



Annual Users' Conference

**ADVANCING RADIATION SAFETY.
EMPOWERING PROGRESS.**

M Resort, Henderson, NV | June 15 – June 18



MIRION
TECHNOLOGIES

Advancing Radiation Safety.
Empowering Progress.

© 2026 Mirion Technologies. All rights reserved.

Defense Rad-Nuc Event Simulation Day 1

David Stewart

Director, PLM: Defense, Security, and Environmental

Mirion Connect | Annual Users' Conference 2026

Henderson, NV

Daily Check-In:

Wednesday



Please take a moment
to check in for today's
session.

Overview



Schedule

WEDNESDAY JUNE 17, 2026	
7:00AM - 8:00AM	BREAKFAST
8:00AM - 11:00AM	GENERAL SESSION
9:15AM - 9:30AM	GROUP PHOTO
9:30AM - 10:00AM	BREAK
11:00AM - 11:15AM	BREAK
RAD-NUC SIMULATION FORUM	
11:15AM - 12:15AM	Introduction to RAD-NUC Simulation and Scenario <i>Presenters: David Stewart, Mirion Bryan Sommers, Mirion</i>
12:15PM - 1:15PM	LUNCH
1:15PM - 3:00PM	Event experiences, Radiological safety review, Instrumentation review <i>Presenters: Rory Hight, R.E.S.T. David Stewart, Mirion Bryan Sommers, Mirion</i>
3:00PM - 3:30PM	BREAK
3:30PM - 5:00PM	Day 1 Simulation <i>Presenter: Group</i>

THURSDAY JUNE 18, 2026	
7:00AM - 8:00AM	BREAKFAST
8:00AM - 10:00AM	Day 1 Simulation Review, Day 2 Simulation Preview <i>Presenter: Group</i>
10:00AM - 10:30AM	BREAK
10:30AM - 11:30AM	Day 2 Simulation <i>Presenter: Group</i>
11:30AM - 12:30AM	LUNCH
12:30PM - 5:00PM	Day 2 Simulation (continued) <i>Presenter: Group</i>
5:00PM - 6:30PM	MC Meeting Wrap-Up

Rad-Nuc

- Rad = malicious or accidental dispersal of radioactive material
- Nuc = weapons or incidents involving fission or fusion

NNSA (National Nuclear Security Administration)

Over the past 5 years, more than 250 incidents* involving theft, unauthorized possession or other criminal activities related to nuclear and radioactive materials have been reported.

IAEA (International Atomic Energy Agency)

Incidents recently reported, such as discovery of :

- uncontrolled sources,
- detection of materials disposed of in an unauthorized way
- detection of inadvertent unauthorized possession
- shipment of nuclear or other radioactive material.

Security personnel at Indira Gandhi International Airport after reports of suspected radioactive leak from cancer medicines.



Rad-Nuc



- 06/2023, Brazil: 2 Cs-137 source stolen from a mining facility found in a scrapyard, 432 km away from original location.
- 03/2023, Mexico: 4 Ir-192 sources (between 0.11 and 35 Ci): transport theft
- 02/2023, Thailand: Cs-137 canister lost
- 02/2023, Libya: 2,5 tons of Uranium yellow cake missing in Libya
- 02/2023, USA, Houston: Industrial “camera” lost
- 01/2023: Western Australia: Cs-137 19 GBq capsule lost in on a 1400 km road – found in 6 days

Source Safari

Summary

Attendees form teams and search for hidden simulated radioactive sources using provided hints

Pre-Requisite

Participation in HLS Track 1 Session (desired)

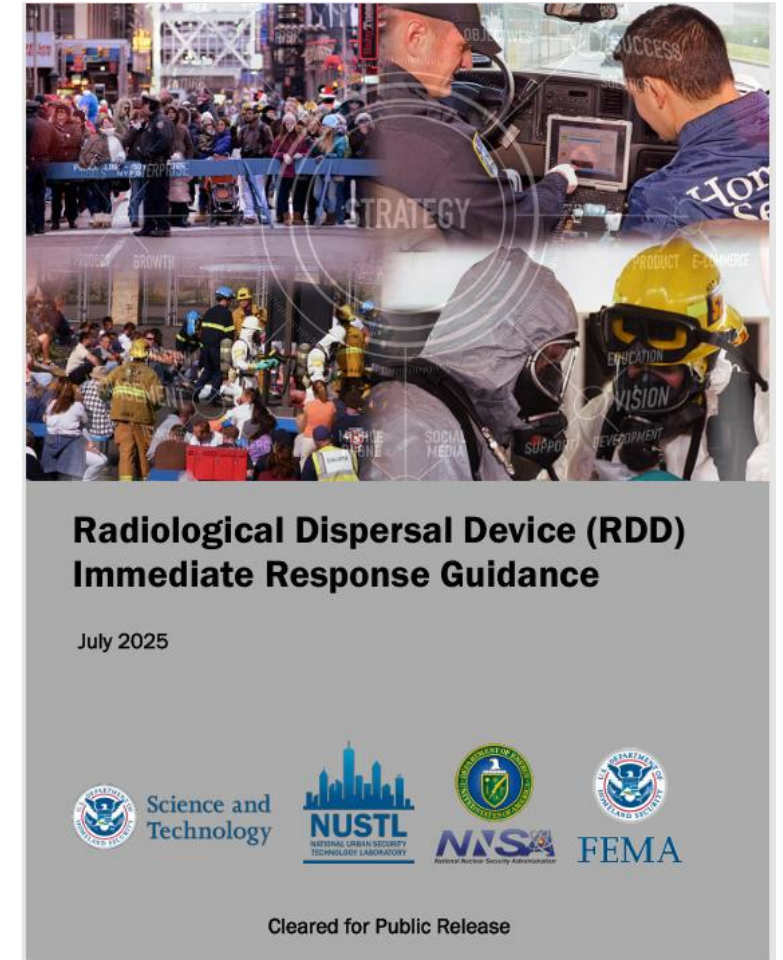
Overview

Using Mission Intel Packs and Mirion SME assistance, Teams search for hidden Radioactive and simulated Sources. Intel Packs include data sheets for capturing mission data. Attendees learn operation of Mirion instruments with hands-on approach and value of simulation training equipment.



2026 Rad-Nuc Event Simulation

- As opposed to our successful Source Safari last year, this year we are focusing on responding to field event style training
- This is an outdoor field exercise (changing into shorts/light weight clothing recommended during our break)
- Utilize a modified version of the Department of Homeland Security “Radiological Dispersal Device (RDD) Immediate Response Guide”
 - Recently released in July 2025
 - Replaces 2017 Guide titled “First 100 Minutes”
 - Still utilizes the familiar 100-minute timeline
 - Emphasizes mission-oriented actions rather than just planning phase

