

RADIOLOGICAL CONTROL MANUAL

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GLOSSARY

NOTE: All underlined terms in the glossary were obtained from 10 Code of Federal Regulations (CFR) 835.2 “Definitions.”

Abnormal situation: Unplanned event or condition that adversely affects, potentially affects, or indicates degradation in the safety, security, environmental or health-protection performance, or operation of a facility.

Absorbed dose (D) means the energy absorbed by matter from ionizing radiation per unit mass of irradiated material at the place of interest in that material. The absorbed dose is expressed in units of ~~radiation absorbed dose (rad)~~ (or gray) (1 rad = 0.01 gray)

Accountable sealed radioactive source means a sealed radioactive source having a half-life equal to or greater than 30 days and an isotopic activity equal to or greater than the corresponding value provided in Appendix E of 10 CFR 835.

Activation: Process of producing a radioactive material by bombardment with neutrons, protons, or other nuclear particles.

Administrative control level: A numerical dose constraint established at a level below the regulatory limits to ~~control~~ administratively control and help reduce individual and collective dose.

Airborne radioactive material or airborne radioactivity means radioactive material dispersed in the air in the form of dusts, fumes, particulates, mists, vapors, or gases.

Airborne radioactivity area means any area, accessible to individuals, where:

1. The concentration of airborne radioactivity, above natural background, exceeds or is likely to exceed the derived air concentration (DAC) values listed in Appendix A or Appendix C of 10 CFR 835
Or
2. An individual present in the area without respiratory protection could receive an intake exceeding 12 DAC-hours in 1-a week.

ALARA means “as low as reasonably achievable,” which is the approach to radiation protection to manage and control exposures (both individual and collective) to the work force and to the general public to as low as is reasonable, taking into account social, technical, economic, practical, and public policy considerations. ~~As used in this part,~~ ALARA is not a dose limit but a process that has the objective of attaining doses as far below the applicable limits ~~of this part~~ as is reasonably achievable.

ALARA Committee: Multidisciplinary forum that reviews and advises management on improving progress toward minimizing radiation exposure and radiological releases.

Annual limit on intake (ALI) means the derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in 1-a year. ~~The annual limit on intake (ALI)~~ is the smaller value of intake of a given radionuclide in 1-a year by the reference man (ICRP 1975) that would result in a committed effective dose equivalent of 5 rem

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(0.05 sievert) or a committed dose equivalent of 50 rem (0.5 sievert) to any individual organ or tissue. ~~The~~ ALI values for intake by ingestion and inhalation of selected radionuclides are based on Table 1 of the Environmental Protection Agency Federal Guidance Report No. 11, ~~Limiting Values of Radionuclide Intake and Air Concentration and Dose Conversion Factors for Inhalation, Submersion, and Ingestion~~ (EPA 1988). ~~This document is available from the National Technical Information Service, Springfield, Virginia.~~

Assessment: Evaluation or appraisal of a process, program, or activity to estimate its acceptability.

Background radiation means radiation from ~~the following~~:

1. Naturally occurring radioactive materials that have not been technologically enhanced
2. Cosmic sources
3. Global fallout as it exists in the environment (such as from the testing of nuclear explosive devices)
4. Radon and its progeny in concentrations or levels existing in buildings or the environment that have not been elevated as a result of current or prior activities
5. Consumer products containing nominal amounts of radioactive material or producing nominal amounts of radiation.

Becquerel (bq): The International System of Units (SI) unit for activity of radioactive material. The quantity of radioactive material in which one atom is transformed per second or undergoes one disintegration per second is 1 becquerel.

Bioassay means the determination of the kinds, quantities, or concentrations and, in some cases, locations of radioactive material in the human body, whether by direct measurement or by analysis and evaluation of radioactive materials excreted or removed from the human body.

Calibration means ~~the process of adjusting to adjust and/or determining-determine the following either:~~

1. The response or reading of an instrument relative to a standard (e.g., primary, secondary, or tertiary) or to a series of conventionally true values
Or
2. The strength of a radiation source relative to a standard (e.g., primary, secondary, or tertiary) or conventionally true value.

