

### 3.4.3.6 Emergency Decontamination



YOUR ORGANIZATION  
STANDARD OPERATING PROCEDURES/GUIDELINES

**TITLE:** Emergency Decontamination

**SECTION/TOPIC:** First Responder Operations

**NUMBER:** 3.4.3.6

**ISSUE DATE:**

**REVISED DATE:**

**PREPARED BY:**

**APPROVED BY:**

X

Preparer

X

Approver

These SOPs/SOGs are based on FEMA guidelines FA-197

#### 1.0 POLICY REFERENCE

CFR

NFPA

NIMS

#### 2.0 PURPOSE

This standard operating procedure/guideline addresses identification of hazmat incident levels, use of hazard zones and perimeters, location of decontamination area, placement of vehicles and supplies, etc.

#### 3.0 SCOPE

This SOP/SOG pertains to all personnel in this organization.

#### 4.0 DEFINITIONS

These definitions are pertinent to this SOP/SOG.

#### 5.0 PROCEDURES/GUIDELINES & INFORMATION

##### 5.1 Identification of Hazmat Incident Levels:

The purpose of technical decontamination is to remove product/contaminates from personnel,

SOP Center

apparatus and equipment. Specific measures may vary slightly with the WMD agent, level of contamination and circumstances of contamination. The Decontamination Sector Officer, through Command, is responsible for determining the most appropriate decontamination procedures and managing the decontamination process.

## **5.2 Use of Hazard Zones and Perimeters:**

## **5.3 Location of Decontamination Area:**

### **TECHNICAL DECON LINE PROCESS/STRUCTURE (PERSONNEL)**

In an incident involving WMD/NBC three shelters will initially be constructed for grouped victims: Two Ambulatory and a Special Needs/Non Ambulatory decontamination shelter for victims requiring assistance, staffed by a male and female support group.

NOTE: Optimally, the Technical Decontamination Setup will be operated by six technicians

### **Station #1 - Personal Belongings Drop/Victim Accountability**

*Personnel Requirements:* two station attendants

*Equipment requirements:* one large container, M256 Chemical Detection Kit, M8 chemical detection paper; Drager System; APD 2000 Chemical Agent Monitor; Victorian instrument CDU-700 and Ludlum Model IIC Radiacmeters plastic bags, triage tags and markers, and a container with soapy water, clipboard and pen.

Attendant #1 will have personnel tag and deposit all critical personal belongings (wallets, keys, identifications, money, purses etc.) into the large container. Attendant #2 will transfer the critical personal belongings into plastic bags and test for contamination with the appropriate sampling device based on the identified threat. If contents are contaminated, the attendant will decontaminate with soapy water and then re-monitor. Once the personal belongings are free of contamination, they will be moved to the exit point of the decontamination line for re-issue to the owners. For biological substances, MMRS toxicology personnel will provide guidance for re-issue. For victim accountability, attendant #1 will record names as individuals enter the technical decontamination procedure. A Start triage tag will be used for each individual.

### **Station # 2 - Clothing Removal**

*Personnel Requirements:* 1 station attendant

*Equipment requirements:* 1 large container and plastic bags.

Attendant #3 will have personnel remove all their clothing and deposit it into the lined container. Once the container is full, the bags will be sealed. These bags will be stored in the personal belongings check/decontamination area until all victims are processed.

### **Station # 3 - Shower**

*Personnel Requirements:* 1 station attendant

*Equipment requirements:* 2 shower systems, soapy water, sponge.

Attendant will have personnel enter the shower and ensure they wash all parts of their body paying particular attention to their hair and body folds. Attendant will have victims wash off any suspected contamination with soapy water and sponge, then re-rinse.

### **Station # 4 - Monitoring**

*Personnel Requirements:* 1 station attendant

*Equipment Requirements:* M8 chemical detection paper; APD 2000 Chemical Agent Monitor; Victorian instrument CDU-700 and Ludlum Model IIC Radiacmeters. Station attendant will monitor with the appropriate detection device for the identified contaminant. If any contamination is detected, the person will move back into the shower and rewash, then be retested. Once victims are tested and determined to be free of contamination, they will be sent forward to the clothing issue area.