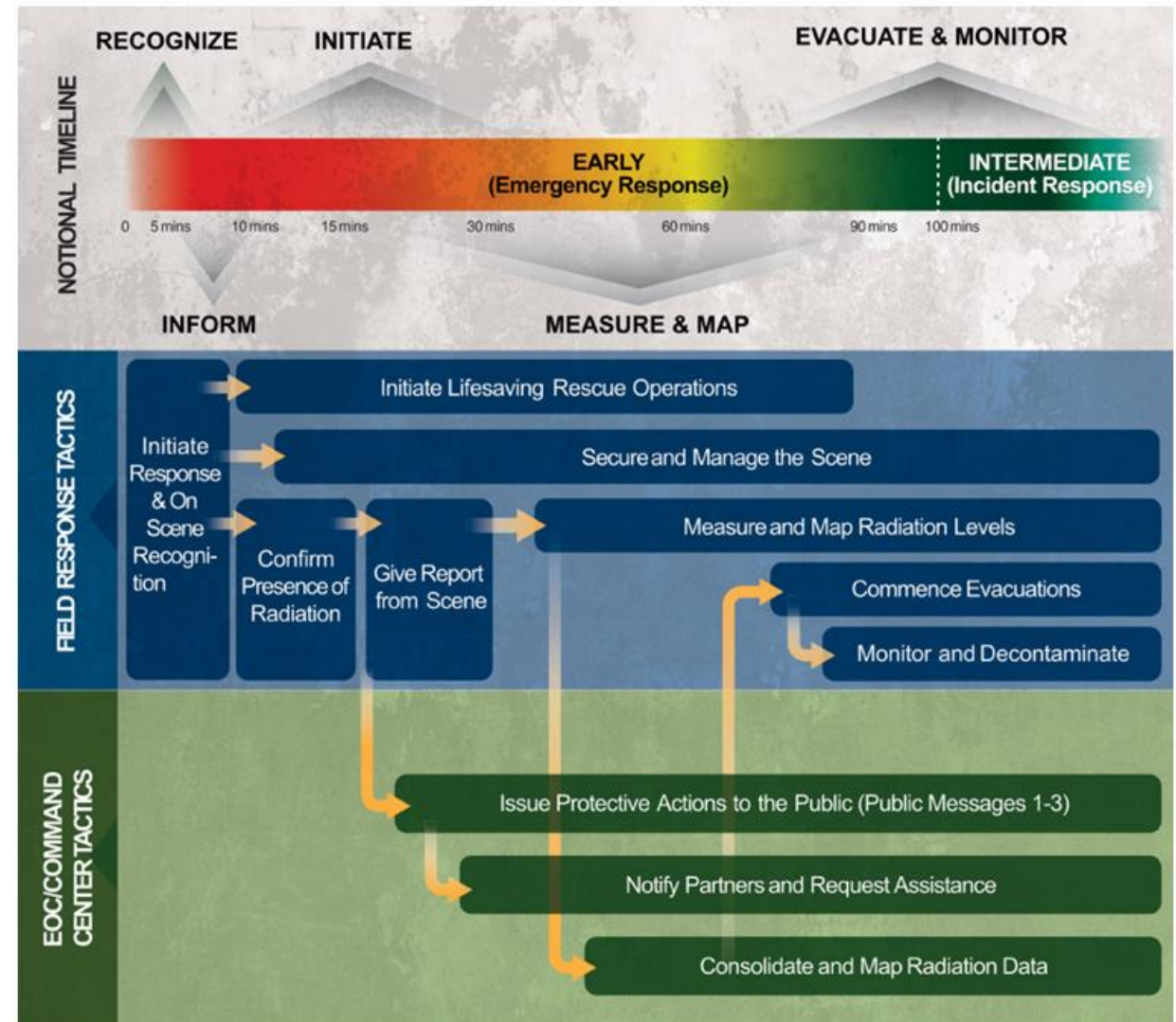


2026 Rad-Nuc Event Simulation



2026 Rad-Nuc Event Simulation

- Our focus for these exercises will be on:
 - Establishing the boundaries of the site
 - Investigation and marking of critical areas
 - Identification and information gathering for decontamination and processing
- We will include several different types of devices (military and civilian) to simulate an actual potential response scenario
- Emphasis will be on communications and understanding management of a chaotic situation



Multi-Agency Equipment

AN/PDR-77/RDS-100P



SPIR-Ace



AN/UDR-13/RGU-100



GS-4 Source Simulator



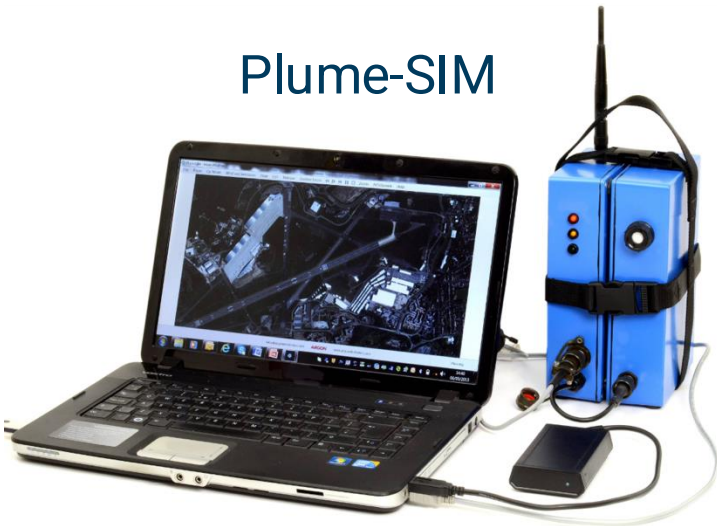
ADM-300A(V1B)



AccuRad



Plume-SIM



Radiation Review

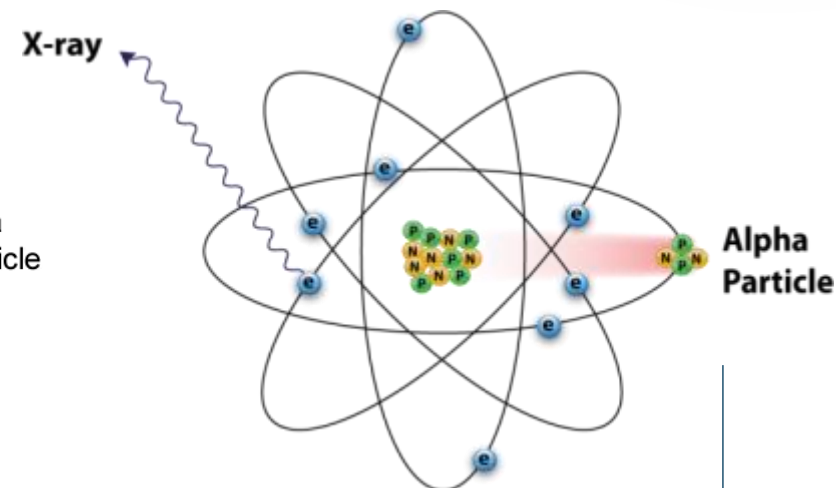
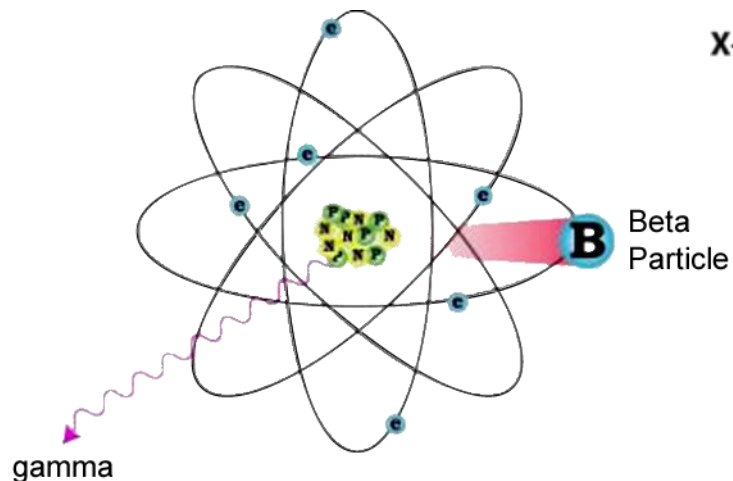
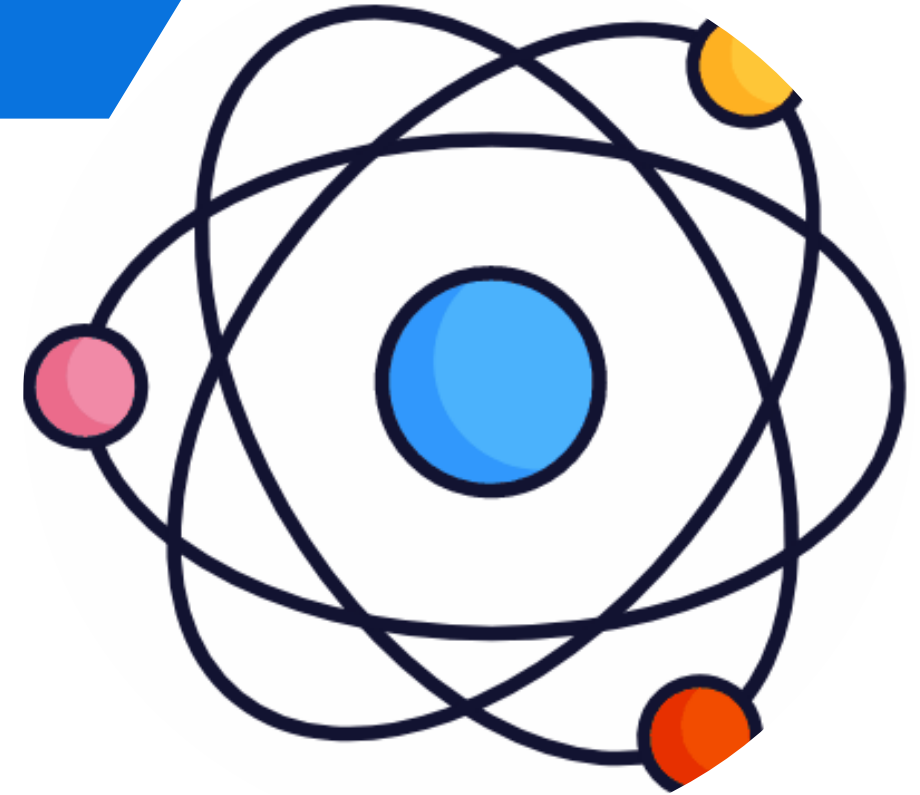


