GLOSSARY OF TERMS

Acute Health Effects	Prompt radiation effects (those that would be observable within a short period of time) for which the severity of the effect varies with the dose, and for which a practical threshold exist.
Affected Personnel	Persons who have received radiation exposure or have been physically injured as a result of an accident to a degree requiring special attention as individuals, e.g., decontamination, first aid, or medical services.
ALARA "**A**s **L**ow **A**s **R**easonably **A**chievable."	Acronym means making every reasonable effort to maintain exposures to ionizing radiation as far below the dose limits as practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed materials in the public
Alpha Particle	A positively charged particle, identical with the nucleus of a helium atom, emitted spontaneously from the nucleus of some radioactive elements. Alpha particles have very little penetrating power can be easily stopped by a sheet of paper but are hazardous if ingested or inhaled.
Assessment Actions	Those actions taken during or after an accident to obtain and process information that is necessary to make decisions to implement specific emergency measures.
Avoided Dose	The amount of exposure that could be avoided if protective action options are implemented and followed.
Background radiation	Naturally occurring radiation existing in the environment.
Backup Route Alerting	General population alerting accomplished using Mobile Route Alerting should the primary alert system (or a portion of the system) have known or indications of sirens being out of service.
Beta Particle	A particle, identical with a high speed electron, emitted spontaneously from the nucleus of some radioactive atoms. Beta particles have little penetrating power but can be hazardous if inhaled, ingested, or brought into contact with the skin.

Boiling water reactor (BWR)	A reactor in which water, used as both coolant and moderator, is allowed to boil in the core. The resulting steam can be used directly to drive a turbine and electrical generator, thereby producing electricity.
Cladding	The thin-walled metal tube that forms the outer jacket of a nuclear fuel rod. It prevents corrosion of the fuel by the coolant and the release of fission products into the coolant. Aluminum, stainless steel, and zirconium alloys are common cladding materials.
Cold shutdown	The term used to define a reactor coolant system at atmospheric pressure and at a temperature below 200 degrees Fahrenheit following a reactor cool-down.
Contamination	Undesired radioactive material that is deposited on the surface of or inside structures, areas, objects, or people.
Containment structure	An enclosure around a nuclear reactor to confine fission products that otherwise might be released to the atmosphere in the event of an accident.
Controlled area	At a nuclear facility, an area outside a restricted area but within the site boundary, access to which the licensee can limit for any reason.
Corrective Actions	Emergency measures taken to ameliorate or terminate an emergency situation at or near the source of the problem, to prevent an uncontrolled release of radioactive material, or to reduce the magnitude of the release, e.g., shutting down equipment, fire-fighting, repair and damage control.
Delayed Health Effects	Radiation effects that are manifested long after the relevant exposure. The vast majorities are Stochastic in which the severity is independent of dose and the probability is assumed to be proportional to the dose, without threshold.
Dose	The quantity of radiation absorbed, per unit of mass, by the body or by any portion of the body.
Dose Rate	The amount of ionizing radiation delivered per unit of time.
Dosimeter	An instrument to measure the total exposure an individual receives from penetrating, ionizing radiation.

