

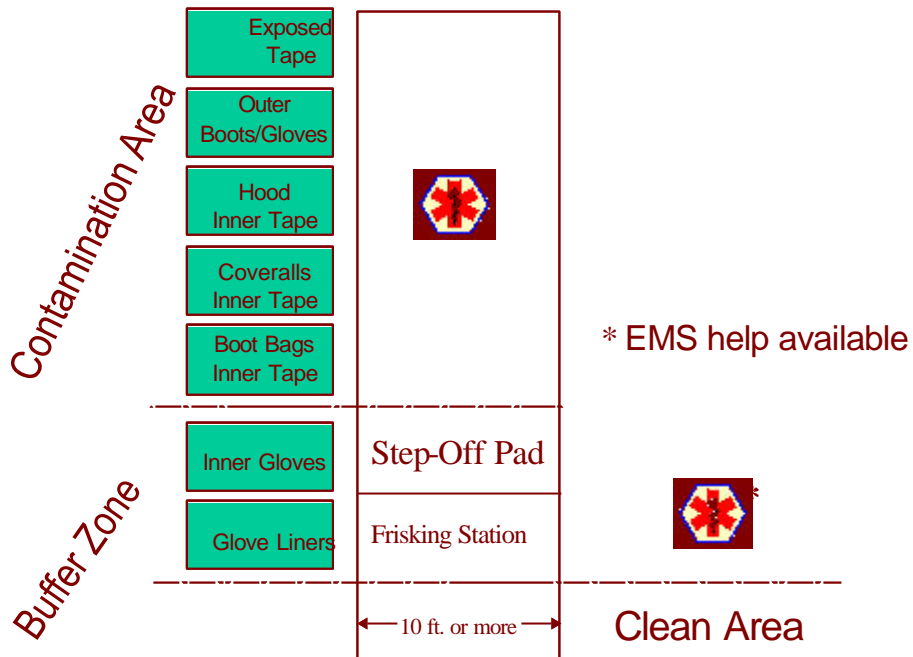
# SOUTH PORTLAND FIRE DEPARTMENT

## STANDARD OPERATING GUIDELINES

<b>SOG #:</b>	6.643	<b>Effective Date:</b>	2/20/2022
<b>Title:</b>	Radiological Technical Decon Line	<b># of pages:</b>	8
<b>Category:</b>	Hazardous Materials Response	<b>Classification:</b>	Red

1. **PURPOSE:** This Standard Operating Guideline (SOG) defines and describes the procedures for a technical decon line in the event of a radiological event. The technical decon line is for responders (SPFD or other agencies) and a minim # of victims.
2. **PROCEDURES:**

### Sample Hotline Layout



## Hotline Decontamination

The basic procedure of hotline decontamination is accomplished in four steps:

- Monitoring upon arrival to determine the extent of the contamination spread.
- Isolating the contaminated area.
- Following decontamination procedures to minimize the spread of contamination. Contamination may be transported or spread to other areas. Contamination can be spread following an incident by:
  - Re-suspension of radioactive particulate that have settled on floors and surfaces because of personnel and equipment activity in a contaminated area. Transfer of contamination to the shoes, clothing, or skin of personnel, and transport to uncontaminated areas. This can result in radiation burns and/or radiation sickness over time through physical contact, inhalation, or ingestion of the radioactive particles.
  - Release of contaminated equipment to uncontaminated areas. This can result in radiation burns and/or radiation sickness over time through physical contact, inhalation, or ingestion of the radioactive particles.
- Establishing a 'hotline' to control contamination spread during team operations. Decontamination procedures are aimed at controlling the spread of contamination on or by people through the movement of equipment, movement through air, or water run-off beyond the initially contaminated area. Decontamination of personnel further prevents inhalation, ingestion, or absorption of radioactive material through the skin. Some of the equipment required for a radiological decontamination operation includes:
  - Calibrated alpha, beta, and gamma survey meters
  - Bradis cloth
  - Step-off pad
  - A rack or trash cans to hold plastic bags
  - Table Masking tape Brushes
  - Q-tips for taking swabs
  - Soap Scissors Paper towels
  - Radiation dosimeters
  - Yellow rope or banner tape to identify decontamination corridor
  - Radiological contamination warning signs
  - Tags for marking bags of personal belongings
  - Forms for people who have to leave valuables in the decontamination line
  - Appropriate PPE for the responders working the decontamination line
  - Medical supplies as identified by medical personnel

### Personnel working in a hotline should:

- Notify the Incident Commander (IC) when personnel decontamination is necessary.
- Wear appropriate PPE when performing decontamination.
- At the end of the operation, survey the personnel performing the decontamination to ensure that they have not become contaminated.

