

Maine Yankee

RELIABLE ELECTRICITY SINCE 1972

EDISON DRIVE • AUGUSTA, MAINE 04330 • (207) 622-4868

May 26, 1994

MN-94-56

JRH-94-129

UNITED STATES NUCLEAR REGULATORY COMMISSION
Attention: Chief, Incident Response Branch
Office for Analysis and Evaluation of Operational Data
Washington, DC 20555

References: (a) License No. DPR-36 (Docket No. 50-309)
(b) NRC Administrative Letter 94-07, "Distribution of Site Specific
and State Emergency Planning Information", dated May 6, 1994.

Subject: Response to NRC Administrative Letter 94-07.

Gentlemen:

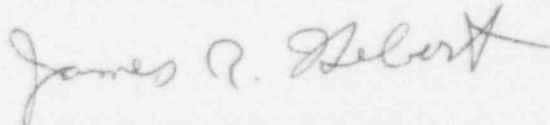
Reference (b) requested 10 copies of our annual Emergency Public Information brochure and a current copy of the state and/or local emergency response plans for our nuclear power plant.

Enclosed are 10 copies of the joint Maine Yankee/State of Maine 1994 brochure entitled "Planning Information For An Emergency At The Maine Yankee Plant Or Other Regional Emergency".

The State of Maine is in the process of updating the State of Maine Radiological Emergency Response Plan (RERP) for Maine Yankee. By copy of this letter to the Maine Emergency Management Agency (MEMA), we are requesting MEMA to add AEOD to the controlled distribution list for the State RERP (includes local plans). This will ensure your office receives periodic updates to the off-site emergency response plans.

We trust this information is satisfactory. Should you have any questions, please feel free to contact us at any time.

Very truly yours,



James R. Hebert, Manager
Licensing & Engineering Support Department

JMT\mwf

c: Mr. Thomas T. Martin
Mr. J. T. Yerokun
Mr. E. H. Trottier
Mr. Patrick J. Dostie
Mr. David D. Brown, Director, MEMA

030048

A045
1/10

1994

**PLANNING INFORMATION
FOR AN EMERGENCY
AT THE MAINE YANKEE PLANT
OR OTHER REGIONAL EMERGENCY**

Guidelines for Emergency Procedures from Maine Yankee and the
Maine Emergency Management Agency

TABLE OF CONTENTS

	Page
Introduction	3
Being Prepared: Emergency Planning	4
Preparing for an Emergency	
Radiation: Natural and Man-made	6
Understanding Radiation	
Radioactive Materials	
Health Effects of Radiation	
Summary of Emergency	
Guidelines	Center Pullout
How Nuclear Power Plants Work	10
Safety At Maine Yankee	12
Mail-in Card	Back Cover

INTRODUCTION

The Purpose Of This Booklet

Federal regulations require that all nuclear power stations have detailed emergency plans to protect the public in the unlikely event of a serious nuclear accident. The State of Maine, in cooperation with Maine Yankee, has developed a comprehensive emergency plan that has been used to respond to regional emergencies such as hurricanes, chemical spills or severe storms.

When you receive this booklet, it is important that you:

- 1** Read it and become familiar with the emergency instructions listed in the center insert.
- 2** Follow the instructions on Page 4, **“Preparing for a Regional Emergency.”**
- 3** Pull out the center insert and, using the adhesive strip, place the insert inside the front cover of your telephone book.
- 4** **If you would need special assistance** in the event of an emergency, take the time now to mail in the card on the back cover.

Even though a nuclear power accident with serious public consequences is very unlikely, planning for such an event is a necessary precaution. Should a serious nuclear accident occur, a preplanned course of protective actions would reduce or prevent any public health consequences. These protective actions are also appropriate for far more likely regional emergencies such as hurricanes and floods.

Nuclear power plants are not unique in having emergency plans. Oil, chemical and transportation industries require such plans as well. Nuclear emergency plans are more detailed than others because the federal regulations are more demanding.

Preparing For a Regional Emergency

We all make preparations for various emergencies such as fires, storms, loss of power, or loss of heat. Personal preparation involves thinking about a potential problem and deciding in advance just what you need and just what you'll do. Being prepared to cope with one type of emergency is often valuable when dealing with a variety of unexpected situations.

What You Can Do Now

There are several common sense things we can all do to be better prepared to cope with an emergency. Some suggestions follow:

- 1** If you have someone in your care who has any special needs and would require assistance in an emergency, notify your local Emergency Management office in advance by telephone (see phone numbers listed in the pullout section) or in writing by filling out the response card at the end of this booklet.
- 2** Become familiar with the contents of this emergency planning booklet. Know how you would be notified in an emergency, and how to respond if requested to take shelter or evacuate.
- 3** Attach the booklet's center pullout in an easily-accessible location, such as in the front of the telephone book. Additional copies are available from your town office or local Emergency Management office.
- 4** Keep all necessary papers and medicine in handy locations ready for easy packing in a hurry.
- 5** Pre-select a location in your home suitable for sheltering in the event of emergencies such as severe storm, nuclear weapons fallout or a Maine Yankee emergency. A basement or inner room usually offers the best shelter protection.
- 6** Select a relative or friend who lives outside the affected area to serve as a common communication point for members of the family.
- 7** Always try to keep enough gas in your vehicles to permit travel of 50 miles or more in an emergency.

