



Jackson Hole Fire/EMS Operations Manual

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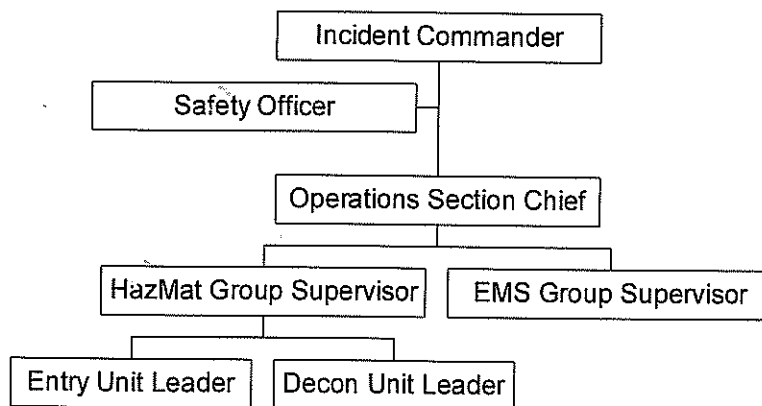
PURPOSE

The purpose of this protocol is to identify the actions that should be taken to decontaminate individuals contaminated by hazardous materials. This guideline identifies general operational approaches for decontamination. Specific decontamination procedures are dependent upon the level of personal protective equipment used and the chemicals involved.

SECTION I – GENERAL PROVISIONS:

It is the responsibility of the Incident Commander to determine the need for decontamination during the hazmat incident. The Incident Commander shall take all necessary steps to limit the number of individuals exposed to hazardous materials, but shall ensure adequate personnel are available to conduct the operation prior to beginning that operation.

When the Incident Commander determines the need to decontamination of individuals and equipment, the following minimum command structure shall be established:



SECTION II – TYPES OF DECONTAMINATION

1. **Emergency Decontamination:** Emergency decontamination procedures should be used anytime personnel or civilians are contaminated without the benefit of appropriate PPE, or when contamination or physical injury manifests a life threat to the individual(s). Decontamination equipment use is limited during this operation and a Decon Line is not yet established.

Emergency decontamination may include decontamination of personnel wearing structural firefighting PPE. Mass decontamination normally occurs during this operation.

2. **Planned Decontamination:** Planned decontamination is that operation of the hazmat incident in which a Contamination Reduction Corridor or Decon Line is established. This operation involves a methodical process in which to remove contaminants from individuals and equipment. Technical decontamination occurs during this phase of decontamination. This process also includes sequestering contaminated equipment and waste materials for further cleaning or disposal.
3. **Secondary Decontamination:** Secondary decontamination includes inspection, testing and monitoring of personnel and equipment to ensure adequate decontamination has taken place. Any personnel or equipment found to require further decontamination must be sent back through the appropriate station within the Decon Line.

SECTION III – HAZARDOUS MATERIALS INCIDENT ZONES (Control Zones)

Incident Command, after consulting the Operations Section Chief and HazMat Group Supervisor, will segregate the incident into manageable zones. All operations must be conducted from the upwind, uphill, upstream side.

1. **Hot or Exclusion Zone:** This is the innermost hazard area and includes all areas of release of hazardous materials. It is the responsibility of Incident Command to establish entry, exit and safe areas within the Hot Zone. All personnel entering this zone are required to wear PPE as prescribed by Incident Command. The Hot Zone must be visually identified to prevent personnel without proper PPE from entering.
2. **Warm or Contamination Reduction Zone:** This is the transition zone from the most contamination to the clean area (Cold Zone). The Contamination Reduction Corridor or Decon Line is established within this zone. Personnel operating within this zone are required to wear PPE as prescribed by Incident Command. The Warm Zone must be visually identified to prevent personnel without proper PPE from entering.
3. **Cold or Support Zone:** This is the outermost zone and is considered the clean area where no contamination has been carried. All incident support equipment and personnel are within this area, including the Incident Command Post (ICP). This zone should be visually identified in order to keep the general public and non-authorized individuals away from the scene when necessary.