- Post any required records. The locations and instrument readings of the contamination levels should be documented, along with victim information, so that follow-up procedures can be implemented later. A person who was contaminated and then decontaminated may still have internal contamination that still needs to be dealt with at a medical facility. See the sample Personnel Contamination Survey Sheet at the end of this module.

**When performing decon on others, personnel working within a hotline should:**

- Survey the person with portable radiation detection instruments to determine the location and extent of non-uniform exposure of the skin due to radioactive contamination.
- Remove loose contamination on clothing by applying tape to the area and lifting it off.
- Removing the clothing alone may reduce the contamination on an individual by a significant amount.
- If the contamination is localized, cover the surrounding unaffected area and cleanse the affected area with moistened paper towels (general washing risks the spread of contamination). Warm water should be used, if possible, as hot water will open skin pores providing easier access for contamination to enter the body.
- For large area contamination, wash with soap and water, using a portable shower if necessary.
- Follow the decontamination procedures until contamination levels are undetectable, unless medical personnel or patient survey determine(s) that further actions would cause bodily harm.
- Avoid abrasion of skin if using a brush to decon.

**For external or internal personnel contamination:**

- Remove loose contamination on clothing by applying tape to the area and lifting it off.
- Remove contaminated articles of clothing and segregate them for laundering or disposal.
- Gently scrub contaminated areas of skin with soap and warm water.
- Rinse thoroughly with warm water.

If internal contamination is suspected (such as when contamination is found in the facial area, inside a respirator, or near a wound), medical personnel may request that bioassay samples be taken to determine the type and extent of the internal contamination.

- Technicians should collect sputum samples, mouthwashes, and nasal swipes.
- At the medical facility, a urine sample, or fecal sample should be requested.
- At the medical facility, a whole-body and/or thyroid count should be requested.

**Equipment Decontamination Process**

- Equipment may be brought into the decontamination area.
- Equipment should be surveyed and contaminated locations marked.

- Decontamination methods used are from least abrasive to most abrasive.
- A survey area (the same size as the decontamination area) should be established adjacent to the decontamination area, with access directly from the decontamination area to the survey area. The survey area should be posted as a “Contamination Area” when necessary. This is where equipment will be re-surveyed after decontamination.
- The survey area should be taped or roped off, and posted as a “Contamination Area” or “Decontamination Area.”

### **Donning and Doffing Protective Clothing**

Sample procedure for donning protective clothing (for respirator and Tyvek® suit)

- Don boot bags and tape them on
- Don overalls
- Don boots
- Don hood
- Don respiratory protection
- Tape all openings
- Don cotton glove liners
- Don inner gloves with the glove under the overall sleeve
- Tape coverall sleeve to inner glove
- Don outer gloves and tape to sleeve
- Don protective sleeves (if required)

Once the task is completed in the radioactive area, the responder should proceed directly to the hotline to doff the PPE. Sample doffing procedures (for respirator and Tyvek® suit) are as follows:

- Remove all exposed tape
- Remove sleeve covers (if used)
- Remove rubber totes, placing the boot bag-covered foot on the clean side of the hotline
- Remove outer gloves
- Remove hood from front to rear
- Remove any exposed tape and loosen any Velcro fasteners
- Remove coveralls, inside out, touching the inside only
- Remove respiratory protection
- Remove tape or fastener from inner boot bag covers
- Remove each shoe bag, stepping one foot at a time onto clean step-off pad
- Remove inner gloves
- Remove cotton glove liners
- Monitor for contamination
- If contamination is found, the individual should immediately go to an alternate decontamination station to undergo additional decontamination procedures.
- Monitor for signs and symptoms of contamination

## DECONTAMINATION PROCEDURE FOR RADIOACTIVE MATERIALS

(Example of a dry decontamination method used by firefighters)

In addition to specific procedures for donning and doffing, there are recommended decon procedures as well. The following list taken from the department of energy's office of environmental management website lists the proper way to perform decontamination for radioactive materials.