Determining Protective Actions

The U.S. Environmental Protection Agency has developed a set of protective action guidelines. These guidelines provide for prompt safety measures even in situations that are not considered to be health- or life-threatening.

In general, if any public exposure to radiation is expected, sheltering or evacuation are possible courses of action. Some levels of radiation exposure would require precautionary evacuation. The guidelines are flexible to allow for special circumstances.

The Governor will select the best form of protection for the emergency planning zone based on all information available and on the advice of the State Division of Health Engineering. A map of the emergency planning zone area is located in the center of this booklet's pull-out section.

Facts To Remember

- Protective actions will be implemented even when expected radiation levels are far lower than those related to serious health effects.
- Do not evacuate unless residents of your specific area are directed to do so.
- If evacuation is ordered and you do not have transportation or if you otherwise need help, call your local fire department — the telephone numbers are listed on the inside cover of your telephone directory.

RADIATION: NATURAL AND MAN-MADE

Understanding Radiation

The term radiation is very broad and includes such things as heat, light and radio waves. However, it is most often used in reference to "ionizing radiation." This type of radiation has enough energy to cause physical changes in materials it strikes.

Here are answers to some commonly asked questions about radiation:

Q. Where does radiation come from?

A. Most radiation comes from natural sources; from outer space as "cosmic radiation" and from the ground we walk on, the buildings we live in and nearly everything we touch. Even the food we eat and the air we breathe contain radioactive elements.

Some radiation comes from man-made sources such as X-rays, television sets, microwave ovens, nuclear weapons testing and nuclear energy facilities.

Q. How is radiation measured?

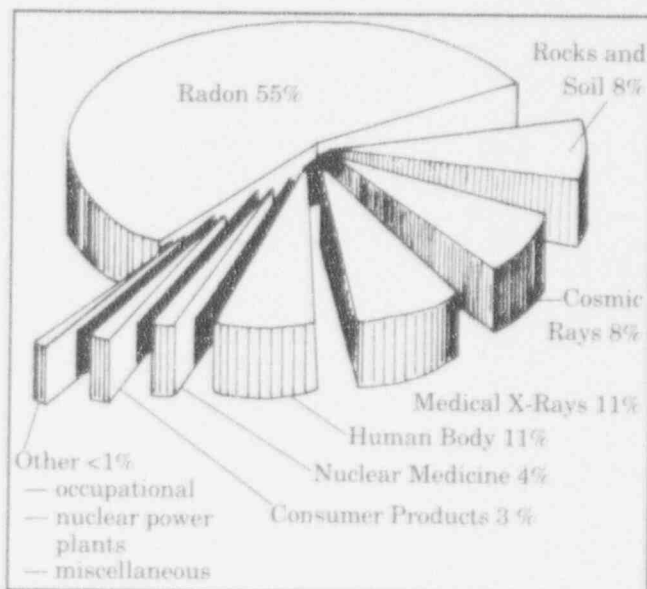
A. Radiation intensity is measured by sensitive instruments such as geiger counters. In these instruments the radiation interacts with gas causing a current to flow which is proportional to the radiation level. The meters of these instruments usually read radiation levels in millirem (mrem) per hour units.

Radiation exposure to individuals is generally expressed in "rem" or "mrem" units. These units are a measure of the biological effects of radiation.

Radiation exposure depends both upon the intensity of the radiation present and time spent in the area. For example, spending three weeks in a granite building that has a one mrem per day field will result in an exposure of 21 mrem. The same amount of exposure occurs in a fraction of a second when receiving a chest X-ray.

Q. How much radiation exposure do people get?

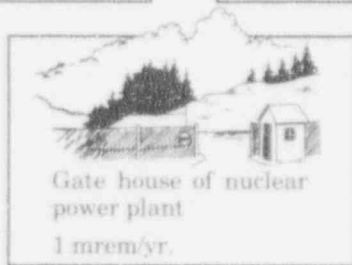
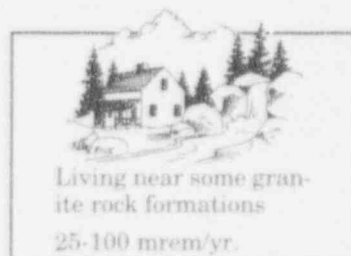
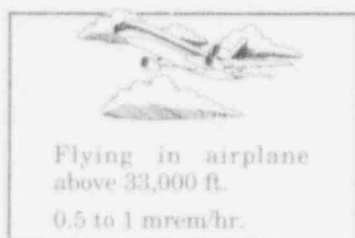
A. Radiation exposure can vary widely depending upon a person's location. For example, cosmic radiation is twice as high at 2,000 feet elevation than it is at sea level; ground radiation is much higher in areas containing radioactive ores such as granite; and airborne radiation is greater near industries or mines that release radioactive particles.



Radiation Exposure Per Year from Various Sources. Totals 300-400 mrem according to the National Council on Radiation Protection and Measurements.

Lifestyle is important, too. For example, a brick house is twice as radioactive as a wooden house; airline pilots receive more cosmic radiation, miners more ground radiation; and the use of radiation emitting equipment such as television, microwave ovens, X-ray equipment, etc., also increases individual exposure.