The Atom

The atom is smallest component of an element, which still retains the physical properties of that element.

An atom is comprised of three types of particles:

- **Protons & Neutrons** in the central nucleus
- **Electrons** – orbiting the nucleus



Common Gamma Emitters

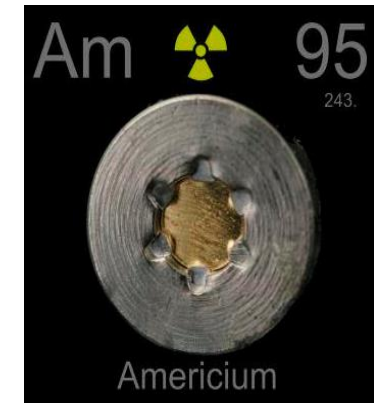
From beta decay mechanism:

- Cobalt-60
- Cesium-137
- Barium-133
- Iridium-192



From alpha decay mechanism:

- Radium-226
- Americium-241



Common Beta Emitters



- Hydrogen-3 (H3, tritium)
- Cobalt-60 (Co60)
- Strontium-90 (Sr90)
- Cesium-137 (Cs137)
- Iridium-192 (Ir192)

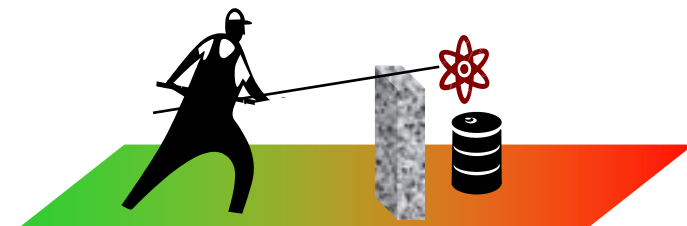
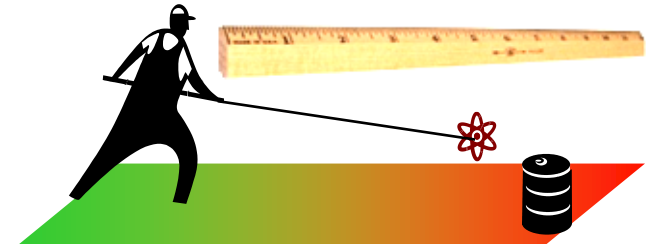
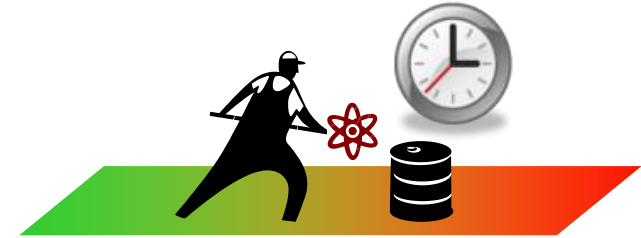
Common Alpha Emitters

- Polonium-210
- Radon-222
- Radium 226
- Americium 241
- Most Uranium isotopes (i.e., U-233, U-235, U-238)
- Most Plutonium isotopes (i.e., Pu-239 and Pu-240)



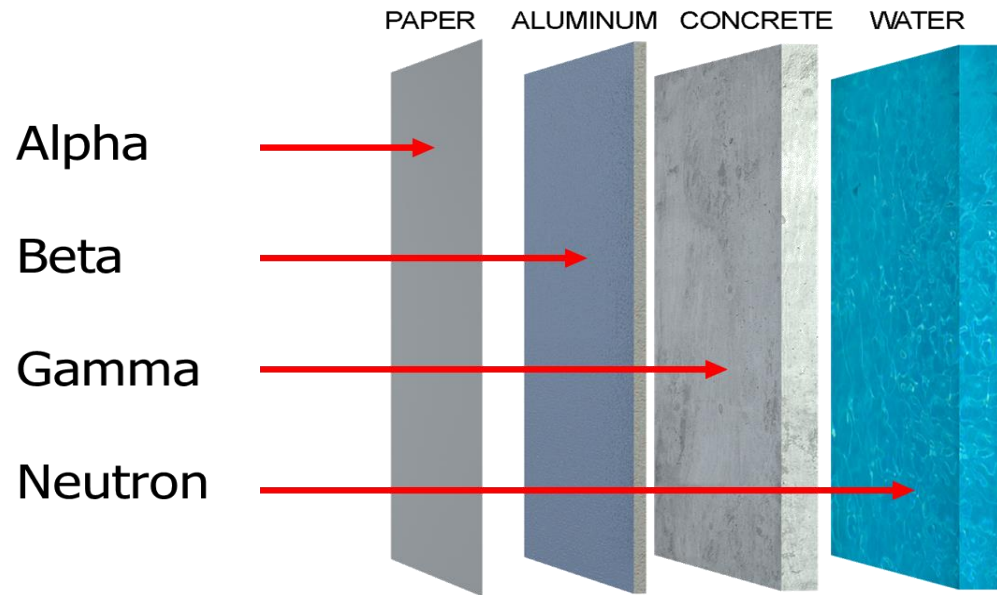
Time, Distance, Shielding

- **Time:** minimize the amount of time near a radiation source
- **Distance:** maximize the distance between you and the radiation source
- **Shielding:** use shielding materials between you and the radiation source to reduce the amount exposure



