

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

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Designating a Class of Employees from

Iowa Army Ammunition Plant  
Burlington, Iowa

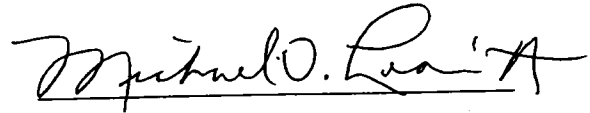


HHS Special Exposure Cohort Designation:  
Iowa Army Ammunition Plant

## I. Designation

I, Michael O. Leavitt, Secretary of Health and Human Services ("the Secretary"), 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.

Date:           MAY 20 2005          



Michael O. Leavitt

## II. Employee Class Definitions

Employees of the Department of Energy (DOE) or DOE contractors or subcontractors employed by the Iowa Army Ammunition Plant, Line 1, during the period from March 1949 through 1974 and who were employed for a number of work days aggregating at least 250 work days either solely under this employment or in combination with work days within the parameters (excluding aggregate work day requirements) established for other classes of employees included in the SEC.

## III. Designation Criteria and Recommendations

Pursuant to 42 U.S.C. § 7384q, the Secretary has determined for the class defined in Section II of this report, upon recommendation of the Advisory Board on Radiation and Worker Health ("the Board"), 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, 42 C.F.R. § 83.13(c)(1), states that it is feasible to estimate the radiation dose that the class received with sufficient accuracy under two situations. First, the rule states that radiation doses can 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 can 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. 42 C.F.R. § 83.3(c)(1)(i).

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 dated May 17, 2005, and received on May 18, 2005.

#### 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 upon the findings summarized below.

(1) As governed by 42 C.F.R. § 83.13(c)(1), NIOSH determined that it lacks access to sufficient information to either 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 to estimate the radiation doses of members of the class more precisely than a maximum dose estimate with sufficient accuracy.

(2) The “work factor” evaluation initially proposed by NIOSH as a means of doing dose reconstruction for the period March 1949-December 1962 is based, in part, on the assumption that workers who handled the pits did so for up to one hour per shift. Former workers at the Iowa Army Ammunition Plant (IAAP) offered credible statements that they had handled the pits during the period in question for significantly more than one hour per shift.

(3) For the period January 1963-December 1974, NIOSH has personal monitoring data that could be used to estimate radiation exposures at the IAAP. However, the Board in its deliberations found that it could not verify the representativeness of these data for use in assessing radiation exposure at the IAAP. In addition, personal exposures in some job categories with significant radiation exposures were never monitored.

(4) For the period from 1957 to 1974, Line 1 employees at IAAP who worked in the “gravel gerties” (special work-bay enclosures designed to prevent widespread contamination in the case of an explosive accident during assembly or disassembly of a weapon containing fissile material) were likely to have been exposed to naturally occurring radon and its progeny that could have been concentrated substantially by the design and ventilation characteristics of these unique constructions. Furthermore, an environmental health expert testified before the Board meeting in April (in favor of the petition) that Iowa has among the highest recorded levels of naturally occurring radon in the United States and that these levels can lead to exceptionally high indoor concentrations, which have been documented in buildings in Iowa. This potential for exceptionally high exposure to naturally occurring radon, combined with the special design of the gravel gerties, raise an unusual potential for the working conditions in these buildings to have produced high exposures to naturally occurring radon and its progeny. However, NIOSH reported at the April Board meeting that NIOSH did not

have sufficient information to estimate the radiation dose associated with this potential; NIOSH had not identified any radon monitoring data for these constructions during the relevant period of operation or from buildings located on a comparable naturally occurring radon source and having comparable design and operational characteristics. Hence, at the conclusion of the April Board meeting, it was not feasible to estimate the maximum radiation dose to which employees of Line 1 of IAAP who worked in the gravel gerties might have been exposed from naturally occurring radon, or to estimate these doses more precisely.

(5) NIOSH proposed to use different methods for calculating dose, i.e. models for the period March 1949-December 1962, and personal monitoring data for the period January 1963-December 1974. Using these two methods, the annual median external photon and neutron external doses for the two periods differed by more than a factor of ten. The Board concluded, and NIOSH concurs, that this significant difference demonstrates that NIOSH cannot estimate dose during this period with sufficient accuracy.

### Health Endangerment

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

(1) As governed by 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) For the period from March 1949 to 1974, NIOSH identified a potential for employees of Line 1 at IAAP to have been exposed to external radiation from fissile material. This fissile material may have been introduced at IAAP if weapons with "in-flight" inserted nuclear capsules were disassembled at IAAP during this period. Such exposure, occurring episodically during disassembly and reassembly operations, could have resulted in some workers in the class accumulating substantial radiation doses.

(3) For the period from 1957 to 1974, Line 1 employees at IAAP who worked in the gravel gerties were likely to have been exposed to naturally occurring radon and its progeny that could have occurred at concentrations higher than those received by other populations within Iowa as a result of the design and ventilation characteristics of these constructions. Such chronic internal exposures could have produced cumulatively substantial radiation doses.

(4) NIOSH did not identify any evidence from the petitioners or from other resources that would establish that either class was exposed to radiation during a discrete incident, such as a nuclear criticality incident, as defined under 42 C.F.R. § 83.13(c)(3)(i).

(5) The Board concurred with the finding of NIOSH that the health of the class may have been endangered and further concurred with NIOSH in this respect by defining the class according to the 250 work day employment requirement specified under 42 C.F.R. § 83.13(c)(3)(ii).

## V. Effect and Effective Date of Designations

The Secretary submits this report on designations of one additional class to the SEC for review by Congress, pursuant to 42 U.S.C. §§ 7384l(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. § 7384l(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."

## VI. 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. § 83.16(b). 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 criterion and findings on which the decision was based.