

GLOSSARY OF TERMS

Activation products	Radioactive nuclides resulting from the absorption of a neutron by a stable nuclide.
Activity	The number of nuclear disintegrations occurring in a given amount of time (e.g., disintegrations per minute, Curies).
Alpha particle	A charged particle emitted from the nucleus of the atom. This particle the same charge and mass as that of a helium atom (2 protons, 2 neutrons).
Atom	The smallest particle of a chemical element capable of entering into a chemical reaction.
Background radiation	Radiation in the environment, primarily from cosmic radiation and naturally occurring radioactive materials.
Background station	A monitoring station where the effects of releases of radioactive materials from nuclear facilities should not be evident. Generally, background stations are more than 10 miles away from a nuclear facility.
Beta particle	A charged particle emitted from the nucleus of the atom. The particle has the same charge and mass of an electron.
Boiling Water Reactor	A type of nuclear reactor in which water is allowed to boil within the reactor core, producing steam to drive a turbine generator.
Byproduct material	Man-made radioactive materials, such as Co-60, Sr-90, I-131, and Cs-137, produced primarily in nuclear reactors. Byproduct materials include both activation and fission products.
Concentration	The amount of radioactive material contained in a given quantities of sample medium.
Cosmic radiation	The radiation produced by the sun and nearby stars composed primarily of high-energy protons and neutrons.
Curie	The physical unit of measurement for radioactivity, without measuring biological impacts. One Curie (Ci) is equal to 37 billion ($3.7 \cdot 10^{10}$) disintegrations per second. A Curie is also used as a measurement of the quantity of radioactive materials; one Curie of material having one Curie of radioactivity.
milliCurie	One one-thousandth of a Curie (0.001 Ci)
picoCurie	One one-trillionth of a Curie ($1.0 \cdot 10^{-12}$ Ci)

femptoCurie	One one-quadrillionth of a Curie ($1.0 \cdot 10^{-15}$ Ci)
Daughter	See: Decay product
Decay	The spontaneous transformation of an unstable nuclide into a different nuclide, or into a different energy state of the same nuclide. This process results in the emission of radiation, and a reduction over time of the number of radioactive atoms.
Decay product	A nuclide resulting from the radioactive decay of another nuclide. Decay products may be stable or radioactive.
Disintegration	A spontaneous nuclear transformation characterized by the emission of energy and/or mass from the nucleus of an atom. When many atoms of the same nuclide are present, the process is characterized by a definite half-life.
Dose, absorbed	The amount of energy deposited by radiation in a given amount of material.
Dose equivalent	A measure of absorbed dose which expresses the biological effects of all types of radiation on a common scale. The common unit of measurement is the Roentgen Equivalent Man (Rem).
Dose rate	The radiation dose equivalent per unit time (e.g., mRem/yr).
Dosimeter	An instrument to detect and measure accumulated radiation exposure or dose.
External radiation	Radiation from a source outside the human body. Only gamma rays and neutrons are considered hazardous when the source is outside the human body. Extremely energetic beta particles may penetrate the dead layer of skin.
Fallout	Airborne radioactive debris from a nuclear detonation or accident that has returned to the surface of the earth.
Fission	A nuclear transformation in which a nucleus splits into at least two smaller nuclei, commonly accompanied by the release of a large amount of energy. The resulting nuclei are often radioactive.
Fission products	Nuclides, such as Sr-90, I-131 or Cs-137, which result from the process of fission. Most fission products are radioactive and have relatively short half-lives.
Gamma radiation	High-energy, short wavelength electromagnetic radiation emitted from the nucleus of an atom. Gamma radiation often accompanies the emission of alpha and beta particles.
Half-life	The time required for the amount of radioactivity of a specific

