

GLOSSARY

absorbed dose

Energy transferred to matter when ionizing radiation passes through it. Absorbed dose is measured in rads.

absorption

The process by which the number and energy of particles or photons entering a body of matter are reduced by interaction with the matter.

acclimation

The acclimation or adaptation of a particular species over several generations to a marked change in the environment.

activity

A measure of the rate at which a material is emitting nuclear radiation, usually given as the number of nuclear disintegrations per unit of time. A unit of radioactivity is the curie (Ci), which equals 3.7×10^{10} disintegrations per second.

adsorption

The adhesion of a substance to the surface of a solid or solid particles.

AEC

Atomic Energy Commission. A five-member commission established by the Atomic Energy Act of 1954 to supervise the use of nuclear energy. The AEC was dissolved in 1975 and its functions transferred to the Nuclear Regulatory Commission (NRC) and the Energy Research and Development Administration (ERDA); ERDA became the U.S. Department of Energy (DOE) in 1977.

aerobic

Processes that can occur only in the presence of oxygen.

air quality

A measure of the levels of pollutants in the air.

air quality standards

The prescribed level of pollutants in the outside air that cannot be exceeded legally during a specified time in specified areas.

air sampling

The collection and analysis of air samples for detection or measurement of radioactive substances.

alluvial

Deposited by a stream or running water.

ambient air

The surrounding atmosphere, usually the outside air, as it exists around people, plants, and structures. (It is not the air in immediate proximity to emission sources.)

anaerobic

Processes that occur in the absence of oxygen.

anion

A negatively charged ion.

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aquaculture

Culture of aquatic organisms

aquatic biota

The sum total of living organisms of any designated aquatic area.

aquifer

An underground bed or stratum of earth, gravel, or porous stone that contains water. The water can be pumped to the surface through a well or it might emerge naturally as a spring.

archaeological sites (resources)

Areas or objects modified or made by man and the data associated with these features and artifacts.

arenaceous limestone

Limestone with a texture or appearance of sand.

artifact

An object produced or shaped by human workmanship of archaeological or historic interest.

ash

Inorganic residue remaining after ignition of combustible substances.

atmosphere

The layer of air surrounding the earth.

backfill

Material used to refill an excavation.

background exposure

See exposure to radiation.

background radiation

Normal radiation present in the lower atmosphere from cosmic rays and earth sources. Background radiation varies considerably with location.

bedrock

Any solid rock exposed at the earth's surface or overlain by unconsolidated surface material such as soil, gravel, or sand.

benthos

The plant and animal life whose habitat is the bottom of a sea, lake, or river.

beta particle

An elementary particle emitted from a nucleus during radioactive decay. It is negatively charged, is identical to an electron, and is easily stopped by, for example, a thin sheet of metal.

bioaccumulation factor

Concentration of a substance (e.g., chemical or radionuclide) in fish flesh or other body parts divided by the concentration of that substance in the water in which the fish is living.

biocide

Chemical agent used to prevent or remove fouling organisms such as bacteria, fungi, algae, clams, etc., from entering or fouling intake and heat exchangers of powerplant/reactor cooling water systems.

biofouling

Aquatic organisms such as bacteria, fungi, algae, clams, etc., that colonize water-flow structures, often causing restricted water flow (i.e., cooling water systems of powerplants/reactors).

biological dose

The radiation dose, measured in rems, absorbed in biological material.

biosphere

The portion of the earth and its atmosphere capable of supporting life.

biostratigraphy

The study of stratigraphy via fossilized remains.

biota

The plant and animal life of a region.

blowdown

Water discharged from a recirculating cooling system to control concentration of salts or other impurities.

BOD

Biological oxygen demand, the oxygen required for oxidation of soluble organic matter by bacterial action in the presence of oxygen.

Btu

British Thermal Unit, a unit of heat; the quantity of heat required to raise the temperature of 1 pound of water by 1 degree Fahrenheit. One Btu equals 1055 joules (or 252 calories).