Challenge aerosol: A synthetic hydrocarbon used for in-place high efficiency particulate air (HEPA) -filter integrity testing because of its wide range of particulate sizes and preponderance of particulate 0.3 ~~μ~~-micron in diameter, the smallest particulate a HEPA filter is designed to filter.

Committed dose equivalent ($H_{T,50}$) means the dose equivalent calculated to be received by a tissue or organ over a 50-year period after the intake of a radionuclide into the body. It does not include contributions from radiation sources external to the body. ~~The committed-Committed~~ dose equivalent is expressed in units of ~~roentgen equivalent man-(rem)~~ (or sievert).

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Committed effective dose equivalent ($H_{E,50}$) means the sum of the committed dose equivalents to various tissues in the body H_T , each multiplied by the appropriate weighting factor (w_T)-that is, $H_{E,50} = \sum w_T H_T$. The committed effective dose equivalent is expressed in units of ~~roentgen equivalent man (rem)~~ (or sievert).

Company-issued clothing: Clothing provided by the Site contractor, such as work coveralls and shoes. ~~For radiological control purposes, company-issued clothing should be considered the same as personal clothing.~~

Containment device: A barrier such as a glove-bag, glovebox, or tent for inhibiting the release of radioactive material from a specific location.

Contamination area means any area, accessible to individuals, where removable surface contamination levels exceed or are likely to exceed the removable surface contamination values specified in Appendix D of 10 CFR 835, but do not exceed 100 times those values.

Contamination reduction corridor: A defined pathway through a hazardous waste-site contamination reduction zone where decontamination occurs.

Continuing training: Training scheduled over a specified time such as over a 2-year period to maintain and improve technical knowledge and skills.

Continuous air monitor: An instrument that continuously samples and measures the levels of airborne radioactive materials providing real-time monitoring and has alarm capabilities at preset levels.

Contractor means any entity under contract with the Department of Energy (DOE) with the responsibility to perform activities at a DOE site or facility.

Contractor senior site executive: The person at a DOE contractor operated facility or site who has final onsite corporate authority and is often called the president, general manager, site manager, or director.

Controlled area means any area to which access is managed by or for DOE to protect individuals from exposure to radiation and/or radioactive material. [At the INEEL, individuals who enter only the controlled area without entering radiological areas are not expected to receive a total effective dose equivalent of more than 0.1 rem (0.001 sievert) in a year].

Conventionally true value of a quantity: The commonly accepted, best estimate of the true value of a quantity. The conventionally true value and the associated uncertainty will normally be determined by comparison with a national or transfer standard, using a reference instrument that has been calibrated against a national or transfer standard.

Counseling: Advice, information exchange, and guidance provided to employees on a radiologically related topic such as dose perspectives, potential health effects from radiation exposure, skin contaminations, contaminated wounds, internally deposited radioactivity, pregnancy, and radiation exposure. This advice and guidance normally is provided by knowledgeable, senior professionals from the Radiological Control organization and other organizations, such as Occupational Medical, as appropriate.

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Critical mass: The smallest mass of fissionable material that will support a self-sustaining chain reaction under specified conditions.

Critique: Meetings of personnel involved in or knowledgeable about an event (either a successful or an abnormal event) to document a chronological listing of the facts.

Cumulative total effective dose equivalent means the sum of the total effective dose equivalents recorded for an individual, where available, for each year that occupational dose was received, beginning ~~as early as~~ January 1, 1989.

Curie (Ci): A quantity of any radioactive material with a transformation rate of 3.7×10^{10} disintegrations per second.

Daily means anytime within a calendar day for the purposes of compliance ~~of 10 CFR 835 and the Radiological Control Manual (RCM)~~ with this manual.

Declared pregnant worker means a woman who has voluntarily declared to her employer, in writing, ~~of~~ her pregnancy for the purpose of being subject to the occupational exposure dose limits to the embryo/fetus as provided in 10 CFR 835.206. This declaration may be revoked~~The declared pregnant worker may revoke this declaration~~, in writing, at any time, by the declared pregnant worker.

