Glossary

Term	Description
Absorbed dose	The amount of energy deposited by ionizing radiation in a unit mass of tissue. Expressed in units of joule per kilogram (J/kg), which is given the special name 'gray' (Gy). The traditional unit of absorbed dose is the rad (100 rad equal 1 Gy).
ACERER	DHHS Advisory Committee on Energy-Related Epidemiologic Research
Activities	Methods used within a communications channel to deliver a message (e.g., the activity of holding training classes to help seniors start their own walking clubs is an example of using a community channel).
Activity	The rate of decay of radioactive material expressed as the number of nuclear disintegrations per second (See Becquerel).
AEC	Atomic Energy Commission, predecessor of the Department of Energy.
Airdrop	A nuclear device dropped from an aircraft and exploded in the atmosphere.
Alpha particle	A particle emitted from the nucleus of some radioactive atoms when they decay. An alpha particle is essentially a helium atom nucleus. It generally carries more energy than gamma or beta radiation, and deposits that energy very quickly while passing through tissue. Alpha particles cannot penetrate the outer, dead layer of skin. Therefore, they do not cause damage to living tissue when outside the body. When inhaled or ingested, however, alpha particles are especially damaging because they transfer relatively large amounts of ionizing energy to living cells.
AM	Arithmetic Mean
Atom	The smallest particle of an element that is capable of entering into a chemical reaction.
Atomic mass	The mass of an atom relative to other atoms. The atomic mass of any element is approximately equal to the total number of protons and neutrons in its nucleus.
Attitudes	An individual's predispositions toward an object, person, or group, that influences his or her response to be positive or negative, favorable or unfavorable.
Audience	See primary target audience and secondary target audience.

Term	Description
Audience profile	A formal description of the characteristics of the people who make up a target audience. Some typical characteristics useful in describing segments include media habits (magazines, TV, newspaper, radio, and Internet), family size, residential location, education, income, lifestyle preferences, leisure activities, religious and political beliefs, level of acculturation, ethnicity, ancestral heritage, consumer purchases, psychographics.
Audience segment(s)	A group of people who are enough alike on a set of predictors that one can develop program elements and communication activities that will likely be equally successful with all members of the segment.
Background Radiation	The amount of ionizing radiation to which a person is exposed from natural sources, such as terrestrial radiation due to naturally occurring radionuclides in the soil or cosmic radiation originating in outer space.
Balloon	A nuclear device suspended from a balloon and exploded in the atmosphere.
Barge	A nuclear device exploded from a barge moored in the lagoon of Enewetak or Bikini.
Barriers	Hindrances to desired change. These may be factors external or internal to audience members themselves (e.g., lack of proper health care facilities, the belief that fate causes illness and one cannot alter fate).
Baseline study	The collection and analysis of data regarding a target audience or situation prior to intervention. Generally, baseline data are collected in order to provide a point of comparison for an evaluation.
Becquerel (Bq)	A measure of the rate of radioactive decay: The Bq corresponds to one decay (disintegration) per second. It replaces the traditional unit activity, the curie (Ci).
Beta Particle	An electron (or positron) ejected from the nucleus of a decaying atom. Beta particles penetrate the dead skin layer. The beta particle is not stopped in tissue as quickly as an alpha particle, producing less damage per living cell. Beta particles may interact with living tissue by entering from the outside or by ingestion or inhalation.
Biological half-life	The time required for a biological system, such as a person, to eliminate by natural processes, other than radioactive decay, one-half of the amount of a substance, such as a radionuclide, that has entered it.

Term	Description
Cancer	A collective term for malignant tumors. A malignant tumor generally is unencapsulated, grows by invasion, and is able to metastasize via lymphatic and blood systems to distant tissue sites.
CDB	County Data Base
CDC	Centers for Disease Control and Prevention: CDC has 11 centers, offices and an institute. It is an agency of the Department of Health and Human Services. CDC is a non-regulatory agency – its mission is to promote health and quality of life by preventing and controlling disease, injury and disability.
CIC	Coordination and Information Center
Coefficient of variation	The standard deviation divided by the value of the parameter considered.
Collective Dose	The estimated dose for an area of the country multiplied by the estimated population in that area of the country.
Communication (or creative) concepts	Central themes of a communication effort to which all messages are relate. Concepts represent the "hooks" to which an audience can connect or relate.
Communication objectives	A quantifiable statement of a desired program achievement necessary to reach a goal.
Community channel	A communication channel in which messages are disseminated at the community level (e.g., library, supermarket, local swimming pool).
Comprehension	A measure to determine whether messages are clearly understood.
Concept testing	The process of learning about the target audience's responses to possible concepts on which you might base your message. This process usually requires qualitative research, such as focus groups.
Contributing factors	Determinants that directly or indirectly cause the problem. A contributing factor can be biological, behavioral, or attitudinal; or an element of the physical or social environment; or the result of policies related to the problem.
Cost/benefit evaluation	Examines the overall cost of a program compared to the dollar value of the effects that can be attributed to the program. These two values yield a cost-benefit ratio.
Crater	The result of a nuclear device placed shallow enough underground to produce a movement of earth when exploded.
Credibility	A quality that contributes to the ability of a message source to influence the target audience. Some components of credibility include whether the message source is trustworthy, believable, reputable, competent, and knowledgeable.

