

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  
Rocky Flats Plant  
Golden, Colorado



## I. Designation

I, Kathleen Sebelius, Secretary of the U.S. Department of Health and Human Services (HHS), 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.

[Signature on File]

Kathleen Sebelius

December 12, 2013

Date

## II. Employee Class Definition

All employees of the Department of Energy, its predecessor agencies, and their contractors and subcontractors who worked at the Rocky Flats Plant in Golden, Colorado, from April 1, 1952, through December 31, 1983, 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 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 the Centers for Disease Control and Prevention's National Institute for Occupational Safety and Health (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 November 12, 2013.

#### 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 doses for members of the proposed class included plutonium, tritium, thorium, uranium and associated progeny, and/or neptunium-237. The modes of exposure for these radionuclides were ingestion and inhalation.
- NIOSH evaluated the available personnel and workplace monitoring data and determined that these data are insufficient for estimating internal thorium exposures. In the absence of adequate personal or area monitoring, NIOSH would employ source term data.
- NIOSH determined that it lacks sufficient source term data that are inclusive of the throughput amounts of thorium (i.e., they only represent a snapshot in time with regard to quantities). Therefore, the source term data do not support estimating potential internal exposures to thorium during the period of the Rocky Flats Plant (RFP) thorium operations from April 1, 1952, through December 31, 1966.
- NIOSH determined that uranium bioassay data may not be available for all potentially-affected individuals. In addition, the uranium co-worker model could not be used because the exposures supported by the uranium co-worker model are not necessarily indicative of the exposures that would have occurred from the U-233 operations. Those working with U-233 were also potentially exposed to Th-228. NIOSH lacks thorium bioassay data for Rocky Flats personnel.
- NIOSH determined that workplace air monitoring and contamination surveys for U-233 processes are insufficient for dose reconstruction purposes. Without uranium and thorium bioassay results, NIOSH concluded that it cannot estimate with sufficient accuracy the potential internal exposures to U-233, U-232, and Th-228 that the proposed class may have received from 1964 through 1983.

- Neptunium-237 exposure was associated with, and the result of, preparation of pure neptunium oxide, metal and metal alloys, and the recovery of Np-237 from a variety of residues, including sand, slag, crucibles, casting skulls, and alloys. Evidence points to a number of specific tasks performed at the request of other DOE laboratories from 1962 through 1983 that involved a few grams to a few hundred grams of neptunium. There are only two bioassay samples for Np-237 and no workplace specific monitoring data. In the absence of adequate personal or area monitoring NIOSH would employ source term data.
- NIOSH determined that it lacks sufficient source term data that are inclusive of the throughput amounts of neptunium (i.e., they only represent a snapshot in time with regard to quantities). These data do not support estimating potential internal exposures to neptunium during the period of January 1, 1962, through December 31, 1983.
- The principal sources of external radiation doses, including medical x-ray dose, for members of the proposed class were evaluated in the *NIOSH RFP SEC-00030 Evaluation Report (ER)*. In SEC-00030, NIOSH concluded that all external dose except neutrons could be estimated with sufficient accuracy.
- The revision of *NIOSH SEC-00192 ER* was initiated based on NIOSH's subsequent research and determination that internal radiation exposures to U-233, thorium, and Np-237 could not be reconstructed. Consequently, NIOSH determined that there is no need to assess external exposures and the ability to reconstruct dose at RFP beyond what has already been presented and assessed in SEC-00030.
- In sum, NIOSH determined that it lacks sufficient information, which includes internal personnel monitoring data, process data, and radiological source term information, to allow it to estimate with sufficient accuracy the potential internal exposures to radionuclides which include thorium, uranium-233 and associated progeny, and/or neptunium-237 for workers at the RFP in Golden, Colorado, from April 1, 1952, through December 31, 1983.
- NIOSH determined that there is no need to assess external exposures and the ability to reconstruct dose at RFP beyond what has already been presented and assessed in SEC-00030.
- 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). Therefore, dose reconstructions for individuals employed at RFP during the period from April 1, 1952, through December 31, 1983, 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 recommended, and the NIOSH Director concurred with, 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), the NIOSH Director 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), the NIOSH Director 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) The Board and the NIOSH Director 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 NIOSH Director concurred with the Board’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. §§ 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. § 83.18(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.