

**Radiological
Emergency Information
for
Rhode Island's
Agricultural Community**



Millstone Power Station

**The Governor of the
State of Rhode Island**

**Director
Rhode Island
Emergency Management**

**Director
Department of Health**

**Director
Department of
Environmental Management**



Purpose

The purpose of this booklet is to provide information regarding protective actions that may need to be taken in Rhode Island if a radiological emergency occurs at a nuclear power plant. This booklet is distributed to farmers, live-stock owners, fruit and vegetable growers, food processors and food distributors in Rhode Island.

The State of Rhode Island, working with Dominion Energy and federal agencies has developed emergency response plans to support and serve the farm and agricultural community in the event of a nuclear power plant emergency. This booklet also contains information on how you would be notified and what procedures you could be asked to follow.

For more information about state plans and emergency resources, please contact the Rhode Island Emergency Management Agency, 645 New London Ave., Cranston, Rhode Island, 02920-3003, Telephone (401) 946-9996, or call the most appropriate agency directly; see page page 15 of this booklet for phone numbers.



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What Is A Nuclear Power Plant Emergency?

A nuclear power plant emergency may involve a release of radioactivity into the atmosphere that could contaminate food, feed, and water supplies. While the expected level of contamination is small compared to areas closer to the nuclear power plant, the contamination of food or water supplies may pose a health risk to the consuming public. Under no circumstances would evacuation of Rhode Island become necessary.

If you are a Rhode Island farmer, livestock owner, fruit and vegetable grower, food processor, or food distributor and are within 50 miles of a nuclear power plant, actions may be required to protect the food or water supplies in the event of radioactive contamination.

State agencies will dispatch teams to collect samples and conduct tests to determine if contamination is present. If food and water becomes contaminated, some protective actions may be necessary. Specific information and instructions to carry out these actions, if required, will be provided through the Emergency Alert System (EAS) announcements and news releases from the Governor.

How Would I Be Informed?

Emergency notification and communication procedures are in place to provide you with information in the event an emergency occurs. Emergency Management would use mass notification systems including the Integrated Public Alert and Warning System (IPAWS) to alert the public. These systems include but are not limited to Wireless Emergency Alerts (WEA), Emergency Alert System (EAS), Social Media, Website, and Reverse Calling systems.

Once activated, these systems allow Emergency Management to provide information to the public by means of text messages, phone calls, emails, and media broadcast. RIEMA would work with local media to distribute more detailed instructions as necessary.

What Is Radioactive Contamination?

Contamination is the accumulation of radioactive material in an area as it settles out of the atmosphere. The primary risk of contamination is ingesting the radioactive material into the body through breathing, eating, drinking, or absorption through the skin. Once in the body, the material may create potential health problems.

Your concern, as a farmer or food producer, is the possibility of feed, water, livestock, and produce becoming contaminated from contact with radioactive particles. Contamination may be passed from plants and animals via milk and other farm produce.

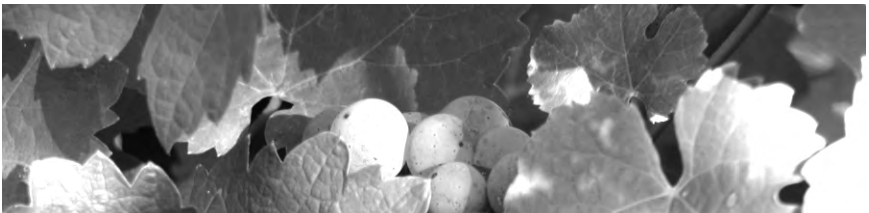


What Are The Effects Of Radioactive Deposits On Food And Water Supplies?

Depending on the amount of radioactive material released into the atmosphere, the duration of the release, and the weather conditions; people, animals, crops, land, and water near the site of the emergency could be affected. Of initial concern would be the condition of fresh milk from lactating animals grazing on pasture and drinking from open sources of water. Sampling for contamination can be performed at the farm or the processing plant. If contamination of milk and processed milk products is found, state or governmental officials will determine whether to dispose of these products or hold them until safe for consumption.

Another concern is the possible contamination of vegetables, grains, fruits, and nuts. The severity of the impact of any contamination would depend on the time of the year an emergency occurred. The time immediately prior to or during the harvest is the most critical period. Crops will be sampled and analyzed by the appropriate governmental officials to ensure that they are safe to eat.