Decontamination: Process of removing radioactive contamination and materials from personnel, equipment, or areas.

Deep dose equivalent means the dose equivalent derived from external radiation at a depth of 1 cm in tissue.

Deposition, new confirmed: A deposition of radioactive material in the body or any organ or tissue of an individual identified during the current reporting period, confirmed through bioassay results to be greater than the Site-determined reportable level.

Derived air concentration (DAC) means, for the radionuclides listed in Appendix 2A of 10 CFR 835, the airborne concentration that equals the ALI divided by the volume of air breathed by an average worker for a working year of 2,000 hours (assuming a breathing volume of 2,400 m³). For the radionuclides listed in Appendix C of 10 CFR 835, the air immersion DACs were calculated for a continuous, nonshielded exposure via immersion in a semi-infinite atmospheric cloud. The value is based on the DAC found in Table 1 of the U.S. Environmental Protection Agency Federal Guidance Report No. 11 (EPA 1988).

Derived air concentration-hour (DAC-hour) means the product of the concentration of radioactive material in air (expressed as a fraction or multiple of the DAC for each radionuclide) and the time of exposure to that radionuclide, in hours.

Disintegration per minute (dpm): The rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

DOE activity means an activity taken for or by DOE, in a DOE operation or facility, that has the potential to result in the occupational exposure of an individual to radiation or radioactive material. The activity may be, but is not limited to, design, construction, operation,

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~~decontamination~~, or decommissioning. To the extent appropriate, the activity may involve a single DOE facility or operation or a combination of facilities and operations, possibly including an entire site or multiple DOE sites.

DOELAP: Department of Energy Laboratory Accreditation Program for personnel dosimetry conducted according to the specifications in DOE-STD-1095-95, “Department of Energy Laboratory Accreditation Program for Personnel Dosimetry Systems.”

DOE Phantom Library: A program for lending in vivo calibration phantoms to DOE and other in vivo laboratories. The library is operated by Pacific Northwest National Laboratory in Richland, Washington, for the DOE Office of Worker Protection Programs and Management.

Dose is a general term for absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent.

Dose assessment: Process of determining ~~radiological-radiation~~ dose and ~~the~~ uncertainty included in the dose estimate, through the use of exposure scenarios, bioassay results, monitoring data, source term information, and pathway analysis.

Dose equivalent (H) means the product of the absorbed dose (D) (~~in radiation absorbed dose (or in grays)~~) in tissue, a quality factor (Q), and all other modifying factors (N). Dose equivalent is expressed in units of ~~roentgen equivalent man (rem)~~ (or sievert) (1 rem = 0.01 sievert).

Effective dose equivalent (H_E) means the summation of the products of the dose equivalent received by specified tissues of the body (H_T) and the appropriate weighting factors (W_T)—that is, $H_{E,50} = \sum W_T H_T$. It includes the dose from radiation sources internal ~~and~~/or external to the body. For the purposes of compliance with 10 CFR 835, deep-dose equivalent to the whole body may be used as effective dose equivalent for external exposures. The effective dose equivalent is expressed in units of ~~roentgen equivalent man (rem)~~ (or sievert).

Embryo/fetus: A developing human organism from conception until birth, synonymous with unborn child.

Engineering controls: Use of components and systems to reduce airborne radioactivity and the spread of contamination by using piping, containments, ventilation, filtration, or shielding.

Entrance or access point means any location through which an individual could gain access to areas controlled for the purposes of radiation protection. This includes entry or egress portals of sufficient size to permit human entry, irrespective of their intended use.

Extremity means the hands and arms below the elbow or feet and legs below the knee.

External dose or exposure means that portion of the dose equivalent received from radiation sources outside the body (~~e.g.i.e.~~, “external sources”).

Facility: For the purposes of ~~the RCM~~~~this manual~~, a facility includes systems, buildings, utilities, and related activities whose use is directed to a common purpose at a single location. Examples include accelerators, storage areas, test loops, nuclear reactors, radioactive waste disposal systems and burial grounds, testing laboratories, research laboratories ~~transport activities~~, and accommodations for analytical examinations of components. Also includes the following: pipelines, ponds, impoundments, landfills, motor vehicles, rolling stock, and aircraft.

