

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

Linde Ceramics Plant  
Tonawanda, New York



## 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.

February 2, 2012  
Date

[Signature on file]  
Kathleen Sebelius

## II. Employee Class Definition

All Atomic Weapons Employees who worked in any area at the Linde Ceramics Plant in Tonawanda, New York, from November 1, 1947 through December 31, 1953, 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 included in the SEC.

## 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 January 4, 2012.

## 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.

- NIOSH evaluated the feasibility of completing dose reconstructions for all employees who worked at the Linde Ceramics Plant in Tonawanda, New York, during the period from November 1, 1947 through December 31, 1953. NIOSH determined during this time period, Linde Ceramics Plant continued to process radioactive materials and to decontaminate associated buildings of the facility, which could have resulted in the generation of airborne dust, surface contamination, and direct contact with bulk materials. The potential for unmonitored, radiation exposure to uranium and uranium progeny continue at the facility until the operations concluded in 1953.
- The principal source of internal radiation doses for members of the class under evaluation for the period from November 1, 1947 through December 31, 1953 were: (1) the inhalation of uranium-bearing dust during the conversion of uranium dioxide into uranium tetrafluoride in Building 38 from 1947-1949; and (2) the potential inhalation or ingestion of residual contamination consisting of uranium in Building 38 and uranium and uranium progeny in other uranium-processing buildings (i.e., Buildings 14, 30, 31, and 37) during the dismantling and decontamination activities from 1947-1953.
- Although NIOSH has access to some monitoring information, its analysis of the data shows that it was insufficient for NIOSH to estimate unmonitored internal exposures for Linde Ceramics Plant workers during this time period. Specifically, NIOSH has obtained individual uranium urinalysis data from November 1947 to 1950 for some workers, but NIOSH does not have access to any monitoring data for worker who may have participated in work activities during 1950 and 1953, including potential decontamination and dismantling operations within Building 38.
- NIOSH obtained documents showing that during 1948, employees of a subcontractor engaged in extensive dismantling activities for equipment used in refining uranium and may have been exposed to an elevated-level of uranium progeny contamination in Building 30; however, no monitoring records have been found. NIOSH determined that there is insufficient data to bound the internal dose for this group of employees. Although Linde employees who worked in the uranium separation processing in Building 38 were monitored for uranium intakes, it is not possible to determine which workers might have also been exposed to the elevated-level of uranium progeny contamination in Building 30.
- During the evaluated period, the only source of radon was from the processing of African ore. Exposure to radon was not believed to be a significant source of internal exposure due to the age of the source and product materials. NIOSH is able to provide a claimant-favorable estimate for the radon intake for all workers during the evaluated time period. Consequently, NIOSH finds that it is not

feasible to estimate, with sufficient accuracy, the total internal dose for workers at the Linde Ceramics Plant during the period from November 1, 1947 through December 31, 1953.

- The principal source of external radiation doses for members of the evaluated class were (1) direct beta-gamma exposures from uranium and uranium progeny contained in the uranium separation process materials (i.e., uranium oxide and uranium tetrafluoride compounds); and (2) residual contamination present on building surfaces and inside equipment and components resulting from the uranium separation process and all other site operations.
- NIOSH has access to a database printout of approximately 6,000 weekly film badge results. Sufficient job category and workgroup information is contained within the database to allow for the statistical analysis of the data by job activity and by work area. This information enables NIOSH to reconstruct external doses for individual occupational groups with sufficient accuracy. NIOSH also has access to results of radiation surveys performed in 1949 and can be used along with the results from the initial FUSRAP (Formerly Utilized Sites Remedial Action Program) site surveys to establish bounding external radiation levels within the Linde Ceramics buildings during standby periods and for outdoor areas.
- NIOSH has sufficient information on the nature and extent of the occupational medical X-rays examination program in place at the Linde Ceramics Plant during the evaluated period and is feasible to reconstruct such dose. However, recently found evidence establishes that medical X-rays of Linde Ceramics workers were taken offsite at the Black Rock Clinic from 1943 through 1949, and thus, not a covered exposure to be included in the dose reconstruction. Therefore, medical X-ray dose is not a consideration for workers at the Linde Ceramics Plant in Tonawanda, New York for the time period from November 1, 1947 through December 31, 1949. Consequently, NIOSH finds that it is feasible to estimate, with sufficient accuracy, the total external dose and occupational medical dose for the class of employees covered by this evaluation.
- NIOSH has determined that it lacks sufficient information, which includes internal monitoring data, air monitoring data, area survey data, and surrogate data from similar operations at other sites that would allow it to estimate the potential internal exposures for uranium and uranium progeny (with the exception of radon) for workers at the Linde Ceramics Plant in Tonawanda, New York for the time period from November 1, 1947 through December 31, 1953. NIOSH finds that it has access to sufficient information to support reconstructing external dose with sufficient accuracy during evaluated time period.
- NIOSH has documented that it cannot complete the dose reconstructions related to this petition with sufficient accuracy for the employees who worked at the Linde Ceramics Plant in Tonawanda, New York for the time period from November 1, 1947 through December 31, 1953. The basis for this finding demonstrates that NIOSH does not have access to sufficient information to estimate either the maximum radiation dose incurred by any members of the class or to estimate such radiation doses more precisely than a maximum dose estimate for that period.

- 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 completely reconstruct radiation doses for employees who worked at the Linde Ceramics Plant in Tonawanda, New York for the time period from November 1, 1947 through December 31, 1953, NIOSH intends to use any reliable internal and external monitoring data that may be available for an individual claim during this period (and that can be interpreted using existing NIOSH dose reconstruction processes or procedures). Dose reconstructions for individuals employed at the Linde Ceramics Plant in Tonawanda, New York for the time period from November 1, 1947 through December 31, 1953, but who do not qualify for inclusion in the SEC, may be performed using these data as appropriate.
- 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).

## V. 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."

## 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. § 83.18(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.