°C

Degree Celsius. The Celsius temperature scale is related to the Fahrenheit scale as follows:

$$^{\circ}\text{F} = ^{\circ}\text{C} \times \frac{9}{5} + 32$$

cancer

The name given to a group of diseases that are characterized by uncontrolled cellular growth.

carbon monoxide

A colorless, odorless gas that is toxic if breathed in high concentration over a certain period of time. It is a normal component of most automotive exhaust systems.

carcinogen

An agent capable of producing or inducing cancer.

carcinogenic

Capable of producing or inducing cancer.

Carolina bay

Wetland area found on the Southeastern Atlantic coastal plain; a shallow depression.

cc

Cubic centimeters, cm^3 or cc (1 cc = 1 milliliter).

CCDF

Complementary cumulative distribution function.

Ci

See curie.

clastic dike

A sedimentary dike formed by broken rocks from overlying or underlying material.

cold shock

A rapid decrease in water temperature that may result in fish mortality.

concentration

The amount of a substance contained in a unit quantity of a sample.

condensate

Water obtained by cooling the steam (overheads) produced in an evaporator system. Also, any liquid obtained by cooling saturated vapor.

CO₂

Carbon dioxide, a colorless, odorless, nonpoisonous gas that is a normal component of the ambient air.

coolant

A substance, usually water, circulated through a processing plant to remove heat.

cooling tower

A structure designed to cool water by evaporation. In this EIS, the water being cooled absorbs heat to condense the steam in the evaporator system.

correlatable

Able to establish a connection between geological formations or events.

Cretaceous

End of Mesozoic era, between 136 and 65 million years ago.

crystalline metamorphic rock

Rock consisting wholly of crystals.

cumulative effects

Additive environmental, health, and socioeconomic effects that result from a number of similar activities in an area.

curie (Ci)

A unit of radioactivity equal to 3.7×10^{10} (37 billion) disintegrations per second. A curie is also a quantity of any nuclide or mixture of nuclides having one curie of radioactivity.

daughter

A nuclide formed by the radioactive decay of another nuclide, which is called the parent.

decay heat

The heat produced by the decay of radioactive nuclides.

decay, radioactive

The spontaneous transformation of one nuclide into a different nuclide or into a different energy state of the same nuclide. The process results in the emission of nuclear radiation (alpha, beta, or gamma).

decomposition

The breakdown of a substance into its constituent parts.

delta T (ΔT)

Change in temperature.

TC

demography

The statistical study of human populations including size, density, distribution, and vital statistics such as age, sex, and ethnicity.

depauperate

Poor or impoverished, falling short of what occurs naturally; i.e., reduced numbers and species of biological organisms.

depositional regimes

A systematic laying or throwing down of material over a substantial area.

detector

Material or device (i.e., instrument) that is sensitive to radiation and can produce a response signal suitable for measurement or analysis.

detritus

Dead organic tissues and organisms in an ecosystem.

distillation

Separation process achieved by creating two or more coexisting zones that differ in temperature, pressure, or composition.

DOE

United States Department of Energy.

dose

The energy imparted to matter by ionizing radiation. The unit of absorbed dose is the rad, equal to 0.01 joules per kilogram of irradiated material in any medium.

dose commitment

The dose that an organ or tissue receives during a specified period of time (e.g., 50 or 100 years) as a result of intake (by ingestion or inhalation) of one or more radionuclides from 1 year's release.

dose equivalent

A term used to express the amount of effective radiation when modifying factors have been considered. It is the product of absorbed dose (rads) multiplied by a quality factor and any other modifying factors. It is measured in rems (Roentgen equivalent man).

dose rate

The radiation dose delivered per unit time (e.g., rems per year).

dosimeter

A small device (instrument) that measures radiation dose (e.g., film badge or ionization chamber) and is carried by a radiation worker.

drift

Mist or spray carried out into the atmosphere with the effluent air from cooling towers.

DWPF

Defense Waste Processing Facility, under construction at the Savannah River Plant. It is designed to process defense waste into a suitable form for terminal storage or disposal.