Term	Description
Curie (Ci)	The traditional unit of measure used to express the amount of radioactive material present. One curie is 37 billion atoms undergoing radioactive decay each second.
Decay constant	The fraction of a number of atoms of a radioactive nuclide that decays in unit time.
Decay product (or Daughter product)	A nuclide resulting from the radioactive disintegration of a radionuclide, being formed either directly or as a result of successive transformations in a radioactive series. A decay product may be either radioactive or stable.
Delivery/ implementation evaluation	Studies of the functioning of components of program implementation; includes assessments of whether materials are being distributed to the right people and in the correct quantities, the extent to which program activities are being carried out a planned and modified if needed, and other measures of how and how well the program is working. Sometimes referred to as process evaluation.
Demographics	Data such as gender, age, ethnicity, income, or education that can be collected from a target audience and can be useful for defining the target audience and understanding how to communicate more effectively with the target audience.
Deposition density	The activity of a radionuclide deposited per unit area of ground. Reported as Bq m^{-2}.
Detonation	A single nuclear device explosion; one or more may comprise a test; several tests comprise a series.
DHHS	Department of Health and Human Services
DOE	Department of Energy, successor of the Atomic Energy Commission

Term	Description
Dose	When radiation enters a person's body, that person receives a radiation dose. Several different terms describe these radiation doses. The rad or gray expresses the concentration (amount of energy divided by the tissue mass) of energy deposited by radiation in the body. The rad is the most basic unit of radiation dose, but its use is limited because different types of radiation have different effects on the cells in the body. The rem or sievert (Sv) is a unit of radiation dose that takes into account these different effects. It puts different types of radiation on an equivalent basis in terms of their potential impact on human cells. A third measure of dose, effective dose, is used to account for the fact that a rem of radiation dose to one part of the body does not have the same potential health effect as a rem to another part. The effective dose allows estimation of dose to the entire body from individual organ doses. To help people interpret these radiation doses, it may be helpful to compare them with other radiation doses people typically receive in daily life, termed background radiation. Each year the average American receives an effective dose of about 3 mSv (300 millirem or 0.3 rem) from background radiation. This radiation is from naturally occurring sources, such as the sun, air, soil and radon gas. Manmade sources such as medical x-rays add about 60 millirem per year to the average person's dose.
Dose coefficient	A factor used to convert radionuclide intake by members of the general public to dose. Usually expressed as dose per unit intake (e.g., Sv Bq^{-1})
Dose Reconstruction	A scientific study that estimates past doses to people from releases of radioactivity or other pollutants. The reconstruction is done by determining how much material was released, how people came in contact with it and the amount absorbed by their bodies.
Dosimetric	Methods developed to estimate the radiation doses to people or their environment exposed to ionizing radiation. Such methods rely heavily on dose reconstruction techniques (see Dose Reconstruction)
Effective dose	A single dosimetric quantity useful for comparing the overall health detriment associated with irradiation of the whole body. It takes into account the absorbed doses received by the various organs and tissues of the body, and weights them according to present knowledge of the radiosensitivity of each organ as well as accounts for the type of radiation and the potential of each type to inflict biological damage. The effective dose is used, for example, to compare the overall health detriments of different radionuclides in a given mix. The unit of effective dose is the sievert (Sv); 1 Sv = 1 Joule kg^{-1}