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Filter integrity test or leak test: A test, normally accomplished using a high-quality challenge aerosol, performed on HEPA filters to identify any damage to the filter or leakage around the filter during in-place testing.

~~Flash x-ray unit: Any device that is capable of generating pulsed x-rays.~~

Frisk or frisking: Process of monitoring personnel for contamination. Frisking can be performed with hand-held survey instruments, automated monitoring devices, or by a radiological control technician.

General employee means an individual who is either a DOE or DOE contractor employee, an employee of a subcontractor to a DOE contractor, or an ~~individual visitor~~ who performs work for or in conjunction with DOE or uses DOE facilities.

Gestational period: The time from conception to birth, approximately 9 months.

Gray (Gy): SI unit of absorbed dose. One gray is equal to an absorbed dose of 1 joule per kilogram (100 rad).

High-efficiency particulate air (HEPA) filter: Normally considered to be a throwaway, extended-media dry type filter with a rigid casing enclosing the full depth of the pleats. The filter has a minimum efficiency rating of 99.97% for the removal of particles with a diameter of 0.3 ~~µ~~micron.

High contamination area means any area, accessible to individuals, where ~~removable surface contamination levels are greater than~~ ~~exceed or are likely to exceed~~ 100 times the ~~removable surface contamination levels~~ values specified in ~~Chapter 2, Table 2-2, of the RCM~~ Appendix D of 10 CFR 835.

High radiation area means any area, accessible to individuals, in which radiation levels could result in an individual receiving a deep dose equivalent in excess of 0.1 rem (0.001 Sv) in 1 hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

Hot particle: Fuel, activated corrosion product, or other particles of small size that have a high specific activity as a result of nuclear fission or neutron activation.

Hot spot: Localized source of radiation or radioactive material normally within facility piping or equipment. The radiation levels of hot spots exceed the general area radiation level by more than a factor of 5 and are greater than 100 mrem (1 mSv) per hour on contact.

Individual means any human being.

Internal dose or exposure means that portion of the dose equivalent received from radioactive material taken into the body (e.g., internal sources).

Infrequent or first-time activities: Radiological work activities or operations that require special management attention and consideration of new or novel radiological controls. The designation of infrequent or first-time activities is specifically applicable to facilities that conduct routine and recurring process operations, and is not applicable to facilities that routinely conduct first-time activities, such as experimental or research facilities.

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~~Irradiator: Sealed radioactive material used to irradiate other materials that have the potential to create a radiation level exceeding 500 rad (5 grays) in 1 hour at 1 m. Although not addressed in the RCM, acceptable radiological controls for irradiator use are specified in 10 CFR 20.1603.~~

Leak test: (see definition under filter integrity test)

Lens of the eye dose equivalent means the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 cm.

Locked high radiation area (LHRA): A high radiation area that is locked in which radiation levels could result in an individual with access to the area receiving a deep-dose equivalent to the whole body in excess of 1 rem (0.01 Sv) in 1 hour at 30 cm from the radiation source or from any surface that radiation penetrates.

Low-level waste: Waste that contains radioactivity and is not classified as high-level waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in Section 11e(2) of the Atomic Energy Act, as amended. Test specimens of fissionable material irradiated only for research and development and not for production of power or plutonium may be classified as low-level waste, provided the concentration of transuranic activity is less than 100 nCi/g.

Member of the public means an individual who is not a general employee. An individual is not a "member of the public" during any period in which the individual receives an occupational dose.

Minor means an individual ~~younger-less~~ than 18 years of age.

Mixed waste: Waste containing both radioactive and hazardous components as defined by the Atomic Energy Act and the Resources Conservation and Recovery Act, respectively.

Monitoring means the measurement of radiation levels, airborne radioactivity concentrations, radioactive contamination levels, quantities of radioactive material, or individual doses ~~as well as and~~ the use of the results of these measurements to evaluate radiological hazards or potential and actual doses resulting from exposures to ionizing radiation.

