

# Appendix B: Acronyms and Glossary **B**

## ACRONYMS

ACOPS: Advisory Committee for Protection of the Sea (International)

AEPS: Arctic Environmental Protection Strategy

AID: U.S. Agency for International Development

ALARA: As low as reasonably achievable

AMAP: Arctic Monitoring and Assessment Program (International)

ANWAP: U.S. Arctic Nuclear Waste Assessment Program

ARCORA: U.S. Arctic Contamination Research and Assessment Program

ARPA: U.S. Arctic Research Policy Act

BEIR: U.S. National Research Council's Committee on Biological Effects of Ionizing Radiations

BNL: U.S. Brookhaven National Laboratory

CAFF: Conservation of Arctic Flora and Fauna

CEPNR: Committee of Environmental Protection and Natural Resources (International)

CF: Concentration factors

CIFAR: Cooperative Institute for Arctic Research (International)

CRESP: Coordinated Research and Surveillance Program (International)

DNA: Deoxyribonucleic acid

DOD: U.S. Department of Defense

DOE: U.S. Department of Energy

EBRD: European Bank for Reconstruction and Development

EMAP: Environmental Monitoring and Assessment Program (International)

EOI: Emergency operating instructions

EPA: U.S. Environmental Protection Agency

EPP&R: Emergency Prevention, Preparedness and Response

EU: European Union

FBR: Fast breeder reactor

fSU: former Soviet Union

G-24: Group of Twenty-four nations

G-7: Group of Seven nations

GAN (Gosatombnadzor) State Committee for Nuclear and Radiation Safety (Russian)

GCC: Gore-Chernomyrdin Commission (U.S.-Russian)

GESAMP: Group of Experts on the Scientific Aspects of Marine Pollution (International)

GIS: Geographical information system

GOSKOMGIDROMET: State Committee for Hydrometeorology (Russian)

GOSKOMOBORONPROM: State Committee for the Defense Industry (Russian)

HEU: Highly enriched uranium

IAEA: International Atomic Energy Agency

IARPC: U.S. Interagency Arctic Research Policy Committee  
 IASAP: International Arctic Seas Assessment Program  
 ICRP: International Commission on Radiological Protection  
 IEA: International Energy Agency  
 IGPRAD: Inter-governmental Panel of Radioactive Waste Disposal at Sea  
 INSP: International Nuclear Safety Program  
 JCCCNRS: Joint Coordinating Committee for Civilian Nuclear Reactor Safety  
 JCCRER: Joint Coordinating Committee on Radiation Effects Research  
 LET: Linear energy transfer  
 LMR: Liquid metal reactor  
 LRW: Liquid radioactive waste  
 MAPI: Ministry of Atomic Power and Industry (Soviet)  
 MINATOM: Ministry of Atomic Energy (Russian)  
 MSC: Murmansk Shipping Company (Russian)  
 NATO: North Atlantic Treaty Organization  
 NEA: Nuclear Energy Agency  
 NGO: Non-governmental organization  
 NIS: Newly Independent States  
 NOAA: U.S. National Oceanic and Atmospheric Administration  
 NPP: Nuclear power plants  
 NRC: U.S. Nuclear Regulatory Commission  
 NRL: U.S. Naval Research Laboratory  
 NSA: Nuclear Safety Account  
 NSC: Nuclear Safety Convention  
 NSF: U.S. National Science Foundation  
 OECD: Organization for Economic Cooperation and Development  
 OMB: U.S. Office of Management and Budget  
 ONR: U.S. Office of Naval Research  
 OTA: Office of Technology Assessment  
 PAME: Protection of the Arctic Marine Environment  
 PCB: Polychlorinated biphenyls  
 PNL: U.S. Pacific Northwest Laboratory  
 PUAEA: Peaceful Uses of Atomic Energy Agreement  
 PWR: Pressurized water reactor  
 RADEX: Radiological Exercises

SRW: Solid radioactive waste  
 SSAN: Nuclear-powered auxiliary submarine  
 SSBN: Nuclear-powered ballistic missile submarine  
 SSGN: Nuclear-powered guided missile submarine  
 SSN: Nuclear-powered attack submarine  
 START: Strategic Arms Reduction Treaty  
 THORP: Thermal Oxide Reprocessing Plant  
 TTC: Technical training center  
 USGS: U.S. Geological Survey  
 VNIINM: All-Russian Scientific Research Institute of Inorganic Materials

## GLOSSARY

**Actinides.** Radioactive elements with atomic number larger than 88.

**Alpha particle.** Two neutrons and two protons bound as a single particle emitted from the nucleus of certain radioactive isotopes in the process of decay or disintegration.

