

PART A - RADIOLOGICAL PROTECTION

The purpose of this standard operating guideline is to outline the actions and responsibilities of personnel designated to protect the citizens of Mower County from the effects of radiological emergencies.

I. LOCAL RADIOLOGICAL EMERGENCIES

A. Preparatory Phase

Each radiological emergency will be unique, however, it is possible to be prepared by developing and maintaining the Mower County radiological protection organization along the lines of CPG 1-30 and CPG 2-1 (On file with the county emergency management director).

B. Emergency Phase

1. County Sheriff:

- a. Activating the call list of first responders. (SOG NW)
- b. Notifying the state duty officer at 1-800-422-0798.  
Describe your assessment.

2. The primary responsibility of the local first responders is to determine whether injured victims are present and to provide necessary rescue and emergency medical care, and to keep people out of the affected area.

NOTE: The following applies to emergencies in which the only hazard is radioactivity. Beware that some radioactive substances may be chemically toxic. In addition, other hazardous materials more life-threatening than the radiological hazard may be present. If so, different procedures may be necessary.

- a. Stay up wind from the suspected hazard. Park response vehicles a safe distance from the incident site (500 feet is suggested).
- b. Look for hazard "indicators" (e.g., warning placards and labels) while determining if there are injured victims.
- c. Put on protective gear (e.g., fire turnout gear, coveralls, jackets, self-contained breathing apparatus) and use dosimeters (CDV-730 and CDV-742) and survey meters (CDV-700 and CDV-715) for the initial survey.

- d. If possible, move victims away from areas of potential radiation exposure or contamination. Be cautious, but DO NOT delay life saving activities if instruments are not immediately available and you must work in the radiation hazard area.
- e. For transportation incidents, obtain the shipping papers, if it is possible to do so without risk of injury or serious contamination.
- f. Set up a control line around the radiation hazard as far away from the accident scene as is practical. (As a general guideline, the control line should be more than 100 feet from the hazard and radiation readings should be less than 1 mR/hr along the perimeter. (See note below.)
- g. If the victim is medically stable, monitor him/her at the control line for possible contamination. Remove the accident victim's contaminated clothing and bag it.
- h. Take precautions to prevent the spread of contamination to other individuals and equipment. If sending an individual to a medical facility, inform transporting personnel and the facility staff that the individual may be contaminated with radioactive material. DO NOT move vehicles, containers, or wreckage, except when necessary to rescue people.
- i. "Package" the victim by folding the stretcher sheet or blanket over and securing him/her.
- j. Verify that all personnel are accounted for (if the incident is in a fixed facility) by contacting the site manager who has controlling authority.
- k. DO NOT directly handle the radiation source for any reason. If it is absolutely necessary to move the radiation source, push it with a broom, vehicle, etc.
- l. No individual or equipment should leave the contaminated area without being monitored for radioactive contamination. However, DO NOT delay transporting a seriously injured person in order to monitor or decontaminate him/her.
- m. DO NOT attempt to cleanup or decontaminate any material involved in the incident. If possible, cover the affected area with a tarp to prevent the spread of contamination.

- requested,
- n. DO NOT allow eating, drinking or smoking at the scene (in order to reduce the risk of internal contamination).
  - o. Record names, addresses, and telephone numbers of individuals present at the incident site. Request that uninjured individuals remain at the site for evaluation by personnel with the Minnesota Department of Health (MDH), Radiation Control Section.
  - p. Assist the MDH Radiation Control Section personnel, as when they arrive.
  - q. Record and report radiation exposures to the county emergency management director. Include name, date, time of reading, initial reading, final reading and dose.

NOTE: Be advised that military personnel will rush to the accident site to take control of military transportation accidents. In such an incident, increase the control line area to 3,000 feet or more in all directions, if possible. If weapon components are exposed to fire, evacuate persons from the area, fight fires and handle other emergency situations in accord with the directives of the military specialists.

C. Recovery Phase

1. The parties found responsible for an accident will be responsible for the conduct of the recovery phase.

II. WIDESPREAD RADIOLOGICAL EMERGENCY

- Mower County DOES NOT have a Radiological Protection Organization. Under ordinary circumstances Mower County can obtain expert radiological assistance from the state and federal governments.

A. Preparatory Phase

1. The county emergency management director shall:
  - a. Designate a county radiological officer (RO), and oversee the designee's training.
  - b. Prepare a radiological hazard analysis for the county.