D₂O

Deuterium oxide or heavy water.

ecology

The science dealing with the relationship of all living things to each other and to the environment.

ecosystem

A complex of the community of living things and the environment forming a functioning whole in nature.

EDC

See environmental dose commitment.

effluent

Liquid waste discharged into the environment, usually into surface streams. In this EIS, effluent refers to discharged wastes that are nonpolluting in their natural state or as a result of treatment.

effluent standards

Defined limits of waste discharge in terms of volume, content of contaminants, temperature, etc.

EIS

Environmental impact statement, a document prepared pursuant to Section 102(2)(c) of the National Environmental Policy Act (NEPA) of 1969 for a major Federal action significantly affecting the quality of the human environment.

electron

An elementary particle with a unit negative charge and a mass 1/1837 of the proton. Electrons surround the positively charged nucleus and determine the chemical properties of the atom.

element

One of the 105 known chemical substances that cannot be divided into simpler substances by chemical means. All nuclides of an element have the same atomic number.

emission standards

Legally enforceable limits on the quantities and kinds of air contaminants that may be emitted into the atmosphere.

endangered species

Plants and animals in an area that are threatened with either extinction or serious depletion.

energy

The capacity to produce heat or do work. Electrical energy is measured in units of kilowatt-hours.

entrainment

The capture and inclusion of organisms in the cooling water systems of powerplants/reactors. The organisms involved are generally 9 to 13 millimeters long, depending on the intake screen mesh size, and include phyto- and zooplankton, fish eggs and larvae (ichthyoplankton), shellfish larvae, and other forms of aquatic life.

environment

The sum of all external conditions and influences affecting the life, development, and ultimately, survival of an organism.

environmental dose commitment (EDC)

A dose representing exposure to, and ingestion of, environmentally available radionuclides for 100 years following 1 year's release of radioactivity.

environmental fate

The result of the physical, biological, and chemical interactions of a substance released to the environment.

environmental transport

The movement through the environment of a substance; it includes the physical, chemical, and biological interactions undergone by the substance.

Eocene

Lower Tertiary Period, after Paleocene but before Oligocene.

epoch

Length of time (geology).

erosion

The process in which uncovered soil and clay are carried away by the action of wind or water.

estuarine

Pertaining to an area where salt and fresh water come together and are affected by tides.

exposure to radiation

The incidence of radiation on living or inanimate material by accident or intent. Background exposure is the exposure to natural background ionizing radiation. Occupational exposure is the exposure to ionizing radiation that takes place during a person's working hours. Population exposure is the exposure to a number of persons who inhabit an area.

°F

degree Fahrenheit. The Fahrenheit temperature scale is related to the Celsius scale as follows:

$$^{\circ}\text{C} = \frac{(^{\circ}\text{F} - 32)}{1.8}$$

fall line

Imaginary line marking the point that most rivers drop steeply from the uplands to the lowlands.

fallout

The descent to earth and deposition on the ground of particulate matter (which might be radioactive) from the atmosphere.

fault

A fracture or a zone of fractures within a rock formation along which vertical, horizontal, or transverse slippage has occurred.

faunal

Animal and plant fossils of a certain rock unit.

feldspar

Most common group of aluminum silicate minerals (containing other metals, such as potassium, sodium, and iron) that form rock.

ferruginous

Containing iron oxide.

fission

The splitting of a heavy atomic nucleus into two approximately equal parts, which are nuclei of lighter elements, accompanied by the release of energy and generally one or more neutrons. Fission can occur spontaneously or can be induced by neutron bombardment.

fission products

Nuclei formed by the fission of heavy elements (primary fission products). Also, the nuclei formed by the decay of the primary fission products, many of which are radioactive.

fluvial

Relating to, or living in or near, a river.

flux

Rate of flow through a unit area.

food chain

The pathways by which any material entering the environment passes from the first absorbing organism through plants and animals to humans.

