

## **DEFINITIONS**

<b>Term</b>	<b>Definition</b>
<b>Access Control</b>	All activities accomplished for the purpose of controlling entry or re-entry into a restricted zone because of radiological contamination to minimize the radiation exposure of individuals. This function is needed to prevent the general public from entering the restricted areas (sheltered and/or evacuated) and permitting only emergency workers with essential missions and limited members of the general public to enter a restricted zone.
<b>Access Control Point</b>	A point established at a road leading into a restricted zone for the purpose of controlling entry into the area.
<b>Accident</b>	An unforeseen and unintentional event that may result in an emergency.
<b>Accident Assessment</b>	The evaluation of the actual and potential consequences of a radiological incident.
<b>ALERT</b>	Events are in process or have occurred which involve an actual or potential substantial degradation in the level of plant safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels
<b>Background Radiation</b>	The level of naturally occurring radiation in the environment. Sources include air, water, soil, potassium-40 in the body and cosmic radiation from the sun. The usually quoted individual background radiation exposure in man's natural environment is an average of 125 millirem per year.
<b>BECONS</b>	The radio communications system for emergency notification and information is available for use by MEMA and towns within the Pilgrim ten-mile EPZ, and PNPS.
<b>Contaminated, Injured or Exposed Individual</b>	Individuals who are: (1) contaminated with radioactive material that cannot be removed by the simple methods described in NUREG-0654/FEMA REP-1, Criteria J.12. and K.5.b., (2) contaminated and otherwise physically injured, or (3) exposed to high levels of radiation.
<b>Contamination (Radioactive)</b>	A frequently misunderstood term, contamination refers to radioactive materials not in their intended containers. "Fixed" or "loose" contamination depends on the degree of effort required to unfix or remove the contamination from a surface.
<b>Critical Organ</b>	The body organ receiving a radiation dose that results in the greatest overall damage to the body.
<b>Critical Pathway</b>	The route or pathway that is given primary consideration as being the mechanism of principal radiation exposure to the public under given conditions.

<b>Term</b>	<b>Definition</b>
<b>Curie</b>	<p>The basic unit 1 to describe the intensity of radioactivity in a sample of material. One curie is equal to 37 billion disintegrations (nuclear transformations) per second. So, in one curie, 37 billion atoms decay in one second. Several commonly used fractions of the curie include:</p> <p>Millicurie: 1/1,000th of a curie, (one-thousandth of a curie, abbreviated mCi)  Microcurie: 1/1,000,000 of a curie, (one-millionth of a curie, abbreviated uCi)  Nanocurie: 1/1,000,000,000 of a curie, (one billionth of a curie)  Picocurie: 1/1,000,000,000,000 of a curie (one-trillionth of a curie, abbreviated pCi)</p>
<b>Decontamination</b>	The process of making any person, object, or area safe by absorbing, destroying, neutralizing, making harmless, or removing chemical or biological agents, or by removing radioactive material clinging to or around it.
<b>Derived Intervention Levels (DIL)</b>	Equals a Protective Action Guide divided by the fraction of the diet assumed to be contaminated times the amount of food intake consumed in a year times a value that converts the activity in the food to the dose commitment in humans.
<b>Design Basis Accident</b>	The postulated accident that a nuclear power plant is designed to withstand or mitigate so as to meet U.S. Nuclear Regulatory Commission regulatory requirements.
<b>DNN</b>	The Dedicated Notification Network is a dedicated ringdown telephone and telefax used as a notification and information link between the Pilgrim Nuclear Power Station Control Room, State Police Troop D, MEMA Headquarters and Region II, the Pilgrim EPZ towns and host communities.
<b>Dose</b>	The quantity of energy absorbed from ionization per unit mass of tissue. The rad is the unit of absorbed dose.
<b>Dose Commitment</b>	The total radiation dose equivalent received by an exposed individual or to the critical (target) organ over the lifetime from a single event.
<b>Dose Rate</b>	The radiation dose delivered per unit time and measured, for instance rems per hour (as rads per second or rads per hour).
<b>Dosimeter</b>	A portable device such as a Dosimetry Life Record (DLR) film badge or direct reading ionization chamber for measuring and registering the total accumulated exposure to ionizing radiation.
<b>Dosimetry</b>	The measurement of radiation doses. It applies to both the devices used (dosimeters) and to the techniques.
<b>Drill</b>	An event involving organizational responses to a simulated accident to develop, test, and monitor specialized emergency skills that constitute one or more components of an emergency plan and procedure.