An additional concern is the possible impact of the contamination on livestock and poultry. Pasture, feed, and water sources, as well as meat and poultry products, will be sampled and analyzed to ensure that the meat and poultry products are safe to eat.



Emergency Planning Zones

Federal requirements demand that planning be accomplished for specific areas outside of the nuclear power plant. These specific areas are called Emergency Planning Zones (EPZ). EPZs are defined as the areas for which planning is needed to assure that prompt and effective actions can be taken to protect the public in the event of an incident or emergency.

The Plume Exposure Pathway EPZ: This is the area generally within an approximate 10-mile radius around a commercial nuclear power plant. Planning is in place to deal with the potential of direct exposure to radiation. Rhode Island is not in the 10-mile radius Plume Exposure Pathway EPZ for any commercial nuclear power plant.

The Ingestion Exposure Pathway EPZ: Rhode Island is within the 50-mile radius exposure pathway of the Millstone Nuclear Power Station, in Waterford, Connecticut (See map page 13, and table on page 14.)

Emergency planning is required, and in place, to deal with the potential of indirect exposure to radiation within this 50 mile radius. Indirect exposure would be due to eating or drinking contaminated food, water, milk, or other liquids.

The safety of the food supply within the 50-mile ingestion exposure pathway EPZ could be a concern to members of the agricultural community, should a radiological release to the atmosphere occur. During such a release, both water and land could become contaminated. Eating and drinking contaminated foods, milk, and water could have a harmful, long-term effect on your health.

Federal, State, and local government emergency response organizations will notify and advise the agricultural community on what actions to take in the event of a radiological emergency.

Preventive Actions And Protective Actions

There are two types of actions that help prevent or lessen the possibility of persons eating or drinking contaminated food or water. They are Preventive Actions and Protective Actions. The decision to recommend either of these actions will be based on the emergency conditions at the nuclear power plant. Environmental and meteorological conditions are considered when making these decisions.

Preventive Actions are measures taken to prevent or minimize contamination of food products. These actions would be intended to prevent or reduce the concentration of contamination on food or animal feed. An example is placing dairy animals on stored feed.

The decision to implement Preventive Actions generally will be based on known or potential releases to the environment.

Protective Actions are measures taken to isolate or contain food and prevent its introduction into commerce and to determine whether tougher actions are appropriate. An example would be to restrict or withhold agriculture and dairy products from the market place by prohibiting transportation from the affected areas.

The decision to implement the Protective Actions should be based on potential for contamination and may be kept in place until actual radiological sample measurements in the pathway of concern are known.



Recommended Precautionary Actions For Food Supply Protection

The following is a summary of Precautionary actions to be taken prior to confirmation of contamination:

Keep Informed:

Tune in to radio and TV EAS stations. If you need more information, contact the Rhode Island Department of Environmental Management.

Plan in Advance:

Develop a plan of action to implement the actions listed below.

Dairy Animals: Remove lactating animals from pasturage and provide them with shelter, protected water, and stored feed. Increase non-contaminated mineral calcium where possible.

Non-Dairy Livestock: Remove from pasturage. Place on stored feed, water from protected sources and provide shelter where possible. Increase non-contaminated mineral calcium where possible.

Pets: Bring pet animals into your home. Bring any food dishes, water dishes, or toys indoors and wash them before letting pets have contact with them. Wash the feet of pets immediately after letting them out for walks or exercise.

Feed Hay and Silage: Cover feed that is outdoors or bring feed inside a building immediately.

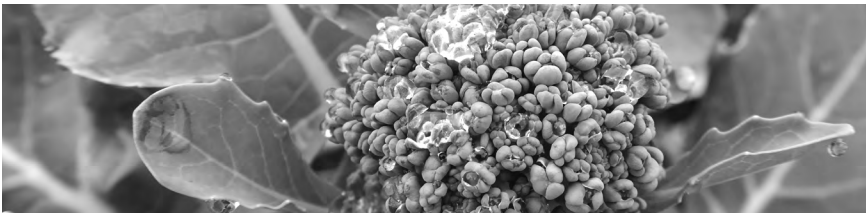
Water: Use protected water supplies, such as wells and covered cisterns.