**Bathymetry.** The measurement of depths of water.

**Benthic.** Dwelling at the bottom of a body of water.

**Beta emitter.** A charged particle emitted from the nucleus of certain unstable atomic nuclei (radioactive elements), having the charge and mass of an electron.

**BN-600.** A type of Soviet designed breeder reactor.

**Curie.** A unit of radioactivity equal to that emitted by 1 gram of pure radium.

**Damaged nuclear fuel.** Nuclear fuel (normally in the shape of rods) that has been corroded, eroded, cracked, or has had its casing opened.

**Defueling.** The process of removing nuclear fuel from a reactor after the fuel has been used for some period of time.

**Demilitarization.** The process of eliminating or reducing military weapons, materials, other hardware and organizational structures.

**Dismantlement.** The process of taking apart and disposing of submarines, ships or other military systems and equipment.

- Dry storage (of spent nuclear fuel).** Refers to the use of special storage containers that do not require water or other cooling liquids.
- Effective dose.** Radiation dose which takes into account the type and energy of radiation as well as the different tissues or organs irradiated.
- EPG-6.** A type of Soviet designed graphite moderated and boiling water cooled nuclear reactor.
- Fallout.** Radioactive particles that are deposited on the earth's surface.
- Fission products.** Atoms created by the splitting of other heavier atoms—usually in a nuclear reactor and usually resulting in radioactive isotopes.
- Fuel assemblies.** A number of individual nuclear fuel rods grouped together with structural support.
- Furfural.** A resin based compound used in Russia to solidify dumped nuclear materials in containers.
- Gamma radiation.** Similar to x-rays, short-wavelength electromagnetic radiation of nuclear origin.
- Half life.** The time required for a radioactive substance to lose fifty percent of its activity by decay.
- Ionizing radiation.** Any electromagnetic or particulate radiation capable of producing ions as it passes through matter.
- LGR.** A type of Soviet designed light water cooled, graphite moderated reactor.
- Non-standard nuclear fuel.** Nuclear fuel of a special design or containing special materials for which special manufacturing, handling, storage, or processing systems are required.
- Nuclear fuel cycle.** From mining uranium to manufacturing fuel to use in a reactor to reprocessing for future use again.
- Plutonium.** Man-made element produced when uranium is irradiated in a reactor. Plutonium-239 is the most suitable isotope for constructing nuclear weapons.
- Rad.** Radiation absorbed dose, a basic unit of absorbed dose of ionizing radiation representing an amount of energy absorbed per unit of absorbing material such as body tissue.
- Radionuclide.** Certain natural and man-made atomic species with unstable nuclei that can undergo spontaneous breakup or decay and, in the process, emit alpha, beta, or gamma radiation.
- RBMK.** A type of Soviet designed graphite-moderated and light water cooled nuclear reactor.
- Reactor core.** The center and energy-producing section of a nuclear reactor containing the nuclear fuel and associated structural components.
- Rem (Rad Equivalent Man).** Unit of dose equivalent. The dose equivalent in “rem” is numerically equal to the absorbed dose in “rad” multiplied by necessary modifying factors.
- Remediation.** The process of taking actions to remove, stabilize, contain, or make benign hazardous or radioactive materials that have been dumped, discharged or otherwise released into the environment.
- Reprocessing.** Taking spent nuclear fuel and separating out the specific nuclear and non-nuclear materials for re-use or disposal using mechanical and chemical processes.
- RT-1.** A nuclear fuel reprocessing plant located at Mayak.
- RT-2.** A nuclear fuel reprocessing plant currently being built at Krasnoyarsk-26.
- Sedimentation rate.** The rate of deposition of sediment at the bottom of a body of water.
- Semipalatinsk.** A former Soviet nuclear weapons testing site located in Kazakhstan.
- Source term.** The quantities and types of released radionuclides and their physical and chemical conditions.
- Spent nuclear fuel.** Nuclear fuel that has been irradiated in a reactor for some period of time and thus “used-up.”
- Stochastic.** A process that is random and results involve chance.
- Tritium.** A radioactive gas, an isotope of hydrogen, that serves as a booster for the fusion

reaction in the secondary component of a nuclear weapon.

**Vitrification.** Process of immobilizing radioactive material, mixing it with molten glass, and encapsulating it into a glasslike solid.

**VVER.** A type of Soviet designed pressurized water nuclear reactor.

**Weapons grade.** Nuclear materials such as plutonium and highly-enriched uranium that are of a type and purity suitable for use in nuclear weapons.