TOLEDO FIRE & RESCUE DEPARTMENT

C-81 Radiological Emergencies Monitoring

Emergency Manual

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Policy/Procedure

1. Radiological Incident

Due to heightened security concerns throughout United States, when a suspicious or unexplainable explosion occurs in the Toledo Fire and Rescue Department response area, at least one of the first alarm units arriving to mitigate the emergency shall immediately employ their rig's radiological monitoring equipment.

1. Two (2) Canberra Ultraradiac radiation dosimeters have been supplied to all Toledo Fire and Rescue engines. They are stored in the Hazmat IQ cases which are on every engine.

2. The guidelines for all radiological incidents are as follows:

    1. Fire personnel shall respond and begin fireground assignments as normal. Response actions may be performed prior to any radiation measurements.

    2. At least one of the first arriving engines shall deploy their radiation equipment and detect for the presence of radiological contamination. Follow equipment in-service procedures as spelled out on page three (3). They shall report their findings to IC as soon as possible.

    3. If radiological contamination is identified, IC shall have all personnel who have begun operations in the Hot Zone to back out, go through Emergency Decontamination, and monitoring for contamination. (If there are viable victims who need rescuing, and the personnel who were in the Hot Zone were on air, then these personnel could continue to be used for victim rescue and then go through decontamination.)

    4. IC shall make this a Second Alarm and request the Haz-Mat Unit and Special Operations

personnel.

5. Fire personnel shall approach with caution and position all personnel at a safe distance – upwind of the scene.

6. Fire personnel shall assume positions in the Cold Zone, turn on their radiological meters, and acquire background readings.

7. Turnout gear with SCBA in-service is to be worn in the Warm and Hot Zones, until the area is monitored and cleared of contamination concerns.

8. Medical problems take priority over radiological concerns. Do not delay rescue of a seriously injured, contaminated person. Following Toledo Fire and Rescue Department Emergency Medical System Protocols, all contaminated patients will be decontaminated prior to transport to a hospital.

9. A Hot/Warm/Cold Zone should be set as soon as practical. The Hot Zone shall be established at any radiological reading above 0.2 MR/Hr , and the Warm Zone established at the background radiation reading up to 0.2 MR/Hr.

10. Fire personnel shall continually monitor the area and employ the use of personal dosimeters, obtaining readings every fifteen minutes.

11. If the Ultraradiac dosimeters read 1 REM/Hr above the background, crews shall retreat from the area. The only exception to this rule shall be if crews are attempting a life saving rescue.

12. Twenty-five (25) REM is the maximum allowable exposure during life saving actions.

13. Time-Distance-Shielding should be practiced to reduce exposure potential.

14. Command shall rotate personnel working in a contaminated environment to limit individual exposure time.

15. Fire personnel shall remain behind barriers when gamma radiation is present as this is an effective method of reducing exposure levels.

16. Fire personnel shall not eat, drink, or smoke within the contaminated area, or, if having worked in the Warm or Hot Zone, until properly decontaminated.

17. All contaminated items such as tools, clothing, or other items shall be wrapped, labeled, and isolated until decontaminated or properly disposed of.

18. Decontamination should be established before the crews enter the Warm or Hot Zones, and then used upon coming out of these zones followed by monitoring.

2. Canberra Ultraradiac Dosimeter

1. The Ultraradiac dosimeter is able to detect gamma radiation contamination as well as measure

personnel exposure to radiation.

2. The Ultraradiac dosimeter will measure very low levels of gamma radiation, including background radiation down to 1 microRem per hour (1µR/HR), and up to deadly radiation amounts of 500 REM per hour (500R/Hr).

3. The warm up time for the Ultraradiac is five (5) seconds and it will work in most environmental conditions.

4. This instrument should be checked once a week on “Tool Day”.

5. Operational Check

    1. Make sure the Ultraradiac is within the calibration range.

    2. Put four (4) AAA batteries in the battery compartment.

    3. Turn the Ultraradiac on by pressing the “ON/OFF” button until the display appears.

    4. Make sure that the High and Low Rate Alarms are set correctly. Use the “Quick Start-Up Guide” located in the Haz Mat IQ case.

    5. Zero out the current total dose of the Ultraradiac by pressing the Dose Button to see the current Total Dose reading. If it does not read zero (0), then press the DOSE and CLR/TEST buttons simultaneously and hold them until the number blinks zero (0).

    6. Prior to making entry into the Warm and Hot Zones, record your name, your Ultraradiac’s current total dose, and your entry time with the Rad Safety Officer.

See Also:

Permanent link:
https://www.tfrdpolicies.com/dokuwiki/doku.php?id=c_manual:c81

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