Emergency	An occurrence that results in the loss of control of radioactive materials at a fixed nuclear facility and which involves an immediate or likely hazard to life, health, property, or the environment.
Emergency Action Levels (EAL)	Plant conditions used to determine the existence of an emergency and to classify its severity. The conditions include radiological dose rates, specific contamination levels (airborne, waterborne, or surface-deposited concentrations) or specific instrument indications (including their rate of change) which may be used as thresholds for initiating such specific emergency measures such as designating a particular class of emergency, taking a notification procedure, or initiating a particular protective action.
Emergency Notification Form (ENF)	Form used by nuclear power facilities to notify State and Local emergency responders of emergency classification level change or to update current emergency condition information. Form information can be transmitted via voice, FAX or electronic data transfer. North Carolina ENF is designated as EM-78. Example and additional information located in Annex F.
Emergency Operations Facility (EOF)	The power company facility used for direction and control of all emergency and recovery activities with emphasis on the coordination of off-site activities such as dispatching mobile emergency monitoring teams, communications with local, State and Federal agencies, and coordination of corporate and other outside support.
Emergency Operations Center (EOC)	The protected site from which government officials exercise direction and control in an emergency.
Emergency Planning Zone (EPZ)	The area for which planning is needed to assure that prompt and effective actions can be taken to protect the public in the event of an accident. The plume exposure EPZ is about 10 miles in radius and the ingestion pathway exposure EPZ is about 50 miles in radius.
Emergency Worker	Any person engaged in operations required to minimize the effects of a fixed nuclear facility emergency.
Exclusion Area	The utility-owned area that surrounds a nuclear plant where the licensee has the authority to determine all activities, including exclusion or removal of personnel and property.
Exposure	Being in the presence of or exposed to ionizing radiation or radioactive material.
Fixation of Contaminated Areas	Processes used to contain radioactive materials in contaminated areas.

Fixed Contamination	Materials or areas contaminated with radiation which are difficult to move or decontaminate.
Fixed Nuclear Facility (FNF)	Nuclear power plants, reactor fuel fabrication or processing plants, test and research reactors, and other facilities using or producing quantities of radioactive material. Facility includes structures and secured grounds.
Gamma Rays	Electromagnetic radiations of high energy originating in atomic nuclei and accompanying many nuclear reactions. Gamma rays have no mass, travel at the speed of light, are highly penetrating, and may cause damage to living tissue.
Ingestion Exposure Pathway (IPZ)	The potential pathway radioactive materials travel, providing a risk to the public through consumption of contaminated water or foods, such as milk or fresh vegetables. The time of potential exposure could range in length from hours to months. Around a nuclear plant, this is likely to occur within the 50-mile EPZ.
Ionizing Radiation	Any gamma rays, X-rays, alpha or beta particles, high speed electrons, protons, or nuclear particles that displace electrons from atoms or molecules as they pass through matter, thereby producing ions. Ionizing radiation may produce skin, tissue, or organ damage.
Irradiation	The exposure to ionizing radiation.
Isotopes	Forms of elements having identical chemical properties, but differing in atomic weight. See radioactive isotope.
Lead Agency	The State or local agency that has primary responsibility for a specific function and will direct the accomplishment of that function.
Local Primary Station(s) (LP-1 / LP-2)	Local radio stations with the responsibility to initiate or relay transmission of EAS messages received from official sources.
Millirem	A one-thousandth (0.001) of a rem. See rem.
Milliroentgen	A one-thousandth (0.001) part of a roentgen. See roentgen.
Mission Dose	Anticipated dose emergency worker will receive while completing a particular assignment. This dose is variable depending upon the assignment and may exceed the turn back value.

Mobile Route Alerting	General population alerting accomplished along pre-established routes inside the 10-mile EPZ using vehicles with flashing lights and effective sound devices (public address system and/or siren) and public address (PA) systems. Vehicles will stop about each quarter (1/4) mile in populated areas and at each house or group of houses that are more than 1/4 mile apart to make announcements concerning the current situation.
Nuclear Power Facility Areas	
Exclusion or Owner Controlled Area	At a nuclear facility, an area where the licensee has the authority to determine all activities, including exclusion or removal of personnel and property.
Protected Area	At a nuclear facility, an area encompassed by physical barriers to which access is controlled.
Restricted area	At a nuclear facility, any area to which access is controlled for the protection of individuals from exposure to radiation and radioactive materials.
Plume Exposure Pathway	The potential pathway of radioactive materials to the public through: (a) whole body external exposure to gamma radiation from the plume and from deposited material; and (b) inhalation from the passing radioactive plume. The time of potential exposure could range from hours to days.
Pocket dosimeter	A small ionization detection instrument that indicates ionizing radiation exposure directly. An auxiliary charging device is usually necessary.
Population at Risk	Persons subject to protective actions during an emergency event.
Pressurized water reactor (PWR)	A power reactor in which heat is transferred from the core to an exchanger by high temperature water kept under high pressure in the primary system. Steam is generated in a secondary circuit. Many reactors producing electric power are pressurized water reactors.
Primary Alert Notification System.	A fixed siren system at specific locations surrounding each nuclear power facility, with activation controls located in the applicable EPZ County Warning Point and/or EOC. These sirens will serve as the primary system for alerting the public to listen to local radio and television stations for information and instructions related to conditions at the facility. Along with the fixed siren system, the Emergency Alert System (EAS) will provide informational or instructional messages via radio and TV on an area-wide basis throughout the 10 mile EPZ.