SECTION IV – DECONTAMINATION METHODS

1. **Wet Decontamination:** Wet decon uses solutions or water to wash contaminated surfaces. Sprayers or hoses are typically used for wet decon. Collection and disposal of contaminated solutions is most often required.
2. **Dry Decontamination:** Dry decon may be accomplished by removal of contaminated clothing or by vacuuming, brushing, scraping or absorbing material.
3. **Physical Decontamination:** Physical decon removes the material from a person without changing the material chemically. Materials must be stored and disposed of appropriately.

4. **Chemical Decontamination:** Chemical decon is used to chemically alter the material. Chemical decon should only be utilized when the specific material is known.

SECTION V – EMERGENCY DECONTAMINATION

The purpose of emergency decontamination is to reduce the level of contamination to individuals as immediately as possible. Victims may be civilians or emergency responders. Emergency decon must take priority over modesty, weather conditions or the environment. However, every reasonable effort must be made to protect individuals and the environment when possible. Emergency decon may be used regardless of the number of individuals contaminated during the event. The speed of emergency decon takes priority over neatness.

Emergency Decontamination Procedure

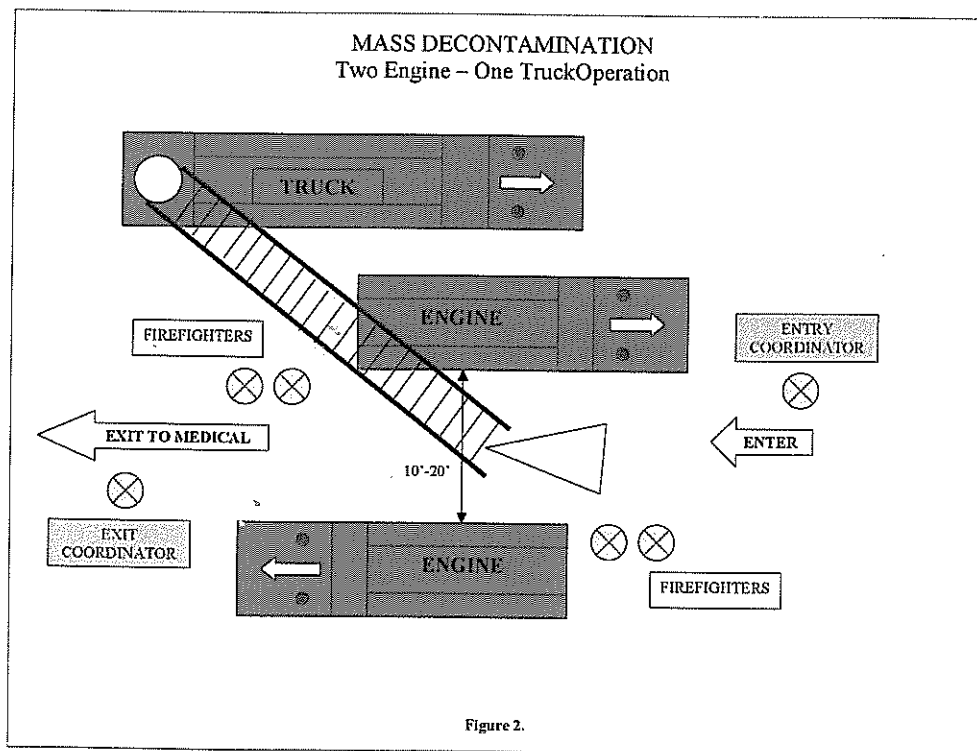
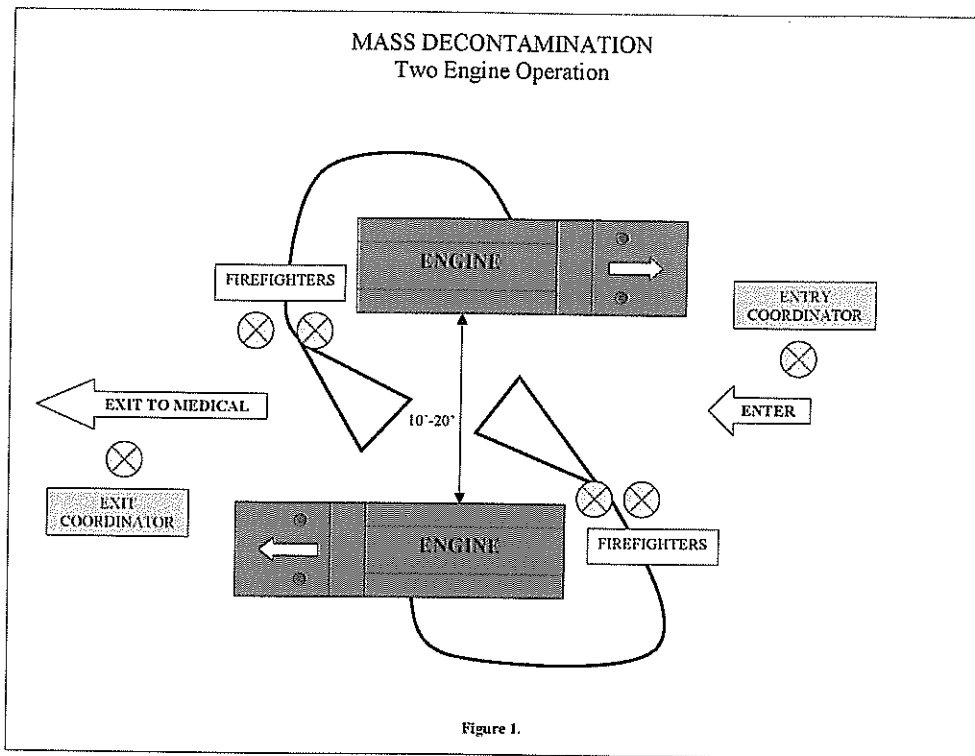
All personnel conducting emergency decon shall wear full structural PPE and SCBA. The fundamental process for emergency decon is Flush-Strip-Flush.

