

HHS Designation of Additional Members of the  
Special Exposure Cohort  
under the  
Energy Employees Occupational Illness Compensation Program Act of 2000

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Designating a Class of Employees from  
Ames Laboratory  
Ames, Iowa



## I. Designation

I, Kathleen Sebelius, Secretary of Health and Human Services, designate the class of employees defined in Section II of this report for addition to the Special Exposure Cohort (SEC), as authorized under the Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA), 42 U.S.C. § 7384q.

October 6, 2010  
Date

[Signature on File]  
Kathleen Sebelius

## II. Employee Class Definition

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, 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.

## III. Designation Criteria and Recommendations

Pursuant to 42 U.S.C. § 7384q, for the class defined in Section II of this report, the Secretary has determined, and the Advisory Board on Radiation and Worker Health (Board) has recommended, that

- (1) it is not feasible to estimate with sufficient accuracy the radiation dose that the class received; and
- (2) there is a reasonable likelihood that such radiation dose may have endangered the health of members of the class.

The SEC final rule states in 42 C.F.R. § 83.13(c)(1) that it is feasible in two situations to estimate the radiation dose that the class received with sufficient accuracy. First, the rule states that radiation doses may be estimated with sufficient accuracy if NIOSH has established that it has access to sufficient information to estimate the maximum radiation dose for every type of cancer for which radiation doses are reconstructed that could have been incurred under plausible circumstances by any member of the class. Alternatively, radiation doses may be estimated with sufficient accuracy if NIOSH has established that it has access to sufficient information to estimate the radiation doses of members of the class more precisely than a maximum dose estimate.

The Board, pursuant to 42 U.S.C. § 7384q, advised the Secretary to designate the class as an addition to the SEC in a letter received by the Secretary on September 7, 2010.

## IV. Designation Findings

### Feasibility of Estimating Radiation Doses with Sufficient Accuracy

The Secretary established the feasibility determination for the class of employees covered by this report based upon the findings summarized below.

- Principal sources of internal radiation exposures for members of the proposed class included exposures to thorium, thorium decay products including thoron, uranium, and the uranium decay products thorium-234 and protactinium-234m.
- NIOSH found that survey and process data are sufficient to bound internal uranium exposures for Ames Laboratory workers. NIOSH has not, however, located sufficient data, including bioassay results, ambient air concentrations, or process information to estimate with sufficient accuracy internal exposures to radionuclides other than uranium for workers in one of the Ames Laboratory buildings (the Research Building (Spedding Hall)), which includes an area known as the Hot Canyon. In addition, the Cave within the Hot Canyon did not provide a degree of containment that precluded the release of radioactive materials into the air. The air within the Cave was shared by the workers outside of it. Lacking bioassay data for these workers, air samples for the room, or detailed information on the materials being handled, NIOSH cannot assess the internal doses to personnel working in the Hot Canyon.
- Because Ames Laboratory employment data do not associate individuals with specific buildings or rooms, it is not possible to specify whether employees did or did not work in the Research Building; therefore, NIOSH must extend the assessment of its inability to bound internal dose in the Research Building to all employees, contractors, and subcontractors at the Ames Laboratory facility. Consequently, NIOSH finds that it is not feasible to estimate, with sufficient accuracy, the total internal dose for workers at the Ames Laboratory site during the period from January 1, 1955 through December 31, 1960.
- Principal sources of external radiation exposures for members of the proposed class included gamma (photon) and beta radiation associated with handling and working in proximity to the uranium decay products, thorium-234 and protactinium-234m, and thorium decay products, primarily radium-228.
- NIOSH found that adequate documentation of the employee medical monitoring program and film badge results for the period supports the estimation of individual external exposures for the evaluated worker class. Therefore, NIOSH finds that there is sufficient information to bound occupational medical dose and external dose for Ames Laboratory workers during all periods. Consequently, NIOSH finds that it is feasible to estimate, with sufficient accuracy, the total medical X-ray and external dose for workers at the Ames Laboratory site during the period from January 1, 1955 through December 31, 1960.
- Pursuant to 42 C.F.R. § 83.13(c)(1), NIOSH determined that there is insufficient information to either: (1) estimate the maximum radiation dose, for every type of cancer for which radiation doses are reconstructed, that could have been

incurred under plausible circumstances by any member of the class; or (2) estimate the radiation doses of members of the class more precisely than a maximum dose estimate.

- Although NIOSH found that it is not possible to reconstruct internal radiation doses for the proposed class, NIOSH intends to use any internal and external monitoring data that may become available (and that can be interpreted using existing NIOSH dose reconstruction processes or procedures) for an individual claim. Dose reconstructions for individuals employed at the Ames Laboratory during the period from January 1, 1955 through December 31, 1960, but who do not qualify for inclusion in the SEC, may be performed using these data as appropriate.
- NIOSH finds that it is feasible to estimate, with sufficient accuracy, occupational medical dose for this class of employees using the assumptions and applicable protocols in the complex-wide Technical Information Bulletin, *Dose Reconstruction from Occupationally Related Diagnostic X-Ray Procedures* (ORAUT-OTIB-0006).
- The Board concurred with the NIOSH evaluation and recommended the proposed class for addition to the SEC.

#### Health Endangerment

The Secretary established the health endangerment determination for the class of employees covered by this report based upon the findings summarized below.

- (1) Pursuant to 42 C.F.R. § 83.13(c)(3), NIOSH established that there is a reasonable likelihood that such radiation doses may have endangered the health of members of the class. Pursuant to 42 C.F.R. § 83.13(c)(3)(ii), NIOSH specified a minimum duration of employment to satisfy this health endangerment criterion as “having been 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 (excluding aggregate work day requirements) established for one or more other classes of employees in the Cohort.”
- (2) NIOSH did not identify any evidence from the petitioners or from other resources that would establish that the class was exposed to radiation during a discrete incident likely to have involved exceptionally high-level exposures, such as a nuclear criticality incident, as defined under 42 C.F.R. § 83.13(c)(3)(i).
- (3) The Board concurred with NIOSH’s finding that the health of the class may have been endangered and defined the class according to the 250-work day requirement specified under 42 C.F.R. § 83.13(c)(3)(ii).

#### IV. Effect and Effective Date of Designation

The Secretary submits this report on the designation of one additional class to the SEC for review by Congress, pursuant to 42 U.S.C. §§ 7384/(14)(C)(ii) and 7384q(c)(2)(A), as amended by the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, Pub. L. No. 108-375 (codified as amended in scattered sections of 42 U.S.C.). Pursuant to 42 U.S.C. § 7384/(14)(C)(ii), as amended by the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005, Pub. L. No. 108-375 (codified as amended in scattered sections of 42 U.S.C.), the designation in this report will become effective 30 days after the date of this report's submission to Congress "unless Congress otherwise provides."

#### V. Administrative Review of Designation

The health endangerment determination of the designation provided in this report may be subject to an administrative review within HHS, pursuant to 42 C.F.R. § 83.18(a). On the basis of such a review, if the Secretary decides to expand the class of employees covered by this designation, the Secretary would transmit a supplementary report to Congress providing the expanded employee class definition and the criteria and findings on which the decision was based.