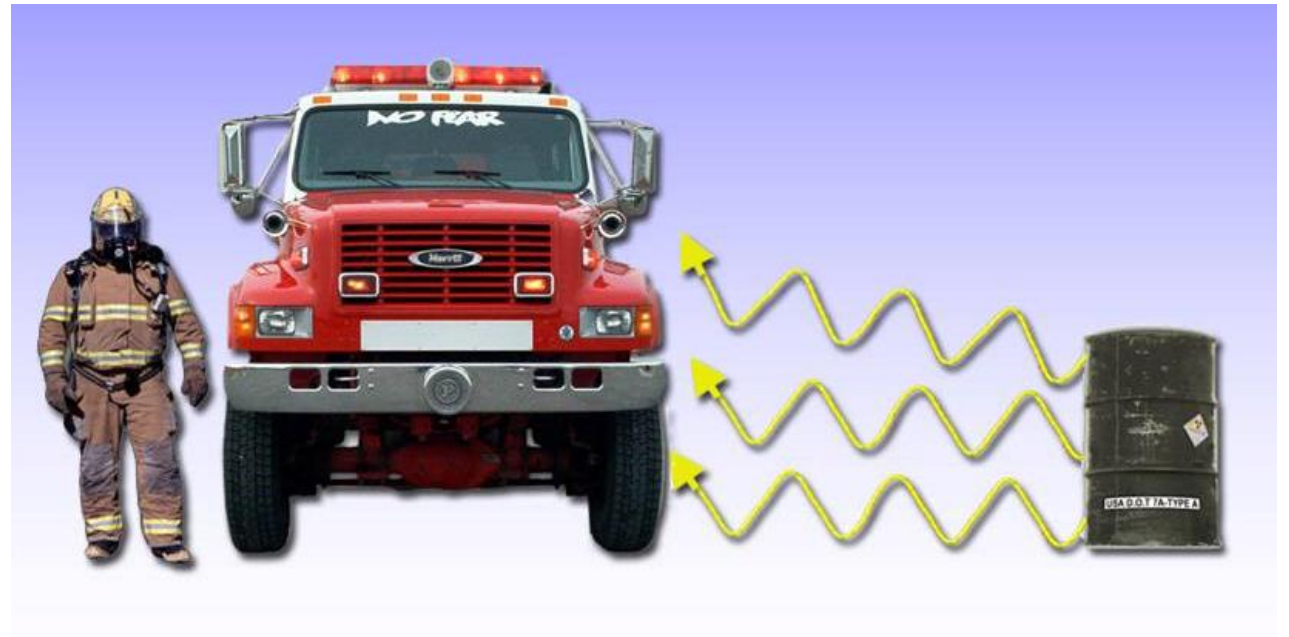
Time, Distance, **Shielding**

Anything between you and the source will help reduce your exposure



M02-Radiation Basics

29



DHS: Radiological Dispersal Device

(First 100 Minutes or not)



Our Training Scenarios

Day 1

Intercepted transport vehicle

- Police officer locates an abandoned rental truck and his PRD alarms – unknown if material lost

Key Challenges:

- Delayed Detection
- Unknown isotope(s) and/or release quantity
- Potential crime scene and evidence protection

Day 2

Explosive dirty bomb/moderate dispersion

- Radiological dispersal device combining radioactive material with conventional explosives – spreading material in parking lot

Key Challenges:

- Dispersed radiological environment
- Multiple sources
- Airborne plume + ground shine

Utilize DHS Guidelines for Thresholds

DANGEROUS RADIATION ZONE

> 10 R/hr

Entry ONLY for life-saving with full informed consent. Extreme short-term risk. Minimize all time inside.

HOT ZONE

> 10 mR/hr

Workers require appropriate training, PPE, and personal dosimeters. Document all entry/exit times.

WARM ZONE / CONTAM. AREA

Above threshold

Transition area. Don/doff PPE. Decontamination activities. Controlled access enforced.

Make use of Time, Distance, and Shielding - ALWAYS

Command Post - DHS

01 Position Upwind & Uphill

Establish CP at minimum 300–500 ft from scene, upwind of any suspected plume. Check wind direction before any positioning decisions.

02 Assign RHSO Immediately

Radiation Health & Safety Officer takes operational control of dosimetry, PPE selection, and dose tracking for ALL personnel entering hazard zones.

03 Activate ICS Structure

Per NIMS/ICS: IC → Ops → Safety Officer → HAZMAT Branch. Assign Field Team Leaders. Document all personnel entering contaminated areas.

04 Initiate Federal Notifications

Contact state rad control program. Request IMAAC atmospheric dispersion modeling. Notify FBI if criminal event suspected. Request RAP teams if needed.

05 Establish Hot Line & Decon Corridor

Set up warm zone perimeter. Designate entry/exit point. No person exits contaminated area without screening. Responder decon is mandatory.

06 Issue Shelter-in-Place or Evacuation

Based on plume direction and initial readings, issue SIP within 300–500 ft (minimum). Evacuate downwind sectors. Coordinate with JIC for public messaging.

Command Post – Mirion Training

Actions

- Central point for all communications
- Authorize entry/egress of teams
- Responsible for monitoring team dose
- Over-ride authority for halting team activities
- Monitor wind/environmental conditions
- Maintain witnesses for possible de-brief and questions from field team

Equipment

- White board
- Map
- Lead team briefing
- Lead team de-briefing
- Air conditioning and re-hab
- Green radio

AccuRad



Field Team - DHS

PURPOSE & PROCESS

The 10-point survey is the first critical measurement effort. It determines the direction and extent of contamination spread and identifies the initial Hot Zone boundary.

Measurement Points:

- 1 measurement at source/release point
- 4 directional points at ~100m from source
- 4 directional points at ~1 km transect line
- 1 background reference point (clean area)

FIELD MEASUREMENT PROTOCOL

At Release Site

Approach with vehicle. Measure gamma dose rate at 1m above ground. If >10 R/hr $\rightarrow$ DO NOT EXIT VEHICLE. Record and withdraw.

Gamma Exposure Rate

Ion chamber or energy-compensated GM detector. Record in mR/hr. Flag any reading ≥ 10 mR/hr (HZ threshold).

Beta-Gamma Surface Contam.

100 cm² probe preferred. Measure surface contamination. Record in dpm/100 cm². Note if alpha screening required.

Plume Centerline

Move to farthest contaminated point. Cut transects every ~1 km back toward source. Adjust midpoints if plume drifts >250 m from estimate.

Field Team – Mirion Training

Sub-divide Field Team

- Break down into three separate teams
- Reinforce each stage
- May occur in real life to minimize exposure (does ALARA still exist?)
- For our scenario – recognize field conditions for temperature in Henderson, NV

Team Overview

Perimeter/Control Line Team

- Establish warm zone/hot zone, ingress/egress, and primary scene oversight

Investigation Team

- Initial approach, marking areas of concern, initial investigation

Identification/Decon Plan Team

- Establish 30cm/contact rate, isotope identification, inform likely decon methods

Limits of Operation - DHS

ZONE / AREA	PPE MINIMUM	DOSIMETRY	ENTRY RULE
Dangerous Radiation Zone (DRZ) > 10 R/hr	Level A or B HAZMAT suit + SCBA. Maximum available shielding.	High-range dosimeter + alarm PRD. Continuous monitoring.	Life-saving ONLY. Informed consent required. IC authorization.
Hot Zone (HZ) > 10 mR/hr	Level C (APF $\geq$ 1000). Tyvek suit, gloves, boot covers, full-face respirator.	Personal dosimeter (legal dose of record) + audible alarm PRD.	RHSO clearance required. Log all entry/exit times and readings.
Warm Zone / Contaminated Area	Level C or D. Disposable coveralls + N95 minimum if no airborne rad confirmed. Gloves, boot covers.	Personal dosimeter. Periodic check vs. alarm threshold.	Screening at entry/exit. Decon before leaving zone.
Command Post (clean zone)	No rad PPE required if upwind. Standard duty gear.	Recommended: personal PRD alarm for all CP personnel.	Monitor CP location. Relocate if readings change.

Perimeter/Control Line – Mirion Training

Actions

- Establish warm zone/hot zone (10mR line)
- Establish background radiation level
- Confirm radioactive material present two tracks/ninety degrees opposed
- Primary scene oversight (correct entry/egress, logging, team activities in zone)
- Monitor wind/environmental conditions
- Call for exit and re-establish perimeter/entry if required
- Dose and peak dose rate recorded all teams

Equipment

- Event Response Incident Form
- AccuRad Sim
- RGU-100 Sim
- Blue radio

AccuRad



AN/UDR-13/RGU-100



Investigation Team – Mirion Training

Actions

- Initial entry into hot zone
- Mark any areas constituting Danger Zone ($>10\text{R/h}$) relative to entry/egress point
- Prioritize investigation (in order):
 - Placards
 - Shipping paperwork
 - Shipment markings
- Obtain pictures of approach, all items before moving/touching
- Do not remove any contaminated material

Equipment

- Event Response Incident Form
- AccuRad Sim
- ADM-300A(V1B)
- Orange radio

ADM-300A(V1B)



AccuRad



ID/Decon Team – Mirion Training

Actions

- Mark any areas constituting Danger Zone (>10R/h) relative to entry/egress point
- Prioritize investigation (in order):
 - Placards
 - Shipping paperwork
 - Shipment markings
- Obtain pictures of approach, all items before moving/touching
- Do not remove any contaminated material
- Identify isotopes if able to safely do so

Equipment

- Event Response Incident Form
- AccuRad Sim
- SPIR-Ace
- RDS-100P
- Red radio

AN/PDR-77/RDS-100P



AccuRad



SPIR-Ace



Advancing Radiation Safety.
Empowering Progress.