In the U.S., the average person is exposed to between 300 and 400* mrem of radiation from natural background sources per year.



Radioactive Materials

Q. What are radioactive materials?

A. Some materials contain "unstable" atoms that have extra energy. They release this extra energy in the form of radiation until they become stable. Each radioactive material sends out a specific kind of radiation with its own energy level.

Q. What kinds of radiation are there?

A. There are three common types of ionizing radiation, each with different characteristics.

ALPHA radiation consists of particles made of neutrons and protons. Alpha has low penetrating power; it can just enter the surface of the skin and can be stopped by a sheet of paper. Alpha-emitting material can be harmful if it is ingested into the body through breathing, eating, or drinking.

BETA radiation consists of electron particles and is more penetrating than alpha. Highest-energy beta can pass through several centimeters of human skin but can be stopped by a thin sheet of metal. Beta-emitting material presents the greatest hazard if ingested.

GAMMA radiation can be very penetrating. The highest energy gamma can pass right through the human body but can be almost completely absorbed by one

*National Council on Radiation Protection and Measurements

meter (about three feet) of concrete. If a person is exposed to gamma-emitting materials, both internal and external damage can result.

Every type of radioactive element breaks down by emitting either alpha, beta, or gamma radiation with a specific energy level. The higher the energy level — the further a radioactive particle will travel and the more material it will ionize.

Health Effects of Radiation

Q. How does radiation affect us?

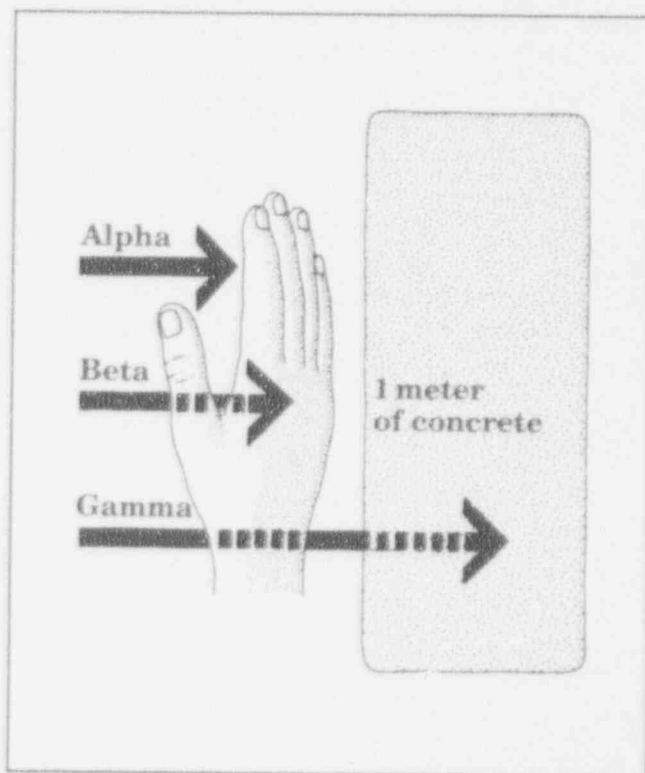
A. Think about how sunlight affects us. In the northern part of the world, the winter's slanting rays seldom cause sunburn but the more direct rays of the summer sun do. Still, just a few moments in the mid-summer sun will not give you a tan or cause a sunburn. Furthermore, a sunburn on your face and hands may hurt but it usually will not seriously harm you. On the other hand, burning over your whole body can make you very ill.

In much the same way, the harm caused by radiation will depend upon the nature and energy level of the particles and rays which strike you, the length of time you are exposed to them, how much of your body is struck by the rays, how much radioactive material you breathe or swallow and how the material is concentrated in the body. A large dose of radiation is more damaging than a small one. Unborn and very young children are more sensitive to radiation than older children and adults.

When emissions from radioactive substances enter the human body, they can damage cells by ionizing (tearing the electrons from atoms). If the damage is slight or takes place slowly, the body can usually make repairs. However, if the damage is great, adequate repairs may be impossible and the consequences severe. The three consequences of greatest concern are radiation sickness, cancers, and genetic mutations.

Q. How much radiation will cause "radiation sickness?"

A. Radiation sickness may result from exposures exceeding 100,000 mrem over a short period of time. The damage will interfere with the ability of the bone marrow to produce red blood cells.



The penetrating power of radiation.

1994

SUMMARY
OF
EMERGENCY
GUIDELINES

Please remove this booklet
and using the adhesive strip
place inside the front cover
of your telephone book
or a location
where it will
be readily available

Sources of Information During an Emergency

If you hear a steady siren for 3 or more minutes, you should tune your radio to one of the following radio stations to find out what is happening at Maine Yankee. If you hear a siren sound, of any other duration, you should contact your local fire department for information.