1. Establish an area of refuge for contaminated individuals as soon as possible.
2. Direct all contaminated individuals to the area of refuge.
3. Establish the gross decon area using a water source such as garden hoses, engine lines, pump sprayers etc. Spray individuals with flooding quantities of water as they enter the area of refuge to remove overt quantities of contaminants.
4. Direct all contaminated individuals to immediately remove clothing to the level of their underwear. If a victims clothing must be cut off, cut from the top down in a manner that limits the spread of contaminants.
5. If possible, conduct gross decon in an area that can impound runoff or if time allows construct a catch basin.
6. Dependent upon the severity of contamination, direct individuals, one per hose line, into the decon area. It may be necessary to spray a number of individuals at the same time when dealing with corrosives, organophosphates or poisons. When victims are contaminated with acids or bases, the water flush should last a minimum of 20 minutes.
7. Spray the individual from head to toe, with arms raised. Instruct the individual to turn slowly while being sprayed. If available, instruct individuals to apply soap in large quantities and scrub their body. Flush with large quantities of water. **Note: If an engine is used for emergency decon, nozzle pressure should not exceed 30 psi.**
8. Establish a medical evaluation area.
9. Once gross decon is complete, direct individuals to the medical evaluation area for care and warming.

Mass Decontamination Procedure

Mass decon will require more coordination than a typical emergency decon due to the number of victims that must be accounted for. It is very important to ensure that victims are adequately managed so that secondary contamination does not occur. In order to conduct a coordinated effort, the Incident

Commander shall establish a decon corridor with either a two engine operation as diagramed in Figure 1. or a two engine, one truck operation as diagramed in Figure 2.



Follow Emergency Decontamination Procedure for decontaminating victims.

SECTION VI – PLANNED AND SECONDARY DECONTAMINATION

Planned and Secondary decontamination are methodical processes in which to ensure that all contaminants are removed from victims, patients and emergency responders. When decontaminating victims injured by the event they must be triaged appropriately and treated based upon their triage priority.

Ambulatory Decontamination Line Procedure

Victims sent to the Ambulatory Decon Line must be able to understand direction, talk, and walk unassisted. All personnel operating within the Decontamination Line shall wear Level B PPE at a minimum. Design of the Ambulatory Decon Line shall be as diagrammed in Figure 3.

