



ORAU TEAM Dose Reconstruction Project for NIOSH

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New Total Rewrite Revision Page Change

**DOCUMENTS MARKED AS A TOTAL REWRITE, REVISION, OR PAGE CHANGE REPLACE THE PRIOR REVISION.
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PUBLICATION RECORD

EFFECTIVE DATE	REVISION NUMBER	DESCRIPTION
05/24/2005	00-A	New document to establish the Pacific National Laboratory external dosimetry. Initiated by Edward D. Scalsky.
07/25/2005	00-B	Refers dose reconstructors to Document No. ORAUT-TKBS-0006-6, Technical Basis Document for the Hanford Site – Occupational External Dose. Initiated by Edward D. Scalsky.
08/05/2005	00-C	Incorporates NIOSH review comments. Initiated by Edward D. Scalsky.
08/12/2005	00	First approved issue. Training required: As determined by the Task Manager. Initiated by Edward D. Scalsky.
09/10/2007	01	Approved Revision 01 initiated to include Attribution and Annotation section. Constitutes a total rewrite of the document. No further changes occurred as a result of formal internal and NIOSH review. Training required: As determined by the Task Manager. Initiated by Edward D. Scalsky.

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6.1 INTRODUCTION

Technical basis documents and site profile documents are not official determinations made by the National Institute for Occupational Safety and Health (NIOSH) but are rather general working documents that provide historic background information and guidance to assist in the preparation of dose reconstructions at particular sites or categories of sites. They will be revised in the event additional relevant information is obtained about the affected site(s). These documents may be used to assist NIOSH staff in the completion of the individual work required for each dose reconstruction.

In this document the word “facility” is used as a general term for an area, building, or group of buildings that served a specific purpose at a site. It does not necessarily connote an “atomic weapons employer facility” or a “Department of Energy [DOE] facility” as defined in the Energy Employees Occupational Illness Compensation Program Act [EEOICPA; 42 U.S.C. § 7384l(5) and (12)]. EEOICPA defines a DOE facility as “any building, structure, or premise, including the grounds upon which such building, structure, or premise is located ... in which operations are, or have been, conducted by, or on behalf of, the Department of Energy (except for buildings, structures, premises, grounds, or operations ... pertaining to the Naval Nuclear Propulsion Program)” [42 U.S.C. § 7384l(12)]. Accordingly, except for the exclusion for the Naval Nuclear Propulsion Program noted above, any facility that performs or performed DOE operations of any nature whatsoever is a DOE facility encompassed by EEOICPA.

For employees of DOE or its contractors with cancer, the DOE facility definition only determines eligibility for a dose reconstruction, which is a prerequisite to a compensation decision (except for members of the Special Exposure Cohort). The compensation decision for cancer claimants is based on a section of the statute entitled “Exposure in the Performance of Duty.” That provision [42 U.S.C. § 7384n(b)] says that an individual with cancer “shall be determined to have sustained that cancer in the performance of duty for purposes of the compensation program if, and only if, the cancer ... was at least as likely as not related to employment at the facility [where the employee worked], as determined in accordance with the [probability of causation¹] guidelines established under subsection (c) ...” [42 U.S.C. § 7384n(b)]. Neither the statute nor the probability of causation guidelines (nor the dose reconstruction regulation) define “performance of duty” for DOE employees with a covered cancer or restrict the “duty” to nuclear weapons work.

As noted above, the statute includes a definition of a DOE facility that excludes “buildings, structures, premises, grounds, or operations covered by Executive Order No. 12344, dated February 1, 1982 (42 U.S.C. 7158 note), pertaining to the Naval Nuclear Propulsion Program” [42 U.S.C. § 7384l(12)]. While this definition contains an exclusion with respect to the Naval Nuclear Propulsion Program, the section of EEOICPA that deals with the compensation decision for covered employees with cancer [i.e., 42 U.S.C. § 7384n(b), entitled “Exposure in the Performance of Duty”] does not contain such an exclusion. Therefore, the statute requires NIOSH to include all occupationally derived radiation exposures at covered facilities in its dose reconstructions for employees at DOE facilities, including radiation exposures related to the Naval Nuclear Propulsion Program. As a result, all internal and external dosimetry monitoring results are considered valid for use in dose reconstruction. No efforts are made to determine the eligibility of any fraction of total measured exposure for inclusion in dose reconstruction. NIOSH, however, does not consider the following exposures to be occupationally derived:

- Radiation from naturally occurring radon present in conventional structures

¹ The U.S. Department of Labor is ultimately responsible under the EEOICPA for determining the probability of causation (POC).

- Radiation from diagnostic X-rays received in the treatment of work-related injuries

The External Dosimetry program at the Pacific Northwest National Laboratory (PNNL) is the same program that existed at Hanford subsequent to 01/03/1965 when Battelle Memorial Institute (BMI) assumed responsibility for operation of the Hanford Laboratories and certain Hanford-wide services and functions as part of the Atomic Energy Commission (AEC) operations at the Hanford site. Since that is the case, it has been determined that any dose reconstructions that incorporate the dose received by PNNL employees as a result of external exposure to radiation will be determined based on the programs described in the corresponding Hanford TBD, Hanford Site – Occupational External Dose (ORAUT 2007).

6.2 ATTRIBUTIONS AND ANNOTATIONS

Jack Fix served as the initial Subject Expert for this document. Mr. Fix was previously employed at PNNL and his work involved management, direction or implementation of radiation protection and/or health physics program policies, procedures or practices related to atomic weapons activities at the site. This revision and original revision have been overseen by a Document Owner who is fully responsible for the content, including all findings and conclusions. Mr. Fix continues to serve as a Site Expert for this document because he possesses or is aware of information relevant for reconstructing radiation doses experienced by claimants who worked at the site. In all cases where such information or prior studies or writings are included or relied upon by Mr. Fix, those materials are fully attributed to the source. Mr. Fix's Disclosure Statement is available at www.oraucoc.org.

All information requiring identification was addressed in ORAUT (2007).

REFERENCES

ORAUT (Oak Ridge Associated Universities Team), 2007, *Hanford Site – Occupational External Dose*, ORAUT-TKBS-0006-6, Rev. 03, Oak Ridge, Tennessee, June 5.