



# ARMY RADCON

## ARMY RADCON

**US Army Radiological Control...  
a service response organization**



**Calibrated Equipment &  
Qualified Personnel**

**Road, Rail & Air Mobile**



**Communications- Electronics Command (CECOM)**

**Fort Monmouth, NJ**

**(732) 532-9723**



### 1. Background.

The Department of Defense maintains assets capable of responding to radioactive material and nuclear weapons accidents. The United States Army maintains a specialized asset called the Army Radiological Control or RADCON team.

The Headquarters, Communications-Electronics Command, Directorate for Safety (DS), Radiological Engineering Branch was assigned the mission to serve as the Service Response Force (SRF) for radiological incidents or accidents involving radioactive materials. The Army RADCON team is aligned to augment Initial Response Forces (IRF) providing extensive radiological assets on 4 hours notice.

### 2. Mission.

The U.S. Army RADCON team serves as the radiological component of the Department of the Army (DA) SRF in providing the On-Scene-Commander with technical assistance and advice necessary to make comprehensive assessments on all radiological aspects of accidents or incidents. The team provides advice and management regarding radiological safety, operational support, and radiological control and containment of the accident site.

### 3. Location.

The SRF element of the DA RADCON Team is located at the U.S. Army Communications-Electronics Command at Fort Monmouth, NJ (732) 532-9723.

### 4. Notification.

Notification for the RADCON team can come from the National Military Command Center; DA Emergency Operations Center; Headquarters AMC; the Joint Nuclear Accident Coordinating Center or General Officer direction. As well, the CECOM

Emergency Operations Center may be contacted at DSN: 99CECOM or (732) 53CECOM.

#### 5. Personnel Resources.

The DA RADCON is a service response force of trained individuals assigned specific duties during accident response under a designated team leader. Specific response functions include:

- Air monitoring for radioactivity.
- Field radiological surveys.
- Establish and maintain forward operations/contamination/command and control.
- Maintain communications with response personnel and forward operations.
- Issue and maintain radiation detection and monitoring equipment.
- Support decontamination operations.

**AIR MONITORING FOR RADIOACTIVITY**  
**FIELD RADIOLOGICAL SURVEYS**  
**ESTABLISH/MAINTAIN CONTAMINATION CONTROL STATION**  
**MAINTAIN COMMUNICATIONS**  
**RADIAC INSTRUMENTATION**  
**SUPPORT DECON OPERATIONS**

#### 6. Training.

The Army RADCON Team serves as an integral component in nuclear weapons accident and incident training, including:

- Operation Digger Shift, Diamond Flame, Dial Flinty, Diagonal Glance and Nevada Test Site exercises  
Navy, Air Force and DoE sponsored exercises

Formal training for the SRF includes:

- Flag Officer Nuclear Accident Course (FONAC)
- Senior Officer Nuclear Accident Course (SONAC)
- Nuclear emergency Training and Operations Course (NETOPS)
- Army Advanced Nuclear Weapons Course
- OSHA HAZWOPER

#### 7. Capabilities.

The Army RADCON can deploy, worldwide, within four hours of notification with the following equipment:

- a. Vehicles: All terrain vehicle (ATV) with 5” low energy gamma detectors.

b. Portable RADIAC equipment.

The RADCON team possesses radiological emergency response equipment and assets. Military GPS, AN/PDR-77 & AN/VDR-2 Radiac Sets and personal protective equipment are always available for responding personnel. As well, the RADCON SRF maintains a state-of-the-art airlift deployed radiological analysis laboratory housed in an expandable shelter.



**AN/PDR-77 RADIAC Set**

c. Mobile Laboratory: This unique DoD asset allows Army RADCON to perform on-site analysis of virtually every type of swipe or sample that may be taken as a result of any radioactive materials accident, inclusive of environmental sampling. The mobile lab requires minimal external support and can be operated by one individual. Most functions are automated and will run overnight, unattended.

The shelter, shown in the “closed” or unexpanded configuration, has an outside dimension of approximately 8 feet wide by 8 feet high by 20 feet long. The shelter can be expanded on either or both sides to a width of 24 feet as shown below.



**RADCON Laboratory Closed**



### **RADCON Laboratory Expanded with Equipment**

Mounted on a Dolly Set or Mobilizer, the shelter is towed by a 5 - ton truck. Mounted on the back of the 5-ton truck are an Environmental Control Unit (ECU) and a 10 kilowatt AC generator. The ECU provides the means to heat or cool the shelter in order to maintain a constant temperature for peak operation of the radioanalysis equipment.

The following radioanalysis equipment is contained within the shelter.

(1) Canberra Genie Workstation. This workstation is an Ethernet based DEC MINI VAX Multichannel Analyzer System. The workstation contains a DEC MINI VAX/VMS expandable megabyte 3 button mouse with dual Small Computer Interface controller, 556 ethernet Acquisition Interface Module. The DCL (Digital Command Language) provides the ability to reduce a counting and analysis operation to a single keystroke. Files and parameters



can be protected to any desired level with user security codes. The system is multitasking and can perform multiple tasks at the same time, such as alpha and gamma spectroscopy. Additional features include automatic peak search with resolution of up to 10 peaks under one envelope, and a radionuclide identification library.

The Germanium detector used in the Genie system is an extended range "P" type with 30% efficiency and less than 1.9

keV resolution at 1332 keV and 1.0 keV or less at 122 keV. The detector does not require liquid nitrogen. A freon based electrically cooled cryostat provides the required refrigeration. Although the operating temperature will be slightly higher than usually achieved with liquid nitrogen, the incorporation of the ECU within the laboratory will provide minimum variations of laboratory temperature and ensure repeatable results.

(2) The LB5100 Low-Level Alpha Beta counter is an automated sample counter used to analyze swipes obtained from the field. It consists of a 100-sample automated changer and a gas-flow proportional detector to assay alpha and beta emitting radionuclides simultaneously. It is an effective method for determining fixed and removable contamination as well as any airborne contaminants.



Assuming a count time of 10 minutes, the Model 5100 can count 100 samples in approximately 16 hours, excluding sample preparation time.



(3) Packard Tri-Carb 2550 Liquid Scintillation Counter. The Packard 2550 is a highly reliable unit. With upgraded software this analyzer reports results directly in DPM and performs its own quench curve, thereby reducing operation time. It has a 408 sample capacity with user programmable counting time.

The 2550 LSC requires minimal sample preparation time and can count 408 samples (at 10 minutes counting time) in 68 hours.

In addition to the laboratory equipment shown, the mobile laboratory is equipped with portable RADIAC equipment.

The portable RADIAC equipment provides the capability to monitor equipment and or surfaces for alpha, beta and/or gamma radiation. This capability is provided by army radiation monitoring devices which, can utilize different probes, contains a microprocessor with capability to store data and can interface with an IBM compatible PC for transfer of data.

For further information contact:

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