

**7-2. RADIATION PROTECTION PERSONNEL.** Radiation protection personnel must have available proper radiation detection instrumentation, and must be proficient in the use of such instrumentation. The RPO will direct and provide supervision of the radiation protection functions.

a. The radiation protection personnel, upon arrival, will establish a radiation contamination control line. If initial response and firefighting operations are still ongoing, control line may be same as evacuation line established for explosive hazards. The number of emergency personnel who are to pass over the radiation contamination control line should be kept to an absolute minimum. Personnel with cuts should remain outside the contaminated area. Anyone passing over this line to the fire area is to wear appropriate protective equipment that may include: protective coveralls, gloves, rubberized boots, head covering, and respiratory protection. EOD personnel are to wear the M25 or MI 17A2 protective mask with the M13A2 filter element and the accompanying head covers (i.e., MOPP Level 4). Personnel assisting in the radiation survey and decontamination operations should wear full-face respirators with high-efficiency dust filters. Tape is to be used to seal the clothing where there are any openings to the body.

b. Firefighters, EOD, and any other personnel or equipment, including vehicles, exiting the fire area are to be monitored for the presence of any DU contamination before moving over the contamination control line. The monitoring instrument to be used is an AN/PDR-27 with the beta shield open, an AN/VDR-2 (IM-243 meter and DT-6 16 probe), or an equivalent instrument (exception vehicle survey, see para h below). These meters, when used for personnel monitoring, should be equipped with earphones to permit aural indications to supplement the slower needle response. The sensory portion of the meter probe will be placed as close to the portion of the item/body being checked as possible, without bringing the probe into direct physical contact. If DU contamination is detected, decontamination should be performed in accordance with chapter 8 under the supervision of a radiation protection person. Decontamination supplies should be made available by the local military community at the request of the RPO. A listing of useful equipment and supplies for use in decontamination is provided in appendix E. Special attention must be given to the areas between the fingers and around the nails. In addition, waste receptacles will be located at the radiation contamination control line for the disposal of contaminated clothing and equipment. Contamination release limits can be found in appendix F.

c. Every effort should be made to contain the spread of contamination to within the radiation control line. Contaminated clothing should be removed, if feasible, at the site. If someone wearing contaminated clothing leaves the site, make sure that the area entered is surveyed and decontaminated. Blankets or something similar should be hung at the radiation contamination control line in order to provide personal privacy for those who must remove contaminated clothing. Also, the injured person should be wrapped in a clean sheet, to prevent the possible spread of contamination. Contaminated clothing need not be removed from a seriously injured person. Besides wrapping the radioactively contaminated, injured person in a clean sheet to prevent the spread of contamination, clean areas adjacent to those being decontaminated should be covered with taped-down paper, plastic, or other disposable material to prevent recontamination.

d. A person should be assigned to assure that the names, addresses, and telephone numbers of those people who cross over the radiation contamination control line, whether contaminated or not, are recorded along with results of personnel monitoring. Appendix G is an example of a personnel contamination record.

Personnel are to wear the M25 or MI 17A2 protective mask with the M13A2 filter element and accompanying head covers

Note → radiation control line

e. No equipment or materials involved in the accident/incident are to be removed from the site for unrestricted use until the item(s) have been monitored by radiation protection personnel and decontaminated as required. Equipment and material release should be adequately documented by radiation protection personnel and proper security procedures should be in force to prevent pilferage.

f. The RPO should note the direction(s) of the smoke from the fire, and where any water that flows out of the tank runs off to during the course of the fire.

g. The radiological survey of the ground should be conducted with an AN/PDR-54, AN/PDR-60, AN/PDR-56F (IM-160F/PDR-56 meter and DT-590A/PDR-56 X-ray probe) or an equivalent low-energy photon detection instrument. The probe must be held as close to the ground surface as possible without coming in direct contact. The radiation contamination control line should be adjusted depending on the extent of ground contamination. If no ground contamination is detected during the radiation survey of the area, rope off a 10-foot radius around the area to control access to it. However, should ground contamination be detected, the areas should be marked off for later decontamination efforts. The radiation contamination control line need not take on the dimensions of a circle, but may take on the shape of the detected ground contamination.

h. Survey the outside of the tank for DU contamination with an AN/PDR-54, AN/PDR-60, AN/PDR-56F radiac meter (IM-160F/PDR-56) and its accompanying radiac probe (DT224B/PDR-56 [main probe]), or an equivalent instrument if the surface of the tank is dry. The probe must be held as close to the surface as possible without coming in contact. However, if the surface being surveyed is wet or covered with grease or dirt, there exists a condition of alpha self-absorption and an AN/PDR-27 with the beta shield open, an AN/VDR2 (IM-243 meter and DT-616 probe) or an equivalent instrument, is to be used. Swipe/wipe the surface of any location where contamination is detected. The swipe samples should be taken with appropriate swipe paper, such as Whatman filter paper. The same instrument being used to survey the tank should be used to analyze the swipe paper. If, for whatever reason, the appropriate swipe paper is not available, then take swipes with a paper towel, cloth, etc. Under these circumstances, analyze the swipes only with an AN/PDR-27 with the beta shield open, AN/VDR-2 (IM-243 meter and DT-616 probe), or an equivalent instrument. If contamination levels are detected, the surface area that is representative of that swipe sample is to be cleaned until the removable surface contamination levels are at least reduced to those levels listed for vehicles in uncontrolled areas in appendix F.

i. If instrument surveys indicate the presence of contamination but the swipe/wipe are negative, press a piece of masking, friction, or adhesive tape onto the area and analyze it with the AN/PDR-27 or AN/VDR-2 or equivalent instrument. If the tape is contaminated, this indicates the presence of small pieces of metal and/or metallic dust. Make sure this material is removed before declaring the tank free from contamination.

#### NOTE

**Some material used for wipes will not pick up metal filings, metallic dust, etc. The only method to detect the presence of this kind of contamination is to use tape.**