© 2026 Mirion Technologies. All rights reserved.

AccuRad



UltraRadiac Plus

- The original and standard personal ratemeter for fire/rescue/hazmat operations!
- Measure and display dose rate and total dose
- Unique Time-to-Alarm feature!
- Programmable Audible, Visual and Vibrating alarms
- Rugged! Rugged! Rugged! for extreme environments
- Military Pedigree - Derived from the Military Pocket RADIAC
- Large, clear, backlit LCD display
- Easy to use in MOPP gloves and turnout gear
- COTS AAA batteries (4)



AccuRad Overview

A body-worn radiation detector designed for operations

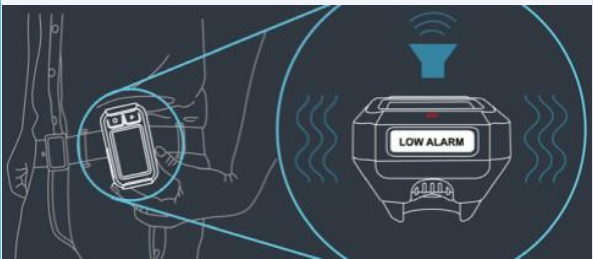


Detect. Search. Localize. Protect.

A high-performance personal radiation detector for civilian defense, CBRN forces, first responders, and law enforcement. The AccuRad addresses every application requiring efficient detection of radiological threats.

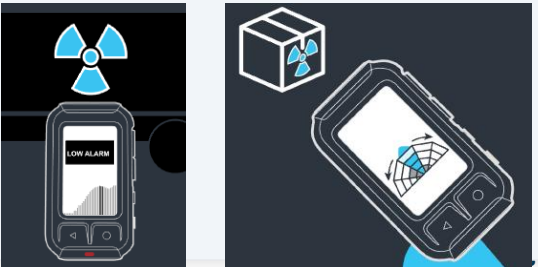
Worn • Hands-free

Clipped on belt or vest. Top display always readable. Continuous monitoring of dose rate and alarms.



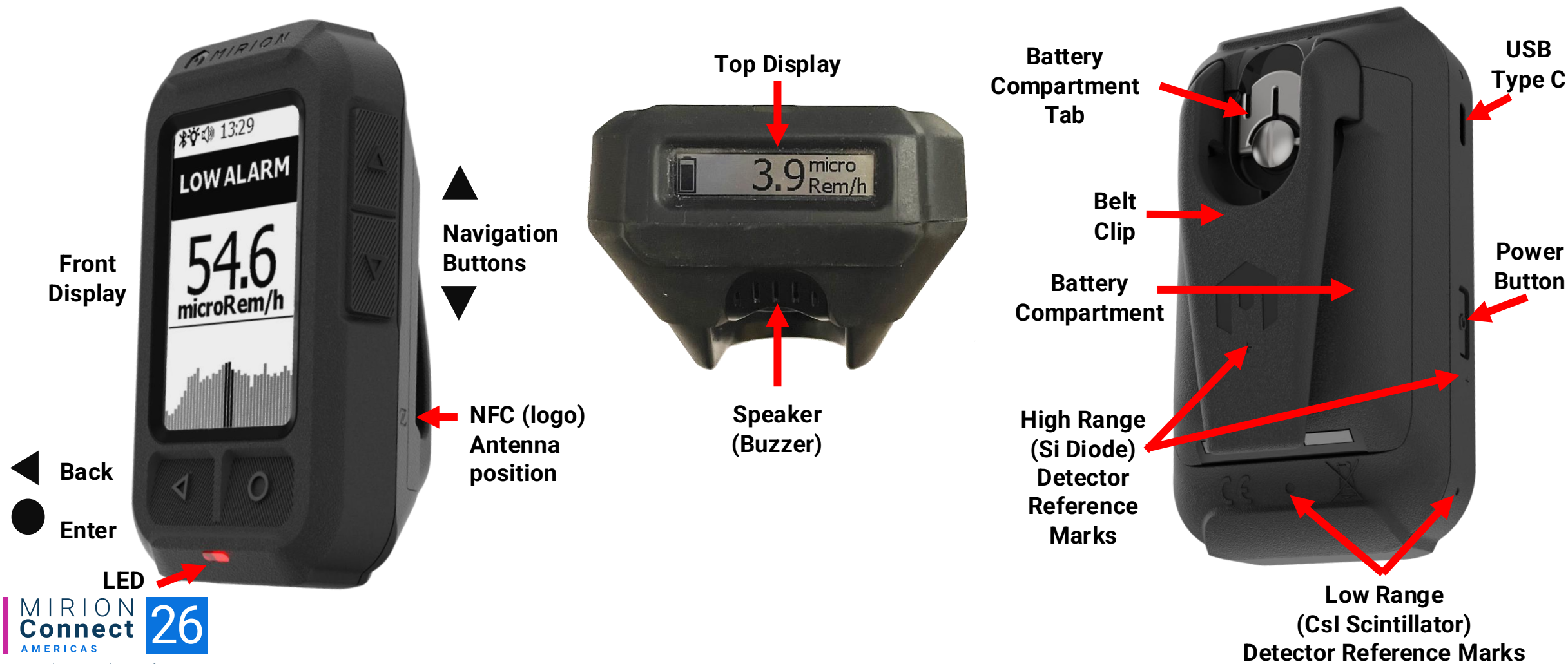
Handheld • Search

Picked up when an alarm fires. Front display shows trend and directional radar to localize the source.



Physical Description: Case

On the Outside



Physical Description: Display

Display Screens



- Plain text to avoid mis-interpretation of mrem or μ rem acronyms.
- Rem with capital letter for readability
- Auto-scaling micro and milli units

Operation: Power ON & Self Check

Power On

(1) **Press & hold Power button to power-on the AccuRad**



(2) Splash screen followed by Information screen with short **self-check** sequence



(3) Background update



(4) Ready for use



Operation: Modes

Detection Mode with Trend



- Default mode with **Trend Screen**
- Both screens active
- Measurement units in microrem/h
- **Buzzer, LED and Vibration** active

Search Mode with Trend



- Measurement units in **cps or mrem**
- Buzzer, LED and Vibration active
- **Green LED** blinks and Audible Chirp proportionate to the count rate
- Red LED blinks upon alarm

Search Mode with Radar



- Measurement units in **cps or mrem**
- Audible, LED and Vibration active
- Green LED blinks and Audible Chirp proportionate to the count rate
- **Red LED** blinks upon alarm

SPIR Ace



SPiR-Ace



The **SPiR-Ace** is a radionuclide identification device (RIID): it detects, localizes, measures and identifies radionuclides, addressing all applications requiring efficient detection and identification of radiological threats in security applications, including civil defense, border security and customs..

- Ultra fast and accurate search and nuclide identification
- Identifies heavily shielded materials, unbalanced mixes, and Special Nuclear Materials masking scenarios
- Works in contaminated environment and with fast temperature changes thanks to the sourceless LED stabilization



SPiR-Ace Overview



SPiR-Ace Startup

Press the ON/OFF button, until the device vibrates.