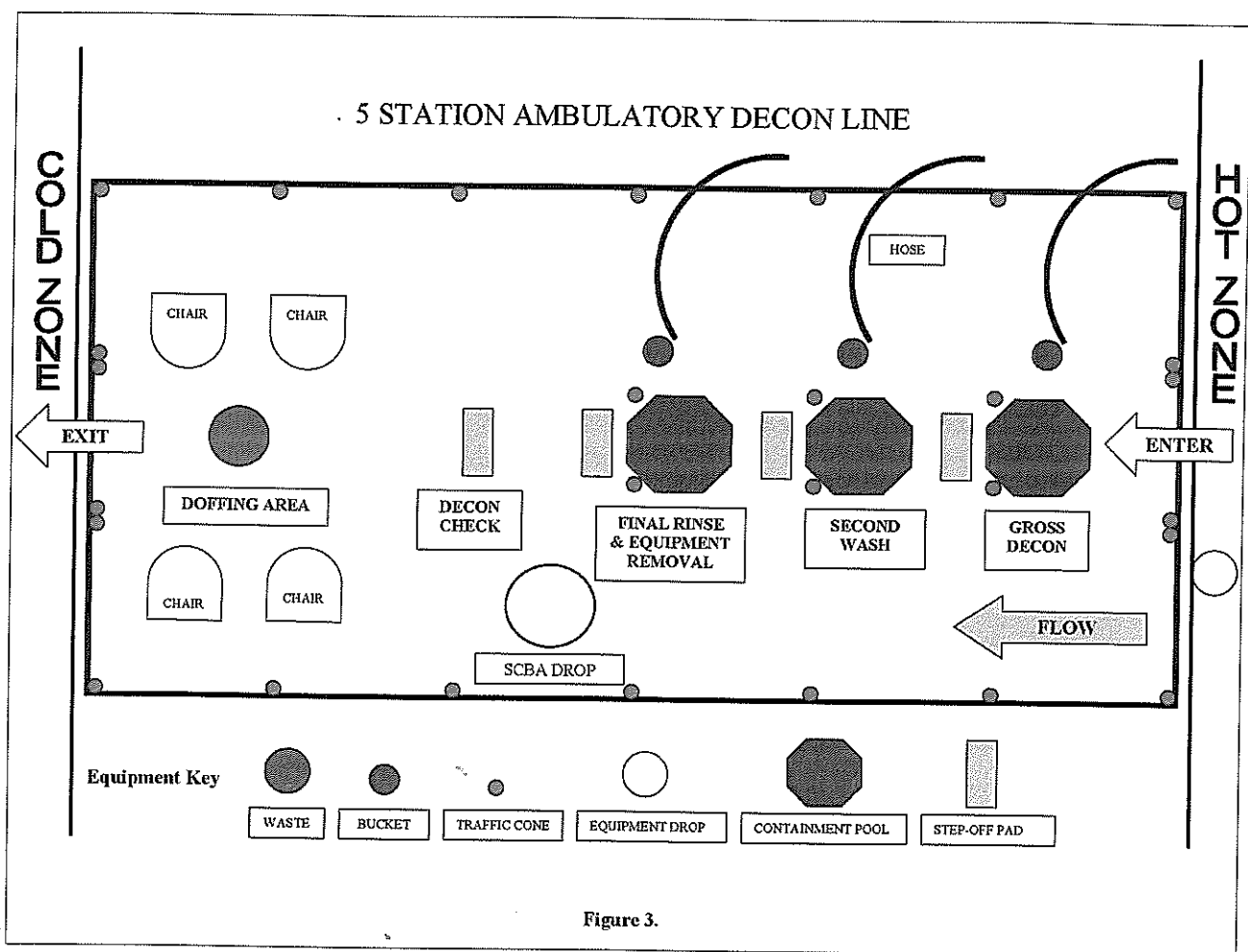


Figure 3.

1. Station 1 – Gross Decontamination:

Ambulatory victims or Patients

- Hold contaminated individual outside of station until ready to begin.
- Direct individual to remove their clothing to their underwear.
- Separate victim's personal belongings from clothing and place them in a clear bag with the victim's name on the bag.
- Place clothing in a barrel or bag.
- Gesture for individual to enter first pan.

- Have the individual close their eyes and mouth.
- Vacuum, brush or wipe all visible material off of the individual.
- Shower individual from head to toe, turning them to cover all four sides as follows; Front, side, back, side.
- Apply soap to all four sides, paying attention to the hands and other hard to each places, under arms, between legs, etc. Hands may be significantly contaminated.
- Rinse all four sides.
- Direct the individual to the medical team in the Cold Zone.