WCLZ	98.9 FM
WKCG	101.3 FM
WCLZ	900 AM
WFAU	1340 AM
WCME	96.7 FM
NOAA Weather Radio:	162.475 MHZ

(National Weather Service)

You may also call these information lines:

Maine Emergency Management Agency	1-800-564-6362
Maine Yankee Plant Information	1-800-762-7104
Maine State Police	1-800-452-4664

It's important to keep the following lines open in an emergency. Please call only if absolutely necessary:

Lincoln County Sheriff:	882-7332
Sagadahoc County Sheriff:	443-9711

In the event of any regional emergency, the State Police would be notified. The State Police in turn would notify the Governor, Maine Emergency Management Agency, and the State Division of Health Engineering.

Things to Do

Place this booklet in a convenient location. Keep necessary papers and medicines ready for easy packing. Help keep telephone lines and roads clear during an emergency by avoiding unnecessary travel or telephone use.

Protective Actions-Sheltering And Evacuating

If a radioactive release occurs, it would travel downwind from the plant. Officials would evaluate weather conditions throughout the region and recommend necessary protective actions (either sheltering or evacuation). If you need any assistance with shelter, evacuation or transportation, call your local fire department. The number is listed on the inside cover of your telephone directory.

IF YOU ARE DIRECTED TO TAKE SHELTER:

- 1 Do not attempt to evacuate if sheltering is ordered; such a course may be more hazardous than staying put.
- 2 Remain indoors. Close all outside doors, windows, air conditioners and ventilation systems. The basement or an inner room generally offers the best shelter protection.
- 3 Keep your RADIO or TV on for information. If notified that radioactivity is in the area, breathing through several layers of wet cloth or gauze provides additional protection.
- 4 Food and water in your home are safe to use. Any open food not in sealed containers should be put in the refrigerator.
- 5 After the shelter period has passed, do not eat garden produce until state authorities indicate that it is safe.

SPECIAL INSTRUCTIONS

School children

Schools have contingency plans to protect children in an emergency. For information about school children and instructions on what you should do, please stay tuned to your radio.

Pets and animals

In an evacuation, pets and animals should be left inside with enough food and water to last two or three days.

Tourists and other visitors

If sheltering is recommended by state officials, tourists and others temporarily in the area should seek shelter indoors. If evacuation is recommended as a precautionary measure, proceed to the reception center for the area in which you are located, via the evacuation routes listed here. Travel at a safe speed with windows and vents closed.

Boaters

NOAA weather radio stations will issue information and instructions. Coast Guard units at Boothbay Harbor, Rockland, Southwest Harbor and Portland will provide assistance, if needed. Coast Guard emergency radio frequency channel is 16.

Mobile home and trailer dwellers

Certain dwellings (mobile homes, trailers, boats) may not adequately shelter inhabitants in certain emergency conditions such as a radiological release or severe storm in the area. Occupants of these dwellings may be advised by state officials to seek the nearest public shelter. Public shelter locations will be given on Emergency Broadcast System stations.

Special Instructions For Farmers And Home Gardeners

Protection of the public is the first priority of state and local officials. In some circumstances, it would also be important to protect food crops and farm animals. If so, you would be advised to follow the instructions listed here.

If a radiological release occurs, it would travel downwind from the plant. State and local officials would evaluate weather conditions throughout the region and would recommend necessary actions to ensure protection of food crops and farm animals.

Keep your RADIO or TV on for updated information.

Animals

Farm animals that ingest radioactive material may become contaminated and the meat and dairy products may be unusable. To prevent this, you may be directed to:

- 1** Place farm animals in a shelter where ventilation can be controlled to limit the entry of air or rain water. Shelter dairy animals first.
- 2** Bring feed and hay into buildings or cover it if it is outdoors.
- 3** Prevent animals from grazing until advised it is safe by state officials.