Produce, Fruits and Vegetables: Produce, Fruits and Vegetables should not enter commerce until cleared by State Officials. Thoroughly wash and peel outer layers. In the case of leafy vegetables, remove outer layers.

Recommended Protective Actions When Contamination Is Found

The following are examples of protective actions that may be recommended should a release of radioactive materials occur and contamination of agricultural products is found by State and local government officials:

- When you go outside, wear clothing that covers all portions of the body, similar to what you would wear when applying pesticides. For example, wear coveralls, long-sleeved shirt, long pants, boots, gloves, etc.
- Wear a respirator, protective mask, or place a folded (preferably dampened) cloth over your mouth and nose when working outside to prevent inhalation of radioactive materials.
- Remove outer clothing before going indoors.
- Wash hands thoroughly before preparing or eating food.
- Remove dairy animals from pasture, shelter them if possible, and provide them with protected feed and water.
- Do not use raw or fresh milk from dairy animals, fresh garden vegetables, or eggs from within the Ingestion Exposure Planning Zone until advised it is safe to do so by appropriate health officials.
- Do not engage in dust-producing activities such as cultivating, disking, baling, or harvesting.
- Do not process or distribute agricultural products until they have been sampled by appropriate governmental officials and found to be free of contamination.



- Do not transport or market food products from the Ingestion Exposure Pathway surrounding the nuclear plant until advised it is safe to do so by health officials. Follow the advice of these officials when heard on the Emergency Alert System messages regarding the area within the Ingestion Exposure Pathway.
- Wash your pets' feet immediately every time they come into the house. Do not allow your pet to have contact with anything that may be contaminated.
- Continue feeding stored feed and water to livestock. Restrict access to pasture until state officials have determined the safety of access to pastures.
- Restrict fishing to catch and release. Fish and game should not be taken for food until further notice.

Specific instructions will depend of the distance of your farm or facility from the commercial nuclear power plant and the existing weather conditions.

What Are The State And Federal Recommended Actions?

The U.S. Department of Health and Human Services, Food and Drug Administration provides the following Protective Actions as guidance to government officials should contamination occur during a radiological accident:

Dairy Animals: Remove lactating dairy cows and goats from pasturage and shelter them, if possible. Substitute with stored or covered feed and uncontaminated water.

Milk: Withhold contaminated milk from the market until cleared by State officials. No milk that was produced by animals that are kept in the Ingestion Pathway Zone should be consumed until cleared by State officials, regardless of whether this milk was intended for market or home consumption.

Fruits and Vegetables: Wear gloves when handling. Utilize washing, brushing, scrubbing, or peeling to remove surface contamination.

Meat and Meat Products: Livestock exposed to external contamination could be used for food if they are adequately washed and monitored by state officials before slaughtering. Animals can be washed down using soap and water. In handling animals you should wear protective clothing to prevent contaminating yourself. Meat animals with internal contamination should not be slaughtered until you are told by state authorities that it is safe to do so. Instructions would be given on a case-by-case basis.

Wild game: Hunters should not harvest any wild game animals until State Officials have determined that it is safe to do so. Because of variabilities of home range and migration patterns of game species, State Officials may impose restrictions of the harvest of animals that are outside of the ingestion pathway zone.

Animal Feeds: Actions relative to animal feeds, other than pasturage, should be carried out on a case-by case basis.

Poultry and Poultry Products: Poultry raised outdoors, especially those kept for egg production, will be monitored by state or local officials. They will be taking samples and performing laboratory tests to determine the presence of radioactive contamination. If contamination is found, state or local officials may advise that poultry and eggs should not be eaten.

Fish/Shellfish: Fish/shellfish and other aquatics raised in ponds should not be harvested unless state or local officials have determined through laboratory analysis of samples that they are safe. Samples of water, fish, and aquatic life from other bodies of water should be analyzed to ensure that they are safe.

Water Supplies: Open sources of water should be protected. Cover open rain barrels and tanks to prevent

contamination. Covered wells and underground sources of water probably will not become contaminated. Radioactive contaminants deposited on the ground will travel very slowly unless soils are sandy. It is unlikely that underground water supplies will be affected.

Filler pipes should be disconnected from storage containers that are supplied by runoff from roofs or other surface drain fields. This will prevent contaminants from entering the storage containers.