Term	Definition
<b>Emergency</b>	An unexpected event during the operation of a nuclear facility that has a significant effect on the safety of the facility, personnel or the public.
<b>Emergency Action Levels</b>	Specific instrument readings, system or event observations and/or radiological levels that initiate event classifications/notification procedures, protective actions, and/or the mobilization of an emergency response organization. These are specific threshold readings or observations indicating system failures or abnormalities.
<b>Emergency Alert System (EAS)</b>	A system of radio and television stations responsible for providing official government instructions to the public (formerly the Emergency Broadcast System – EBS).
<b>Emergency Classification Level(s) (ECL):</b>	<p>Applies to commercial nuclear power plants only:</p> <p><b>Unusual Event (UE):</b> Events are in process or have occurred which indicate a potential degradation in the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs</p> <p><b>Alert (ALERT):</b> Events are in process or have occurred which involve an actual or potential substantial degradation in the level of plant safety of the plant or a security event that involves probable life threatening risk to site personnel or damage to site equipment because of HOSTILE ACTION. Any releases are expected to be limited to small fractions of the EPA Protective Action Guideline exposure levels</p> <p><b>Site Area Emergency (SAE):</b></p> <p>Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary</p> <p><b>General Emergency (GE):</b></p> <p>Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.</p>

<b>Term</b>	<b>Definition</b>
<b>Emergency Medical Services</b>	The supportive action that entails the provision of medical treatment and ambulance services to the critically ill and injured.
<b>Emergency Medical Services (Office of)</b>	The Massachusetts Department of Public Health Office of Emergency Medical Services maintains information and communication links with ambulances and medical resources throughout Massachusetts, New Hampshire, Vermont, Connecticut, and Rhode Island.
<b>Emergency Operating Center (EOC)</b>	A facility that is the primary base of emergency operations for an off-site response organizations (ORO) in an emergency.
<b>Emergency Operations Facility (EOF)</b>	A facility that is the primary base of emergency operations for and operated by the licensee in a radiological incident where there is a coordinated deployment of emergency personnel, evaluation of offsite effects of the accident, coordination of decisions affecting accident mitigation and public safety, and maintenance of communication with offsite authorities.
<b>Emergency Planning Zone (EPZ)</b>	A geographic area surrounding a commercial nuclear power plant for which emergency planning is needed to ensure that prompt and effective actions can be taken by State and local governments to protect the public health and safety in the event of a radiological accident. The plume pathway EPZ is approximately 10 miles in radius, while the ingestion pathway EPZ has a radius of approximately 50 miles.
<b>Emergency Response Organizations</b>	The Federal, State, or local agencies or departments or executive offices and nuclear utilities that have a major or lead role in emergency planning and preparedness.
<b>Emergency Worker Monitoring and Decontamination Station</b>	The designated area within a monitoring station where emergency workers, equipment, and vehicles are monitored for radiological contamination and decontaminated, if necessary.
<b>Evacuation</b>	A population protection strategy involving orderly movement of people away from an actual or potential hazard, and providing reception centers for those without their own resources for temporary relocation.
<b>Exercise</b>	An event involving organizational responses to a simulated commercial nuclear power plant accident with radiological and other offsite consequences. The purpose of an exercise is to test the integrated capabilities of involved offsite response organizations to implement emergency functions set forth in State, Tribal, and local radiological emergency response plans and procedures.
<b>Exposure</b>	The absorption of radiation or ingestion of a radionuclide. Acute exposure is generally accepted to be a large exposure received over a short period of time. Chronic exposure is exposure received during a lifetime.
<b>Exposure Limits</b>	Established limits for administratively controlling exposures to radiation.