Protective Action Guide (PAG)	The projected radiological dose to individuals in the population which warrants taking protective action. This guide does not imply an acceptable level of risk.
Protective Actions	Emergency measures taken for the purpose of preventing or minimizing radiological exposures.
Radiation	Refers to energy propagated in the form of high frequency electromagnetic waves such as X-rays and gamma rays, or in the form of nuclear particles such as alpha, beta, or neutron radiation. See ionizing radiation.
Radiation Protection Emergency Team	A team from the Radiation Protection Section, Department of Environment and Natural Resources, that performs technical operations and advises the State Emergency Response Team.
Radioactive Isotope	(Radioisotope) An unstable isotope of an element that decays or disintegrates while spontaneously emitting radiation.
Radioactive Material	Any solid, liquid, or gas which spontaneously emits ionizing radiation.
Radiological Exposure Control	Actions taken to protect the general public, emergency workers, livestock, food, water or property from radiation.
Recovery Actions	Those actions taken after the emergency to restore affected property as nearly as practicable to its pre-emergency condition.
Regional Control Center (RCC)	An activated NCEM Branch Office established to support and stage disaster relief personnel and Equipment.
Rem	A unit of measure of dose from any radiation (alpha particles, beta particles, gamma rays, or neutrons) to body tissue in terms of its estimated biological effects. This unit of measure takes into consideration the varying damage causing potential of exposure to X-rays, gamma rays, beta particles and neutrons.
Roentgen	A unit used to measure exposure to gamma (or X-ray) radiation.
SCRAM	The sudden shutting down of a nuclear reactor, usually by rapid insertion of control rods, either automatically or manually by the reactor operator. May also be called a reactor trip.
Secondary Alert Notification System.	Tone-alert radios, activated by the National Weather Service, will provide an automatic alarm signal along with siren activation. The tone-alert weather radios will broadcast the same EAS message heard on local radio and television stations.

Shielding	Any material or obstruction that absorbs (stops) radiation.
Site	That part of the nuclear station property consisting of the reactor, auxiliary, turbine and service buildings and grounds contained within the owner-controlled area fence.
Special Facility Population	School, hospital and family care facility occupants located in the plume exposure EPZ.
State Emergency Response Team (SERT)	Team of representatives from state agencies, public and voluntary response organizations involved with disaster response activities. Provides technical expertise and guidance to State leaders during disaster operations. Coordinates all activity associated with the delivery of emergency resources used to support local emergency operations.
Supplemental Route Alerting	General population alerting accomplished using Mobile Route Alerting of areas within the 10 mile EPZ that are not sufficiently covered by the primary notification system.
Technical Support Center (TSC)	A facility utilized for evaluation of plant status by knowledgeable personnel in support of short-term operations during an emergency situation.
Total Effective Dose Equivalent (TEDE)	The sum of the products of the dose equivalent to each organ and a weighting factor, where the weighting factor is the ratio of the risk of mortality from delayed health effects arising from irradiation of a particular organ or tissue to the total risk of mortality from delayed health effects when the whole body is irradiated uniformly to the same dose.
Turn Back Value	The maximum allowable exposure for workers within a contaminated area. When exposure levels are reached emergency workers are removed from the area.
Warning Point	A facility that receives warning and other information and disseminates or relays this information in accordance with a prearranged plan.
Whole Body Exposure	The external exposure of a person or an animal to radiation.