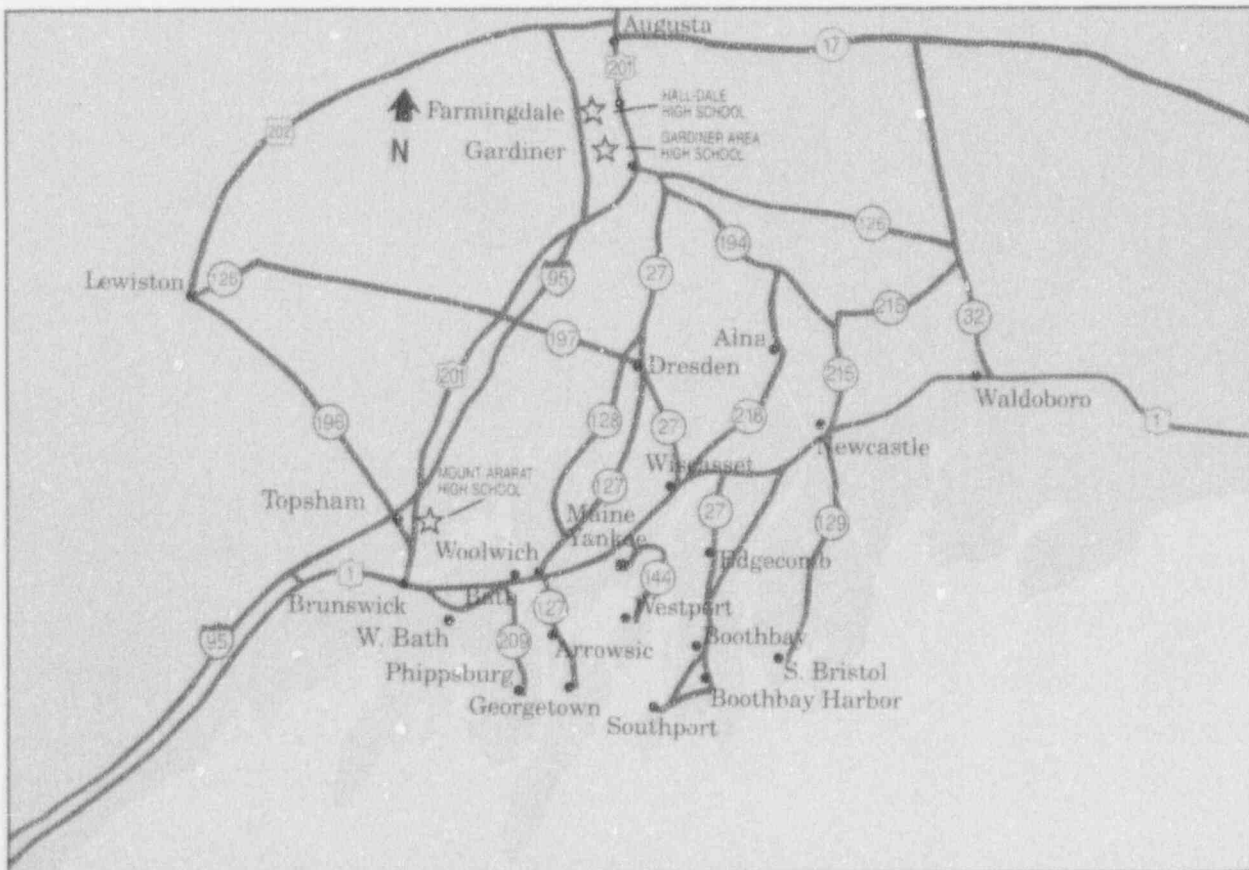
Water

Store as much water as possible for livestock. Cover rain barrels, open wells, tanks or other storage containers to prevent contamination.

EVACUATION DESTINATIONS AND ROUTES

Evacuation routes may change depending on existing conditions. Stay tuned to local radio or TV stations for possible changes in recommended routes or protective measures. Local, county and state police officers will assist you en route.

If you live in...	Evacuation Route	Reception Center
Alna	N 218 to W 194 to N 27, across Gardiner Bridge	Gardiner Area High School
Arrowsic	N 127 to S US 1 to Pleasant St., Brunswick, to N 95 to Topsham Exit to N 201	Mt. Ararat High School
Bath	S US 1 to N 201, Topsham	Mt. Ararat High School
Boothbay	N 27 or N Back Narrows Rd. to N US 1 to N 32 to W 126 to Gardiner Bridge to N 201 to Hallowell	Hall-Dale High School
Boothbay Harbor	N 27 or N Back Narrows Rd. to N US 1 to N 32 to W 126 to Gardiner Bridge to N 201 to Hallowell	Hall-Dale High School
Dresden	N 27, across Gardiner Bridge	Gardiner Area High School
Edgecomb	N 27 or N River Rd. to N US 1 to N 32 to W 126 to Gardiner Bridge to N 201 to Hallowell	Hall-Dale High School
Georgetown	N 127 to S US 1 to Pleasant St., Brunswick, to N 95 to Topsham exit, to N 201	Mt. Ararat High School
Newcastle	N 215 to W 194 to N 27, across Gardiner Bridge	Gardiner Area High School
Phippsburg	N 209 to S US 1 to N 201, Topsham	Mt. Ararat High School
So. Bristol	N 129 to N 215 to W 194 to N 27, across Gardiner Bridge	Gardiner Area High School
Southport	N 27 to Lakeview Dr. back to N 27 to N US 1 to N 32 to W 126 to Gardiner Bridge to N 201 to Hallowell	Hall-Dale High School
West Bath	S OLD US 1 to Cooks Corner to S US 1 to N 201, Topsham	Mt. Ararat High School
Westport	N on 144, right onto Birch Pt. Rd., N US 1 to N 27, across Gardiner Bridge	Gardiner Area High School
Wiscasset	N 27, across Gardiner Bridge	Gardiner Area High School
Woolwich	S US 1 to Pleasant St., Brunswick, to N 95 to Topsham exit to N 201	Mt. Ararat High School



Food Crops and Home Gardens

Instructions for handling any food crop that may have been contaminated during a nuclear accident would be issued by state and federal officials. Keep your radio or TV on for updated information. You may be advised not to harvest or eat any food crop that was grown or stored outdoors until advised to do so by appropriate officials.

Roots and tubers such as potatoes and carrots can generally be eaten after they are washed and peeled. Leafy vegetables may be eaten after the outer layers are removed and the product is washed with soap and water.

Fish

State officials would issue instructions about fishing operations. Some recreational and commercial fishing may be stopped as a precaution. Listen to the radio or TV for updated information.

Food Processors and Distributors

Persons or companies who process or distribute food, milk or fish may be directly advised to take special precautions by state and federal officials. Keep your radio or TV on for updated information.