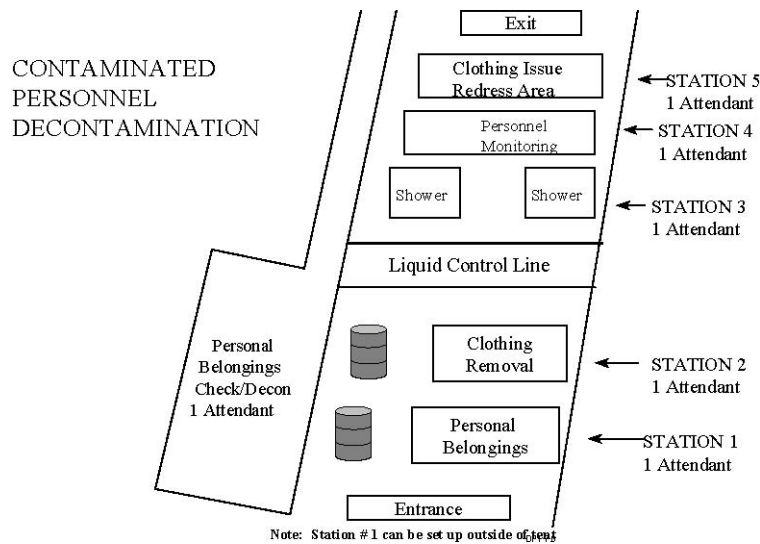
### **Station # 5- Clothing issue/Redress**

*Personnel Requirements:* 1 station attendant

*Equipment requirements:* Appropriate number of hospital scrubs and thongs for all personnel processing through decontamination

Attendant will issue the appropriate sized hospital scrubs and thongs to each person and have them redress.

The Decontamination Sector Officer will release individuals who have been processed through the decontamination corridor to the Medical Sector staff for further evaluation. This includes all emergency response personnel, civilians and patients. The Decontamination Sector Officer will determine when it is appropriate to release custody of clothing, personal effects and equipment after consulting the Treatment Sector Officer.



NOTE: Optimally, the Technical Decontamination Setup will be operated by 5 technicians

## TECHNICAL DECON LINE PROCESS/STRUCTURE (EQUIPMENT)

### Station #1 - Initial Wash

*Personnel Requirements:* 1 station attendant

*Equipment requirements:* Appropriate booster lines and nozzles

Station attendant will spray the vehicle and/or equipment for two to three minutes with water. Hot water, if available, is more effective at removing residual contaminants. Although undersurfaces are difficult to reach, they must be sprayed.

### Station #2 - Decon Solution Application

*Personnel Requirements:* 1 Station attendants

*Equipment Requirements:* Spray devices, 5% Chlorine bleach solution, brushes

Station attendant will apply the decon solution to all areas of the equipment suspected of being contaminated. Make special effort to apply decon solution to undercarriage of vehicles driven in or through a contaminated area, particularly apparatus used in emergency gross decontamination.

### Station #3 - Wait (Solution Contact Time)

*Personnel Requirements:* 1 Station Attendant

*Equipment Requirements:* Spray devices, 5% Chlorine bleach solution, brushes

Station attendant will allow the solution to stay on the vehicles/equipment for a minimum of fifteen minutes. Throughout the wait time, the attendant will observe the equipment and re-spray areas that dry from sunlight, heat or evaporation.

**Station #4 – Rinse**

*Personnel Requirements:* 1 Station attendants

*Equipment Requirements:* Appropriate booster lines and nozzles

Station attendant will spray vehicles and/or equipment for two to three minutes, paying particular attention to undersurfaces.

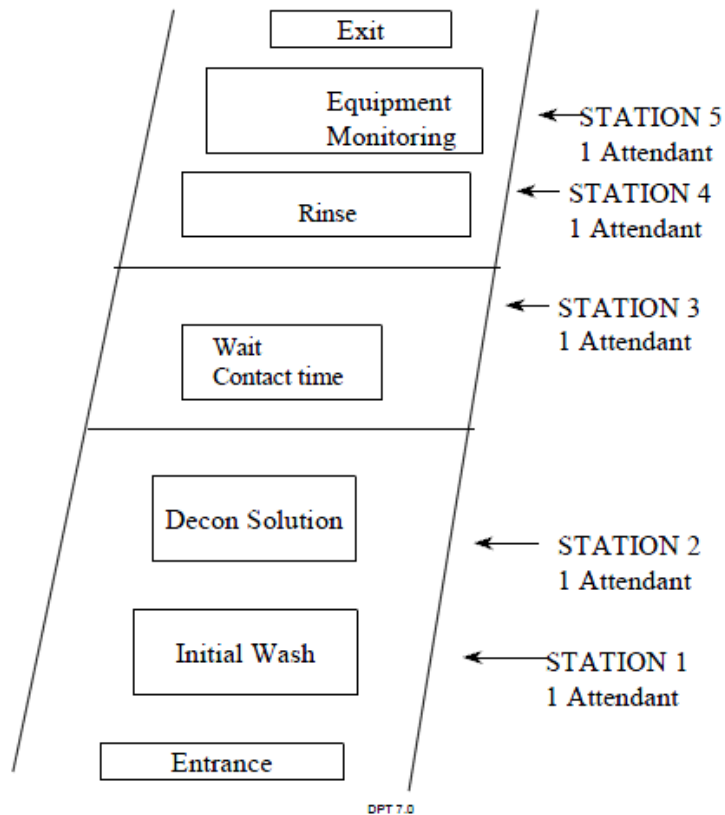
**Station #5 - Equipment Monitoring**

*Personnel Requirements:* 1 station attendants

*Equipment Requirements:* M8 chemical detection paper; Drager System; APD 2000 Chemical Agent Monitor;