1. Establish the Decontamination System (Plan and set up) considering contaminants present. Necessary barricades or identifying features of the decontamination system should be obvious to responders. Barricade tape or traffic cones could be used for identifying the decontamination system. Different types and levels of personal protective clothing are worn by response organizations. When conducting decontamination, you must adjust the decontamination process to satisfy the type and level of personal protective clothing being worn by responders.



2. Instruct responders to place equipment or tools in the designated drop area. This drop area should be made of some type of containment system. Examples of an equipment/tool drop area include a plastic cover placed on the ground that tools/equipment can be placed on or a lined can in which equipment/tools can be placed. Equipment and tools placed in the drop area will be decontaminated and surveyed/monitored to be free of contaminants by the local, state, or tribal radiation authority.



3. Have responders approach the hot zone line (identified by a step off pad). Typically, absorbent pads are acceptable to use as stepoff pads. Responder should step on pad and wipe feet. Responder should step into the warm zone. Decontamination workers should replace damaged step off pads as necessary. Replacement pads should be placed on top of existing pads.



4. The responder should step into the warm zone. With the assistance of the decontamination workers, the responder will remove the SCBA harness/backplate; do not turn off the SCBA air supply. Decontamination workers should ensure that the responder does not disconnect the regulator air supply or remove the SCBA face piece. Positive pressure within the face piece should be maintained.



5. With decontamination workers assisting, have the responder remove firefighting gloves. The decontamination worker will place the firefighting gloves in the designated collection device (plastic bag or lined can or ground-covered area).



Note: If the firefighting coat is equipped with wristlets, the decontamination worker will assist the responder in releasing the wristlets.

6. The decontamination worker will assist the responder with replacing the firefighting gloves with latex gloves.

7. With decontamination workers assisting, the responder will remove the firefighting helmet and hood. The decontamination worker will place the helmet and hood in the designated collection device (plastic bag or lined can or ground-covered area).



Note: If the responder helmet is not equipped with a chinstrap that can be separated from the helmet, the helmet should be slid down the SCBA face piece supply hose and held by the decontamination worker. The firefighting hood should be handled in the same manner. A second option to sliding the helmet and hood down the air supply line is to cut the helmet strap and hood to facilitate removal.



8. With decontamination workers assisting, have the responder remove firefighting coat. The decontamination worker will place the firefighting coat in the designated collection device (plastic bag or lined can or ground-covered area).



9. With decontamination workers assisting, have the responder step to the next position in the decontamination process and remove firefighting pants and boots. The decontamination worker will place the firefighting pants and boots in the designated collection device (plastic bag, lined can, or ground-covered area).



Note: If available, some type of temporary footwear should be provided (shoe covers, sandals, etc.).

10. The responder will remove the SCBA face piece and hand it to the decontamination worker. The decontamination worker **will turn off the responder's SCBA**. The decontamination worker will place the SCBA in the designated collection device (plastic bag, lined can, or ground-covered area).



Note: The decontamination worker may also be required to handle the firefighting helmet and hood.

11. The responder should step to next position in the decontamination process and remove latex gloves. Place gloves in disposal and report to designated staging area for contamination survey/monitoring by local state or tribal radiation authority.

12. The decontamination workers will complete the decontamination process by conducting a self-decontamination using the aforementioned decontamination steps.

Note: The decontamination workers will assist each other in removing protective clothing and placing removed clothing into the designated collection area.



13. Decontamination workers should brief the Incident Commander on the number, type and location of items (protective clothing, equipment, tools, etc.) needing decontamination. The Incident Commander will coordinate the final contamination survey of responders who entered the hot zone, and decontamination of the items (protective clothing, equipment, tools, etc.) with the local, state, or tribal radiation authority.

Note: The radiation authority will determine appropriate background radiation levels and identify radiation levels that can be considered clean for personnel and equipment.

3. REFERENCES:

- None

By Order Of:

A handwritten signature in blue ink, appearing to read "Jim Wilson", is written over a faint, circular official stamp.

James P. Wilson  
Fire Chief