fuel

A substance used to produce heat (e.g., from chemical energy by combustion, or from nuclear energy by nuclear fission).

gal

Gallon.

gamma rays

High-energy, short-wave length electromagnetic radiation accompanying fission and emitted from the nucleus of an atom. Gamma rays are very penetrating and require dense (e.g., lead) or a thick layer of materials for shielding.

gamma spectrometry

Identification and quantification of radioisotopes by measurement of the characteristic gamma rays emitted by elements undergoing radioactive decay.

g/cm²

Grams per square centimeter, a measure of pressure. Atmospheric pressure is about 1055 g/cm².

genetic effects

Radiation effects that can be transferred from parent to offspring; radiation-induced changes in the genetic material of sex cells.

geology

The science that deals with the earth: the materials, processes, environments, and history of the planet, especially the lithosphere, including the rocks and their formation and structure.

g/L

Grams per liter.

glaucconitic

Mineral aggregate containing glauconite, giving it a green color.

gneiss

Rock formed from bands of granular minerals alternating with bands of minerals that are flaky, or have elongate prismatic habits.

gradient

Slope, particularly of a stream or land surface.

groundwater

The supply of water under the earth's surface in an aquifer.

gypsum

Mineral containing hydrous calcium sulfate.

half-life (effective)

The time required for a radionuclide contained in an organism to reduce its activity by one half as a combined result of radioactive decay and biological elimination.

halogens

The group of five chemically related nonmetallic elements that include fluorine, chlorine, bromine, iodine, and astatine.

hardwoods

Trees that are angiosperms and yield wood that has a hard consistency.

health physics

The science concerned with recognition, evaluation, and control of health hazards from ionizing radiation.

heat exchanger

A device that transfers heat from one fluid (liquid or gas) to another or to the environment.

heavy metals

Metallic elements of high molecular weight, such as mercury, chromium, cadmium, lead, and arsenic, that are toxic to plants and animals at known concentrations.

heavy water

Water in which the molecules contain oxygen and deuterium, an isotopic form of hydrogen that is heavier than ordinary hydrogen.

high-level waste

High-level liquid waste or the products from the solidification of high-level liquid waste or irradiated fuel elements if discarded without reprocessing.

historic resources

The sites, districts, structures, and objects considered limited and nonrenewable because of their association with historic events or persons, or social or historic movements.

holding pond

A pond constructed to retain water from a cooling water system before release to a water body.

Holocene

Epoch of Quaternary Period from end of Pleistocene to present time.

hydraulic conductivity

Water flow rate in liters per day through a 1-square-foot cross-section under a unit hydraulic gradient.

hydraulic (water) head

Height of water with a free surface above a subsurface point.

hydrocarbons (HC)

Organic compounds consisting primarily of hydrogen and carbon. Hydrocarbons are emitted in automotive exhaust and from the incomplete combustion of fossil fuels such as coal.

hydrograph

Graph showing water characteristics such as velocity, or flow, in relation to time.

hydrology

The science dealing with the properties, distribution, and circulation of natural water systems.

hydrosphere

The water portion of the surface of the earth as distinguished from the solid portion, the lithosphere.

hydrostratigraphic unit

Rock or soil body extending laterally for a considerable distance; sometimes abbreviated HSU.

ichthyoplankton

The early life stages of fish (eggs and larvae) that spend part of their life cycle as free-floating plankton.

impingement

The process by which aquatic organisms too large to pass through the intake screens of a powerplant/reactor become caught on the screens and unable to escape.

incorporated places

Political units incorporated or combined as cities, boroughs, towns, and villages.

indigenous labor pool

An area's native labor pool composed of workers normally residing in the area who do not leave the area after termination of a construction project.

induced radioactivity

Radioactivity that is created when substances are bombarded with neutrons, as in a reactor.

inert gas

A gas that is totally unreactive.

in-movers

Workers who move into an area during construction and leave when the project is finished. As referred to in this document, in-movers also include some weekly travelers.

