

Radiological Emergency Preparedness Food Protection Guide for Emergency Managers

Purpose of this Fact Sheet

This fact sheet is designed to augment planning for food control measures following an incident at a nuclear generating plant. This fact sheet does not supersede any plans, procedures, or guidelines currently in use.

Food protections begin in the plume phase with the issuing of a livestock advisory during the Site Area Emergency for the entire 10 mile EPZ. At a General Emergency, MDA will issue an embargo order to all areas where Protective Action Recommendations (Evacuate or Shelter) have been mandated.

“Embargo” refers to protecting the food supply by preventing food and feeds from entering commerce and otherwise acting to limit human consumption. The water supply may also be subject to embargo.

Additional controls may be put in place following the results of field sampling during the Intermediate/Ingestion Phase.

Additional food embargoes are mandated when lab analysis indicates radiation levels exceeding strict FDA guidelines for annual consumption.

Protective Action Guideline

The guidelines issued by the Food and Drug Administration (FDA) establish revised protective action guidelines (PAGs) that restrict:

- Internal whole body radiation dose (Committed Effective Dose Equivalent – CEDE) to 0.5 rem or
- Internal radiation dose to a single organ (committed dose equivalent – CDE) to 5 rem, whichever is most limiting.
- In addition, water supplies are subject to the EPA Clean Water Act limits of 0.004 rem per year

The PAGs are expressed in terms of measurable quantities called Derived Intervention Levels (DILs). DILs are limits on the concentration of radioactive material in food. A DIL corresponds to the concentration of radioactivity in food, which could lead to an individual receiving a dose equal to or greater than the PAG if no intervention was taken for one year.

Basis For Guidelines

FDA guidance is based on preventing contaminated items from entering the food chain. The FDA limit is based on an individual consuming that product in proportion to the total diet for one year.

This limit is conservative so there is no immediate health impact but there is urgency in taking protective action. The high priority item is **milk from any source** since grazing concentrates the amount of radioactive iodine in milk and poses the greatest risk exposure to a child’s thyroid.

Other foodstuffs and feed are dependent upon the growing season and when the product is being taken to market.

Note: Counties within the 10-mile emergency planning zone (EPZ) will already be in the process of dealing with embargoes, since embargo orders will be in place from the plume phase. This needs to be taken into consideration during protective action recommendation (PAR) approval and initial implementation planning.

Protective Action Recommendation

The State Emergency Operations Center Planning and Assessment Center and Intermediate Phase Task Force will develop the PAR for food protection.

- A map detailing the affected area will be provided.
- The Minnesota Department of Agriculture will be asked to prepare a list of the growers, producers, and distributors affected in relation to the growing season.
- A technical advisor will explain this PAR in terms of risk level, so that the state incident manager (SIM) and operations chief can communicate it to the governor or governor’s authorized representative, state agencies, and counties.
- After the PAR is coordinated with state and county agencies, it will be given to the SIM for approval. Once approved it becomes a PAD.
- A media release about the PAD will be made through the Joint Information Center (JIC).
- An initial implementation plan will be developed after the PAR is approved.



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Considerations for Implementation of Food Protection

Food control decisions emphasize public protection, and balance the long and short term implications for economic damage to the state.

The following guidance may be used to develop an initial implementation plan:

1. A high priority on the sample plan is to survey farms inside the embargoed area to determine if contamination is present with the goal of rezoning the embargoed area (*IPTF, MDA*).
2. Review normal food protections and processing actions to mitigate any additional cross-contamination. What actions need to be taken regarding processors outside the embargoed area? Inform counties of methods (*MDA*).
3. Discuss if stations can be set up where produce, food, and or feed in transit may go to be tested and reimbursed for added expense and if food is condemned (*State/American Nuclear Insurers - ANI*).
4. Request the county assist with designation of testing and reimbursement sites (e.g., identify large areas where many vehicles may be parked are needed -- county fairgrounds if not in use) (*State, County*).
5. Designate how control points should be set up -- is law enforcement required at each intersection around the embargoed area? (*State, County*)
6. Designate intersections where the control points will be located and determine if extra staffing is needed (*State Patrol, County*).
7. Develop a media release for residents and immobile populations (e.g., hospitals) regarding safe food/water handling (*JIC*).
8. Contact rail and road transporters to return shipments for testing (*MnDOT*).
9. Determine where embargoed products will be disposed (*State, County, MDA, MPCA*).
10. Ensure that ingestion brochure distribution is taking place in the counties (*State*).

11. Discuss strategies weighing both the minimization of the embargo's short term economic damage vs. the long term reputation of Minnesota agriculture. Develop strategies for foodstuffs which exceed the DIL (*IPTF/State*).

12. Accurate and coordinated media releases.
 - a. Request PIO from the county or local jurisdiction to come to JIC
 - b. Coordinate state agencies for a media release.

Hunting and Fishing Considerations

Hunting and fishing restrictions may be larger in area than that of an embargo. This is due to the transitory nature of wildlife and fish. The season of the year will also play a role in this recommendation

The Minnesota Department of Natural Resources (DNR) is the agency responsible for implementation and enforcement.

Long Term Ingestion Issues

Milk Protection Considerations

1. What types of protective actions would be imposed by whom to protect the milk supply?
2. How many dairy farms were affected?
3. How would you enforce embargoes?
4. How will you conduct a long term milk sampling program?
5. How will contaminated feed and milk be disposed?
6. How will the information be distributed to farmers regarding the protective action decisions?
7. Is it likely that all dairy farms will be unable to put livestock on stored feed and covered water?
8. How is animal feed obtained, paid for and transported into the embargo area?
9. How will contaminated milk be disposed of?

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Food Protection Considerations

1. What protective actions would be imposed to protect the food supply?
2. What crops are in various stages of growing/harvesting? Will they be treated the same?
3. Will contaminated farms be able to plant next year?
4. What is an estimated value for affected farms/crops/agricultural products? To whom do you provide this information?
5. How many food processing plants were affected?
6. How will food product movement within the state and outside the state be controlled?
7. How will contaminated food/crops be disposed of?
8. What steps can be taken to insure the non-contamination of Minnesota agricultural products?
9. Will personal gardens be sampled? How?
10. Are food shortages anticipated?

Livestock Protection Considerations

1. What protective actions would be imposed to protect livestock?
2. What services would farmers require for care of livestock (particularly if they are unwilling to re-enter to tend their herds)?
3. What methods will be used to dispose of contaminated farm animals and animals which may have died or need to be euthanized?
4. How would you sample meat products and deal with public perception of mass contamination?

5. Would you decontaminate farm animals? How?

Wildlife Protection Considerations

1. What is the present hunting and fishing season?
2. What protective actions would you make regarding fish? Game? Fowl, etc.?
3. What would be a strategy for long-term sampling?
4. Who is responsible for mushroom and berry picking restrictions and sampling?
5. Where would these restrictions be placed?
6. Is the river safe for fishing and recreational use?