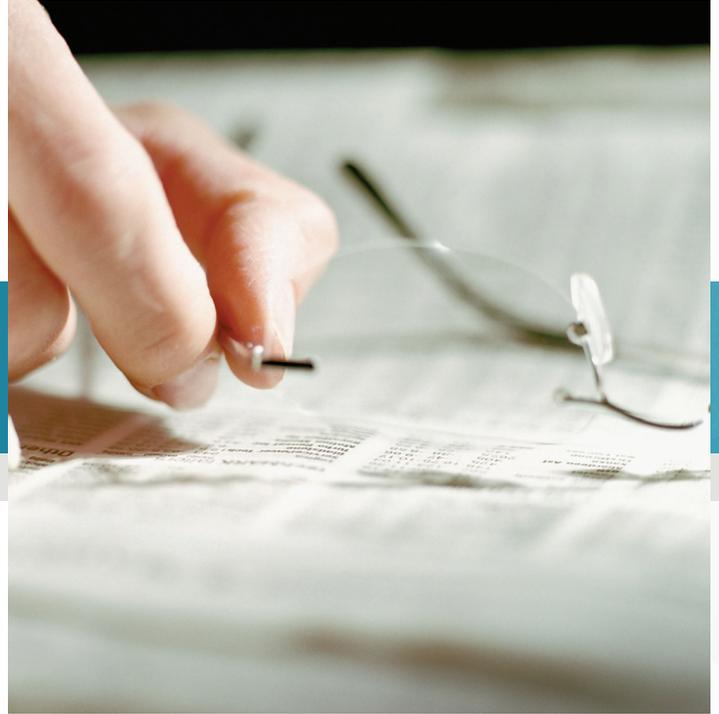




Report

How to read your exposure report



OVERVIEW

Have confidence that each report you receive from Mirion Technologies Dosimetry Services (DSD) is processed with complete integrity. Whether you require weekly, monthly or quarterly reports, rest assured that each report will provide complete and accurate information regarding radiation amounts, and individual exposure levels of each dosimeter.

Each report provides the information needed to meet government regulations and lets you know that proper steps are being taken to ensure that your employees are not being exposed to harmful levels of radiation. Processing is performed at our state-of-the-art facility in Irvine, California.

KEY FEATURES

- All personnel are listed by location
- Reports include the monitoring period, the dose equivalent for the current monitoring period, quarter to date, year to date and lifetime to date dose for each returned dosimeter.

GENERAL INFORMATION

The below information is for the United States and United Kingdom. Clients in other countries may have other regulatory requirements.

COMPLIES WITH ALL REGULATORY REQUIREMENTS IN EFFECT JANUARY 1, 1994 FOR REPORTING EXTERNAL RADIATION EXPOSURE. THESE REGULATIONS ARE LOCATED IN THE REVISED U.S. CODE OF FEDERAL REGULATIONS, TITLE 10, PART 20, AND APPLICABLE STATE REGULATIONS.		
	10 CFR 20 limits: [*]	State limits: (if applicable)
Whole Body: TEDE $H_p(10)$ Effective Dose	5,000 mrem/year	1,250 mrem/quarter
Lens of Eye $H_p(3)$ Equivalent Dose	15,000 mrem/year	1,250 mrem/quarter
Skin: SDE $H_p(0.07)$ Equivalent Dose	50,000 mrem/year	7,500 mrem/quarter
Extremity Equivalent Dose	50,000 mrem/year	18,750 mrem/quarter
<i>* Less than 18 years of age: 10% of annual limit, quarterly limit</i>		
ANNUAL DOSE LIMITS IN EFFECT FROM 1ST JANUARY 2000 (REFERENCE SCHEDULE 4 OF THE U.K. IONIZING RADIATIONS REGULATIONS 1999).		
Whole Body $H_p(10)$ Effective Dose	20 mSv	
Lens of Eye $H_p(3)$ Equivalent Dose	150 mSv	
Skin $H_p(0.07)$ Equivalent Dose	500 mSv	
Extremity Equivalent Dose	500 mSv	
Effective Dose: The sum over all tissues and organs in the body of the product of the equivalent dose in a tissue/organ and its tissue weighting factor.		
$H_p(d)$: Dose at tissue depth d millimeters		

TERMINOLOGY

The following technical terms are used in the dosimetry service industry.

ALARA: Acronym for “As Low As Reasonably Achievable”—Making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical and consistent with the purpose for which the licensed activity is undertaken.

CDE: Committed Dose Equivalent, $H_{T,50}$ (Internal) --- Dose equivalent to organs to tissues of reference (T) that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

CEDE: Committed Effective Dose Equivalent, $H_{E,50}$ (Internal) --- Sum of the products of the weighting factors, and committed dose equivalent to each of the body organs or tissues that are irradiated.

DDE: Deep Dose Equivalent, $H_p(10)$ --- Measurement in rem (Sv) for dose equivalent at a tissue depth of 10 millimeters; applies to external whole body exposure.

Dose Equivalent, H_T --- The product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest.

Effective Dose Equivalent, H_E --- Risk-weighted sum of products of dose equivalent to major body organs, or tissues that are irradiated. External Dose: That portion of the dose equivalent received from radiation sources outside the body.

Extremity: Hand, elbow, arm below the elbow, foot, knee, leg below the knee.

LDE: Eye Dose Equivalent, $H_p(3)$ --- Measurement in rem (Sv) for dose

equivalent at a tissue depth of 3 millimeters; applies to the external exposure of the lens of the eye.

Millisievert (mSv): Unit of equivalent dose and effective dose.

Occupational Dose --- Dose received by an individual in the course of employment in which the individual’s assigned duties involved exposure to radiation and/or to radioactive material. Occupational dose does not include dose received from background radiation, such as a patient from medical practices, from voluntary participation in medical research programs, or as a member of the general public.

PSE: Planned Special Exposures (US NRC Reg Guide 8.35) --- Restricted to special circumstances where dose cannot otherwise be avoided; permits doses separate from and in addition to the annual dose limits.

Dose Limits: The permissible upper bounds of radiation dose.

REM: Roentgen Equivalent Man --- The product of the absorbed dose in tissue, quality factor, and all other necessary modifying factors at the location of interest. “Unit of dose equivalent” (1 rem = 0.01 sievert = 1,000 mrem)

SDE-E: Shallow Dose Equivalent, Extremity, --- Measurement in rem (Sv) for dose equivalent at a tissue depth of 0.07 millimeters; applies to external exposure of an extremity.

SDE-WB: Shallow Dose Equivalent, Whole body, $H_p(0.07)$ --- Measurement in rem (Sv) for dose equivalent at a tissue depth of 0.007 cm; applies to external exposure of whole body.

TEDE: Total Effective Dose Equivalent --- Sum of DDE (external exposure) and CEDE (internal exposure).

TODE: Total Organ Dose Equivalent --- Sum of DDE (external exposure) and CDE (internal exposure).

Whole Body: Head, trunk, arms above the elbow and legs above the knee.

> Dosimetry Services

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