



## ORAU TEAM Dose Reconstruction Project for NIOSH

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**PUBLICATION RECORD**

<b>EFFECTIVE DATE</b>	<b>REVISION NUMBER</b>	<b>DESCRIPTION</b>
08/12/2005	00	New technical basis document for the Pacific Northwest National Laboratory occupational internal dose. First approved issue. Initiated by Edward D. Scalsky.
05/18/2007	01	Approved revision initiated to include Attribution and Annotation section. Constitutes a total rewrite of the document. No further changes occurred as a result of formal internal review. This revision results in no change to the assigned dose and no PER is required. Training required: As determined by the Task Manager. Initiated by Edward D. Scalsky.

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## 5.1 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 causation<sup>1</sup>] 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

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<sup>1</sup> 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 Internal 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 internal exposure will be determined based on the programs described in the corresponding Hanford TBD, Technical Basis Document for the Hanford Site – Occupational Internal Dose (ORAUT 2004a), and its Attachment D (ORAUT 2004b).

## 5.2 ATTRIBUTIONS AND ANNOTATIONS

Donald Bihl served as the initial Subject Expert for this document. Mr. Bihl 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) has been overseen by a Document Owner who is fully responsible for the content, including all findings and conclusions. Mr. Bihl 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. Bihl, those materials are fully attributed to the source. Mr. Bihl's Disclosure Statement is available at [www.oraucoc.org](http://www.oraucoc.org).

All information requiring identification was addressed in ORAUT (2004a, 2004b).

## REFERENCES

ORAUT (Oak Ridge Associated Universities Team), 2004a, *Technical Basis Document for the Hanford Site – Occupational Internal Dose*, ORAUT-TKBS-0006-5, Rev. 01, Oak Ridge, Tennessee, November 24.

ORAUT (Oak Ridge Associated Universities Team), 2004b, *Technical Basis Document for the Hanford Site – Attachment D Occupational Internal Dose*, ORAUT-TKBS-0006-5, Rev. 01, Oak Ridge, Tennessee, November 24.