- c. Oversee the radiological planning efforts of the county RO.
  - d. Determine the radiological equipment needs of the county and keep a current inventory of this equipment. (Radiological instruments shall be exchanged with the state RI/M&C shop every four years.)
  - e. Maintain a current list of emergency shelter facilities.
  - f. Maintain a current roster of radiological personnel (name, address, and phone number).
  - g. Oversee the county radiological protection training needs.
2. The county RO shall:
- a. Assist the county emergency management director in building and training a radiological protection staff.
  - b. Update the county radiological/hazardous materials protection annex to the county emergency operations plan in cooperation with the county emergency management director.
  - c. Coordinate with the county emergency management director to plan and carry out a radiological protection exercise at least every four years.
  - d. Supervise the county-wide radiological protection system.
- B. Increased Readiness Phase
1. County Emergency Management Director shall:
    - a. If the county is in a high hazard area, and evacuation is ordered, or requested, implement the evacuation procedures. (See the Evacuation, Traffic Control, and Security Annex to the county emergency operations plan.) Upon evacuation, coordinate with the hazard county to carry out operations.
    - b. Alert and activate the county's radiological protection organization personnel. Coordinate EOC operations.
    - c. Make announcements to the public regarding the use of fallout shelters and the preparation of expedient shelters in the basements

of homes.

2. County radiological officer shall:

- a. Review the county radiological/hazardous materials protection annex and this standard operating guideline.
- b. Review and update radiological resource lists in the county in the resource manual. Make provisions to obtain additional supplies if necessary.
- c. Prepare the county EOC for radiological protection operations to ensure that it is properly staffed, has adequate supplies and equipment, and has operable phone and back-up radio communications.
- d. Supervise overall radiological protection efforts for the jurisdiction.

3. Lead Monitor shall:

- a. Consider the feasibility and necessity of crisis training of shelter and self-protection monitors.
- b. Verify that all radiological monitors understand and are prepared to fulfill their missions.
- c. Carry out the procedures for distribution of radiological instruments to shelters and vital facilities.
- d. Determine when monitors should report to their assignment.

4. Radiological Monitors shall:

- a. Operationally check that radiological instruments are in proper working order. Charge dosimeters.
- b. Make certain that the shelter has at least one AM/FM radio. If possible, obtain back-up two way radios for the shelter. Protect against electromagnetic pulse by unplugging electronic equipment, disconnecting external antennas, and wrapping aluminum foil around radios.

- c. Verify that all necessary equipment has been stocked (See part III, Radiological Monitoring, below.) Fill empty containers with water to be held in reserve and set aside additional food items that are available. Make certain supplies are protected from radioactive contamination.
- d. During a radiation survey of the shelter, prepare a sketch of the area to be occupied.
- e. Review the handbook, "Radiation Safety in Shelters."
- f. Place charged dosimeters (CDV-742) at various locations in the shelters (three feet off the floor and three feet from an outside wall). They will provide an estimated dose measurement for different locations within the shelter.

C. Emergency Phase

1. The county radiological officer shall:

- a. Collect and analyze the situation and mission data.
- b. Based on data and assessments, advise public officials on the issuance of radiological protection guidance to the public.
- c. Provide radiological protection advice and guidance to both public officials and radiological protection personnel.
- d. Communicate with adjacent jurisdictions and the state EOC when recommended or deemed advisable. The state EOC will contact local jurisdictions when data is needed.
- e. Analyze radioactive decay data and create fallout history curves  
for the jurisdiction. Determine when it is safe for occupants to leave shelters, and so advise public officials and radiological protection personnel.

During the emergency phase, all radiological personnel in shelters shall function as part of the county radiological reporting network. Surviving communication equipment will be utilized to report weapon effects radiation data, and mission data to the county EOC.

2. The Lead Monitor shall:

- a. Begin training additional radiological protection personnel, at the direction of the radiological officer.
- b. Provide advice and guidance to radiological monitors concerning their missions.

3. Radiological Monitors shall:

- a. Utilize CPG 2-6.4 "Radiation Safety in Shelters" (located with central shelter stock or on file with the emergency manager) as their primary resource guide for shelter activities.
- b. Monitor people as they enter the shelter. Decontaminate as necessary.
- c. When possible, inform the county EOC of their situation, and request a schedule for reporting mission and shelter data (e.g., damages, injuries, radiation levels).
- d. Maintain a continuous log of shelter activities. This should include communications.  
a date/time, record of activities, observations, and  
Display the log in a highly visible area for easy reference.
- e. Maintain a record of radiation dose or estimated dose for all exposed individuals.
- f. When time allows, use radiation meters to recheck the radiation rates at various locations in the shelter. Utilize the safest places and improve "weak spots."
- g. Graph radioactive decay using the fallout history curve method. Estimate minimum shelter stay times. Advise remedial movement only if shelter protection is clearly inadequate. (Clear actions with the county radiological officer, if possible.)
- h. Organize and prepare (train if necessary) a two-person decontamination team for shelter decontamination activities.

- i. Coordinate efforts to maintain shelter areas free from contamination.