Term	Description
Effective half-life	The time required for the amount of a radionuclide deposited in a living organism to be diminished 50 percent as a result of the combined action of radioactive decay and biological elimination.
Effects evaluation	A measure of the extent to which a program accomplished its stated goals and objectives. Also called impact, outcome, or summative evaluation.
Electron	An elementary particle with a unit negative electrical charge and a mass 1/1837 that of the proton. Electrons surround the positively charged nucleus and determine the chemical properties of the atom.
Electron-volt	A unit of energy equivalent to the amount of energy gained by an electron in passing through a potential difference of one volt, abbreviated eV
EML	Environmental Measurements Laboratory
Environmental factor	A component of the social, biological, or physical environment that can be causally linked to the health problem.
EPA	Environmental Protection Agency
Epidemiology/ Epidemiologic/ Epidemiological	The study of the determinants of disease in people. Two basic types of epidemiologic studies are the follow-up or cohort study and the case-control study. In follow-up studies, groups are identified with regard to the presence or absence of some exposure and are followed through time to assess and compare disease rates in each group. In case-control studies, people with disease (cases) are identified and their prior exposure history is compared with that of people without disease (controls).
Equivalent Dose	A quantity used in radiation protection to place all radiation on a common scale for calculating tissue damage. Equivalent dose is the product of the absorbed dose in grays and the radiation weighting factor. The radiation weighting factor accounts for differences in radiation effects caused by different types of ionizing radiation. Some radiation, including alpha particles, causes a greater amount of damage per unit absorbed dose than other radiation. The sievert (Sv) is the unit used to measure equivalent dose. The sievert replaces the rem, the traditional unit (1 Sv equals 100 rem).
Euthyroid	A thyroid that functions normally.
Evaluation plan	Written plan that documents all tasks related to evaluation (e.g., designing surveys, planning data collection and analysis, reporting on findings).
Expert review	Examination and critique of program plans or materials by selected people who are knowledgeable in a relevant content area.

Term	Description
Exposure	1) A term generally used to mean subjected to or being in the presence of radioactivity or radiation. 2) A measure of the ionization produced in air by x or gamma radiation. It is the sum of the electrical charges of all ions of one sign produced in air when all electrons liberated by photons in a volume element of air are completely stopped in air, divided by the mass of the air in the volume element. The unit of exposure frequently used is the roentgen, R. In the SI system of units, the unit of exposure is the coulomb per kilogram, C kg^{-1}; 1 R = 2.58 x 10^{-4} C kg^{-1}.
Exposure Rate	A measure of the ionization produced in air by x or gamma radiation per unit of time (frequently expressed in R hr^{-1} or mR hr^{-1}).
Exposure route	A pathway by which a radionuclide or other toxic material can enter the body. The main exposure routes are inhalation, ingestion, absorption through the skin, and entry through a cut or wound in the skin.
Exposure/reach evaluation	Measures the extent to which a message was disseminated (e.g., how many members of the target audience encountered the message). However, this type of evaluation does not measure whether audience members paid attention to the message or whether they understood, believed, or were motivated by it. Also referred to as process evaluation.
External dose	The dose received from radiation sources outside of the body.
Factor-specific strategy	A strategy (health communication, health policy, engineering, and/or health service intervention) that is designed to cause change in a specific factor that contributes to the health problem.
Fallout	Radioactive debris that falls to earth following a nuclear explosion. The radioactive debris, once having been airborne, following a nuclear detonation, that has been deposited on the earth. Special forms of fallout include "local", "intermediate", and global.
Femtocurie	One billionth of a microcurie, 3.7 10^{-5} disintegration per second, abbreviated fCi.
FIPS	Federal Information Processing Standard. The code system used to number counties within each state of the United States. The first and second digits are the two-digit state/equivalent territory identifier; the last three digits are the county or equivalent area identifier.
Fission	A nuclear transformation characterized by the splitting of a nucleus into at least two other nuclei and the release of a relatively large amount of energy.
Fission yield (or yield)	The percentage of fissions leading to a particular nuclide by direct formation and by decay of precursors.

Term	Description
Focus group interviews	A type of qualitative research in which an experienced moderator leads about 8-10 respondents through a discussion of a selected topic, allowing them to talk freely and spontaneously.
Formative evaluation	Evaluation conducted during program development. Formative evaluation measures the extent to which to concepts, messages, materials, activities, and channels meet researchers' expectations with the target audience.
Fusion	A nuclear transformation characterized by the joining together of two light nuclei (usually hydrogen) under extreme pressure and heat that results in a release of a substantially larger amount of energy than that from fission.
Gamma	A high-energy electromagnetic radiation emitted from a decaying atomic nucleus. Gamma rays are similar to medical x-rays, but are emitted at very specific energies characteristic of their decaying atoms. They penetrate tissue farther than beta or alpha particles, but leave a lower concentration of ions in their path to potentially cause cell damage.
Gatekeeper	Someone with whom you must work before you can reach a target audience (e.g., a schoolteacher) or accomplish a task (e.g., a television public service director).
Geodemographics	Geographic factors and trends in a specific locale (e.g., where people live, population density, health care, climate, eating patterns, spending patterns, leisure activities, local industry, and outdoor activities) that can help with location decisions (e.g., selecting a clinic site) or local contact interventions.
GM	Geometric Mean
GMT	Greenwich Mean Time
Goal	The overall improvement in the health problem the health communication effort will strive to create.
GSD	Geometric Standard Deviation
H Hour	Detonation time (zero hour), the time the device was detonated.
Half-life	The length of time in which any radioactive substance will lose one half of its radioactivity. The half-life determines how long a substance will remain radioactive.
HASL	Health and Safety Laboratory
Health behavior	An action performed by an individual that can negatively or positively affect his or her health (e.g., smoking, exercising)
Health communication	The study and use of communication strategies to inform and influence individual and community decisions that enhance health.
ICRP	International Commission on Radiological Protection