HazMat Responders

- Hold contaminated individual outside of station until ready to begin.
- Gesture for individual to enter first pan.
- If individual's SCBA is external, open the belt.
- Shower individual from head to toe, turning them to cover all four sides as follows; Front, side, back, side.
- Apply soap to all four sides, paying attention to the hands and other hard to each places, under arms, between legs, etc. Hands may be significantly contaminated.
- Work up a lather with the scrub brushes.
- Rinse all four sides.
- With individual facing forward, have them place hands on the cones or walker and raise one foot to the rear.
- Spray, scrub and rinse the bottom of the boot. When completed, tap the boot. The individual, with the clean foot, will step on to the step-off pad.
- Individual will raise other foot, over the pan, and the bottom of the boot is cleaned in the same manner. When completed, tap the boot. The individual will place his second foot on the step-off pad.

2. Station 2 – Second Wash Station:

HazMat Responders

- Gesture for individual to enter the pan.
- As individual is already wet, begin by applying soap to all four sides and scrubbing it in. Pay attention to the hands.
- Individual rotates as soap is rinsed away.
- With individual facing forward, have them place hands on the cones or walker and raise one foot to the rear.
- Spray, scrub and rinse the bottom of the boot. When completed, tap the boot. The individual, with the clean foot, will step on to the step-off pad.
- Individual will raise other foot, over the pan, and the bottom of the boot is cleaned in the same manner. When completed, tap the boot. The individual will place his second foot on the step-off pad.

3. Station 3 – Final Rinse and SCBA Drop:

- Gesture for individual to enter the pan.
- With individual leaning slightly forward, remove the SCBA.
- Deposit the SCBA in the tool drop.

- Individual rotates and is given a final rinse, paying attention to the back where the SCBA had been.
- Rinse boots and have individual step to the step-off pad.

4. Station 4 – Decontamination Check:

- Either visually or by using a UV light or some other meter, the efficiency of decon is checked.
- Individual is sent back to Station 2 if decon has not been thorough enough.
- If decon appears complete, move individual to Station 5 – Doffing Area

5. Station 5 – Doffing Area:

Operation 1: Tape and partial suit removal

- Have individual step into a large plastic bag.
- Remove tape from all surfaces.
- Individual may sit on a wet chair if necessary.
- Unzip the suit.
- Working from the hood down, suit is inverted so as to be inside out.
- Remove outer gloves.
- Once the suit is past the waist, individual may sit on a dry chair.
- Ensure suit remains inverted and pull it down over the boots.
- Remove the suit and boots in one motion and as a package.