Close water intake valves from any contaminated water sources to prevent distribution (e.g., irrigation) of contaminated water.

Honey: Honey and bee-hives will need to be sampled and analyzed by appropriate state officials. If radioactive contamination is detected in the area, you will be instructed by these officials on how to handle the hives and honey.

Grains: If grains are permitted to grow to maturity, most contamination will probably be removed by the wind and rain. The process of milling and polishing will probably remove any remaining contamination. Sampling and laboratory analysis will determine if the grain is safe to eat.

Soils: If state and local government officials find that the soil is contaminated, proper soil management procedures can be implemented to reduce contamination to safe levels. Non-use of the land for a specific period of time may be necessary in some cases. However, in situations involving highly contaminated soil, removal and disposal of the soil may be more appropriate. State officials will let you know what actions are appropriate.



Other Agricultural Products: Other agricultural products not covered in this discussion will need to be sampled and analyzed by state or local officials if radioactive contamination is detected in the area. You will be instructed by these officials on how to handle these products.

Post-Emergency Actions

The following sections describe post-emergency actions possible if contamination is verified:

Restricted Zone(s): Designation of an area, or areas, from which the population is evacuated or relocated and to which access is controlled.

Re-entry: Re-entry is the temporary entry under controlled conditions into restricted, contaminated areas.

Relocation: The non-emergency removal of populations from areas that are to be restricted due to projected exposures during the post-emergency phase.

Return: The orderly reoccupation of areas that were evacuated during the emergency phase of an accident or from which populations were relocated during the post-emergency phase.

Recovery: Recovery is the process of reducing radiation in the environment to acceptable levels for normal daily living. Following the emergency, state and local government officials will identify the types and levels of contamination. They may need to take samples of air, water, soil, crops, and animal products from your farm or business. If such actions are necessary, they will provide you with instructions and assist you in decontaminating your animals, food, and property.

Temporary Embargoes: Following a radiological emergency, and in some cases during an emergency, state or local officials may restrict the movement of food products and withhold them from marketplace. If they are found to be contaminated, these products should not be released until they are safe for consumption or until a decision is made to dispose of them. You will be instructed

how to safely handle and dispose of contaminated food products and how to decontaminate your animals, food, and property, if such actions are necessary. Contaminated food will be isolated (temporary embargoes) to prevent its introduction into the market-place. State and local government officials will determine whether condemnation and disposal are appropriate.

Condemnation: The designation of agricultural products as unfit for consumption will be determined by state or local government officials.

Reimbursement: The repayment for economic losses caused as the result of an accident will be paid by the nuclear power plant. Federal legislation requires nuclear power plants to participate in an insurance pool to cover legitimate claims for losses incurred as the result of a radiological emergency.