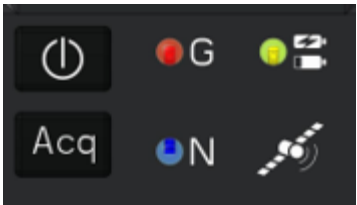
SPiR-Ace initiates a self-test sequence



The device vibrates



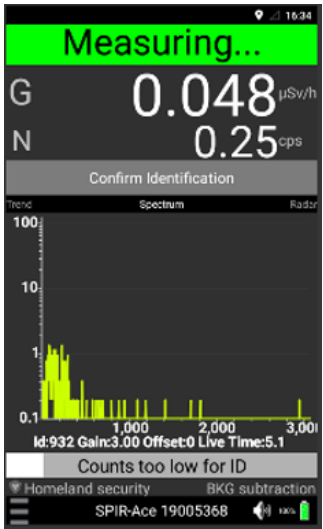
LEDs flash → steady



Splash screen

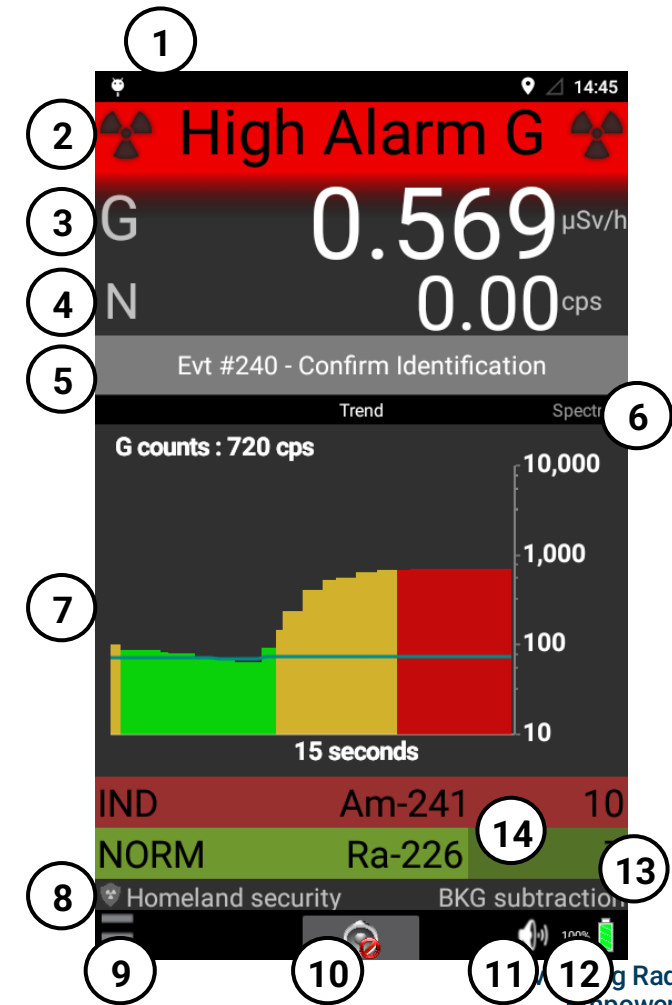


The application starts



SPiR-Ace User Interface

1. Status Bar
2. **Alarm status & warnings**
3. **Gamma Measurement**
4. Neutron Measurement (if equipped)
5. **Confirm Identification button**
6. Current Screen Name (Trend...)
7. Specialized tool (trend, radar, map...)
8. Active Radionuclide Library (Homeland security, accident...)
9. Settings Menu Button
10. Serial Number or alarm acknowledgement
11. Current Alarm Indicator (vibrator, sound...)
12. Detection Module Battery Level
13. Background Subtraction:
14. **Identification Results (category, nuclide, confidence level)**



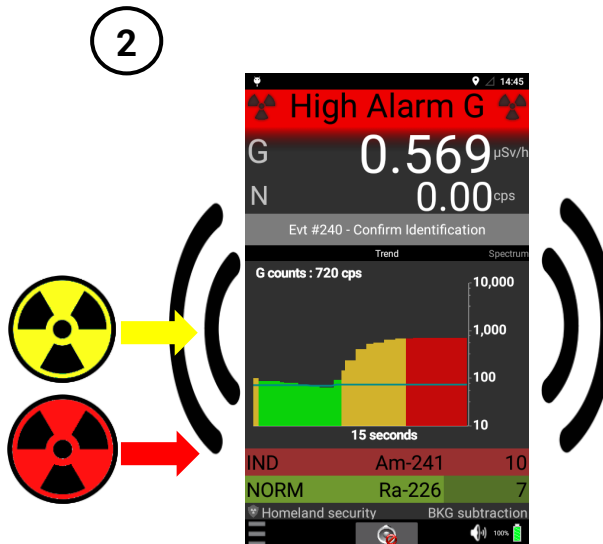
SPIR-Ace Detect, locate, Identify

1. The interface defaults to the **Trend** screen. The device will automatically enter "Sleep Mode" (black screen) and remain actively monitoring



2. If a source is detected, it vibrates and provides visual and/or audible alarms

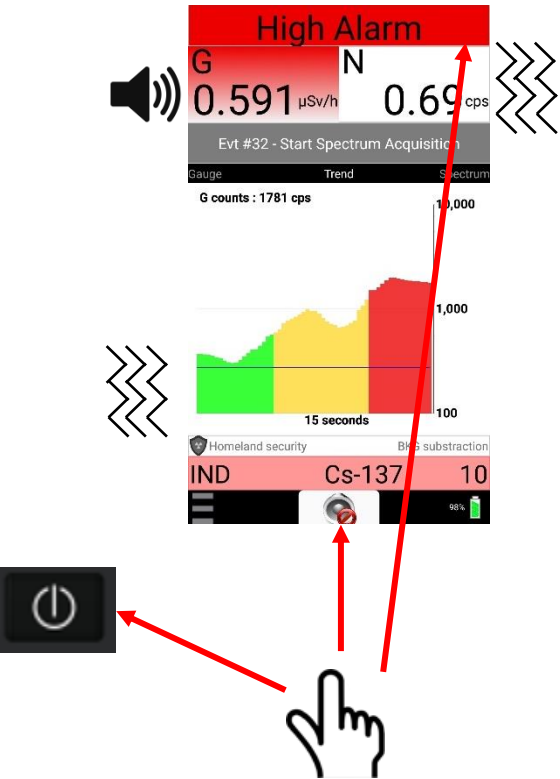
If strong enough, the source may be identified real-time.



2. Use the most appropriate screen to locate the source and perform the nuclide identification



SPiR-Ace Alarm Acknowledgement



Acknowledge sounds
and vibrations

SPiR-Ace Detailed Identification

When a source is located, confirm the nuclide identification

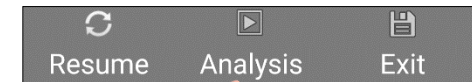
1. Press
"confirm identification"



