



GENERAL ORDER

Loudoun County Sheriff's Office

Chapter: Operations	Section: 401.7	
Subject: Operational Functions	Topic: Preventive Radiological/Nuclear Detection Program	
Accreditation: OPR.05.01, 06.01, TRN.02.01	Revised:	Reaffirmed:
Enacted: 07/30/2015	Last Review: 07/24/2015	Review: 07/30/2015

I. PURPOSE

Due to the increase of terrorist threats nationwide, the possibility exists of a radiological incident occurring within Loudoun County. To support early detection and respond to radiological/nuclear threats, the Loudoun County Sheriff's Office employs radiation detections systems.

The purpose of this General Order is to establish policy and procedure regarding the use of Personal Radiation Detectors (PRD's) and the preliminary investigation of illicit radiological materials.

II. POLICY

It shall be the policy of the Loudoun County Sheriff's Office to deploy Personal Radiation Detectors (PRD's) to personnel in the field for the purpose of detecting, verifying, locating, and measuring illicit radioactive material. All Sheriff's Office personnel shall adhere to the following principles whenever radioactive materials are encountered in order to mitigate exposure:

- A. Time – minimizing the exposure time reduces the dose from the radiation source.
- B. Distance – the intensity and dose of radiation decreases dramatically as you increase your distance from the source.
- C. Shielding –inserting the proper shield between you and a radiation source will greatly reduce or eliminate the dose you receive.

III. PROGRAM DESCRIPTION

The Preventative Radiological Nuclear Detection Program (PRND) is a national and regional effort to detect, report, and deter any unauthorized attempts to import, possess, store, develop or transport illicit radiological/nuclear materials.

To achieve this effort, radiation detection equipment is deployed with law enforcement and fire service personnel in the National Capital Region through grant funding. The detection methodology calls for two types of detection.

- A. The first methodology is used during *Steady State*. That is, during normal daily operations a deputy sheriff will happen to detect, with a personal radiation detector, the presence of a source of radiation and will investigate its source.
- B. The second methodology is used during *Enhanced Steady State*, typically during a special event, in which large crowds may gather requiring additional security or intelligence dictates additional screening due to a threat or when other information dictates a source is likely to be present.

The deputy sheriff initiating an investigation based upon detection has an established procedure to follow in order to identify the source. In the event the deputy sheriff is unable to identify the nature of the source, additional resources may be required. The Loudoun County Department of Fire, Rescue and Emergency Management HAZMAT Unit has the ability to provide advanced detection and identification in support of this program and will provide access to additional technical resources.

IV. PRIMARY SCREENING

Only those personnel who have attended and successfully completed an agency approved course of instruction on Personal Radiation Detection Devices shall be permitted to operate a Personal Radiation Detection Device. Although Personal Radiation Detection Devices may be issued to any sworn member of the Sheriff's Office, members assigned to the following units/programs shall take priority:

- A. Traffic Safety Unit (Motor Unit, Crash Reconstruction Unit, Truck Safety Unit)
- B. Explosive Ordnance Disposal (EOD)
- C. Crime Scene Unit
- D. Special Weapons and Tactics (SWAT)

Pursuant to such PRD training, PRD users shall adhere to the following protocols unless approved training subsequent to this General Order dictates otherwise:

- A. Personal Radiation Detection Device operators shall not change or alter the manufacture's default settings of the device and shall follow the manufacturer guidelines.
- B. When an operator receives an alarm, the operator shall transmit the following radio message to the Emergency Communications Center:

“Unit XX” ... “I will be conducting a PRND investigation.” (or similar verbiage)

Verbiage containing the terms “radiological,” “nuclear” or any other term that is likely to cause panic by the general public and/or press shall be avoided.

C. Detect Elevated Radiation Levels

1. Radiation alarm is triggered
2. Observe surroundings
3. Note Rate reading, frequency (pitch) of the audio sound/the frequency of the vibrator pulsation and Rate display flashing

D. Verify the Alarm

1. Recheck persons, packages/objects, or vehicles suspected of causing the initial alarm.
2. Buildings/areas: Leave the general area, then return to reacquire the alarm.
3. Verified: The alarm is repeated with the same instrument or with another instrument. The preferred method shall be with another instrument though only when an additional operator is readily available to respond for such assistance (i.e., does not require a call-out of personnel).