insolation

Solar radiation incident on the water surface.

intensity

The energy or the number of photons or particles of radiation incident on a unit of time. Intensity of radioactivity is the number of atoms disintegrating per unit of time.

interfluvial

Falling in the area between two streams.

ion

An atom or molecule that has gained or lost one or more electrons and thus has become electrically charged.

ion exchange

Process in which a solution containing soluble ions to be removed is passed over a solid ion exchange column, which removes the soluble ions by exchanging them with labile ions from the surface of the column. This process is reversible; the trapped ions can be eluted from the column and the column regenerated.

ionization

The process whereby ions are created. Nuclear radiation can cause ionization, as can high temperatures and electric discharges.

ionizing radiation

Radiation capable of displacing electrons from atoms or molecules, thereby producing ions.

irradiation

Exposure to radiation.

isotope

An atom of a chemical element with a specific atomic number and atomic weight. Isotopes of the same element have the same number of protons but different numbers of neutrons.

kaolin

Clay mineral group characterized by a silicon oxygen sheet and an aluminum-hydroxyl sheet alternately linked to form a two-layer crystal lattice.

kilometer

A metric unit of length equal to 0.62137 mile.

leachate

Liquid that has percolated through solid waste or other media and has extracted from the solids dissolved or suspended materials into the liquids.

leaching

The process whereby a soluble component of a solid or mixture of solids is extracted as a result of percolation of water around and through the solid.

leukemia

A form of cancer characterized by extensive proliferation of nonfunctional, immature white blood cells (leukocytes).

lignite

A brownish-black coal between stages of peat and sub-bituminous coal.

limonite

Hydrous ferric oxides occurring naturally but having unknown origins.

liters per second

A metric unit of flow rate equal to 15.85 gallons per minute.

lithology

Rock descriptions by color, structure, grain size, etc.

lithosphere

The solid part of the earth composed predominantly of rock.

long-lived nuclides

Radioactive isotopes with half-lives greater than 30 years.

lps

Liters per second.

m³/m

Cubic meters per minute.

m³/s

Cubic meters per second.

macroinvertebrates

Those invertebrates that can be seen by the unaided eye that are retained in a U.S. Standard sieve (0.595 millimeters).

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macrophytes

Aquatic plants that can be either submerged or emergent.

marine terrace

Narrow coastal strip altered by marine deposit and erosion.

maximum permissible dose

That dose of ionizing radiation established by competent authorities as an amount below which there is no appreciable risk to human health; at the same time, it is below the lowest level at which a definite hazard exists.

mechanical draft (cooling tower)

A type of cooling tower that uses fans to provide air flow for promoting evaporative cooling (see natural draft).

megawatt (MW)

A unit of power equal to 1000 kilowatts (kW) or 1 million (10⁶) watts.

mg

Milligram (one-thousandth of a gram).

mica

Variously colored, or colorless mineral silicates, crystallizing in monoclinic forms that separate into thin leaves.

micro (μ)

Prefix indicating one millionth. One microgram equals one-millionth of a gram or 10^{-6} gram.

micrometer (μm)

A unit of length equal to one one-millionth (10^{-6}) of a meter.

micron

A micrometer (10^{-6} meter).

migration

The natural travel of a material through the air, soil, or groundwater.

ml

Milliliter (one-thousandth of a liter).

mm

Millimeter (one-thousandth of a meter).

mobility

The ability of a chemical element or a pollutant to move into and through the environment.

moderator

A material used to slow neutrons from fission to thermal energies.

molecule

A group of atoms held together by chemical forces. A molecule is the smallest unit of a compound that can exist by itself and retain all its chemical properties.

monitoring

Process whereby the level and quality of factors that can affect the environment and human health are measured periodically to regulate and control potential impacts.

mrem

Millirem (one-thousandth of a rem).

mutagen

Physical, chemical, or radiative agent capable of inducing mutation (above the spontaneous background level).

mutagenesis

The occurrence or induction of mutation, a genetic change that is passed on from parent to offspring.

mutation

An inheritable change in the genetic material (in a chromosome).

nano

Prefix indicating one thousandth of a micro unit; one trillionth;
1 nanocurie = 10^{-9} curie.