<b>Term</b>	<b>Definition</b>
<b>Food, Water, and Milk Control</b>	The protective action that entails controlling food, water, milk, and livestock feed supplies, which may have become contaminated.
<b>GENERAL EMERGENCY</b>	Events are in process or have occurred which involve actual or imminent substantial core degradation or melting with potential for loss of containment integrity or HOSTILE ACTION that results in an actual loss of physical control of the facility. Releases can be reasonably expected to exceed EPA Protective Action Guideline exposure levels offsite for more than the immediate site area.
<b>Hostile Action</b>	An act toward a nuclear power plant or its personnel that includes the use of violent force to destroy equipment, take hostages, and/or intimidate the licensee to achieve an end. This includes attack by air, land, or water using guns, explosives, projectiles, vehicles, or other devices used to deliver destructive force. Other acts that satisfy the overall intent may be included. HOSTILE ACTION should not be construed to include acts of civil disobedience or felonious acts that are not part of a concerted attack on the nuclear power plant. Non-terrorism-based EALs should be used to address such activities (e.g., violent acts between individuals in the owner controlled area).
<b>Host Community (Area)</b>	A geographical area that is at least 5 miles, and preferably 10 miles, beyond the boundaries of the 10-mile plume pathway EPZ (15 – 20 miles from the commercial nuclear power plant) where functions such as congregate care, radiological monitoring, decontamination, and registration are conducted.
<b>Incident Command System (ICS)</b>	ICS is a standardized on-scene incident management concept designed specifically to all responders to adopt and integrated organizational structure without being hindered by jurisdictional boundaries.
<b>Joint Information Center (JIC)</b>	A central point of contact for all news media at the scene of the incident. News media representatives are kept informed of activities and events via public information officials from all participating Federal, State, and local agencies, which, ideally, are collocated at the JIC.
<b>Ingestion Exposure Pathway</b>	The pathway by which the exposure could be from ingestion of contaminated water or foods, such as milk, meat, or fresh vegetables.
<b>Ingestion Zone</b>	The emergency planning zone corresponding to the ingestion exposure pathway, having a radius of about 50 miles for commercial nuclear facilities.
<b>KI Dispensing Site (KIDS)</b>	Sites that are set up by MDPH to dispense KI (Potassium Iodide) to the evacuating general public.

<b>Term</b>	<b>Definition</b>
<b>Law Enforcement</b>	The supportive action that entails the use of law enforcement personnel to maintain civil order
<b>Letters of Agreement</b>	Agreements in writing between two or more organizations, groups, or individuals that stipulate the resources and actions expected and to be provided in response to an emergency request.
<b>Mass Care</b>	The supportive action that entails the provision of food, shelter, routine medical services, registration, and other essential provisions or services for evacuees.
<b>Mass Care Shelter</b>	A facility at least 5 miles beyond the 10-mile EPZ boundary designated to provide food, lodging, and care to members of the public evacuated from the EPZ as the result of an emergency.
<b>Mobility Impaired</b>	Those without transportation, including those without their own cars, those who are unable to drive and those who need assistance, any of whom will need transportation assistance to evacuate.
<b>Monitoring</b>	The act of detecting the presence of radiation and the measurement of radiation levels, usually with a portable survey instrument.
<b>MS-1 Hospital</b>	Hospitals trained and capable of treating members of the general public who may be injured and/or considered to have substantial radiation related injuries, or who may have been exposed to and contaminated by radioactive materials.
<b>National Response Plan (NRP)</b>	The National Response Plan specifies how the resources of the federal government will work in concert with state, local, and tribal governments and the private sector in response to Incidents of National Significance.
<b>National Incident Management System (NIMS)</b>	NIMS is a structure for management of large-scale or multi-jurisdictional incidents.
<b>Nuclear Alert System (NAS)</b>	A communications network which links the State police communications centers, the State's emergency management agencies, the near-site facilities, the Vermont Yankee and Seabrook Power Stations' control rooms and the emergency operations facility for the affected power station.
<b>Nuclear Power Station</b>	A site where nuclear materials are employed in commercial power generating operations.
<b>Offsite</b>	The area beyond the boundaries of a nuclear plant.
<b>Onsite</b>	The area/location of the commercial nuclear plant.
<b>Permanent Resident Population</b>	All members of the public who have a residence in the 10-mile EPZ but are not in institutions.

