Ames Laboratory
Special Exposure Cohort
Petition Evaluation Report

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Petition Overview

- March 31, 2011: NIOSH informed an Ames Laboratory claimant that we were unable to reconstruct the radiation dose for the claim
- April 7, 2011: NIOSH received an 83.14 SEC petition
- April 13, 2011: petition qualified for evaluation
- June 9, 2011: NIOSH Evaluation Report issued

Petition Overview—cont.

- **NIOSH proposed class to be added to the SEC:**

  All Department of Energy employees, its predecessor agencies, and its contractors and subcontractors who worked in any area of the Ames Laboratory at Iowa State University during the period from January 1, 1942 through December 31, 1970, 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 classes of employees included in the Special Exposure Cohort.

Background

- Ames Laboratory is located at Iowa State University in Ames, Iowa.
- Ames Laboratory is a DOE facility with operations beginning in 1942 and continuing to present.
- During the World War II years, the primary mission of the Ames Laboratory was the process development and production of uranium and thorium metal.
- After the war, the mission of the Ames Laboratory shifted to mainly research and development.

Background—cont.

- There currently are three SEC classes associated with the Ames Laboratory:

  1. All DOE employees or contractors who worked at one of the following facilities/locations: Chemistry Annex 1 (also known as “the old women’s gymnasium” and “Little Ankeny”), Chemistry Annex 2, Chemistry Building (also known as “Gilman Hall”), Research Building, or the Metallurgical Building (also known as “Harley Wilhelm Hall”) from January 1, 1942 through December 31, 1954 (SEC-0038).

Background—cont.

- **SEC classes (cont.):**

  2. **Sheet metal workers, physical plant maintenance and associated support staff (including all maintenance shop personnel), and supervisory staff who were monitored or should have been monitored for potential internal radiation exposures associated with the maintenance and renovation activities of the thorium production areas in Wilhelm Hall (a.k.a. the Metallurgy Building or "Old" Metallurgy Building) at the Ames Laboratory from January 1, 1955, through December 31, 1970 (SEC-0075).**

Background—cont.

- **SEC classes (cont.):**

  3. **All employees of the Department of Energy, its predecessor agencies, and its contractors and subcontractors who worked in any area of the Department of Energy facility at the Ames Laboratory from January 1, 1955 through December 31, 1960 (SEC-0166).**

Background—cont.

- **SEC class definition review**
  - **In November 2010, DCAS provided a report (DCAS Assessment Report—Review of SEC Class Definitions) that systematically reviewed all existing SEC class definitions based on a NIOSH evaluation and recommendation to add a class.**
  - **The class definitions were reviewed based on criteria of consistency, applicability, and whether any actions may be required by NIOSH to correct an existing class definition (e.g., because of possible problems with implementation by DOL).**
  - **The review was specific to the criteria used in the SEC evaluation report to develop the class definition (e.g., feasibility time period, access controls, DOL implementation).**

Background– cont.

- **Review findings**
  - **Most of the issues and discrepancies identified in the DCAS report were associated with the evolution of the DCAS process for defining a class in an SEC Evaluation Report.**
    - **Early classes were closely related to the petitioner proposed class**
    - **Early classes were established based on perceived limitations and sometimes without the review by DOL to ensure they could be implemented as written**
  - **Over time, the need to expand and/or adjust the proposed SEC class to address DOL class implementation issues was recognized to ensure claimants were not inadvertently excluded.**

Background—cont.

- **The report identified a couple of classes associated with the Ames Laboratory that had potential issues and would not be defined the same way using today's criteria.**
  - **SEC-0038—a facility specific definition associated with the 1942 through 1954 period**
  - **SEC-0075—included job specific requirements and monitored or should have been monitored criteria for the period of 1955 through 1970**

Background—cont.

- SEC-0166 Evaluation Report was presented at the August 2010 Advisory Board meeting.
- NIOSH recommended a class of "All Employees" for the period of 1955 through 1960.
  - The end date was based on the petitioner proposed end date to expedite the evaluation and move the class forward.
  - NIOSH committed to continue to review the information to ensure a proper end date for the class.

Background---cont.

- **The class defined in the SEC-0185 Evaluation Report was developed to remove the issues associated with the earlier class definitions and to provide a proper class end date for SEC-0186.**

Feasibility of Dose Reconstruction

- **There are insufficient monitoring and source-term data from which to draw conclusions regarding potential magnitude of internal doses for the period from January 1, 1942 through December 31, 1970.**
  - **SEC-0038—infeasibility was driven by the inability to bound internal exposures from thorium operations**
  - **SEC-0075—infeasibility was driven by the inability to bound thorium exposures during routine maintenance and renovation activities at Wilhelm Hall (a.k.a. Metallurgy Building)**
  - **SEC-0166—infeasibility centered around the inability to bound internal exposures from radionuclides in the Research Building Hot Cave**

Feasibility Summary

Feasibility Findings for SEC-00185		
Source of Exposure	**Dose Reconstruction Feasible**	**Dose Reconstruction NOT Feasible**
Internal		
		X
External		
- Beta-Gamma	X	
- Neutron	X	
- Occup. 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 Department of Energy employees, its predecessor agencies, and its contractors and subcontractors who worked in any area of the Ames Laboratory at Iowa State University during the period from January 1, 1942 through December 31, 1970, 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 classes of employees included in the Special Exposure Cohort.

Recommendation

- **For the period January 1, 1942 through December 31, 1970, NIOSH finds that radiation dose estimates cannot be reconstructed for compensation purposes**

Class	Feasibility	Health Endangerment
January 1, 1942 – December 31, 1970	No	Yes