Term	Description
Implementation plan	Written plan that documents all tasks related to program implementation from "rollout" forward (e.g., kickoff event, newsletter mailings, conferences). This plan differs from a research or development plan that documents tasks prior to rollout (e.g., researching the target audience, concept testing, getting buy-in from stakeholders).
In-depth personal interviews	A qualitative research method that involves a one-on-one discussion between an interviewer and a respondent about selected topics. The structure and interviewing style are less rigid than in quantitative, interviewer-administered surveys.
Integrated Intake	The intake of a radionuclide over time in an area having a specific deposition density. Reported as Bq per Bq m^{-2}.
Intermediate	The nomenclature for test yields varied according to information policy governing specific years. From 1945 through 1963, "Intermediate" referred to test yields from 20 to 200 kt.
Internal dose	The dose received from radioactive material taken into the body.
Interpersonal channel	A communication channel that involves dissemination messages through one-on-one communication (e.g., mentor to student, friend to friend, pharmacist to customer).
IOM	Institute of Medicine
Isotopes	Forms of the same element having the same number of protons, but different numbers of neutrons.
Key informants	Persons or organizations whose opinions can be seen as representative of a community or target audience because of their experience or expertise with the target audience.
Kickoff	Start date for the public portion of a health communication effort, after the internal, preparatory work is complete, that often includes an announcement or event such as a news conference, health fair publicity, or program registration drive.
Kilocurie	One thousand curies, 3.7×10^{13} disintegrations per second, abbreviated kCi. (see curie)
Kriging procedure	Interpolation technique used to estimate the ^{131}I deposition densities in counties where measurements were not available.
kt	A kiloton. The energy of a nuclear explosion that is equivalent to an explosion of 1,000 tons of TNT.
LLI	Lower Large Intestine
LLNL	Lawrence Livermore National Laboratory
Low Test Yield	The nomenclature for test yields varied according to information policy governing specific years. From 1945 through 1963, "Low" referred to test yields less than 20 kt.

Term	Description
Mass-reach media channel	A channel in which messages disseminated to a large number of people simultaneously using various media (e.g., radio, TV, newspapers, billboards).
Materials	Tangible products that contain the message to be delivered to the target audience (e.g., a brochure, a PSA tape, or a script for an oral presentation).
Megacurie	One million curies, 3.7×10^{16} disintegrations per second, abbreviated MCi. (see curie)
Microcurie	One millionth of a curie, 3.7×10^{4} disintegrations per second, abbreviated mCi. (see curie)
Millicurie	One thousandth of a curie, 3.7×10^{7} disintegrations per second, abbreviated mCi. (see curie)
Milliroentgen (mR)	One-thousandth of a roentgen.
MSL	Mean Sea Level
Mt	A megaton. The energy of a nuclear explosion that is equivalent to an explosion of one million tons of TNT.
Nanocurie	One billionth of a curie, 37 disintegrations per second, abbreviated nCi. (see curie)
NCEH	National Center for Environmental Health, CDC
NCI	National Cancer Institute
NCRP	National Council on Radiation Protection and Measurements
Neoplastic	Pertaining to the pathologic process resulting in the formation and growth of an abnormal mass of tissue.
Neutron	Neutrons are part of the nucleus of an atom having neither a positive nor a negative charge. Neutrons are about the same size as protons.
NOAA	National Oceanic and Atmospheric Administration
NRC	National Research Council
NRL	Naval Research Laboratory
NTS	Nevada Test Site
Nuclide	A species of atom characterized by the constitution of its nucleus. The nuclear composition is specified by the number of protons Z, the number of neutrons N, and energy content; or alternatively, by the atomic number Z, the mass number = N + Z, and the atomic mass. To be regarded as a distinct nuclide, the atom must also be capable of existing for a measurable time; thus nuclear isomers are separate nuclides, whereas promptly decaying excited nuclear states and unstable intermediates in nuclear reactions are not so considered.