<b>Term</b>	<b>Definition</b>
<b>Plume</b>	Generally a gaseous atmospheric release from a nuclear power plant, in an accident or emergency, which may contain radioactive noble gases and volatile solids. While emergency plans must recognize the very low probability that particulates could be released in a serious accident, primary emphasis is given to the development of protective actions against the release of noble gases and volatiles such as radioiodines. This cloud is not visible to the eye, but can be measured, or “seen” with radiation measurement equipment.
<b>Plume Exposure Pathway</b>	For planning purposes, the area within approximately a 10-mile radius of a nuclear plant site. A term describing the means by which whole body radiation exposures occur as a result of immersion in a plume release. The area in which plume exposures are likely is described in NUREG- 0396 as an area extending out approximately 10 miles from the reactor site and forming roughly a “keyhole” shape, with the keyhole oriented downwind. In the EPZ-plume, actions may be required to protect the public from the effects of whole-body external exposure to gamma radiation from the plume and from deposited materials and inhalation exposure from the passing radioactive plume’s released materials. The duration of exposure in this mode could range from hours to days in the case of particulate deposition.
<b>Plume Zone</b>	The emergency planning zone corresponding to the plume exposure pathway having a radius of about 10 miles for commercial nuclear facilities.
<b>Potassium Iodide (KI)</b>	A prophylactic drug (stable form of iodine) that can be used effectively to block the uptake of radioiodine by the thyroid gland.
<b>Precautionary Action</b>	Those measures taken early in an emergency (at ALERT or SITE AREA EMERGENCY) to provide additional time for implementation, to reduce the number of transients in an EPZ, and to ease traffic congestion later if a full-scale evacuation is ordered. Precautionary actions include transfer of daycare and school children to host facilities outside the EPZ, and closing of state forests, parks, beaches, and other outdoor recreation areas. It may include sheltering of school children during a security event.
<b>Primary Agency</b>	The governmental department or subdivision that is assigned fundamental and lead responsibility to ensure the fulfillment of a designated function.
<b>Projected Dose</b>	The estimated or calculated amount of radiation dose to an individual from exposure to the plume and/or deposited materials, over a period of time, in the absence of protective action.
<b>Protective Actions</b>	Those measures taken in anticipation of or after an uncontrolled release of radioactive material has occurred to prevent or mitigate radiological exposures to persons that would be likely to occur if the actions were not taken. Protective actions include evacuation, sheltering, access control, and food, water, and milk control.

<b>Term</b>	<b>Definition</b>
<b>Protective Action Guides (PAGs)</b>	Projected dose to an individual in the general population that warrants the implementation of protective action. Specific PAGs (FDA and EPA) have been recommended in terms of the level of projected dose that warrants the implementation of evacuation, sheltering, relocation, and limiting the use of contaminated food, water, or animal feed.
<b>Protective Action Recommendations (PAR)</b>	Advice to the State on emergency measures it should consider in determining action for the public to take to avoid or reduce their exposure to radiation.
<b>Public</b>	The general population with the exception of site personnel.
<b>Public Alert and Notification System (PANS)</b>	A network of sirens, EAS tone-alert radios, NOAA tone-alert radios, public address systems, mobile speakers, loud-hailers, and door-to-door personal notification that would be used to notify the public of an emergency.
<b>Public Health and Sanitation</b>	The supportive action that entails the provision of adequate health services and the maintenance of sanitation facilities and procedures.
<b>Rad</b>	Acronym for radiation absorbed dose. The basic unit of absorbed dose radiation. One rad represents the absorption of 100 ergs of nuclear (or ionizing) radiation per gram of the absorbing material or tissue
<b>Radiation</b>	Any or all of the following: alpha particles, beta particles, gamma rays, X-rays, neutrons, high-speed electrons, high-speed protons, and other atomic particles.
<b>Radiological Emergency Response Plan</b>	A detailed plan which coordinates and describes the emergency response organizations, responsibilities, and capabilities of local or State governments and private organizations to ensure public health and safety arising from an emergency in which there is a potential for radiological release.
<b>Radiological Exposure Control</b>	The monitoring and controlling of public and emergency worker exposure, maintaining records of this exposure, and the actions and procedures necessary for the decontamination of evacuees, emergency workers, and equipment and materials.
<b>Radiological Incident</b>	Any event involving actual or potential radiation exposure or radioactive contamination to the public resulting from the release of radioactive materials from a nuclear power station.
<b>Reception Center</b>	A pre-designated facility outside the Plume Exposure EPZ (minimum is 15 miles from utility) at which the evacuated public can register; receive radiation monitoring and decontamination; receive assistance in contacting others; receive directions to Congregate Care Centers; reunite with others; and receive general information. It generally refers to a facility where monitoring, decontamination, and registration of evacuees are conducted. (Note: also called a relocation center, registration center.)