Victorian instrument CDU-700 and Ludlum Model IIC Radiacmeters Station attendant will use the appropriate detection device to monitor for complete removal/neutralization of the identified contaminant. If Federal Agencies on the scene provide additional certification of decontamination, their process/requirements will be accommodated.

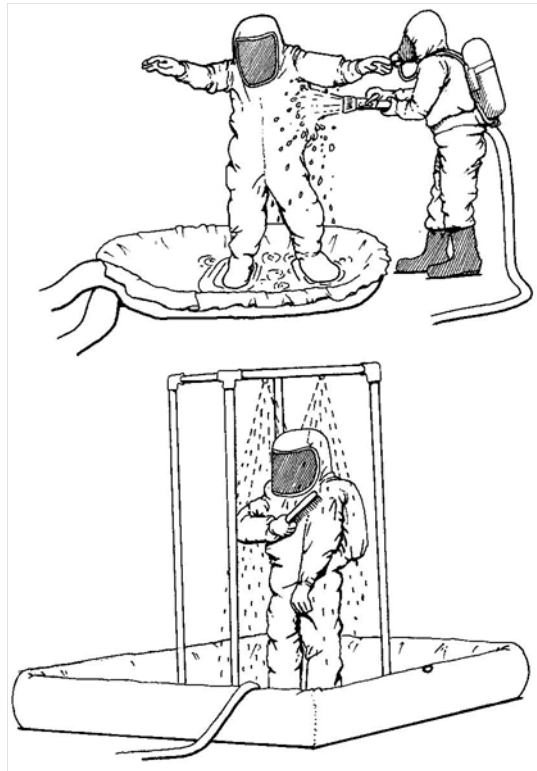
## CONTAMINATED EQUIPMENT DECONTAMINATION



### 5.4 Decontamination Procedure

The purpose of the Decontamination Procedure is to assure that any potentially harmful or dangerous residues, on persons, equipment or apparatus, are confined within the Hot Zone. Decontamination is intended to prevent the spread of contaminants beyond the already contaminated area, including the fire station, the hospital, and other environments.

The specific measures required to decontaminate personnel, equipment, or apparatus will vary with the contaminant, the circumstances and the level of contamination. These factors must be considered on a case-by-case basis, within the guidelines described in this procedure.



Command is responsible for assuring that a Decontamination Sector is implemented at incidents which involve a potential contamination problem. This sector should be assigned to personnel from the Hazardous Materials Team. Decontamination must be integrated into the management plan of the hazardous materials incident.

The Decontamination Sector Officer is responsible for determining the most appropriate decontamination procedures and managing the decontamination process. This should be done in conjunction with advice from the Poison Control Center.

The initial assessment of decontamination requirements must be based upon the specific needs of the situation. The decontamination process must be appropriately designed for the specific materials involved and the degree and type of exposure encountered. The assessment will require research and may involve consultation with toxicology resources.

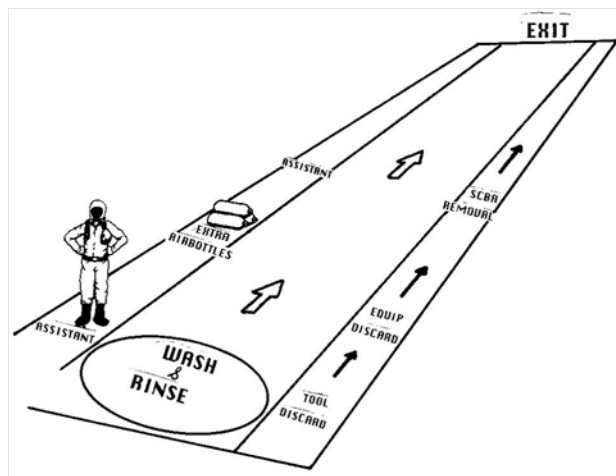
The Decontamination Sector Officer must assume that all personnel and equipment preparing to leave the Hot Zone are contaminated. Three courses of action are available:

1. Confirm not contaminated--using instruments or investigation based on the nature of the situation.
2. Decontaminate (as appropriate to the situation) and release.
3. Retain and package items for removal from the site for disposal or decontamination at a different location.

