

# EMERGENCY PLANNING

## Diablo Canyon Power Plant

### PROTECTING PUBLIC HEALTH & SAFETY

#### Emergency Classifications

Nuclear power plant emergencies are classified into one of four classifications described below. At each level, PG&E would notify local, state and federal officials. These officials would take actions as outlined in their emergency plans.

##### Unusual Event

A minor, unplanned event has occurred. No threat to public health and safety.

##### Alert

A plant safety system has been damaged or may have been damaged. No threat to public health and safety.

##### Site Area Emergency

A radiological release may be expected to occur or has occurred. The release would not be expected to exceed federal exposure limits beyond the plant site boundary, an area about 1,000 yards from the plant.

##### General Emergency

A significant release of radioactivity has occurred or may occur. Protective actions may be required in several of the Protective Action Zones.

#### What To Do If Siren Sounds

##### If you hear a loud, steady siren for three to five minutes:

- Go indoors and tune to a local radio or television station. Stay tuned and listen for important information and instructions. The County will use the Emergency Alert System to provide the public with information via local radio and television stations.
- If you are able, go to your neighbors and make sure they are aware of any emergency warning and related emergency actions.
- If you are at sea, tune to Marine Channel 16 for emergency information.
- Only call (805) 543-2444 if you urgently need information or transportation assistance during an evacuation. The County Office of Emergency Services activates this phone line only when there is an emergency that affects large numbers of people in the county.

##### Do Not:

- Do not call 911! It is an emergency line for people who need urgent medical, fire, or police help. Using 911 for information ties up the system and may delay help for someone who needs it.
- Do not leave the area unless you are told to do so over the Emergency Alert System.
- Do not use your telephone unless you need to call for help.
- Do not call local police, fire, or sheriff's offices unless you need their immediate help during an emergency. Please leave telephone lines open and emergency personnel available for people who need immediate lifesaving help.

#### How To Get More Information

If you would like more information on the emergency plan, write or call the San Luis Obispo County Office of Emergency Services or Pacific Gas and Electric Company.

##### Pacific Gas and Electric Company

4325 South Higuera Street  
San Luis Obispo, CA 93401  
(805) 546-5292  
[www.pge.com](http://www.pge.com)

##### Office of Emergency Services

County of San Luis Obispo  
County Government Center  
San Luis Obispo, CA 93408-2790  
(805) 781-5011  
[www.slocounty.ca.gov/oes](http://www.slocounty.ca.gov/oes)

##### California Emergency Management Agency

3650 Schriever Avenue  
Mather, CA 95655  
(916) 845-8400  
[www.calema.ca.gov](http://www.calema.ca.gov)

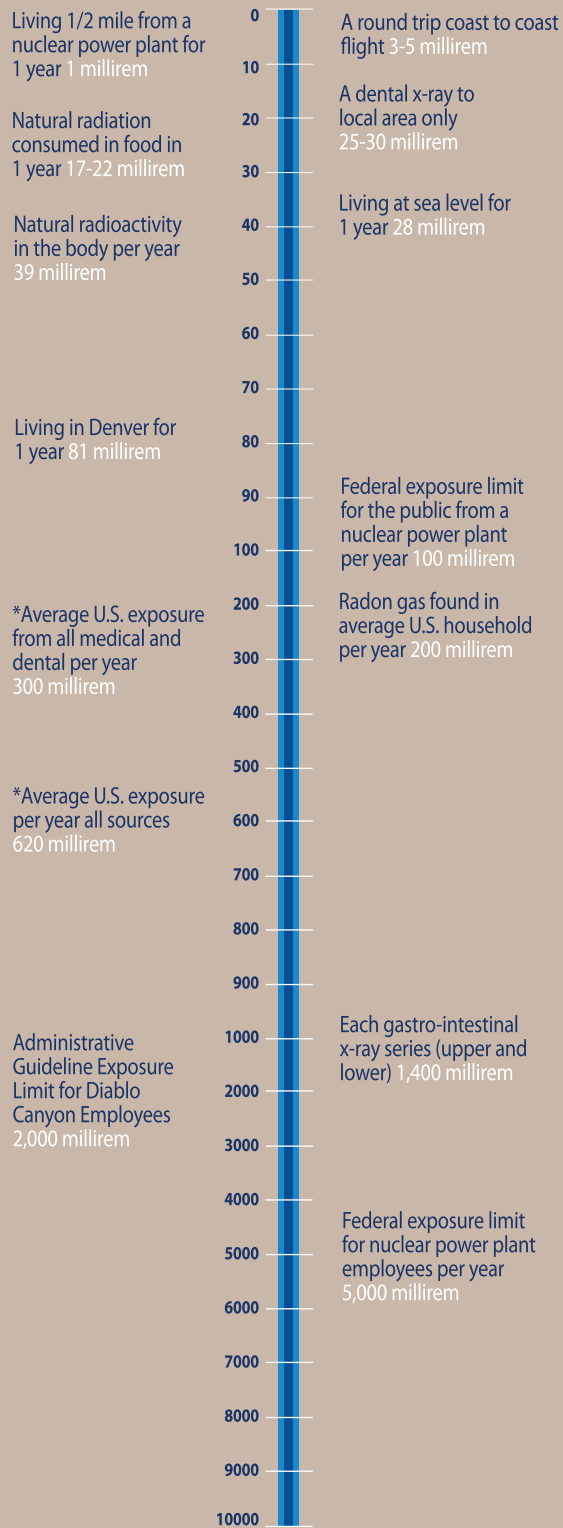
##### San Luis Obispo County Health Agency