A more detailed brochure for farmers and food processors is available. To obtain a copy, call the Maine Emergency Management Agency at 1-800-452-8735. Public understanding and cooperation are key to effective planning for an emergency. Reading the information contained in this booklet will help you to respond to any regional emergency in the best way possible.

If you have any questions during an emergency, call the Maine Emergency Management Agency at 1-800-564-6362.

For additional copies or further information contact your town office or Lincoln or Sagadahoc Emergency Management Directors at:

TOWNS IN EMERGENCY PLANNING ZONE			
Location	Telephone Numbers	Location	Telephone Numbers
Alna	586-5313	Newcastle	563-3441
Arrowsic	443-4609	Phippsburg	389-1088
Bath	443-5563	South Bristol	563-3977
Boothbay	633-2051	Southport	633-3318
Boothbay Harbor	633-3671	West Bath	443-4342
Dresden	737-4335	Westport	882-7651
Edgecomb	882-7018	Wiscasset	882-8200
Georgetown	371-2820	Woolwich	442-7094

COUNTIES IN EMERGENCY PLANNING ZONE	
Location	Telephone Numbers
Lincoln	882-7559
Sagadahoc	443-8210

OR:

Maine Emergency Management Agency
Station 72
State Office Building
Augusta, ME 04333
(287-4080)

IF YOU ARE DIRECTED TO EVACUATE:

- 1 Secure your property as if you were going on vacation.
- 2 Take extra clothing and blankets, vital medicine and important papers. Pets and animals should be left inside with enough food and water for two or three days.
- 3 Leave area immediately, travel at a safe speed to your designated reception center by the routes listed here, with car windows and ventilation systems closed. Listen to the radio for information or to Channel 9 if you have a CB radio.
- 4 Upon your arrival at a reception center, register, giving necessary information. If you intend to travel further, give destination and leave word on how you can be reached.
- 5 Continue to listen for follow-up reports until notified that the emergency condition has ended. Do not return to the evacuated area unless state officials announce that it is safe to return.

Be a Good Neighbor

In the event of any type of emergency, offer to help your elderly and disabled neighbors who may need assistance in securing their property or in evacuating.

Please Keep This Booklet in a Convenient Place for Quick Reference.

CLASSIFICATION OF NUCLEAR EMERGENCIES

EMERGENCY ACTION LEVELS AND RESPONSES

Emergency Class	Plant Criteria	Response
Unusual event	Indication of potential plant degradation. No radioactivity released.	Plant notifies State and Federal officials.
Alert	Actual or potential substantial degradation of plant safety and/or minor release of radioactivity.	Local and state emergency action teams alerted. State Emergency Public Information Center activated.
Site Area Emergency	Actual or likely failure of plant safety systems and/or small radioactive release within federal guidelines.	Sirens will activate. Emergency Broadcast Systems (EBS) will activate.
General Emergency	Actual or imminent substantial core degradation; loss of containment threatened. Releases reasonably expected to exceed federal guidelines.	State makes appropriate protective action determination.

Classification of Nuclear Emergencies (reference NUREG 0654). For planning purposes, nuclear plant accidents are classified into four categories of increasing severity.

Q. How much radiation is considered a fatal dose?

A. In the event of short-term exposure of 400,000 to 600,000 mrem, it is estimated that half of the individuals exposed will die. (It is important to remember that an exposure of this magnitude would be very unusual. The average annual exposure to radiation, as stated on page 7, is between 300 and 400 mrem.) Should death not result from such a short-term exposure, the body will begin to repair damage after about four days and can repair as much as 90 percent of the damage at a rate of approximately 2.5 percent per day. While the symptoms of radiation sickness may disappear within a few weeks, the possibility of long-term consequences such as cancer and genetic mutation will remain.

Q. Is low-level radiation harmful?

A. Unfortunately, there is no definitive answer to this question. All studies of low-level radiation exposures (less than 1000 mrem per year) indicate that health effects, if they exist, are not measurable or discernible. That is, if they exist, they are so low that they are masked by the health consequences of other environmental and social factors.

Q. Should we be concerned about low-level radiation?

A. Although there is no evidence linking low-dose radiation with health risks, protective organizations such as the National Council on Radiation Protection and Measurements and the International Commission on Radiological Protection have adopted a conservative philosophy. This philosophy allows for the possibility that there could be effects in the low-dose range proportional to those observed at much higher levels.

Based on this philosophy, the BEIR-V Report of the National Academy of Sciences, published in 1990, calculates that a single 1000 mrem exposure per person to the general population could result in an increase of genetic disorders of about 0.4% above the normal rate of 42,000 per million live births.

The Report also calculates that a single 10,000 mrem exposure per person to the general population would increase the number of cancer fatalities about 4% above the normal rate of 180,000 per million persons. Most experts agree, reasonable caution should be used. The benefits of medical and dental X-rays, the use of smoke alarms, T.V. viewing, air travel and mountain hiking are probably far greater than the small increased radiation risk involved. However, the benefits from X-raying feet for shoe fitting are not considered to be worth additional risk.

HOW NUCLEAR POWER PLANTS WORK

Nuclear power plants are similar to coal and oil-fired power plants - they all use a fuel to give off heat to produce high pressure steam that drives a turbine attached to an electric generator.