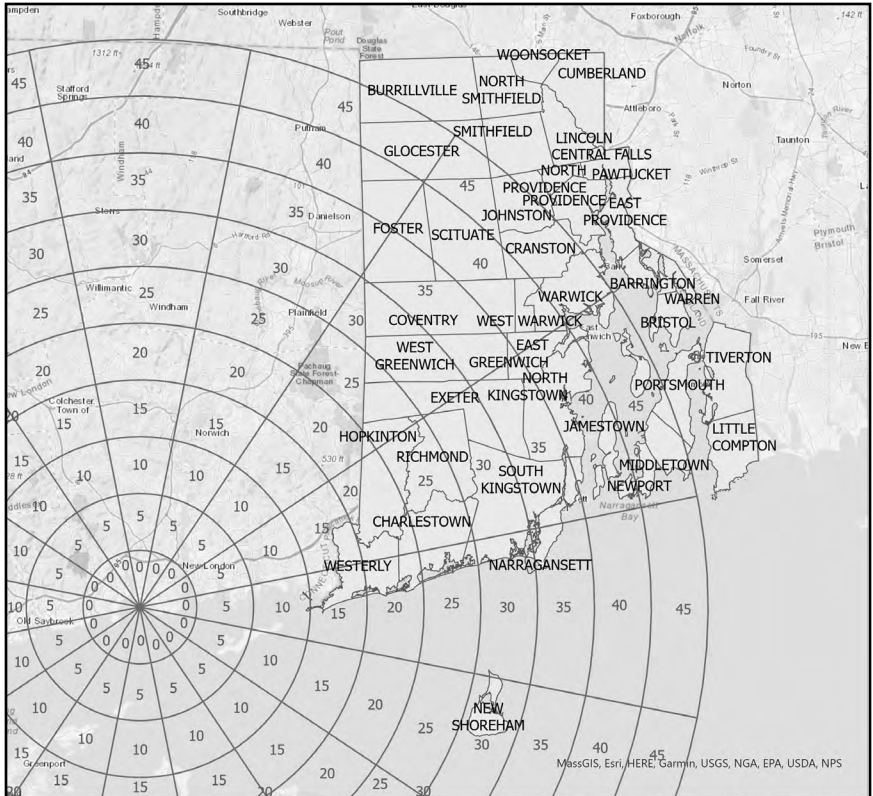
Summary

If a radiological emergency occurs, the Departments of Agriculture, Health, and Environmental Management will determine what areas within Rhode Island may be affected. These departments will provide Field Sampling Teams to take milk, water, and food samples to determine if there are any radiological concerns in your area.

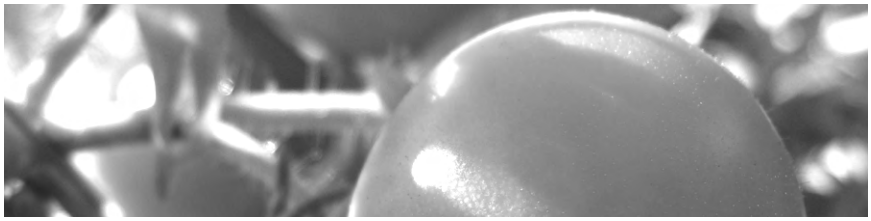
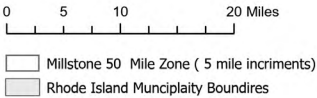
Be prepared to follow the guidelines for protecting and caring for your livestock. You should give dairy animals your first priority by sheltering them and using feed and water from protected sources. There is no need to automatically destroy milk or other farm produce you feel may be contaminated. State agencies will test milk, and produce for contamination levels. The results of these tests will be used to advise you of the status of your milk or produce.

Protect yourself, your family, and your employees from unnecessary exposure. Avoid needless handling of potentially contaminated produce. Leave plants and crops in the ground until advised by state or local officials. If you are directed to destroy milk or produce, you will be given specific instruction on how and where this is to be done. Keep records of any losses or expenses you may incur.

Rhode Island Ingestion Pathway Emergency Planning Zones (50 Miles)



Rhode Island Ingestion Pathway Zones from Millstone Power Plant

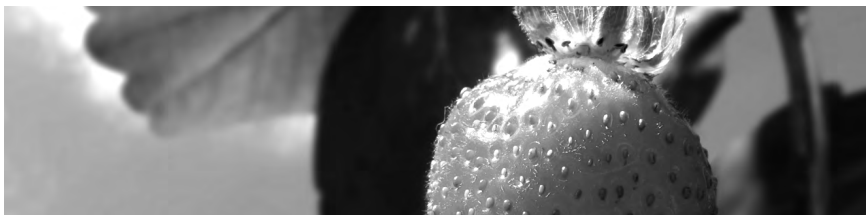


Towns In The 50 Mile Ingestion Pathway Zone

Rhode Island Communities within 50 Miles of Millstone Power Station	
Burrillville	Newport
Charlestown	New Shoreham
Coventry	N. Kingstown
Cranston	Portsmouth
E. Greenwich	Providence
Exeter	Richmond
Foster	Scituate
Glocester	Smithfield
Hopkinton	S. Kingstown
Jamestown	Warwick
Johnston	Westerly
Middletown	W. Greenwich
Narragansett	W. Warwick

Listing Of Rhode Island State Agency Telephone Numbers

Agency	Telephone #
Department of Health (24 hr)	401-222-5960
Center For Drinking Water Quality	401-222-6867
Center For Food Protection	401-222-2750
Department of Environmental Management (24 hr)	401-222-3070
Agriculture Division	401-222-2781
RI Emergency Management Agency (24 hr)	401-946-9996



Rhode Island Emergency Management Agency

645 New London Avenue

Cranston, RI 02920-3003