decontamination of a below-grade vault which contains waste staging tanks
- 2003 – leak of caustic radwaste into vault. Preliminary decontamination work performed
- February 2005 – decontamination resumes (paint chipping and cleanout)
- Increasing contamination/airborne levels
- Workers PPE highly contaminated
- All workers receive minor intakes (< 50 mrem)



## TA-50-66 Event *Deficiencies*



- Work document did not address hazard
- ALARA review controls (local ventilation, skilled workers, CAM hold point of 100 DAC) not implemented
- Estimated contamination levels used, not verified prior to or during work
- Air-sampling times did not correlate with work activity
- Indicators of a problem not recognized



# Americium Contamination Event



- ✦ Type B – Spread of Am-241 contamination to four states
- ✦ July 2005 – Shipment of 18 uranium nitride pellets in nine swagelok couplings from PF-4 to Sigma Facility for welding
- ✦ Problem – Unexpected Am-241 contamination on couplings
- ✦ Shipping container and packaging opened in inert glovebox



# Americium Event *Deficiencies*



- Hazard not communicated between PF-4 and Sigma Facility
  
- Contributing deficiencies in areas of:
  - Work planning and controls
  - Survey and labeling practices
  - Receipt surveys
  - Personnel monitoring practices at Sigma
  - Assessments
  
- Problems with event response



# Independent Oversight Inspection



- Report issued November 2005
- Reviewed core functions and essential system functionality
- Twenty-six findings – many in areas of prior enforcement actions
- Similar deficiencies to TA-50-66 and Am-241 event



## Enforcement Approach



- Early 2006 – LANL (UC) requests expedited enforcement (no site investigation) due to contract transition
  - Performs compliance status review of events against regulations
- Office of Enforcement determination – can rely on existing documentation as basis for enforcement decision
- No investigation report - issued detailed PNOV



# Enforcement Approach

(*cont'd*)



- UC, LANS and NNSA meeting to discuss integrated corrective action approach
- Enforcement Action delayed until February 2007



## Key Factors



- High Significance – worker impacts could have been greater
- Programmatic deficiencies
- Disclosed through events and DOE assessment
- Thorough investigation into TA-50-66
- Due to long-standing and recurrent nature, enforcement history, no mitigation for corrective actions (similar to 2004)



# Enforcement Outcome



- PNOV to University of California – February 2007
- Fifteen separate violations (5 SL I, 10 SL II)
- SL I – work controls adequacy, implementation, QI, assessments, ALARA
- SL I based on long-standing and programmatic nature, not escalated from SL II



# Enforcement Outcome

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- \$1.1 M waived penalty
- No mitigation
- Per-day authority not utilized
- NA-1 letter to LANS
  - Forwarded copy of PNOV
  - Expectations regarding corrective actions