

Development of the Portsmouth Gaseous Diffusion Plant Site Profile

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Purpose of Meeting

- Discuss the Portsmouth Gaseous Diffusion Plant Site Profile.
- Describe how the Site Profile is used.
- Ask for suggestions and information.
- Document concerns and issues.
- Answer questions.

Energy Employees

Occupational Illness

Compensation Program Act

(EEOICPA)

Department of Labor

Department of Health
and Human Services – NIOSH

Oak Ridge Associated
Universities Team

ORAU Team

- Oak Ridge Associated Universities
- Dade Moeller & Associates
- MJW Corporation
- Sub-contractors

ORAU Program Goals

- Protect claimant privacy.
- Build trust and confidence.
- Process claims accurately and efficiently.
- Avoid conflicts of interest.

Dose

Reconstruction

Occupational Radiation Dose

Occupational Medical Dose

Occupational Environmental Dose

Internal Dose

External Dose

Site Profiles

Site Profile documents contain information that is used to understand the activities and practices of a facility, specifically their radiation protection practices. The information included in the document includes the potential types of exposure, types of material, and various details about the dosimetry program (i.e., limits of detection, frequency of badge exchange, multiple badging, types of radiation exposure monitored (or not monitored), medical exposure information, *in vitro* (bioassay) monitoring, *in vivo* monitoring, action levels, etc.).

Site Profiles

The larger Site Profile documents contain six smaller documents called Technical Basis Documents. The Technical Basis Documents focus on specific sections or topic areas. Site Profile documents and Technical Basis Documents are general working documents that provide guidance concerning 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 in the completion of the individual work required for each dose reconstruction.

Site Profiles

In these documents, 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 facility" as defined in the Energy Employee Occupational Illness Compensation Program Act of 2000 (42 U.S.C. § 7384I (5) and (12)).

Site Profiles Support Dose Reconstruction

- Used by dose reconstructors.
- Provide site-specific technical information.
- Minimize interpretation of data.
- Living document.

General Information

- Completed Site Profiles can be seen at <http://www.cdc.gov/niosh/ocas> .
- Comments are encouraged and should be sent to NIOSH directly.
- Meetings are being held with union representatives to encourage input.

Developing the Site Profile

- Document written by subject experts.
- Document reviewed by NIOSH and ORAU Team.
- Document approved for use by NIOSH and ORAU.

Developing the Site Profile

- Portsmouth Gaseous Diffusion Plant Site Profile team was established in May 2003.
- Team leader is Mark Notich.
- Sections were written by different authors.
- The Site Description was completed on November 21, 2003.
- The other sections are in progress.

Contents of Site Profile

- Purpose and Scope
- Site Description
- Occupational Medical Dose
- Occupational Environmental Dose
- Occupational Internal Dosimetry
- Occupational External Dosimetry

Purpose and Scope

- Used in reconstructing radiation doses to workers at the Portsmouth Site.
- Covers the time frame from when enrichment began in 1954 to the present.
- Uncertainties in data evaluated also.
- Claimant-favorable assumptions used.

Site Description

- Brief description of the facilities and processes on the site over the years
- Radioactive materials present
- Potential internal exposure routes
- Potential external exposure routes

Portsmouth Gaseous Diffusion Plant

- Uranium enrichment
- Waste handling
- Radionuclides – uranium, technetium
- Others – thorium, plutonium, americium

Occupational Medical Dose (X-rays)

- Frequency of chest X-rays
- Equipment and techniques used
- Organ dose calculations
- Uncertainty in dose
- Dose reconstructor instructions

Occupational X-rays

- Employer required
- Required dates
- X-Ray equipment changed over time
- Older equipment had higher doses
- Not included in DOE dose record

Occupational Environmental Dose (for Unmonitored Workers)

- Internal dose from on-site radioactive materials in the air
 - On-site releases to air
 - Annual intakes from air concentrations
- Occupational external dose
 - Ambient radiation
- Dose reconstructor instructions

Environmental Dose

- Unmonitored workers
- Internal component
 - Intake from inhalation of radionuclides
- External component
 - Radiation sources in soil, waste pits, buildings, etc.
- Not included in DOE dose record

Occupational Internal Dosimetry

- Methods and practices
- Sources of exposure
- Minimum detectable activity (MDA) for:
 - Whole Body Counting
 - Bioassay
- Reporting levels
- Dose reconstructor instructions

Internal Dosimetry

- Bioassay program started in 1954
- *In vitro* urinalysis for uranium and technetium
- *In vivo* counting
 - Whole body counter – 1965
 - Chest counter – 1965

Occupational External Dosimetry

- Methods and practices
- Sources of exposure
- Adjustments to recorded dose
- Minimum detectable levels (MDLs)
- Dose reconstructor instructions

External Dosimetry

- Dosimeter technology
 - Beta/photon – 1954 to present
 - Neutron – 1992 to present
- Calibration
- Exchange frequency
- Workplace radiation fields
- Exposure geometry

In Conclusion

- Developing a usable Site Profile is an important task.
- Site Profiles are living documents.
- Additional information is being sought and will be used when it adds to the document.
- Send comments directly to NIOSH

Sending Comments to NIOSH on Site Profile Documents

- NIOSH welcomes comments from all interested stakeholders (organized labor groups, worker advocacy groups, claimants, etc.) on the Site Profile documents.
- Please include the name of the site, the title of the document, and the Site Profile Number when submitting comments.

Sending Comments to NIOSH on Site Profile Documents

Send the comments to:

Department of Health and Human Services
National Institute for Occupational
Safety and Health (NIOSH)

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