2. Identification gets refined until the end of the countdown

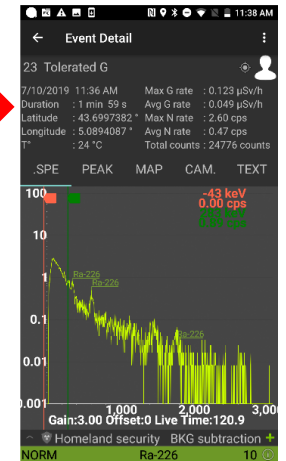


3. When complete, an Event Report is created. The final nuclide identification is provided.



IND	Am-241	10
NORM	Ra-226	7
Homeland security		BKG subtraction

4. The measurement may be further **analyzed** or **sent**... *we'll come back on this*

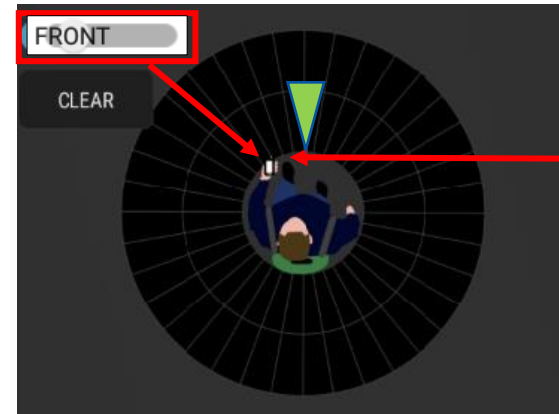
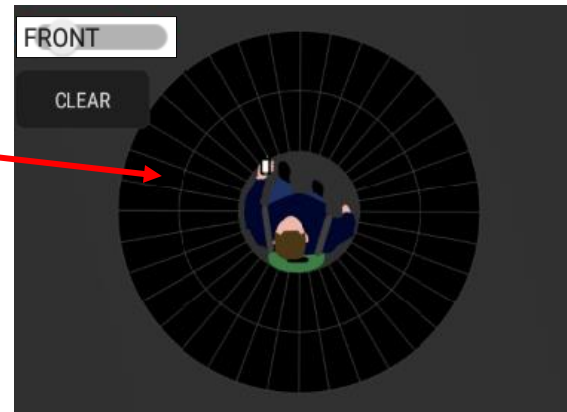
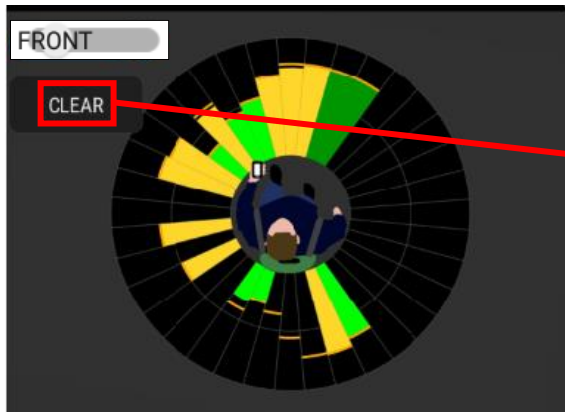


SPiR-Ace Search Radar Screen

1. "Clear" the Radar Scope

2. Make sure the front/back toggle is set to "Front". Use according to the picture. Phone always pointing forward.

3. Start turning around. Signal may increase in the front direction.



Smartphone
(pointing forward)



SPIR Ace RIID



RDS-100P/PDR-77

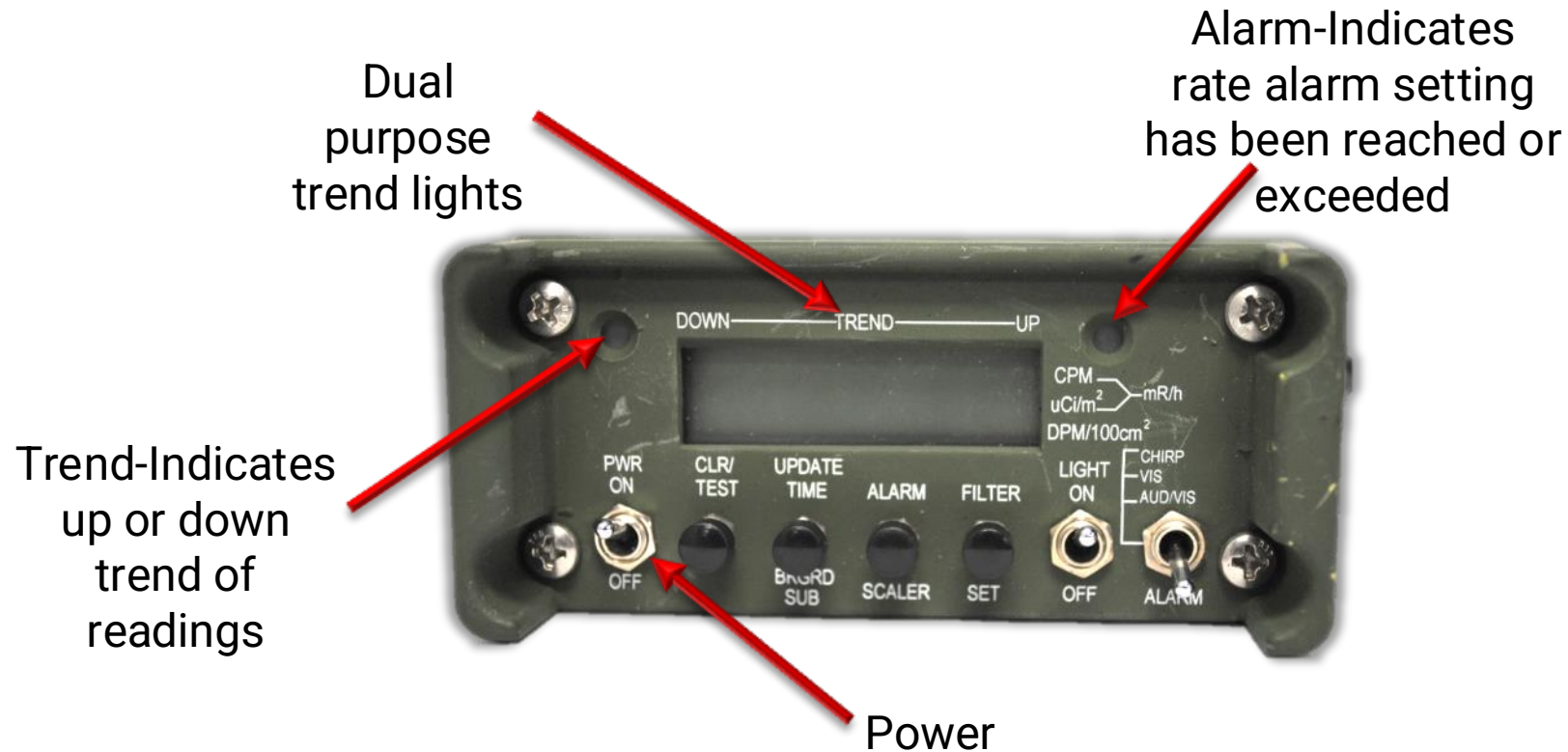


RDS-100P Components

- Carrying Pouch w/shoulder strap
- Radiac meter
- Beta/Gamma Probe
- Alpha Probe
- X-ray probe
- Radioactive Test Sample
- Headset and Volume Control Assembly



RDS-100P Controls and Indicators



RDS-100P Controls and Indicators

CLR/TEST – Start operating test; used w/other button to perform various functions

FILTER – Converts indicated reading to average reading



UPDATE TIME – Reading displayed every second or every 2 seconds

ALARM – Used in setting alarm set points

BRGRD SUB – Subtracts background from display

SCALER – Accumulated total counts for a predetermined time

RDS-100P Startup Procedures

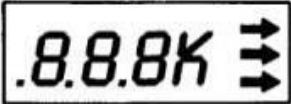
1. Perform before PMCS
2. Install batteries:
 - a. Radiac meter
 - b. X-ray probe
3. Attach Beta/Gamma probe to the Radiac meter
4. Set power to ON (up) and wait for arrow display



RDS-100P Startup Procedures

5. Set alarm switch to CHIRP
6. Press CLR/TEST and hold until alarm sounds, then release

The next step is timed

7. When  appears, conduct the following within 10 seconds:
 - a. Set Alarm (VIS) – *Alarm sound stops*
 - b. Set Alarm (AUD/VIS) – *Alarm sounds and TREND lights come on*
 - c. Set Alarm (Chirp) – *Lights go out, alarms sound*
 - d. Set Alarm (VIS)



RDS-100P Startup Procedures

8. At the end of the 10-second segment test, the digit/unit test begins with three zeros and the sequence shown. Check each display in the sequence for correctness of all characters, including decimals. During the electrical tests that start immediately after 999 K, you may see one-digit codes on the display. You can ignore these codes. If all tests OK, after 10 to 60 seconds, a flashing 9 appears. Press CLT/Test 3 zeros will be replaced by a background reading and arrows.
9. Set desired features



RDS-100P Beta/Gamma Probe

Conducting the Survey

- Distance:** Hold the probe approximately 1–2 cm (or ~ 1 inch) from the surface or item you are monitoring.
- Speed:** Move the probe slowly and consistently across the area, at a rate of about 5–7 cm per second (or 1 probe width per second).
- Audio & Visuals:** Keep the audio speaker on to quickly detect any spikes in radiation while monitoring the digital LCD screen.
- Differentiating Beta vs. Gamma:** The Beta/Gamma probe features a sliding shield. To determine the beta dose rate, take a reading with the shield **open** (detects both beta and gamma) and then **closed** (blocks beta, detecting only gamma).