In all cases the primary objective must be to avoid contaminating anyone or anything beyond the Hot Zone. When in doubt about contamination, decon all affected personnel, equipment, and apparatus.

The Decontamination Area should be established within the Hot Zone perimeter adjacent to the Entrance/Exit (Lobby Control). Personnel, equipment, and apparatus shall not be permitted to leave the Hot Zone without approval from the Decontamination Sector Officer.

The Decontamination Area should provide a corridor leading away from the source of contamination toward the Exit, with stations along the way for the deposit of tools, equipment, protective clothing and other items. Monitoring personnel and equipment should be appropriately placed along the path. A person travelling along the path should experience a decreasing level of contamination along the way. When showers or spray nozzles are used, adequate space must be provided to avoid contamination of other areas or persons.



All contaminated items must remain within the perimeter of the Hazard Zone until decontaminated or safely packaged for removal. The Hazard Sector Officer or Decontamination Sector Officer will be responsible for supervising proper removal of these items. Personnel should be assigned to inspect persons and/or equipment before being released from the Decontamination Area. This inspection may be visual or may involve the use of monitoring instruments, when appropriate. It must be assumed that items or persons are contaminated, unless their non-contamination can be confirmed.

#### DECONTAMINATION AREA PRECAUTIONS

During the decontamination process, all personnel working in the Decontamination Area must be adequately protected from contaminants. The Decontamination Sector Officer will identify and require the appropriate protective equipment. These individuals and their equipment may also require decontamination after use.



Any runoff or residue from decontamination procedures must be contained within the Hot Zone and retained for proper disposal. Contaminated run-off must not be allowed to spread or escape. Diking may be necessary, and should be directed back to the Hot Zone.

#### CONTAMINATED PATIENTS

Patients in need of medical treatment should be removed from the source of contamination as quickly as possible, but remain within the Hot Zone perimeter. These patients must not be allowed to contaminate further areas or persons. It may be necessary to bring treatment personnel (with adequate protective clothing) into the Hot Zone to deal with these patients, unless they can be rapidly and effectively decontaminated. After decontamination, the patients and treatment personnel may leave the Hot Zone.

#### TRANSPORTATION

**Transporting of Level I patients should not be delayed for complete decontamination.** Patients should be quickly treated for life threatening injuries simultaneous with decontamination efforts. Once treatment is completed and the patient is ready for transport, the patient should be covered and transported. The rescue should be brought to the Warm Zone perimeter for loading. When feasible, the rescue should be prepared by draping exposed surfaces with sheets or polyurethane covers. Patients should be wrapped or covered to lessen off-gassing of the products within the rescue. Rescue and treatment personnel may still have to wear protective garments and S.C.B.A. while enroute.

**If it is necessary to transport contaminated patients to medical facilities, the receiving hospital must be notified in advance of the nature of the contamination, in order to make necessary preparations.** The rescue used will be considered contaminated and will have to be decontaminated before being used to transport any non-contaminated persons. Helicopters will not be used for transporting any contaminated patients due to off-gassing effects on the pilot and flight crew.

#### DECONTAMINATED PERSONS

When persons are decontaminated at a Decontamination Area, they may be released to leave the Hazard Zone. This includes Fire Department personnel, other emergency personnel, civilians and patients. The Decontamination Sector Officer will determine when it is appropriate to release custody of protective clothing, personal effects and equipment after consulting appropriate medical personnel (i.e., health center physician or Poison Control Center physician).

The Decontamination Sector Officer may release individuals who are substantially decontaminated and direct them to medical facilities for further evaluation or decontamination. Individuals may also be directed to shower, change clothes or take other secondary decontamination measures. These personnel should complete an exposure form. The health center's exposure control officer will initiate contact and follow-up measures.

#### PROTECTIVE EQUIPMENT PERSONAL EFFECTS

When feasible, protective clothing and personal effects should be decontaminated and released from the Hot Zone with the individual. If the Decontamination Sector Officer determines this is not feasible, these items will be impounded in the Decontamination Area. Personal effects will be carefully guarded by Decontamination Sector personnel until a determination can be made regarding their final disposition.

#### TOOLS AND EQUIPMENT

The Decontamination Sector Officer will determine when tools, equipment and apparatus may be released from the Hot Zone. No item shall be removed without approval. The Decontamination Sector Officer may impound equipment for later evaluation and have it packaged for storage or transportation. This impoundment will be accomplished following the consultation of medical and technical assistance.

#### **5.5 Placement of Vehicles and Supplies:**