Term	Description
Offsite	The detection of radioactivity offsite is defined as detected outside the boundary of the test site.
Onsite	A notation that radioactivity was detected onsite only is made for tests from which there was a release of radioactivity into the atmosphere that was not detected beyond the boundaries of the test site.
ORERP	Offsite Radiation Exposure Review Project
PHS	Public Health Service
Picocurie	One millionth of a microcurie, 0.037 disintegration per second, abbreviated pCi.
Plowshare	Name of nuclear tests carried out in the United States for civilian purposes, e.g., excavation.
PPG	Pacific Proving Ground
Proton	Protons, along with neutrons, make up the nucleus of an atom. Protons have a single positive charge. While protons and neutrons are about 2,000 times heavier than electrons, they are still very small particles.
Rad	A measure of the amount of energy absorbed by the body. The rad is the traditional unit of absorbed dose, equal to 100 ergs/gram in any medium; now replaced by the gray (1 gray equals 100 rad).
Radiation	Energy moving in a form of particles or waves. Familiar radiations are heat, light, radio waves and microwaves. Ionizing radiation is a very high-energy form of electromagnetic radiation. It is invisible and cannot be sensed without the use of detection equipment. Ionizing radiation creates ionization within tissue; these ions can cause cell damage.
Radioactive decay	Spontaneous disintegration of the nucleus of a radionuclide.
Radioactive equilibrium	Establishment of a radionuclide parent-daughter relationship where by the activity of the daughter radionuclide is approximately the same as that of the parent radionuclide.
Radioactivity	Spontaneous transformation of an unstable atom, often resulting in the emission of radiation. This process is referred to as decay or disintegration of an atom.
Radionuclide	A radioactive, unstable nuclide.
Rem	Roentgen equivalent, man: The traditional unit of equivalent dose; replaced by the sievert (Sv) (1Sv = 100 rem). The rem measures the damage to a human from radiation exposure. It is determined by multiplying the number of rads by a number reflecting the potential damage caused by the particular type of radiation.

Term	Description
Risk	The probability of developing a given disease over a specified time period. Risk can be influenced by several factors: personal behavior or lifestyle, environmental exposure to other material, or inborn or inherited characteristic that is known from scientific evidence to be associated with a health effect. Because many risk factors are not exactly measurable, risk estimates will be uncertain.
Roentgen (R)	A special unit of exposure to ionizing radiation. It is that amount of gamma or x-rays required to produce one electrostatic unit of charge of either sign per cubic centimeter of air at standard temperature and pressure.
S.I. units	The *Systeme International* (or International System) of units and measurements. This system of units officially came into being in October 1960 and has been adopted by nearly all countries, though the amount of actual usage varies considerably. Units used throughout this report are listed as S.I. units with traditional unit comparisons given periodically.
Safety Experiment	Experiment designed to confirm that a nuclear explosion would not occur in case of an accidental detonation of the explosive associated with the device.
Surface	A nuclear device placed on or close to the earth's surface.
Sv	Sievert. The unit of equivalent dose of any ionizing radiation that produces the same biological effect as a unit of absorbed dose of ordinary x-rays (1 sievert = 100 rem).
TDB	Town Data Base
Test	A test is defined in the Threshold Test Ban Treaty as either a single underground nuclear explosion conducted at a test site, or two or more underground nuclear explosions conducted within an area delineated by a circle having a diameter of two kilometers and conducted within a total period of time not to exceed 0.1 second.
Thermonuclear Device	A 'hydrogen bomb.' A device whose explosive energy comes from fusion of hydrogen nuclei as well as fission.
TOA	Time of Arrival
Tower	A nuclear device mounted at the top of a steel or wooden tower and exploded in the atmosphere.
ULI	Upper Large Intestine
Uncertainty	The term used to describe the lack of precise knowledge in a given estimate based on the amount and quality of the evidence or data available. All estimates contain uncertainty. In this report, uncertainty exists because of a lack of precise knowledge about factors that are important in estimating a person's dose or risk.

Term	Description
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
Weapons Effects	A nuclear test to evaluate the civil or military effects of a nuclear detonation on various targets, such as military hardware.
X-ray	X-rays are an example of electromagnetic radiation that arises as electrons are deflected from their original paths or inner orbital electrons change their orbital levels around the atomic nucleus. X-rays, like gamma rays are capable of traveling long distances through air and most other materials. Like gamma rays, X-rays require more shielding to reduce their intensity than do beta or alpha particles. X- and gamma rays differ primarily in their origin: x-rays originate in the electronic shell; gamma rays originate in the nucleus.