National Register of Historic Places

A list maintained by the National Park Service of architectural, historic, archaeological, and cultural sites of local, state, or national significance.

natural draft (cooling tower)

A type of cooling tower that relies on the difference in density between the entering air and internal heated air to provide air flow for promoting evaporative cooling (see mechanical draft).

natural radiation or natural radioactivity

Background radiation.

nCi

Nanocuries, 10^{-9} curies.

NEPA

National Environmental Policy Act of 1969.

neutron

An uncharged elementary particle with a mass slightly greater than that of the proton and found in the nucleus of every atom heavier than hydrogen. A free neutron is unstable and decays with a half-life of about 13 minutes into an electron and a proton.

neutron flux

Number of neutrons flowing through a specified area per unit of time.

NH₃

Ammonia, a pungent, reactive colorless gas, which is irritating to the eyes and moist skin in high concentrations.

NO_x

The oxides of nitrogen, primarily NO and NO₂. These are often produced in the combustion of fossil fuels. In high concentration they constitute an air pollution problem.

nodes

The intersection of horizontal and vertical grids.

NRC

U.S. Nuclear Regulatory Commission.

nuclear energy

The energy liberated by a nuclear reactor (through fission or fusion) or by radioactive decay.

nuclear powerplant

A facility that converts nuclear energy into electrical power. Heat produced by a reactor is used to make steam to drive a turbine that drives an electric generator.

nuclear reaction

A reaction in which an atomic nucleus is transformed into another element, usually with the liberation of energy as radiation.

nuclear reactor

A device in which a fission chain reaction is maintained and which is used for irradiation of materials or the generation of electricity.

nucleus

The small, positively charged core of an atom that contains nearly all of the atom's mass.

nuclide

An atomic nucleus specified by its atomic weight, atomic number, and energy state. A radionuclide is a radioactive nuclide.

once-through (cooling system)

A cooling system that utilizes water from a river one time for cooling and then returns it to the river.

organic degreasers

Cleaning agents having organic chemical structures.

outcrop

Part of a geologic formation above the surface of the earth.

Paleocene

Epoch of Tertiary Period between the Gulfian of the Cretaceous Period and before the Eocene.

particulates

Solid particles small enough to become airborne.

pD

The negative log of the deuterium (heavy hydrogen) ion concentration in solution; analogous to the term pH, which refers to the normal hydrogen ion concentration.

penplain

Almost featureless, plain land surface.

perched

A water-bearing area of small lateral dimensions lying above a more extensive aquifer.

periphyton

Plankton (attached) plants that occur in water.

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permeability

Ability of water to flow through porous rock or soil.

person-rem

The radiation dose commitment to a given population; the sum of the individual doses received by a population segment.

pH

A measure of the hydrogen ion concentration in aqueous solution; specifically, the negative logarithm of the hydrogen ion concentration. Acidic solutions have a pH from 0 to 7; basic solutions have a pH greater than 7.

photon

Electromagnetic radiation; a quantum of electromagnetic energy having properties of both a wave and a particle but without mass or electric charge.

physiography

Description of earth surface features, including air and water as well as land.

BB-4

phytoplankton

Planktonic (floating) plants that occur in water.

Piedmont province

Large area forming a plateau at the base of the Appalachian mountains, extending from New Jersey to Alabama.

piezometric maps

Lines of equal groundwater pressure drawn on a map.

piezometric surface

The surface to which water in an aquifer would rise by hydrostatic head.

Plant stream

Any natural stream on the Savannah River Plant. Surface drainage of the Plant is via these streams to the Savannah River.

Pleistocene

An epoch of the Quaternary Period between Pliocene and Holocene.