4. Radiological Analyst shall:

- a. Analyze incoming radiological data to determine location of radioactivity, radiation intensity and the hazard to life.
- b. Determine areas where human activity is permitted or restricted, and for what period of time.
- c. Report to the county radiological officer those hazardous situations requiring immediate remedial actions.
- d. Assist the county radiological officer in the preparation of advisories.

5. Radiological Plotters shall:

- a. Record incoming data on appropriate forms.
- b. Prepare and maintain:
  - 1) Meteorological information
  - 2) Message and reporting logs
  - 3) Dose and dose rate plots
  - 4) Maps of current situations

D. Recovery Phase

1. The county radiological officer shall:

- a. Provide technical support and guidance to public officials in developing decontamination priorities and public guidance.
- b. Supervise the activities of the radiological monitors.
- c. Communicate with the state EOC in order to utilize state and federal resources to the highest degree possible.
- d. Assess the need for, plan, and request from the state EOC aerial

radiological missions.

- e. Oversee a public education program on radiation safety and decontamination procedures. Where this applies to the agricultural community for protection and decontamination of the food chain, the public education program shall be coordinated with the appropriate Minnesota county agricultural extension agent.

2. The Lead Monitor shall:

- a. Train additional radiological monitors, as deemed necessary by the county radiological officer.
- b. Maintain exposure records for radiological monitoring personnel.
- c. Provide advice and guidance to radiological monitors concerning their missions.
- d. Based on the guidance of the county radiological officer, establish a mission total exposure level for all operational missions in potentially contaminated areas.
- f. Make clear to radiological monitors the procedure and schedule for reporting radiological information to the EOC.

3. Radiological monitors shall:

- a. Carry out radiological protection and decontamination missions. Report radiological data to the EOC as required in mission directives.
- b. Keep track of the radiological exposure doses of each person operating on assigned missions. Report this data to the lead monitor.
- c. When on operational missions, read dosimeters frequently and advise the mission leader if the maximum dose may be exceeded.
- d. When on operational missions, advise other team members of radiological hazards and radiological protective measures.
- e. Support decontamination operations for personnel and equipment.
- f. Monitor all personnel for radioactive contamination after a mission

or upon return to shelter. Decontaminate, if necessary.

### III. RESPONSIBILITIES

- A. The County EM Director is responsible for:
  - 1. Assuring that skills and knowledge, data and information (e.g. radiation, chemical properties, exposure estimates), and materials needed to minimize the effects of all radiological accidents or threats are available and utilized in time of emergency.
  - 2. The county's overall radiological preparedness and mitigation efforts; including planning, training, exercising, and developing radiological resources. FEMA Civil Preparedness Guide 1-30, "Guide for the Design and Development of a Local Radiological Defense Support System" describes this planning process in detail and is on location in the County EM Director's office.
  - 3. The county's overall radiological response and recovery efforts; including monitoring, reporting, assessment, containment, decontamination, and protective actions.
- B. The Radiological Control Section of the Minnesota Department of Health (MDH) will be called upon for instrumentation, guidance, decontamination and medical evaluation. County radiological protection personnel will respond, as necessary, to assist in the execution of this responsibility.
- C. The County Highway Engineer is responsible for:
  - 1. Decontamination of, or arranging for decontamination of county roads and bridges, allowing for safe evacuation or other movements.
  - 2. Coordination with the Minnesota Department of Transportation and/or spill cleanup contractor for road decontamination and evacuation route clearance. (See Hazardous Material Clean-up Contractors section of the County Resource Manual.)
- D. The county sheriff is responsible for supporting radiological monitoring and decontamination operations in the county.
- E. Municipal fire and police department personnel are responsible for:

1. Supporting emergency operations during radiological incidents.
  2. Assisting in the decontamination of facilities, thoroughfares, and public areas.
- F. The Minnesota Agricultural County Extension Director is responsible for assisting with the dissemination of public information on radiological recovery to the agricultural community, primarily with regard to protection of the food chain.
- G. Shelter Radiological Monitoring

#### **IV. OPERATION POLICIES**

1. Radiological protection operations will be directed and controlled at the scene during small-scale radiological emergency. During a large-scale radiological incident, operations will be directed from the county EOC. If there is a significant probability that Mower County could be a nuclear hazard area, radiological protection operations will be moved to an alternate location.
2. During periods of widespread radiological emergency caused by nuclear detonations or nuclear power plant releases, each department of local government must be prepared to conduct radiological training within its department and provide for its own radiological monitoring and decontamination needs in order to carry out its assigned emergency functions.
3. Radiological information will be obtained from shelter monitors, self-support monitors, and state and regional EOC's when adequate communication exists. The primary center of radiological operations shall be the direction and control staff and advisors operating from the county EOC.