

# **DECONTAMINATION**

## **I. PURPOSE**

To formulate a decontamination plan for reducing and removing contamination radioactive material from structures, areas, objects, and persons with the lowest feasible expenditures and materials, and with radiation exposure to decontamination personnel held to a minimum commensurate with the urgency of the task.

## **II. SITUATION AND ASSUMPTIONS**

- A. Decontamination must be based on a careful and sound estimate of the situation utilizing all aspects of the decontamination of areas, buildings, and resources depends upon the need for the particular area or resource contaminated and the length of time which the contamination would remain. Decontamination is performed for the purpose of supporting the overall MOHSEP Mission. Thus, any decision to carry out a decontamination procedure must be based upon careful evaluation of the expense in materials, time and labor compared with the inconvenience and hazard involved in avoiding the contamination. In general, the principles of radiological decontamination are that: (1) radioactivity cannot be destroyed, (2) the surface contaminated dictates the method of decontamination to be used, (3) decontamination personnel must proceed from the easy to the most difficult method and (4) monitoring should be done frequently for effectiveness.
- B. Assumptions
1. Trained RADEF Officers and teams exist, or will exist, in all state agencies and in each political subdivision of the state.
  2. Specific guidance for livestock and agriculture has been furnished by the local United States Department of Agriculture (USDA) officials.
  3. Maximum use of the Personal Protection Program for persons and protective covering for equipment and resources will be affected prior to any attack to reduce personnel contamination.

## **III. CONCEPT OF OPERATIONS**

As in the case of natural disasters, Community action is by far the best way to do all that must be done to recover from a nuclear attack. With this in mind, local governments have available many organized units to serve as a nucleus for decontamination teams, such as Fire and Police Departments, Public Utilities and Public Works crews and equipment.

In order to utilize these basic organizations to the best ability, a series of priorities should be established using the information available to the EOC from the radiological monitoring teams. The radiological monitoring teams should be in every shelter and resource. In addition the following time factors should be considered before adopting a decontamination procedure, (1) the time which the contamination would remain if left alone, (2) the time which contamination may be allowed to remain as permitted by the situation, and (3) the time required for the decontamination (this time factor should not be greater than either of the former). As stated in paragraph 1 above, decontamination is performed for the purpose of supporting the overall MOHSEP Mission.

#### **IV. ORGANIZATION AND ASSIGNMENT OF RESPONSIBILITIES**

##### A. State

- \_\_\_\_\_1. The State Board of Health is responsible for coordination plans and programs for decontamination. The State RADEF Officer will furnish technical advice and support.

##### B. State Agencies and Departments

- \_\_\_\_\_1. To develop plans and programs and conduct such decontamination activities as are inherent to its normal responsibilities or as may be assigned by proper authority. Prepare to support political subdivisions in accordance with priorities to be established.

##### C. East Baton Rouge Parish

- \_\_\_\_\_1. MOHSEP is responsible for the preparation of plans to cope with contamination which may occur within its respective areas of responsibility. These plans should be prepared in accordance with the concepts and operational guidelines as stated in this appendix, and coordinated with the next higher echelon of government. Further, priorities should be established for decontamination of those areas and resources that are most vital to saving of lives and to the community as a whole.

##### D. The Public

It is incumbent on each person to:

- \_\_\_\_\_1. Decontaminate their person and the equipment used with materials on hand to the best of their ability.
- \_\_\_\_\_2. Make themselves available for community projects as established by the governing authority and in accordance with the priorities given.

- \_\_\_\_3. Become as knowledgeable on procedures for decontamination as possible and adhere to safety criteria.

## V. DIRECTION AND CONTROL

- A. The establishment of priorities for decontaminating must be weighed carefully. The first consideration must be given to immediate protection from bodily injury and death. The next consideration is that the total radiation injury from fallout is a composite due to several causes, including contamination of the surrounding areas, contamination of skin areas, and ingestion and inhalation of fallout materials. The following is a list which gives general priorities.

- \_\_\_\_1. Personnel and clothing they are wearing.
- \_\_\_\_2. Food and water to be consumed.
- \_\_\_\_3. Vehicles and equipment to be used.
- \_\_\_\_4. High radiation areas in essential locations or areas.
- \_\_\_\_5. Structures and building to be used after emergency from shelters.
- \_\_\_\_6. General areas such as schools, shopping centers, parks, etc.

- B. The method of decontamination will vary with the surface of the material to be decontaminated. In some cases the fallout is removed by brushing, wiping, or washing. In other cases fallout may be covered over with some shielding material. It is possible that removal of the contaminated item to an isolated area until the radiation has decayed may be the best decontamination. The following are some methods of decontamination:

1. Wet
- \_\_\_\_a. Water (scrubbing, hot, cold, detergents)
- \_\_\_\_b. Steam
- \_\_\_\_c. Complexing agents (Polyphosphates, Sodium Versenates, Citrus Acids, Citrates)
- \_\_\_\_d. Caustics (Sodium Hydroxide or Lye, Trisodium Phosphate)
- \_\_\_\_e. Organic solvents (kerosene, gasoline, alcohol, ether, turpentine, carbon tetrachloride, commercial paint remover).

\_\_\_\_f. Acid mixtures

\_\_\_\_g. Inorganic acids

2. Dry

\_\_\_\_a. Vacuum

\_\_\_\_b. Abrasions (vacuum or sand blasting, chipping, filing or grinding).

\_\_\_\_c. Aging

\_\_\_\_d. Sealing

\_\_\_\_e. Disposal