Pliocene

An epoch of the Tertiary Period between Miocene and Pleistocene.

plume

The visible emission into the air from a flue, chimney, or cooling tower. Also, a segment or area within a body of water that has measurably distinct characteristics (e.g., higher temperatures as from heated effluent).

pollution

The addition of any undesirable agent to an ecosystem in excess of the rate at which they can be degraded, assimilated, or dispersed by natural processes.

ppb

Parts per billion (10^{-9}); one thousandth of a part per million.

ppm

Parts per million. This unit is commonly used to represent the degree of pollutant concentration when the concentration is small. In air, ppm is usually volume pollutant per one million volumes of air; in water, a weight per one million weight units.

primary road

Interstate, state, and regional routes including rural arterial routes and their extensions into or through urban areas.

pyrite

Isometric mineral: FeS_2 (iron sulfide).

quality factor

The factor by which absorbed dose, in rads, is multiplied to obtain a quantity expressing the irradiation incurred by various biological tissues taking into account the biological effectiveness of the various types of radiation.

quartz

Crystalline silica: SiO_2 .

quartzite

Very hard, metamorphosed sandstone.

Quaternary age

The period from the end of the Tertiary age to the present.

rad

Acronym for radiation absorbed dose, the basic unit of absorbed dose equal to the absorption of 0.01 joule per kilogram of absorbing material.

radiation

The emitted particles and photons from the nuclei of radioactive atoms. Some elements are naturally radioactive whereas others are induced to become radioactive by bombardment in a reactor. Naturally occurring radiation is indistinguishable from induced radiation.

radiation detection instrument

Devices that detect and record the characteristics of ionizing radiation.

radiation monitoring

Continuous or periodic determination of the amount of radiation present in a given area.

radiation protection

Legislation, regulations, and measures to protect the public and industrial laboratory workers from harmful exposure to radiation.

radiation shielding

Reduction of radiation by interposing a shield of absorbing material between a radioactive source and a person, laboratory area, or radiation-sensitive device.

radiation standards

Permissible exposure levels of radiation and regulations governing same.

radioactivity

The spontaneous decay or disintegration of unstable atomic nuclei, accompanied by the emission of radiation.

radioisotopes

Nuclides of the same element (same number of protons in their nuclei) that differ in the number of neutrons and that spontaneously emit particles or electromagnetic radiation.

receiving waters

Rivers, lakes, oceans, or other bodies of water into which treated or untreated wastewaters are discharged.

recirculating (cooling system)

A cooling system that uses the same water cyclically to absorb heat and be cooled again. A percentage of new water must be added continuously to make up for evaporative and blowdown losses.

rem

Acronym for roentgen equivalent man, the unit of dose for biological absorption. It is equal to the product of the absorbed dose in rads, a quality factor, and a distribution factor.

residence time

The period of time during which a substance resides in a designated area.

roentgen (R)

A unit of exposure to ionizing radiation equal to or producing one coulomb of charge per cubic meter of air.

runoff

The portion of rainfall, melted snow, or irrigation water that flows across ground surface and eventually is returned to streams. Runoff can carry pollutants into receiving waters.

sandstone

Clastic rock containing large, individual particles visible to the unaided eye.

sanitary landfilling

An engineered method of solid waste disposal on land in a manner that protects the environment. Waste is spread in thin layers, compacted to the smallest practical volume, and covered with soil at the end of each working day.

SCDHEC

South Carolina Department of Health and Environmental Control

screen

Tool used to allow particles of a certain size through while retaining larger particles.

secondary road

A rural, major collector route.

sedimentation

The settling of excess soil and mineral solids of small particle size contained in water.

seep lines

Small zone where water leachate percolates slowly to the surface; a series of groundwater or leachate springs.

seismic

Pertaining to any earth vibration, especially an earthquake.

seismicity

The tendency toward the occurrence of earthquakes.

settling tank

A tank in which settleable solids are removed by gravity.

sewage

The total of organic waste and wastewater generated by an industrial establishment or a community.

sewer

Any pipe or conduit used to collect and carry away sewage or stormwater runoff.