Monthly means every calendar month for the purposes of compliance with ~~this manual~~ 10 CFR 835 and the RCM.

Nonstochastic effects means effects ~~from due to~~ radiation exposure for which the severity varies with the dose and for which a threshold normally exists (e.g., radiation-induced opacities within the lens of the eye).

Nuclear criticality: a self-sustaining chain reaction or the state in which the effective neutron multiplication constant of system of fissionable material equals or exceeds unity.

Occupational dose means an individual's ~~dose from exposure to~~ ionizing radiation dose (external and internal) ~~as a resulting from of~~ that individual's work assignment. Occupational dose does not include doses received as a medical patient or doses resulting from background radiation or participation as a subject in medical research programs.

Performance Check: Verification by a knowledgeable and trained individual that an instrument is properly operating by general instrument check and exposing the instrument to a known source

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to validate that the instrument response is within +/- 20% of response to same or similar source following calibration.

Person means any individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, government agency, any state or political subdivision of, or any political entity within a state, any foreign government or nation or other entity, and any legal successor, representative, agent or agency of the foregoing; provided that person does not include the Department or the United States Nuclear Regulatory Commission.

Personnel dosimetry: Devices designed to be worn by a single person for the assessment of dose equivalent such as film badges, thermoluminescent dosimeters (TLDs), and pocket ionization chambers.

Personnel monitoring: Systematic and periodic estimate of radiation dose received by personnel during working hours. Also, the monitoring of personnel, their excretions, skin, or any part of their clothing to determine the amount of radioactivity present.

Personal protective equipment: Equipment such as respirators, face shields, and safety glasses used to protect workers from excessive exposure to radioactive or hazardous materials.

Phantom: A device, generally made of synthetic material to simulate human tissue, organs, or bone structure, that is used to calibrate radiation detection equipment. Examples include a realistic torso phantom and lung, thyroid, or liver calibration phantoms.

Planned special exposure: Preplanned, infrequent exposure to radiation, separate from and in addition to, the annual dose limits.

Prefilter: Filter that provides first-stage air filtration to remove larger particulates and prolong the efficient use of a HEPA filter.

Prenatal radiation exposure: The exposure of an embryo/fetus to radiation.

Primary dosimeter: A dosimeter worn on the body used to obtain the formal record of whole-body radiation dose.

Protective clothing: Clothing provided to personnel to minimize the potential for skin, personal, and company-issued clothing contamination. Also referred to as "anticontamination clothing," "anti-Cs," and "PCs."

Qualification standard: The explicit performance requirements for minimum proficiency in technical, academic, and Site-specific knowledge and practical skills used in determining satisfactory completion of training programs. The qualification standard is used to qualify radiological control technicians at DOE facilities.

Quality factor (Q) means the modifying factor used to calculate the dose equivalent from the absorbed dose; the absorbed dose (expressed in rad or gray) is multiplied by the appropriate quality factor (Q). The quality factors are listed in to be used for determining dose equivalent in roentgen equivalent man (rem) are shown in Appendix 2D and 2E of 10 CFR 835.

Quarterly means every calendar quarter for the purposes of compliance with this manual 10 CFR 835 and the RCM.

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Rad: Unit of radiation absorbed dose. One rad is equal to an absorbed dose of 100 ergs per gram or 0.01 joules per kilogram (0.01 gray).

Radiation means ionizing radiation: alpha particles, beta particles, gamma rays, ~~*X~~-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. Radiation as used in ~~this manual~~[the RCM](#) does not include nonionizing radiation such as radiowaves or microwaves or visible, infrared, or ultraviolet light.

Radiation area means any area, accessible to individuals, in which radiation levels could result in an individual receiving a deep-dose equivalent in excess of 0.005 rem (0.05 mSv) in 1 hour at 30 cm from the radiation source or from any surface that the radiation penetrates.

Radioactive material: For the purposes of ~~the RCM~~[this manual](#), radioactive material includes any material, equipment, or system component determined to be contaminated or suspected of being contaminated. Radioactive material also includes activated material, sealed, and unsealed sources, and material that emits radiation.