In a nuclear plant the fuel (uranium) is packed into sealed metal tubes within the reactor system and surrounded by water. The heavy uranium atoms in the tubes are split into lighter atoms producing the heat which is ultimately converted to electricity.

Q. Are nuclear plants perfectly safe?

A. No. It is impossible for any energy system to be perfectly safe. U.S. nuclear power plants are designed to the highest quality standards. They feature many safety systems to prevent any accident that could cause the release of radioactivity and to minimize the consequences should one occur. However, accidents resulting in the release of substantial quantities of radioactivity are theoretically possible.

Q. Can a nuclear plant explode like an atomic bomb?

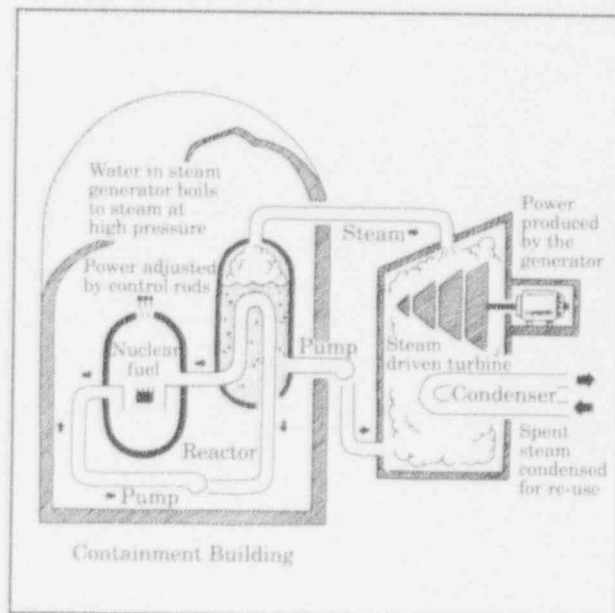
A. No. A nuclear plant reactor cannot undergo a nuclear explosion. Reactor fuel is enriched only to about 4% strength, while weapons fuel is enriched to greater than 90% strength.

Q. How could large amounts of radioactivity escape?

A. For an accident to affect the public, some kind of damage would have to occur to the nuclear tubes allowing the radioactive materials to escape into the reactor system. Damage would also have to occur to the reactor system permitting the radioactive material to escape further into the reactor containment building. If the backup safety systems did not work properly and the containment building leaked excessively, substantial quantities of radioactive gases could then be released into the environment.

The amount of radioactive materials released would depend on many factors: the concentration of radioactive material in the fuels; the amount of fuel tube damage that occurred; the nature of the reactor system failure; the effectiveness of the backup safety systems; and the leakage rate of the reactor containment building. The duration of radioactive gas release would also depend on many factors and could last anywhere from a few minutes to several days.

How Maine Yankee works



Q. Have nuclear plant accidents ever occurred that resulted in a significant public radiation exposure?

A. During the last thirty years, four hundred twenty four nuclear power plants have been placed in operation throughout the world. Hundreds more nuclear power propulsion units have been installed in military ships. Some of these units have had accidents that involved the release of small amounts of radioactive gas. The amount of radioactivity accidentally released is tiny when compared to natural background radiation. However, two accidents occurred that were of consequence: at Three Mile Island and Chernobyl.

Q. What happened at the Three Mile Island plant?

A. On March 28, 1979, the plant lost its feedwater supply. Then the reactor fuel overheated due to failure of some backup safety systems and errors in judgement by plant operators. Although some radiation was released the direct health impact of the Three Mile Island accident on area residents is not considered to be discernible. However, the way the accident occurred, how it was handled, and how it was reported in the media created a great deal of public stress.

Q. Could an accident like the one at Chernobyl happen at Maine Yankee?

A. No. Because of fundamental differences between Maine Yankee and Chernobyl, it is extremely unlikely that an accident like the one at Chernobyl could happen here.

The Chernobyl accident involved unstable reactor design and inadequate containment. These situations are prevented by regulation, procedure and design at Maine Yankee.

The accident at the Chernobyl nuclear reactor in Ukraine has prompted many Americans to take a thoughtful look at the safety of nuclear power in our country. While we do not know the full story behind the Chernobyl accident, we can speak with certainty about the design and operation of Maine Yankee. Any lessons that can be learned from the Chernobyl accident have been thoroughly addressed as part of the industry's on-going effort to make nuclear energy as safe as possible.

SAFETY AT MAINE YANKEE

Q. What safety systems does Maine Yankee have?

A. In addition to the many safety systems originally built into the plant, Maine Yankee has spent more than \$30 million on additional safety measures in the last several years and has constantly reiterated that safety is the primary job of every Maine Yankee employee.

Maine Yankee's designers have built into the plant a "safety-in-depth" design which uses multiple backup safety systems and barriers which are available if other systems fail. This design philosophy assumes something will go wrong and seeks to reduce the consequences with a three-step approach: **prevent—mitigate—contain**. Every precaution is taken to prevent accidents, but since this cannot be totally guaranteed, Maine Yankee is designed to mitigate or reduce the severity of an accident, however unlikely. It is further designed to contain the effects of any serious accident within the plant.