sewerage

The entire system of sewage collection, treatment, and disposal.

shield

An engineered body of absorbing material used to protect personnel from radiation.

short-lived nuclides

Radioactive isotopes with half-lives no greater than about 30 years (e.g., cesium-137 and strontium-90).

siliceous cement
Cement with an abundance of silica.

siltstone
Silt having the texture and composition of shale, but lacking its fine lamination.

sink
An area from which water drains or is removed.

sludge
The precipitated solids (primarily oxides and hydroxides) that settle to the bottom of the storage tanks containing liquid high-level waste.

slug
Small, isolated body of water.

slurry
A suspension of solid particles (sludge) in water.

softwoods
Trees, particularly evergreens and shrubs, that produce seeds in a cone.

SO₂
Sulfur dioxide, a heavy pungent colorless gas (formed in the combustion of coal). SO₂ in high concentration is considered a major air pollutant.

SO_x
The oxides of sulfur, primarily SO₂ and SO₃. SO_x is a common air pollutant.

sparger
A discharge nozzle that provides quick dispersion of one fluid (liquid or gas) into another.

spill
The accidental release of radioactive material.

spray irrigation
The practice of dispersing treated aqueous effluents by spraying land in controlled amounts. Treated effluent is rich in nutrients that can be utilized by plants.

SREL
Savannah River Ecological Laboratory, an ecology research institution operated by the University of Georgia under contract from DOE.

SRL
Savannah River Laboratory.

SRP
Savannah River Plant.

stable
Not radioactive.

stack
A vertical pipe or flue designed to exhaust gases and suspended particulates.

stack gases
Gases emitted from a stack.

stationary source
A source of emissions into the environment that is fixed rather than moving, as an automobile.

storage
Retention of radioactive waste in manmade containment, such as a tank or vault, in a manner permitting retrieval; distinguished from disposal, which implies no retrieval.

storage coefficient
Volume of water released from storage in a vertical column of 0.93 square meter when the water table declines 0.93 meter.

stratified
Formed or arranged in layers.

stratigraphy
Division of geology dealing with the definition and description of rocks and soil of both major and minor natural divisions.

study area
A specific geographic area isolated from surrounding areas for the purpose of examining and analyzing specific phenomena and activities.

surface water
All water on the surface, as distinguished from groundwater.

surficial deposit
Most recent geological deposit lying on bedrock or on or near the earth's surface.

Tertiary age
First period of Cenozoic era, thought to be between 65 and 2 million years ago.

thermal pollution
Degradation of water quality by introduction of a heated effluent.

threshold dose

The minimum dose of a given substance that produces a measurable environmental factor.

tolerance

The relative capability of an organism to endure an unfavorable environmental factor.

topography

The configuration of a surface area, including its relief or relative elevations and the position of its natural and manmade features.

toxicity

The quality or degree of being poisonous or harmful to plant or animal life.

transmissivity

The rate at which water of prevailing kinematic viscosity is transmitted through a unit width under a unit hydraulic gradient.

Triassic Period

First period of the Mesozoic era, thought to be between 225 and 190 million years ago.

tritium (H-3)

A radioactive isotope of hydrogen, a weak beta emitter with a half-life of 12.5 years.

TSP

Total suspended particulates, the concentration of particulates in suspension in the air irrespective of the nature, source, or size of the particulates.

turbidity

Measure of sediment or suspended foreign particle concentration in solution.

unconsolidated

Loosely arranged or unstratified sediment.

USGS

United States Geological Survey.

venting

Release of gases or vapors under pressure to the atmosphere.

waste heat

Heat in materials at temperatures that are close to ambient and hence not valuable for production of power. Waste heat must be discharged to the environment.

water pollution

Presence of one or more contaminants in such degree as to be detrimental to the intended use of the water.

watershed

The area drained by a stream.

water table

The upper surface of groundwater.

wetland

Land or areas containing much soil moisture.

BP-4
BC-19

zooplankton

Planktonic (floating) animals that supply food for fish.