Protecting the Public

Coordinating
Environmental Sampling and Analysis

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Based on the initial site characterization, a sampling plan must be designed and implemented to protect public health.
The sampling plan should include:

- Objectives/primary concerns
  - safe homes and yards, water supply and food supply
- Priorities and sample types
  - air, water, produce, soil, roads, building surfaces
Sampling Plan

- Sampling protocols should be consistent with the protocols established in the NYS Radiological Emergency Preparedness Plan for Nuclear Power Plants: Procedure M - Ingestion Sampling Team Procedures.
Sampling Plan

- Mechanism to collect and analyze samples, and then evaluate results - local resources or request NYS assistance

- Decision criteria: EPA 400 “Manual of Protective Action Guides and Protective Actions for Nuclear Incidents”
Sampling Supplies

- Local health departments - sampling supplies cached for public health emergencies and routine sampling
- Regional DOH and DEC offices have supplies
- Municipal water districts - water sampling supplies
- Counties with nuclear power plants have limited supplies in their radiological survey kits
Protective Action Decisions

- **Food / Water Interdiction:** Prevention of contaminated food stuffs/milk entering food chain.

- **Relocation:** The removal or continued exclusion of people from contaminated areas (restricted zone) to avoid chronic radiation exposure.

- **Re-entry:** Temporary entry into a restricted zone under controlled conditions.

- **Return:** The reoccupation of areas cleared for unrestricted residence or use.
What is a Protective Action Guide?

- **PAG** - A value against which to compare the projected dose to an individual from a release of radioactive material in order to determine if a specific protective action is warranted...
  - Shelter-in-place
  - Evacuate
  - Food/water interdiction
Food Supplies

- Plans should include coordination with the State Dept of Agricultural and Markets and DOH, to collect, test and evaluate affected food supplies (local producers - dairies, farms and home grown).

- Samples will be tested by DOH (Wadsworth) or contract labs.

- Decision criteria: “ACCIDENTAL RADIOACTIVE CONTAMINATION OF HUMAN FOOD AND ANIMAL FEEDS: RECOMMENDATIONS FOR STATE AND LOCAL AGENCIES” (FDA, 1998)
Food PAGs

- Food with a concentration at or above the Derived Intervention Level (DIL), for any radionuclide, should not be permitted on the market.

- A DIL is the concentration of a given radionuclide in food that will deliver a dose equal to the PAG.
Protective Actions for Food

- Protective actions may be recommended to avoid or limit contamination, or

- Reduce the concentration in food, or

- Delay or limit consumption until food is evaluated
Protective Action Examples

- Shelter Animals
- Use Stored Feed, or Move to Clean Pasture
- Peel, Wash, Husk Produce
- Hold for Decay, or Divert Use
- Apply Temporary Embargo
- Do not Dilute or Blend
Drinking water supplies should be tested using approved water sampling protocols (EPA or NYS DOH Bureau of Water Supply Protection). Federal and State regulations require routine monitoring for gross alpha and gross beta.
Water Quality

- Coordinate with municipal water districts to collect drinking water samples that will be tested by DOH (Wadsworth) or contract labs.

- The results will be evaluated by the Bureau of Water Supply Protection, assisted as necessary by the Bureau of Environmental Radiation Protection.
Homes and Yards

- Plans should include a survey procedure to insure “safe” homes and yards.

- The survey procedure should include an area survey to detect contamination or sources of radioactivity, and a wipe (swipe) sample survey to determine the extent of removable contamination.

- How clean is clean?
Re-Entry / Return

- Re-entry purposes may include radiation monitoring, animal care, property maintenance and security, and factory or utility operation.

- Return can occur once there is no threat of reaching dose limits.
Questions?