

# Medina Modification Center Special Exposure Cohort Petition Evaluation Report

**Stuart L. Hinnefeld**

**Director**

**National Institute for Occupational Safety and Health  
Division of Compensation Analysis and Support**

**June 2012  
Santa Fe, NM**

# Petition Overview

- NIOSH determined it was not feasible to complete the dose reconstruction for an existing Medina claim
- May 24, 2012: Claimant was notified and provided with a copy of Special Exposure Cohort Petition Form A
- May 30, 2012: Petition (83.14) submitted to NIOSH
- May 31, 2012: NIOSH Evaluation Report issued

# Background

- EEOICPA covered from 1958-1966 (DOE)
- Located in San Antonio, TX, SW of Lackland AFB
- About 3,200 acres in size
- Constructed by AEC as a nuclear weapons storage and maintenance area
- Operated by AEC, Air Force, Sandia Corp., and contractor Mason and Hanger
- Sister facility to Clarksville Modification Center

# Operations

- Storage operations began in 1955
- Nuclear capsule storage in underground vault structures (A Structures)
- Weapons assembly, modification, and disassembly in various structures
- AEC transferred operations to Pantex in 1965
- Decommissioning not complete until 1966
- Workforce—ranged from ~95 workers in 1959 to a maximum of 669 in 1963

# Sources of Available Information

- ORAU Team Site Profiles and Technical Information Bulletins (TIBs) and Procedures
- NIOSH Site Research Database
- Existing claimant files
- Information from Pantex Plant SEC evaluation
- Data captures

# Data Capture Efforts

- DOE Opennet (OSTI data base)
- Standard data base search (DDRS, NNSA, CEDR, etc.)
- Internet search
- Nuclear Regulatory Commission (ADAMS)
- Hanford/PNNL
- DOE Legacy Management
- State of Texas
- Various DOE locations, especially Pantex
- Libraries

# NOSH/OCAS Claims Tracking System

(information as of May 21, 2012)

- Medina claims submitted to NIOSH 46
- Claims that meet the recommended class years 46
- Dose reconstructions completed for claims that meet the class definition 38
- Claims containing some internal dosimetry 0
- Claims containing some external dosimetry 16

# Potential Radiation Exposures

## ■ Internal

- Airborne uranium oxides (HEU and DU)
- Tritium gases
- Radon
- Plutonium

## ■ External

- Photon/beta and neutron exposures from
  - Uranium
  - Plutonium
  - Ir-192 and Co-60 radiography sources



# Personal Monitoring Data

- **Internal monitoring data**
  - Indications are that baseline tritium analyses were performed; data has not been found by NIOSH
  - No information on uranium or plutonium urinalysis
- **External monitoring data**
  - Individual external and summary records for monitored workers from 1959-1966 available
  - NTA film was added to badges in 1964, but discontinued shortly thereafter

# Workplace and Source-Term Data

- **Workplace data**
  - Routine air monitoring for tritium and alpha contamination was done
  - NIOSH has been unable to locate the data
- **Source-term data**
  - Materials include uranium metals, uranium oxides, tritium, and plutonium
  - Detailed source-term information is not available (some classification issues)

# Feasibility of Dose Reconstructions

- Available internal monitoring records, process descriptions, and source-term data are inadequate to complete dose reconstructions with sufficient accuracy for the evaluated class of employees during the period from January 1, 1958 through December 31, 1966
- The findings from this SEC evaluation are consistent with the SEC determinations for facilities with similar radiological exposures:
  - Pantex Plant
  - Clarksville Modification Center, Ft. Campbell

# Feasibility of Dose Reconstructions—cont.

- External doses can be reconstructed using available external monitoring data and available dose reconstruction methods:
  - Available film badge data likely from highest exposed worker group
  - Neutron doses are assigned using neutron-to-photon ratios of similar operations
  - Doses from X-ray examinations are assigned based on available methodology

# Feasibility Summary

Feasibility Findings for Medina Modification Center		
Source of Exposure	Dose Reconstruction Feasible	Dose Reconstruction NOT Feasible
<b>Internal</b>		
		X
<b>External</b>		
- Beta-Gamma	X	
- Neutron	X	
- Occupational Medical X-ray	X	

# Health Endangerment

- The evidence reviewed in this evaluation indicates that some workers in the class may have accumulated chronic radiation exposures through intakes of radionuclides and direct exposure to radioactive materials.
- Consequently, NIOSH is specifying that health may have been endangered for those workers covered by this evaluation who were employed for a number of work days aggregating at least 250 work days within the parameters established for this class or in combination with work days within the parameters established for one or more other classes of employees in the SEC .

# Proposed Class

All employees of the Department of Energy, its predecessor agencies, and DOE contractors or subcontractors who worked at the Medina Modification Center in San Antonio, Texas during the period from January 1, 1958 through December 31, 1966, for a number of work days aggregating at least 250 work days, occurring either solely under this employment or in combination with work days within the parameters established for one or more other classes of employees in the Special Exposure Cohort.

# Recommendation

- For the period from January 1, 1958 through December 31, 1966, NIOSH finds that radiation dose estimates cannot be reconstructed for compensation purposes

Class	Feasibility	Health Endangerment
January 1, 1958 – December 31, 1966	No	Yes