Operation 2: Mask and inner glove removal

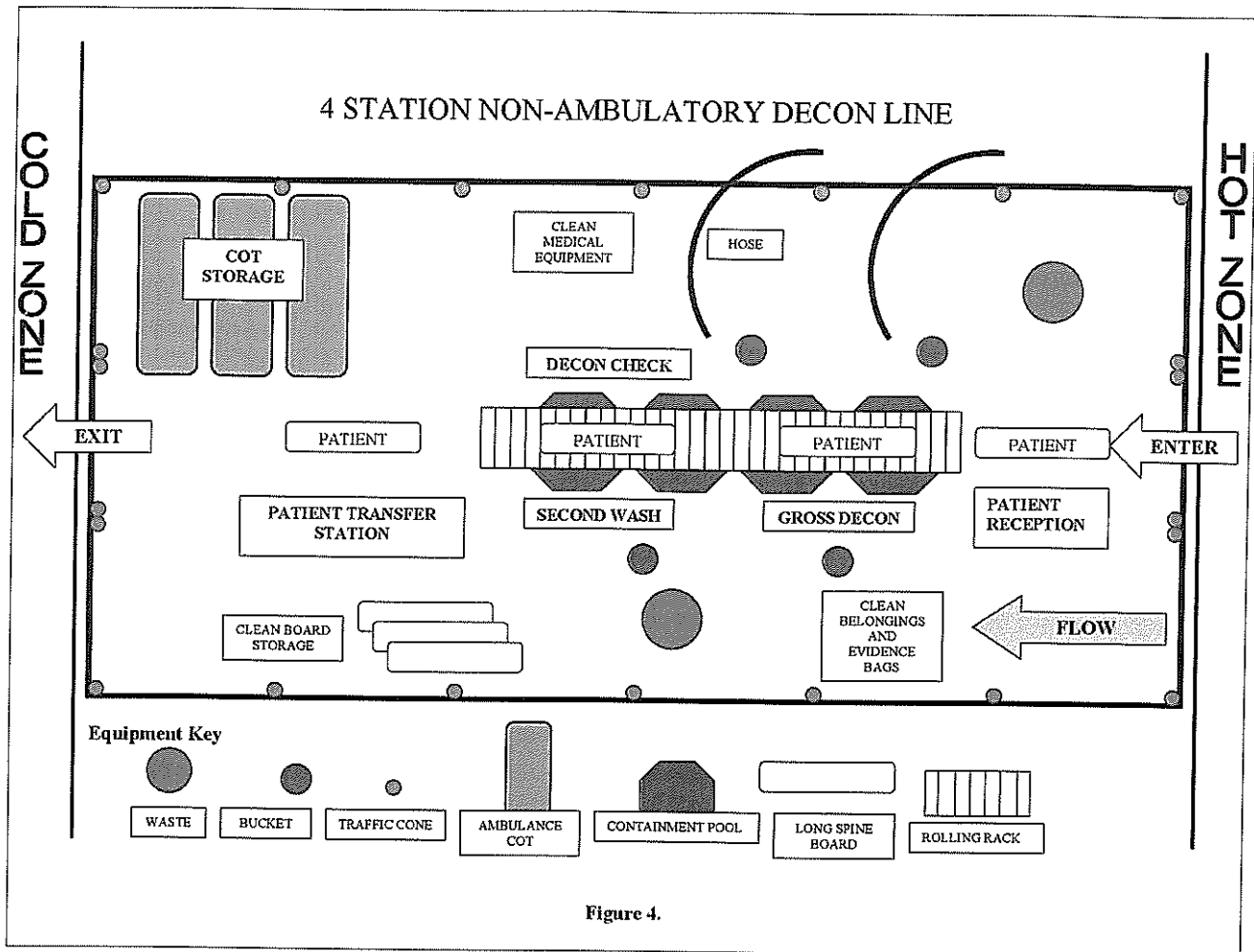
- Remove the individuals mask from the top down so as not to spray other individuals.
- Remove the inner gloves.
- Allow the individual to hydrate, and check vital signs.
- Direct individual to shower.

Non-Ambulatory Decontamination Line Procedure

Non-Ambulatory victims are those individuals who are not capable of moving through the Decon Line on their own. These individuals may have life threatening injuries and must be treated accordingly. Patients may be unresponsive or may have injuries significant enough that they cannot move without assistance. All personnel operating within the Decontamination Line shall wear Level B PPE at a minimum.

Patients are delivered to the Decon Line by responders within the Hot Zone. Design of the Non-Ambulatory Decon Line shall be as diagramed in Figure 4. The following procedure is used for the Non-Ambulatory Decon Line.

1. Cut the patients clothing, where necessary, to remove all clothing down to the underwear.
2. Separate victim's personal belongings from clothing and place them in a clear bag with the victims name on the bag. Place clothing in a barrel or bag.



3. Station 1 – Victim Reception:

- Reassess Triage.
- Manage life / limb threatening injuries.

4. Station 2 – Gross Decontamination:

- Close the patient’s mouth and pinch the nose shut if patient is unconscious.
- Conduct anterior and posterior shower.
- Apply soap and scrub.
- Transfer patient to clean long board.

5. Station 3 – Second Wash Station:

- Repeat soap and scrub.

6. Station 4 – Decontamination Check:

- Conduct visual inspection to ensure proper decon.

- Use meters, pH paper, radiation detection meter, etc. if necessary.

7. Station 5 – Victim Transfer Station:

- Transfer patient to ambulance cot and medic crew.

SECTION VII – EQUIPMENT DECONTAMINATION

All equipment shall be decontaminated in accordance with the manufactures recommendations.

SECTION VIII – HAZARDOUS WASTE MANAGEMENT

All hazardous waste generated through the decontamination process shall be managed in the appropriate manner based upon the hazard. All efforts to protect the environment shall be taken. It is the responsibility of the spiller to ensure proper disposal of all products is conducted. The HazMat Group Supervisor shall create a complete inventory of all equipment and materials that cannot be decontaminated and must be destroyed.

