

# **Vitro Manufacturing - Canonsburg Addendum to the Special Exposure Cohort Petition Evaluation Report**

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**August 2011**

**Richland, WA**

# Petition Overview

- **July 14, 2010: 42 CFR Part 83.13 petition received (SEC-00177)**
- **September 9, 2010: Petition qualified for evaluation**
- **NIOSH divided the petitioner-requested class into two periods to be separately evaluated**
  - **January 1, 1958 through December 31, 1959**
  - **Residual radiation period: January 1, 1960 through April 30, 1965 (was reserved for further research)**

# Petition Overview—cont.

- Evaluation for the first period presented at the Advisory Board meeting held in February 2011
  - Based on NIOSH's recommendation, a class has been designated covering January 1, 1958 through December 31, 1959
- Addendum to the Evaluation Report completes NIOSH's evaluation of the second period
  - January 1, 1960 through September 30, 1965

# Background

- Located in Canonsburg, PA, approximately 20 miles southwest of Pittsburgh
- Performed Manhattan Engineering District (MED) and Atomic Energy Commission (AEC) contract recovery of uranium from residues and scraps beginning in August 1942
- Performed various process developments to recover uranium from different waste streams including the Tonawanda wastes stored at Lake Ontario Ordnance Works

# Background—cont.

- In 1955, received first of a series of source material licenses to import milling by-product residues from Canada
- In January 1957, completed the shipment of 10K running tons of residues that had been classified as “unrecoverable material-measured” to Blairsville
- Two piles of imported residues resulted and remained on the Canonsburg site
- Work to bury the two residue piles in the lagoon area began in July 1965, and was completed by September 30, 1965

# Vitro Operations: 1960-1965

- Decontamination and decommissioning conducted in early 1960
  - Shuttering of process equipment
  - Storing and removing ore residues
  - Appears to have been completed by May 1960
- Indications of some work activities after May 1960
  - Residue piles remained onsite, protected by a chain link fence and a *guard service*
  - Vitro indicated to the AEC that the material was being kept wet to prevent resuspension of particles during this storage period

# Vitro Operations: 1960-1965—cont.

- Residue piles provided source-term for exposure
  - More than 4,000 dry tons of ore processing residue stored above ground
  - AEC inspection detected levels of contamination in uncontrolled areas above permissible levels
  - Potential for wind-blown resuspension
- Burial of the uranium residues began August 2, 1965 and was completed by September 30, 1965

# Potential Radiation Exposures During the Class Period

- **Internal sources of exposure**
  - **Uranium and uranium progeny**
    - Decontamination of the buildings
    - Storage, transport, and burial of the residue piles
    - Resuspension from the above-ground residue piles
- **External sources of exposure**
  - **Photon/beta exposure from the residues of uranium and progeny**

# Personal and Area Monitoring Data

- **Internal monitoring data**
  - No bioassay data for the evaluation period
  - No air sample data are available for the evaluated period
- **External monitoring data**
  - No external monitoring data for 1960-1965
  - Limited area survey data are available for 1960-1965
  - Surveys and soil data collected to prepare for or verify remediation

# Sources of Available Information

- ORAU Team Technical Information Bulletins (TIBs) and Procedures
- Interviews with seven former employees
- Existing claimant files
- Documentation provided by petitioner
- NIOSH Site Research Database
- Data captures

# Data Capture Efforts

- U.S. Atomic Energy Commission
- FUSRAP data during residual period
- ORNL records
- DOE Opennet (OSTI database)
- Internet search
- NARA Atlanta
- Various DOE locations

# Interviews

- Seven interviews with former workers were completed for the period January 1958-April 1960 (petitioner requested period)
- No additional interviews conducted for the period beyond 1960
  - None of the workers located for interview were onsite beyond 1960; therefore, they could not provide information for conditions beyond shut-down

# Previous Dose Reconstructions

## NIOSH OCAS Claims Tracking System

Information available as of August 8, 2011

- Vitro Manufacturing claims submitted to NIOSH 27
  
- Claims with employment during the period evaluated (01/01/1960-09/30/1965) 8
  - Pulled for previous SEC (1942-1957) 1
  - Dose Reconstructions completed 7
  
- Claims containing internal monitoring data 0
  
- Claims containing external monitoring data 0

# Feasibility of Dose Reconstructions

- The available 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 January 1, 1960 through September 30, 1965
- With the effective removal of source-term achieved through the burial of the residue piles, NIOSH is able to model the exposure scenario at Vitro Manufacturing from September 30, 1960, forward, utilizing its normal residual period methodologies

# Summary of Feasibility Findings (1960-1965)

Source of Exposure	Reconstruction Feasible	Reconstruction Not Feasible
<b>Internal</b>		<b>X</b>
- Natural Uranium		<b>X</b>
- Uranium Progeny		<b>X</b>
<b>External</b>		<b>X</b>
- Gamma		<b>X</b>
- Beta		<b>X</b>
- Neutron	<b>N/A</b>	<b>N/A</b>
- Occupational Medical X-ray	<b>N/A</b>	<b>N/A</b>

# NIOSH Recommendation

**All Atomic Weapons Employees who worked at Vitro Manufacturing in Canonsburg, Pennsylvania, from January 1, 1960 through September 30, 1965, 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.**

# NIOSH Recommendation—cont.

Class	Feasibility	Health Endangerment
<p><b>January 1, 1960 to September 30, 1965</b></p>	<p><b>No</b></p>	<p><b>Yes</b></p>