E. Locate or Localize the Alarm

1. Localization is a very overt act; consider involving another deputy for officer safety.
2. If the alarm indicators are enabled, the frequency (pitch) of the audio sound and the frequency of pulsation for the vibrator will increase as the PRD moves closer to the radioactive material.
3. Observe initial reading:
 - a. Conduct left-right scan
 - b. Conduct rotational scan
 - c. Conduct up-down scan

F. Measure the Alarm

1. Do not measure if:

- a. It is a suspected explosive device. If an explosive device is suspected, immediately defer to EOD protocol.
 - b. The rate reading is 2,000 pR/h (2 mR/h) or higher at 3 meters or more from the suspect item. 2 mR/h, consideration should be given to cordoning off the area and creating safety zones (incident specific).
 - c. The LCD displays "OL" (indicates a gamma detector overload: reading is greater than 999 R/h (or 10 RJh in the pre-production PRD models) or 10 mR/h in the Search mode).
 - d. There is spilled material.
2. Document the following (when feasible):
- a. Location and description of person, package, vehicle, building, etc.
 - b. Highest rate reading found during the detect and locate processes
 - c. Highest rate reading at approximately 1 meter from suspected object/item
 - d. Include units in your report:
 - (i) mR/h => milliR per hour or
 - (ii) R/h => "R per hour."
 - (iii) mR/h => milliR per hour or
 - (iv) R/h => "R per hour."
3. At the completion of the Measure process, leave the vicinity of the suspect radiological material and acquire a new background-update measurement.

G. Remember, alarm adjudication can occur at any point during the above process.

V. SECONDARY SCREENING

Determining the radioisotope requires the employment of a Radiation Isotope Identifier Device (RIID) which is a function of the Loudoun County Department of Fire, Rescue, and Emergency Management. Whenever a PRD operator deems a secondary screening is necessary he/she shall, in the following order:

- A. Ensure that notification is made to the Weapons of Mass Destruction (WMD) Coordinator for the Washington Field Office (WFO) of the Federal Bureau of Investigation. Such notification may be made directly to the WFO or through the Joint Terrorism Task Force (JTTF)
- B. Request a response from the Loudoun County Department of Fire, Rescue, and Emergency Management HAZMAT Unit for a "PRND Investigation." HazMat personnel will follow protocol as dictated by Loudoun County Department of Fire, Rescue, and Emergency Management policy. LCFR will take care of any notifications to the Virginia Department of Emergency Management and the Virginia Emergency Operations Center. Additionally, LCFR will handle any mutual aid requests for secondary screening should they be unavailable.
- C. Request a response from the Criminal Investigations Division
- D. Request that a Command Staff page be sent

VI. SCREENING AT SPECIAL EVENTS

- A. Needs during special events will be determined based upon the nature of the event.
- B. Background sources shall be determined during pre-event screening in order to establish a baseline.
- C. Whenever screening for radiological sources at special events has been deemed necessary, typically through intelligence channels, such screening shall be done passively.
- D. During any planning initiative where passive primary screening has been identified as a resource that will be deployed, Sheriff's Office personnel shall coordinate with the Loudoun County Department of Fire, Rescue, and Emergency Management HAZMAT Unit regarding the availability of secondary screening resources.
- E. To ensure that medical patients are not needlessly re-screened during a special event, once a medical patient has been adjudicated, he/she shall be provided with documentation (paperwork, wristband, badge, tag, etc.). However, should that same medical patient leave the venue, he/she shall be subject to re-screening upon re-entry.
- F. All alarms during special events, regardless of final adjudication, shall be formally documented.

VII. STORING RADIOLOGICAL / NUCLEAR MATERIAL

- A. Under no circumstance shall a member of the Loudoun County Sheriff's Office take possession of, transport, or store any radioactive material. Should the need arise for a disposition of radioactive material, the Virginia Department of Health, Division of Radiological Health maintains a duty officer who is available 24 hours a day to respond to radiological emergencies. Requests for the duty officer may be made through the Virginia Emergency Operations Center by specifically asking for assistance from Radiological Health.

VIII. INVESTIGATION

- A. The initial PRD operator, any assigned detectives, and any other assigned Loudoun County Sheriff's office personnel shall work collaboratively with any Commonwealth of Virginia and/or federal assets that respond to an investigation of illicit radioactive material in Loudoun County.
- B. Since law enforcement does not have the authority to enforce regulatory violations, whenever it appears that someone is not in compliance with Virginia regulations the Virginia Department of Health, Division of Radiological Health shall be notified. Such notification shall be made through the same channels as found in Section VII of this General Order.

IX. DOCUMENTATION

- A. The completion of formal documentation (Incident-Based Reporting) shall only be required for alarms that have been adjudicated as a threat or whenever non-compliance with Commonwealth regulations is discovered.
- B. For alarms that are quickly adjudicated as harmless, no formal documentation is required unless such alarms are received during a special event (see Section VII of this General Order). For alarms that are adjudicated as harmless and someone has been detained for a substantial amount of time, detailed notes shall be added to the call articulating the facts.
- C. Clearance codes have been designated for alarms that are adjudicated as harmless and for alarms that are adjudicated as a threat and shall be used accordingly.

X. MAINTENANCE

- A. Daily functional checks shall be made against known source material. Source material is available at specific exits of each station and the Operational Support Division office.

- B. For Personal Radiation Detection Devices with an internal calibration function, there is no need for annual factory calibrations. However, for units with a built-in dosimeter function, annual factory calibrations are required. As the Sheriff's Office is opting not to use the built-in dosimeter function, such calibrations need not be conducted.