Division of Environmental Health  
2156 Sierra Way  
San Luis Obispo, CA 93401  
(805) 781-5544



## Typical Sources And Amounts Of Radiation

### Millirem Doses



\*Data based on NCRP report #160, August 2009. Updated from NCRP report #93 (published in 1987)

## Where Radiation Is Found

Most radiation comes from natural sources- the air, rocks, earth, sun, building materials and even the food we eat. Natural sources of ionizing radiation include cosmic rays from the sun and outer space, and radioactive elements that occur naturally in the soil, rocks and building materials, such as concrete.

Nuclear radiation is particles or rays given off by unstable atoms. Radiation is produced inside a nuclear reactor when the uranium atoms split or "Fission". This also produces heat which is used to generate electricity.

The three basic types of ionizing radiation produced by radioactive atoms are alpha particles, beta particles, and gamma rays. Alpha particles and beta particles have low penetrating power. Alpha particles can be blocked by a piece of paper. Beta particles can be blocked by a thick piece of cardboard or by a piece of aluminum foil. Gamma rays are electromagnetic energy, similar to visible light and X-rays, but they have a higher penetrating power. Heavy shielding of lead or concrete, such as a nuclear power plant's containment structure, will stop gamma rays.

## How Much Radiation Is Dangerous

The unit most commonly used to measure human exposure to radiation is the rem. Because most normal exposures involve only a fraction of a rem, the most commonly used unit is the millirem, one thousandth of a rem.

The amount of natural radiation to which people are exposed depends upon where they live and the concentration of radioactive material in the ground. The effects of radiation depend upon how much is received, the length of exposure and the person's general health and age. The risk from radiation exposure can be reduced by shortening the time of exposure, getting farther away from the source, and shielding or blocking the source. It is known that whole-body radiation doses of more than 10,000 millirem over a short period of time can cause a slight increase in a person's risk of developing some types of cancer years after exposure. The risk that radiation induced cancer will develop during the person's lifetime is estimated by the National Academy of Sciences to be about 1/20 of one percent for every 1,000 millirem of short-term exposure greater than 10,000 millirem. In other words, if you were to receive a short term exposure of 11,000 millirem (11 rem), your estimated risk of developing some type of cancer would increase by 0.05 percent.

Both the federal government and the State of California have established radiation dose limits for the public from a nuclear power plant at 100 millirem/year. For doses expected to be greater than 1,000 millirem, protective actions such as evacuations or sheltering would be required. The purpose of these actions would be to keep people away from the radioactive materials that might be released during a severe accident.

Diablo Canyon's design makes a large release of radioactive materials extremely unlikely. The safety systems at the plant are designed to control and contain the release of radioactive materials under accident conditions. The federal and state limits on radiation exposure established for the public, guide the emergency planning for protective action. The emergency plans for Diablo Canyon Power Plant are designed to minimize the exposure to the public by using the protective actions of sheltering and evacuation.