	radionuclide to be reduced by one-half by radioactive decay. Each radionuclide has a unique half-life.
Hot-cell	A heavily shielded enclosure in which large quantities of radioactive materials may be safely processed or stored, either by remote means or automatically.
Hot-spot	A small area of localized radioactive material contamination.
In-situ	In position or in its original place.
Indicator station	A monitoring station where the effects of releases of radioactive materials from nuclear facilities should be evident.
Internal radiation	The radiation from a source within the body, resulting from the deposition of radioactive materials in body tissue.
Isotope	Nuclides having the same number of protons in their nuclei (i.e., the same chemical element) and a differing number of neutrons. Chemical properties of different isotopes of a single chemical element are almost identical.
Man-made radioactive materials	Radioactive materials which do not occur naturally in the environment (e.g., Co-60, Sr-90, I-131, Cs-137).
Monitoring	The periodic or continuous determination of radiation levels and the amount of radioactive materials present in a given area.
Naturally-occurring radioactive materials	Radioactive materials, such as K-40, Uranium, Thorium, and their daughters, which occur naturally in the earth's crust and other radioactive materials, such as Be-7 and C-14, which are produced by natural processes in the earth's atmosphere.
Nuclide	A species of atom characterized by the makeup of its nucleus (i.e., the number of protons and neutrons and the energy content).
Parent	A radionuclide which, upon radioactive decay, yields a specified nuclide (a daughter) either directly or as a later member of the radioactive series.
Pathway	A physical or biological mechanism whereby radioactive materials in the environment may reach man or another biological organism.
Pressurized Water Reactor	A type of nuclear reactor in which water within the core is maintained at sufficient pressure to prevent boiling. Steam to drive the turbine generator is produced in a heat exchanger known as a "steam generator".
Radiation	The emission and propagation of energy through space or through a medium. The term is also used to refer to the emitted energy. In

this context, the term refers to electromagnetic waves (e.g., light, microwave, heat, radio waves, X-ray, and gamma rays). By extension, the term also refers to the emission of particles from the atomic nucleus.

Radioactive material	Any material which exhibits the property of radioactivity.
Radioactivity	The property of certain nuclides to spontaneously emit particles or electromagnetic radiation.
Radionuclide	Any radioactive species of atom that exists for a measurable length of time.
rem	The unit of dose equivalent, which expresses the biological damage of all types of radiation on a common scale.
millirem	One one-thousandth of a Rem. A typical chest X-ray will result in a radiation dose equivalent between 25 and 50 milliRem.
Roentgen	A unit of exposure to ionizing radiation. For X-rays and gamma rays, 1 Roentgen (R) equals 1 rem.
Spectrometry	The measurement of the concentration of a radioactive material by examination of the energy spectrum of the radiation emitted by a sample.
Spectrum	A visual display, photographic record, or a plot of the distribution of the intensity of a given type of radiation, usually as a function of energy. Analysis of the spectrum obtained from the sample can be used to identify and quantify the radionuclides present in the sample.
Thermoluminescent dosimeter	A type of dosimeter which stores the energy from incident radiation as deformations in a crystal lattice. Upon heating the crystal gives off light in proportion to the amount of radiant energy absorbed.
Tritium	A man-made radioactive isotope of hydrogen having one proton and two neutrons.

SYMBOLS AND ABBREVIATIONS

&	Intersection of
± or +-	Plus or minus
<	Less than
-	TLD lost or damaged
--	No analysis performed
∞	Infinity (division by zero)
A	Air (in Network Descriptions)
AGY	Agency that collected the sample
ALARA	As Low As Reasonably Achievable
ANAL	Analyses
AQ	Aquatic species
AVG	Average
B	Background Station
BEGIN	Date upon which sample collection began
BWR	Boiling Water Reactor
CO	County or County Route
COA	Cooling Off Area (Dawson Forest)
COLLECT	Date upon which sample was collected
CY	Calendar Year
D	Deposition (soil & vegetation in Network Descriptions)
DFW or DFWMA	Dawson Forest Wildlife Management Area
DHEC	South Carolina Department of Health and Environmental Control
DIR-DIST	Direction and Distance (in miles) from facility
DNR or GADNR	Georgia Department of Natural Resources
DOE	United States Department of Energy
DS-	Downstream of
DWPF	Defense Waste Processing Facility at Savannah River Site
D/W	Dry to Weight ratio
E	East or Exponential power
ENE	East-Northeast