Radioactive material transportation means the movement of radioactive material by aircraft, rail, vessel, or highway vehicle when such movement is subject to Department of Transportation regulations or DOE orders that govern such movements. Radioactive material transportation does not include preparation of material or packaging for transportation, monitoring required by 10 CFR 835, storage of material awaiting transportation, or application of markings and labels required for transportation.

Radioactive material area means any area within a controlled area, accessible to individuals, in which items or containers of radioactive material exist and the total activity of radioactive material exceeds the applicable values provided in Appendix E of 10 CFR 835.

Radioactive waste: Solid, liquid, or gaseous material that contains radionuclides regulated under the Atomic Energy Act, as amended, and is of negligible economic value considering the cost of recovery.

Radioactivity: A natural and spontaneous process by which the unstable atoms of an element emit or radiate excess energy from their nuclei and, thus, change (or decay) to atoms of a different element or to a lower energy state of the same element.

Radiography: Examination of the structure of materials by nondestructive methods using a radioactive source or a radiation-generating device.

Radiological area means any area within a controlled area defined in this section as a radiation area, high radiation area, ~~locked high radiation area~~, very high radiation area, contamination area, high contamination area, or airborne radioactivity area. [\[At the INEEL, this includes radiological buffer area and locked high radiation area\].](#)

Radiological buffer area (RBA): An intermediate area established to prevent the spread of radioactive contamination and to protect personnel from radiation exposure.

Radiological control hold point: Cautionary step in a technical work document requiring the Radiological Control organization to perform some action or verification. The radiological control hold-point requirements will be satisfactorily completed before the work is continued.

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Radiological label: Label on an item that indicates the presence of radiation or radioactive materials.

Radiological posting: Sign, marking, or label that indicates the presence or potential presence of radiation or radioactive materials.

Radiological work: Any work that requires the handling of radioactive material or that requires access to radiation areas, high radiation areas, very high radiation area, contamination areas, high contamination areas, or airborne radioactivity areas.

Radiological work permit (RWP): ~~PA written~~ permit that identifies radiological conditions, establishes worker protection and monitoring requirements, and contains specific approvals for radiological work activities. Radiological work permits serve as an administrative process for planning and controlling radiological work and informing workers of radiological conditions.

Radiological worker mean a general employee whose job assignment involves operation of radiation producing devices or working with radioactive materials, or who is likely to be routinely occupationally exposed above 0.1 rem (0.001 sievert) per year total effective dose equivalent. ~~[At the INEEL, Aa~~ radiological worker also may be referred to as a radiation worker or a “radworker.” Individuals who complete either Radiological Worker I or Radiological Worker II training are designated radiological workers].

Real-time air monitoring means measurement of the concentrations or quantities of airborne radioactive materials on a continuous basis.

Refresher or requalification training: Training scheduled ~~on the alternate year when full retraining is not completed for Radiological Worker I and Radiological Worker II personnel to~~ ~~reacquaint one with material previously studied and applicable lessons learned.~~

Release to uncontrolled areas: Release of material from administrative control after confirming that the residual radioactive material meets the guidelines in DOE O 5400.5, “Radiation Protection of the Public and the Environment.”

Rem: ~~Dose unit of roentgen equivalent man. DA unit of~~ dose equivalent ~~that in roentgen equivalent man~~ is numerically equal to the absorbed dose in ~~radiation absorbed dose~~ multiplied by a quality factor, distribution factor, and any other necessary modifying factor (1 rem = 0.01 sievert).

Removable contamination: Radioactive material that can be removed from surfaces by nondestructive means such as casual contact, wiping, brushing, or washing.

Representative sample: A sample that closely approximates both the concentration of activity and the physical and chemical properties of material (e.g., particle size and solubility in case of air sampling of the aerosol to which workers may be exposed).

Respiratory protective device means an apparatus, such as a respirator, worn by an individual for the purpose of reducing the individual intake of airborne radioactive materials.

Response Check: Verification by a knowledgeable and trained individual that an instrument is properly operating by general instrument condition check and noting proper function in non-zero background area or near radioactive sources.

