



Radiological Work Deficiencies at PFP and 105 K-East Reactor Facility

NEL-2012-02

**Presented to: EFCOG Enforcement
Coordination Working Group**

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Summary of Concerns- PFP

- DOE Surveillance Report S-11-SED-CHPRC-PFP-002, *Planning and Execution of Radiological Work (April, 2011)*
 - One Concern, Twelve Findings
 - Referenced 4 events related to glove box removal activities
 - 1 event resulted in 4 individuals receiving low level uptakes of Pu (NTS-RL—CPRC-PFP-2011-0005)

Summary of Concerns

PFP Radiological Work Deficiencies

- Multiple deficiencies in planning and execution of radiological work including program deficiencies in
 - Radiological Work Planning
 - Hazard Analysis
 - Execution of radiological work
 - Training of radiological work planners
 - Unclear roles and responsibilities
 - Radiological staffing
 - Conduct of Operations

Summary of Concerns

PFP Radiological Work Deficiencies

- RCE Performed:
 - 1 Root Cause: Ineffective management of change associated with the PFP shift to D&D work scope and increase in scope due to ARRA funding
 - 2 Contributing Cause:
 - PFP/RadCon Organization structure ineffective to assure implementation of an effective RadCon Program
 - Conduct of Operations culture LTA
- Preventive Actions included centralizing RadCon program, procedure improvements, training, Communication of expectations

Summary of Concerns

100 K-East Reactor

- Demolition of the 105 K-East Reactor Rod Room - January 2011
- Enhanced Work Planning commenced in early 2010; HRB approved end of September 2010
- Work plan called for using an excavator to shear rod extensions from Horizontal Control Rods - HCRs to remain in place inside reactor core
- Administrative control in work package prohibiting removal of HCRs
- Controls in place to monitor for airborne radioactivity, removable contamination, and external radiation exposure during demolition work; however, not real-time self-reading devices provided.
- Demolition on outer rod room commenced mid-December

Summary of Concerns

100 K-East Reactor

- January 10, 2012 – FWS determined method described in work plan not practical due to site conditions; alternate approach selected. Allowed by the work package
- January 11, 2012: 11 HCRs observed hanging from the outer wall of the 105K-East Reactor control rod room
- January 12, 2012: Stop work declared, initial investigation initiated, documented in CRRS
- No exposure/contamination spread; radiation levels below HRA levels
- Did not reach threshold for reporting into ORPS/NTS.
 - Note: OE considered event to be a Near Miss to a radiological exposure event.
- ACE performed

Other Issues/Concerns Noted in EL

- July 2010: NTS-RL—CPRC-PRCGEN-2010-0002, *Programmatic Issues Associated with Identification of Hazards and Incorporation of Associated controls into Work Documents*
- February 2011: *Integrated Corrective Action Plan (ICAP)*: Addressed programmatic issues of work management, corrective action management, self-assessment, performance trending and organizational performance
- May 2012: Effectiveness Review – ICAP
- July 2013 - CAP: *Non-Compliance with Contractual and Regulatory Requirements Prior to Initiating Construction on the 100K Infrastructure Utilities Upgrade Project*

Noncompliances Noted

- Areas of potential noncompliance noted by OE included:
 - Inadequate hazard analysis
 - Work Control
 - Failure to develop and implement written procedures commensurate with radiological hazards.

Process Notes

- Initially contacted by OE in June 2012
- Final letter received in September
- Initial focus was on the Control Rod Event – Pulled programmatic considerations from PFP events
- Although radiological control program is centralized, the events were unrelated in nature/cause.
- Pulled together issues/concerns over a 2-year span
- Significant consideration given to local DOE office conclusions on effectiveness

Process Notes

- Open communication and discussion on path forward being considered
- Requested input for consideration
- Allowed the opportunity to provide suggestions on content
- No surprise content in final letter
- Response provided to OE, acknowledging their conclusions and recognizing collaborative effort of local office in resolving program concerns
- Update provided during D.C. visit in January 2013