



NIOSH Fact Sheet

What a Claimant Should Know About Radiation Dose Reconstruction

In accordance with The Act,¹ the National Institute for Occupational Safety and Health (NIOSH), Office of Compensation Analysis and Support (OCAS), is responsible for conducting occupational radiation dose reconstructions for covered employees with cancer who are not members of the Special Exposure Cohort (SEC).²

The purpose of this fact sheet is to explain dose reconstruction and its role in the compensation program. If this fact sheet does not answer your questions on dose reconstruction, please feel free to contact OCAS at 513-533-6800 (toll-free at 1-800-35-NIOSH) or by e-mail at ocas@cdc.gov. You can also contact our dose reconstruction contractor toll-free at 1-800-322-0111.

Purpose of Dose Reconstruction

Dose reconstructions are used to estimate the radiation doses to which an individual worker or group of workers have been exposed, particularly when radiation monitoring data are unavailable, incomplete, or of poor quality.



How Radiation Doses are Reconstructed

NIOSH will reconstruct radiation doses by evaluating all appropriate data relevant to the energy employee's radiation exposure.

Examples of data that may be used in dose reconstruction include:

- Internal dosimetry data (such as results of urinalysis, in vivo measurement, etc.)
- External dosimetry data (such as film badge readings, thermoluminescent dosimetry results, etc.)
- Workplace monitoring data (such as air sample results and area radiation measurements)
- Workplace characterization data (such as solubility studies and particle size measurements)
- Process descriptions for each work location

If an individual's radiation exposures were monitored using present-day technology and consisted of only external radiation exposure, dose reconstruction would be very simple. It might only require summing the radiation doses recorded from radiation badges and adding estimated potential "missed" doses resulting from the limits of detection of monitoring badges used. However, for most claimants, the process will be more complex.

¹ In this document, "The Act" refers to the Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA).

² The SEC is currently comprised of employees: (1) with specific cancers; (2) who worked at three specific DOE facilities or participated in certain nuclear weapons tests; and (3) who meet other additional requirements. These employees' cancers are presumed to be radiation-related for compensation purposes under The Act and they are eligible for compensation without a dose reconstruction.



Conducting Dose Reconstructions When There is Little or No Monitoring Data Available

If an individual's radiation doses were not monitored or there is uncertainty about the monitoring methods used, dose reconstruction could require extensive data gathering and analysis. This may include:

- Determining specific characteristics of the monitoring procedures
- Identifying events that were unmonitored
- Identifying the types and quantities of radioactive materials involved
- Evaluating production processes and safety procedures
- Identifying the locations and activities of exposed persons
- Identifying comparable exposure circumstances for which data is available to make assumptions
- Conducting a variety of complex analyses to understand the data compiled or estimated

Additional Sources of Information That May be Used for Dose Reconstruction

In cases where data are limited, NIOSH may use the following sources of information for dose reconstruction:

- DOE and its contractors, including Atomic Weapons Employers (AWEs) and the Former Worker Screening Program
- NIOSH and other records from health research on DOE worker populations
- Interviews and records provided by the claimant
- Co-workers of covered employees, or other witnesses with information relevant to the covered employee's exposure identified during an interview with NIOSH
- Labor union records from unions representing employees at covered facilities of DOE or AWEs
- Other relevant information

Time Needed to Complete Dose Reconstruction

When done for research purposes, dose reconstruction may take months to years to complete. In compensation programs, a balance between efficiency and precision is needed. Before NIOSH could start dose reconstructions under The Act, we had to issue regulations and develop technical guidelines and procedures. NIOSH also awarded a contract for support in data collection, claimant interviews, and dose reconstruction. We are working with the contractor to make sure the backlog of claims awaiting dose reconstruction is handled promptly, consistently, and fairly. Once a portion of the backlogged claims have been completed, NIOSH will be able to develop estimates of the time needed to complete a dose reconstruction.

Dose Reconstruction Results

After dose reconstruction has been completed, a draft copy of the report will be sent to the claimant. NIOSH will conduct a closing interview with the claimant to review the dose reconstruction results. This will be the claimant's final opportunity to provide additional information that may affect the dose reconstruction. If no additional information is provided, the claimant will be asked to complete an OCAS-1 form. This form certifies that there is no additional information to give NIOSH regarding the claim and that the claim record for dose reconstruction should be closed.

Once NIOSH receives the signed OCAS-1 form, the final dose reconstruction report will be sent to the claimant and the Department of Labor (DOL) for completion of the compensation process.