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Sealed radioactive source means a radioactive source manufactured, obtained, or retained for the purpose of utilizing using the emitted radiation. The sealed radioactive source consists of a known or estimated quantity of radioactive material contained within a sealed capsule, sealed between a layer or layer(s) of non-radioactive material, or firmly fixed to a nonradioactive surface by electroplating or other means intended to prevent leakage or escape of the radioactive material. Sealed radioactive sources do not include reactor fuel elements, nuclear explosive devices, and radioisotope thermoelectric generators.

Shallow dose equivalent means the dose equivalent deriving from external radiation at a depth of 0.007 cm in tissue.

Sievert (Sv): An SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sieverts is equal to the absorbed dose in grays multiplied by the quality factor (1 Sv = 100 rem).

Site: An area managed by DOE where access can be limited for any reason. The Site boundary encompasses controlled areas.

Source leak test means a test to determine whether a sealed radioactive source is leaking radioactive material.

Step-off pad: Transition area between contaminated and noncontaminated areas that is used to allow exit of personnel and removal of equipment.

~~Sticky pad: Step-off pad provided with a tacky surface to reduce the potential for inadvertently tracking contamination out of a contaminated area.~~

Stochastic effects means, for radiation protection purposes, malignant and hereditary diseases for which the probability of an effect occurring, rather than its severity, is regarded as a function of dose without a threshold for radiation protection purposes.

Survey: An evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of radioactive material or other sources of radiation. When appropriate, such an evaluation includes a physical survey of the location of radioactive material and measurements or calculations of levels of radiation, or concentrations or quantities of radioactive material present.

Technical work document: A term used to generically identify formally approved documents that direct work, such as procedures, work packages, or job or research plans.

Thermoluminescent dosimeter (TLD): Radiation monitoring device used to record the radiological exposure of personnel or areas to certain types of radiation.

Total effective dose equivalent (TEDE) means the sum of the effective dose equivalent (for external exposures) and the committed effective dose equivalent (for internal exposures). [At the INEEL, Deep-dose equivalent to the whole body may be used as effective dose equivalent for external exposures].

Transuranic waste: Without regard to source or form, waste that is contaminated with alpha-emitting transuranic radionuclides having half-lives greater than 20 years and concentrations greater than 100 nCi/g at the time of assay.

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Unusual occurrence: Nonemergency occurrence that has significant impact or potential for impact on safety, the environment, health, security, or operations.

Very high radiation area means any area, accessible to individuals, in which radiation levels could result in an individual receiving an absorbed dose in excess of 500 rads (5 grays) in ~~one~~ hour at 1 m from a radiation source or from any surface that the radiation penetrates.

Week means a period of ~~7~~seven consecutive days.

Weekly means every calendar week for the purposes of compliance with ~~10 CFR 835 and the RCM~~this manual. When no work is in progress, response check from the previous workday may be used for operational and safety-related tours.

Weighting factor (w_T) means the fraction of the overall health risk, resulting from uniform, whole body irradiation, attributable to specific tissue (T). The dose equivalent to ~~the affected~~ tissue, H_T , is multiplied by the appropriate weighting factor to obtain the effective dose equivalent contribution from that tissue. ~~See Appendix 2B~~The weighting factors are ~~as listed in~~ 10 CFR 835.

Whole body means, for the purposes of external exposure, head, trunk (including male gonads), arms ~~(above and including the elbow)~~, or legs ~~(above and including the knee)~~.

Whole-body dose means the sum of the annual deep-dose equivalent for external exposures and the committed effective dose equivalent for internal exposures.

Year means the period of time beginning on or near January 1 and ending on or near December 31 of that same year used to determine compliance with the provisions of ~~the RCM~~10 CFR 835. The starting date ~~and ending date~~ of the year used to determine compliance may be changed provided that the change is made at the beginning of the year and that no day is omitted or duplicated in consecutive years.

Yearly means every 12 months \pm ~~1~~3 months for the purposes of compliance with ~~10 CFR 835 and the RCM~~this manual.