<b>Term</b>	<b>Definition</b>
<b>Recovery</b>	The process of reducing radiation exposure rates and concentrations of radioactive material in the environment to acceptable levels for return by the general public for unconditional occupancy or use after the emergency phase of a radiological emergency.
<b>Re-entry</b>	The provisions for the return of the public after evacuation, when the radiation risk has been reduced to acceptable levels.
<b>Release of Radioactive Material</b>	<p>a. Controlled Release - Any release of radioactive material from a nuclear power station, which was planned and is being controlled by station personnel.</p> <p>b. Unplanned Release - Any release of radioactive material which is not a controlled release as defined above.</p>
<b>Relocation</b>	The removal or continued exclusion of people (households) from contaminated areas to avoid chronic radiation exposure.
<b>Rem</b>	Acronym for Roentgen equivalent man. The unit of dose of any ionizing radiation that produces the same biological effect as a unit of absorbed dose of ordinary x-rays. A unit of dose for measuring the amount of ionizing radiation energy absorbed in biological tissue.
<b>Restricted Zone</b>	An area of controlled access from which the population has been evacuated, relocated or sheltered-in-place.
<b>Return</b>	Reoccupation of areas cleared for unrestricted residence or use by previously evacuated or relocated populations.
<b>Roentgen</b>	A unit of exposure of gamma (or X-ray) radiation in field dosimetry. One roentgen is essentially equal to one rad. A unit for measuring the amount of radiation energy imparted to a volume of air. The roentgen can be used only to measure X-rays or gamma rays.
<b>Sampling</b>	Collecting specimens of materials (e.g., particles or radioiodine in the air, animal feed, vegetation, water, soil, milk) at field locations.
<b>Shelter-in-Place</b>	A protective action which includes going indoors listening to an EAS radio or television station, closing all windows and doors, closing exterior vents, and turning off heating and air conditioning equipment using outside air.
<b>SITE AREA EMERGENCY</b>	Events are in process or have occurred which involve an actual or likely major failures of plant functions needed for protection of the public or HOSTILE ACTION that results in intentional damage or malicious acts; (1) toward site personnel or equipment that could lead to the likely failure of or; (2) that prevent effective access to equipment needed for the protection of the public. Any releases are not expected to result in exposure levels which exceed EPA Protective Action Guideline exposure levels beyond the site boundary.
<b>Source Term</b>	The radioisotope inventory of the reactor core, or radioisotope release to the environment, often expressed as a function of time.

<b>Term</b>	<b>Definition</b>
<b>Standard Operating Procedures</b>	A detailed pre-established set of operational instructions, which direct an agency's action in response to an emergency situation. These procedures will be used by an agency in carrying out its assigned responsibilities.
<b>Support Agency</b>	The governmental department or subdivision that is assigned to assist in the fulfillment of a designated function.
<b>Supportive Actions</b>	Those actions that are planned or are taken during or after protective actions to ensure public health and welfare.
<b>Thyroid Blocking</b>	The use of potassium iodide or other suitable drug for the purpose of saturating the thyroid gland with stable iodine and thereby preventing thyroid uptake of radioiodine.
<b>Total Population Exposure</b>	The estimated exposure to all segments of the general public following a radiological release from all exposure pathways, including exposure from the plume, ingestion, and ground plume exposure pathways.
<b>Transient Population</b>	That segment of the public visiting areas inside the EPZ, where they do not reside, such as tourist, employees, etc.
<b>UNUSUAL EVENT</b>	Events are in process or have occurred which indicate a potential degradation in the level of safety of the plant or indicate a security threat to facility protection has been initiated. No releases of radioactive material requiring offsite response or monitoring are expected unless further degradation of safety systems occurs