EPA	United States Environmental Protection Agency
EPD	Georgia Environmental Protection Division
ERL	Environmental Radiation Laboratory
ERP	Environmental Radiation Program
ESE	East-Southeast
FBI	Federal Bureau of Investigation
FEMA	Federal Emergency Management Agency
FMC	Four Mile Creek (from Savannah River Site)
FRMAC	Federal Radiological Monitoring and Assessment Center
GA	Georgia or Georgia Highway Route
GEMA	Georgia Emergency Management Agency
GNAL	Georgia Nuclear Aircraft Laboratory
GPC	Georgia Power Company
GTRR	Georgia Tech Research Reactor
GW	Groundwater (in Network Descriptions)
HCA	Hot Cell Area (Dawson Forest)
I	Indicator Station
IPX	Ingestion Pathway Exercise
ISGS	In-situ Gamma Spectrometer
KBS	Naval Submarine Base, Kings Bay
L3RC	Lower Three Runs Creek (from Savannah River Site)
MCL	Maximum Contaminant Level in drinking water
MDC	Minimum Detection Concentration
MPC	Maximum Permissible Concentration (limit in waste water)
MRL	Mobile Radiation Laboratory
N	North
NA	Not Applicable
NAT	Natural
ND	Not Detected
NE	Northeast
NNE	North-Northeast
NNW	North-Northwest

NORM	Naturally Occurring Radioactive Materials
NRC	United States Nuclear Regulatory Commission
NUM	Number of ...
NW	Northwest
OGCA	Official Code of Georgia Annotated
PREC	Precipitation
PWR	Pressurized Water Reactor
S	South
SAMP	Sample(s)
SC	South Carolina or Steel Creek (from Savannah River Site)
SE	Southeast
SED	Sediment (in Network Descriptions)
SRS	Savannah River Site
SSE	South-Southeast
SSW	South-Southwest
STA	Monitoring Station
SW	Southwest
T	TLD Monitoring (in Network Descriptions) or Type of Station
TLD	Thermoluminescent Dosimeter
TVA	Tennessee Valley Authority
U3RC	Upper Three Runs Creek (from Savannah River Site)
US	United States or United States Highway Route
US-	Upstream of
USDOE	United States Department of Energy
USEPA	United States Environmental Protection Agency
USNRC	United States Nuclear Regulatory Commission
VEG	Vegetation
VEGP	Vogtle Electric Generating Plant
VOL	Sample volume
W	West
WMA	Wildlife Management Area
WNW	West-Northwest

WSW	West-Southwest
YDS	Yards
cm ³ (or cc)	cubic centimeter
dpm	disintegrations per minute
fCi/m ³	femtoCuries per cubic meter
g/L	grams per liter
mR/yr	milliRoentgen per year
mRem/yr	milliRem per year
pCi/kg	picoCuries per kilogram
pCi/L	picoCuries per liter
pCi/m ²	picoCuries per square meter
pCi/m ³	picoCuries per cubic meter
uR/hr	microRoentgen per hour
α	Alpha particles
β	Beta particles
γ	Gamma rays
Ar-41	Argon 41 Isotope
Be-7	Beryllium 7 Isotope
C-14	Carbon 14 Isotope
Co-58	Cobalt 58 Isotope
Co-60	Cobalt 60 Isotope
Cs-134	Cesium 134 Isotope
Cs-137	Cesium 137 Isotope
Eu-152	Europium 152 Isotope
H-3	Tritium (Hydrogen 3) Isotope
I-131	Iodine 131 Isotope
K-40	Potassium 40 Isotope
Mn-54	Manganese 54 Isotope
P-32	Phosphorous 32 Isotope
Pu-238	Plutonium 238 Isotope
Pu-239	Plutonium 239 Isotope

Ra-226	Radium 226 Isotope
Ra-228	Radium 228 Isotope
Sr-89	Strontium 89 Isotope
Sr-90	Strontium 90 Isotope
Th-232	Thorium 232 Isotope
U-235	Uranium 235 Isotope
U-238	Uranium 238 Isotope
Zn-65	Zinc 65 Isotope

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