



Radiation Incident Mass Casualty Decontamination

Produced by the Canadian Nuclear Safety Commission for First Responders

**THE FOLLOWING ARE RECOMMENDATIONS ONLY.
LOCAL OR PROVINCIAL PROCEDURES AND PROTOCOLS MUST BE FOLLOWED.**

To be performed after standard medical triage

Always wear personal protection equipment (PPE) when dealing with loose contamination. Immediate care of critical injuries takes precedence over care of radiation injuries and radioactive contamination control.

Under normal circumstances, contamination checks are made using a contamination meter. A proper scan should take approximately five minutes per person. A reading on a contamination meter that is twice the background level, indicates that a person is contaminated. All contaminated clothing must be removed, bagged and tagged.

In the event that the number of individuals to be checked overwhelms all available resources, the decontamination process will need to be accelerated. The following process is recommended:

Mass Decontamination Process:

Step 1: Is the Individual Grossly Contaminated?

With a contamination meter, check hands and feet thoroughly and then perform a 10 to 15-second check over the rest of the person. **A contamination meter reading that is in excess of ten times the background level (or, if no contamination meter is available, a gamma dose rate meter reading greater than 0.5 $\mu\text{Sv/h}$) is an indication of gross contamination. Note:** a gamma dose rate meter is only to be used for decontamination monitoring as a last resort.

If GROSSLY CONTAMINATED: remove contaminated clothing

If NOT: the individual may exit the decontamination line

Step 2: Is the individual still contaminated after removing contaminated clothing?

Check skin with a contamination meter as described above.

If YES (over a large area): clean the contaminated area thoroughly, controlling runoff water

If YES (over a small area): wipe with a damp cloth or wet wipes taking care not to irritate skin

If NO: the individual may exit the decontamination line

Step 3: Is the skin contamination persisting after washing?

Check skin with a contamination meter as described above. Any readings that are above twice the background level indicate contamination. Readings greater than 10 times the background level should be checked with a gamma dose rate meter. A gamma dose rate reading greater than 100 $\mu\text{Sv/h}$ 10 cm from the skin could indicate the presence of a highly radioactive particle. This area should be covered with whatever is available and noted. Prompt medical treatment to remove the radioactive particle should be sought. Any information available concerning the radionuclide should also be noted and relayed to hospital staff.

If YES (over a large area): possible internal contamination

If YES (over a small area): areas should be noted and covered if possible

If NO: the individual may exit the decontamination line

Canadian Nuclear Safety Commission 24-hr Duty Officer's number: (613) 995-0479