

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

Clinton Engineer Works

Oak Ridge, Tennessee



## 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.

May 11, 2012  
Date

[Signature on file]  
Kathleen Sebelius

## II. Employee Class Definition

All employees of the Tennessee Eastman Corporation (1943-1947) and the Carbide and Carbon Chemicals Corporation (1947-1949) who were employed at the Clinton Engineer Works in Oak Ridge, Tennessee, from January 1, 1943 through December 31, 1949 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.

## 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 April 11, 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 has determined that the principal sources of internal radiation for members of the proposed class included exposures to uranium residues as well as African and domestic uranium ores through inhalation and ingestion of airborne uranium dust, and exposure from thorium, radium, radon and radon progeny.
- NIOSH has determined that based on the lack of thorium, radium, radon and uranium monitoring data for Clinton Engineer Works Elza Gate warehouse workers during the storage and/or repackaging operations conducted during the period from January 1, 1943 through December 31, 1949, internal dose reconstruction from all potential sources of exposure is not feasible.
- NIOSH has determined that the principal sources of external radiation for members of the proposed class included exposures to uranium ore, UO<sub>2</sub> residues, uranium tailings, uranium slag, and uranium decay products that were stored at the Clinton Engineer Works Elza Gate warehouse site.
- Although limited external dosimetry data were found for 1945-1946, NIOSH has not identified sufficient documentation to define and quantify the total external source term for the Clinton Engineer Works Elza Gate warehouse area during the period from January 1, 1943 through December 31, 1949. Without additional documentation or source term information, NIOSH cannot make assumptions about the relative amounts of materials that would have been encountered at the site during this period, nor can NIOSH determine whether the monitored exposures are representative of the maximally-exposed individual during the period under evaluation.
- Although no specific information regarding occupational medical dose has been identified for individual Clinton Engineer Works employees, the dose associated with medical X-ray exams, if required as a condition of employment and administered onsite, can be bound by 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).
- NIOSH concludes that there is insufficient source term information and external monitoring data available to bound external exposures for the period from January 1, 1943 through December 31, 1949. NIOSH finds that it is likely feasible to reconstruct occupational medical dose for workers at the Clinton Engineer Works Elza Gate warehouse area with sufficient accuracy.

- NIOSH lacks sufficient information, which includes specific biological monitoring data, sufficient air monitoring information, sufficient process and radiological source information, and surrogate data from similar operations at other sites that would allow it to estimate the potential internal or external radiological exposures for all workers who worked at the Clinton Engineer Works Elza Gate warehouse area during the period from January 1, 1943 through December 31, 1949. NIOSH determined that members of this class may have received internal and external radiation exposures from uranium residues as well as African and domestic uranium ores, and uranium decay products, over the covered period at the site.
- NIOSH has documented that it cannot complete the dose reconstructions related to this petition with sufficient accuracy for the employees who worked at the Clinton Engineer Works Elza Gate warehouse area during the period from January 1, 1943 through December 31, 1949. The basis of this finding demonstrates that NIOSH does not have access to sufficient information to estimate either the maximum radiation dose incurred by any member of the class or to estimate such radiation doses more precisely than a maximum dose estimate for that period. As indicated in its research, NIOSH has identified that the class members include all employees of the Tennessee Eastman Corporation from 1943 through 1947, and the Carbide and Carbon Chemicals Corporation from 1947 through 1949, who worked at the Clinton Engineer Works.
- Although NIOSH found that it is not possible to completely reconstruct radiation doses for the proposed class, NIOSH intends to use any internal and external monitoring data that may become available for an individual claim (and that can be interpreted using existing NIOSH dose reconstruction processes or procedures) to support a partial dose reconstruction for non-presumptive cancers and/or cases that have less than 250 work days of employment. Therefore, dose reconstructions for individuals employed at Clinton Engineer Works in the area around the Elza Gate warehouses during the period from January 1, 1943 through December 31, 1949, but who do not qualify for inclusion in the SEC, may be performed using these data as appropriate.
- 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.
- 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.