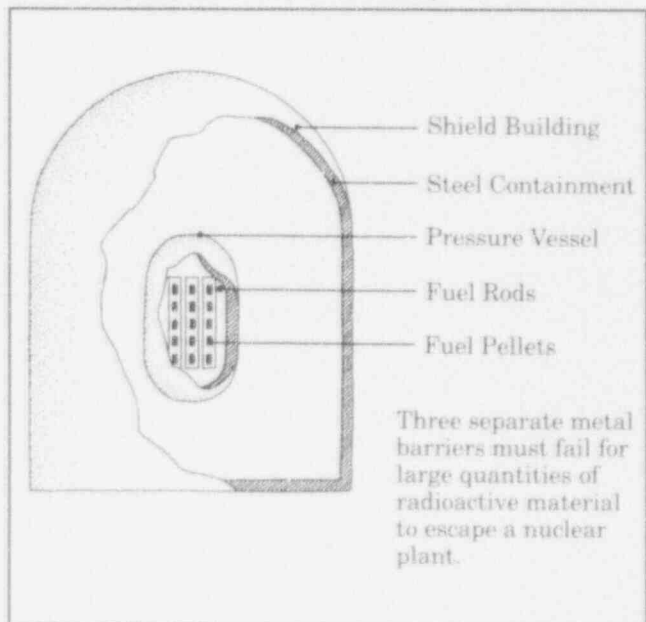
Plant personnel work with state and federal authorities to continually test safety systems, upgrade emergency planning and monitor radioactivity levels in and around the plant. Systems are constantly evaluated and improved for maximum effectiveness.

Q. What are some of the barriers against the release of radioactivity?

A. The following are just a few of the multiple barriers and redundant safety systems that are designed into Maine Yankee to prevent, mitigate and contain any accident affecting the public safety:

- The fuel itself is made of dense ceramic pellets which contain the uranium and the radioactive waste materials resulting from fission.
- The pellets are sealed within metal tubes called cladding.
- The reactor core is in a pressure vessel with 6 to 8 inch thick steel walls which contains the tubes holding the nuclear fuel, the control rods and the primary coolant.
- The reactor is encircled by a concrete wall which supports the vessel and provides a shield against radiation.
- A leak-tight steel shell also encloses the reactor and houses all the reactor system components. The steel shell is designed to prevent the escape of radioactive materials from the containment building in the event of an emergency.
- A massive concrete wall — 2 to 4 feet thick — acts as another radiation

Barriers against release of radioactivity



shield. This outer wall — the one visitors see — is the dome building that houses the reactor.

- An emergency core cooling system ensures that backup supplies of water will prevent the reactor core from over-heating if the primary coolant water supply should be reduced.
- In addition to its human operators, the reactor has automatic controls to shut it down if changes from normal operating conditions are sensed. The control rods govern the amount of heat produced by the reactor and can be used to shut down the reactor by either human or automatic direction.

Q. How much radioactivity has been released from Maine Yankee?

A. Maine Yankee controls the amount of radioactivity released to the air and water so that the amount of radioactive material is as low as reasonably achievable. The estimated maximum exposure to an individual at the plant boundary, calculated using Nuclear Regulatory Commission approved methodology, has ranged from 0.002 to 0.2 mrem/yr (1988-1992). This is less than 1% of the allowable federal dose limit of 100 mrem per year to individual members of the general public from commercial nuclear power plants [(10 CFR § 20.1301 (a) (1)].

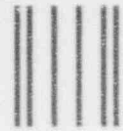
These dose estimates show that a person living next to the plant received very little additional radiation exposure. The additional exposure is less than that received by a person working in a granite office building or by a passenger on a cross-country plane flight. It is also very small compared to an individual's average annual exposure of 300-400 mrem per year from natural background radiation.

For more information, please write to: Maine Yankee Public and Government Affairs, Edison Drive, Augusta, Maine 04330; or visit the Maine Yankee Energy Information Center at the plant site Monday through Sunday, Noon to 4 PM. Or call the Information Center's toll-free number, 1-800-458-0066.

KEEP THIS BOOK HANDY FOR EMERGENCIES

In the event of a public emergency or natural disaster, some residents may need special assistance because of transportation problems or physical impairments. If you or someone you know has special needs, please fill out the postage paid tear-off card attached to the back cover page and return it now. Special needs information will be treated as confidential by state and local authorities.

- Please carefully note on the card the type of assistance you may need and any special conditions you have.
- Please complete a new card every year when your new brochure arrives.

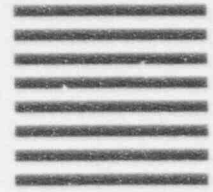


NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES

BUSINESS REPLY MAIL

FIRST-CLASS MAIL PERMIT NO. 621 AUGUSTA ME

POSTAGE WILL BE PAID BY THE ADDRESSEE



MAINE EMERGENCY MANAGEMENT AGENCY
72 STATE HOUSE STA
AUGUSTA ME 04330-9946



Maine Yankee
Edison Drive
Augusta, Maine 04336

BULK RATE
U.S. POSTAGE
PAID
PORTLAND, ME
PERMIT NO. 1



PLEASE READ THIS BOOKLET AND KEEP IT HANDY

This booklet is printed with soy based ink on recycled paper

PLEASE RECYCLE 