Deployment



Pre-deployment Brief

- 10 Minute break (consider changing clothes?)
- Meet at XXXXX
- We will divide into four teams
 - Command Post (green radio)
 - Perimeter Team (blue radio)
 - Investigation Team (orange radio)
 - Decon/Identify Team (red radio)
- Briefed by intercepting police officer
- Deploy in waves (remember ALARA)

■ TRAINING EXERCISE IN PROGRESS ■

MIRION
Connect
AMERICAS

26

Annual Users' Conference

RAD-NUC EVENT SIMULATION · DEFENSE TRACK

TRAINING
EXERCISE

UNDERWAY IN THIS AREA

A SIMULATED RADIOACTIVE LOST SOURCE / DISPERSION EVENT
is currently underway as part of a controlled training scenario.
All personnel, equipment, and materials are part of the exercise.
NO licensed radioactive material is present.



NO LICENSED RADIOACTIVE MATERIAL PRESENT
All sources are simulated for training purposes only



Exercise Controller / RSO:
Location:
Event:

QUESTIONS OR CONCERNS — CONTACT:
David Stewart | +1 (607) 731-8342
M Pavilion · M Resort Spa & Casino, Henderson, NV
Mirion Connect 2026 · June 15–18, 2026

FOR TRAINING / EXERCISE USE ONLY — NOT AN ACTUAL EMERGENCY

Basic Response to Radiation Incidents

Dose Rate Guidance During Entry Operations	
Rate	Recommended Action
2X Background	Radiation Present
Less than 2 mR/h	Establish Cold Zone (Controlled Area)
Bkgd - <2 mR/h	Establish Warm Zone Perimeter
2 mR/h up to 10 mR/h	Establish Hot Zone Perimeter for Major Event
5 R/h	Turn Back Limit for Plumbing, Recon, or Identify Mission
100 R/h	Turn Back Limit for Rescue Mission
> 100 R/h	Grave Danger to Responders Very short duration entry by informed volunteers for extreme life safety missions only

Total Accumulated Dose	
Dose	Recommended Action
5 rem (5,000 mR)	Dose limit for responders performing recon, plumbing, or identify mission.
10 rem (10,000 mR)	Dose Limit for responders protecting critical infrastructure
25 rem (25,000 mR)	Dose limit for responders performing rescue mission
> 25 rem	Rescue mission or protecting large populations by informed volunteers

NOTE: Dose limit is equal to the sum of the external dose (as read from a dosimeter) and internal dose. Limit internal dose with proper respiratory protection and PPE.

DHS Response Zone Guidelines

Table 2. Radiation Zones and Suggested Activities for Each Zone During the First 12 Hours

Decision Exposure Rate mR/hr	Radiation Zones mR/hr	Activities	Total Accumulated Stay Time for First 12 Hrs *
Background	Uncontrolled	No restrictions. The best location for Incident Command and decontamination activities.	Unlimited
< 10	Low-Radiation Zone < 10 -100	If feasible, restrict access to essential individuals. Initial decontamination of first responders should occur near the outer boundary of this area. Uninjured personnel within this zone at the time of the RDD explosion can be directed to proceed directly home to shower if resources do not permit contamination surveying at the scene. (For RDDs containing up to ~1000 Ci, this may be the only zone that exists.)	Full 12 Hours
100	Medium-Radiation Zone 100-1000	Restrict access to only authorized personnel. Personal dosimetry should be worn. Serves as a buffer zone/transition area between the high and low radiation zones. People within this zone at the time of the explosion should be surveyed for contamination before being released. (For RDDs up to ~ 10,000 Ci, this may be the highest radiation zone that exists.)	5 - 12 Hrs (12 Hrs for critical property and lifesaving activities)
1000	High-Radiation Zone 1000 - <10,000	Restrict access to authorized personnel with specific critical tasks such as firefighting, medical assistance, rescue, extrication, and other time- sensitive activities. Personal dosimetry should be worn. People within this zone at the time of the explosion should be surveyed for contamination before being released.	30 minutes – 5 Hours
10,000	Extreme Caution Zone ≥ 10,000	This area, located within the high radiation zone, is restricted to the most critical activities, such as lifesaving. Personal dosimetry required, although one monitor for several responders is acceptable if they remain near the person with the monitor. Limit time spent in this area to avoid Acute Radiation Sickness. People within this zone at the time of the explosion must be surveyed for contamination before being released.	Minutes to a few hours

Perimeter/Control Line – Mirion Training

Actions

- Establish warm zone/hot zone (10mR line)
- Establish background radiation level
- Confirm radioactive material present two tracks/ninety degrees opposed
- Primary scene oversight (correct entry/egress, logging, team activities in zone)
- Monitor wind/environmental conditions
- Call for exit and re-establish perimeter/entry if required
- Dose and peak dose rate recorded all teams

Equipment

- Event Response Incident Form
- AccuRad Sim
- RGU-100 Sim
- Blue radio

AccuRad



AN/UDR-13/RGU-100



Event Response Form

- Respect team assignment – working to have a cross-section of skills across all teams
- Establish who will be primary instrument individual(s) and who will be primary for documentation/pictures
- Once get into command post we will have a readout from our initial on-scene response police officer
- Please check your instruments while waiting for event to start so ready to deploy (including zero dose)

[illegible]

Investigation Team – Mirion Training

Actions

- Initial entry into hot zone
- Mark any areas constituting Danger Zone ($>10\text{R/h}$) relative to entry/egress point
- Prioritize investigation (in order):
 - Placards
 - Shipping paperwork
 - Shipment markings
- Obtain pictures of approach, all items before moving/touching
- Do not remove any contaminated material

Equipment

- Event Response Incident Form
- AccuRad Sim
- ADM-300A(V1B)
- Orange radio

ADM-300A(V1B)



AccuRad



Typical Shipping Documents

ACME / WYLE E. COYOTE SHIPPING COMPANY, LLC 4001 Desert Road Tucson, AZ 85701 Tel: (520) 555-0199 Fax: (520) 555-0188 www.acmewyle-shipping.com DOT Registered Carrier SCAC: AWCS MCF 0442817 USDOT# 1887334		HAZARDOUS MATERIALS SHIPPING MANIFEST UNIFORM STRAIGHT BILL OF LADING Manifest #: AWC-2026-0615-NV Date: June 13, 2026								
★ FOR TRAINING / EXERCISE PURPOSES ONLY — NOT AN ACTUAL HAZMAT SHIPMENT ★										
SHIPPER / CONSIGNEE Mirion Technologies (IST) 2 Science Road Glenwood, IL 60425 Contact:		COMSIGNEE / SHIP-TO Mirion Connect 2026 M Pavilion — Henderson Events Center 200 S Green Valley Pkwy, Henderson, NV 89012 Attn:								
MANIFEST / PRO # PRO-7749312-A		BILL OF LADING # BOL-2026-06-8841								
CARRIER NAME ACME/WYLE E. COYOTE SHIPPING CO.		TRUCK/UNIT # NV-9ACME4								
PURCHASE ORDER # PO-MC26-RAD-001		SHIP DATE June 13, 2026								
SCAC CODE AWCS		DRIVER R. Runner								
REG. AUTHORITY DOT-HM-181 / IAEA SSR-6		TRAILER # TLR-2244-A								
SPECIAL HANDLING INSTRUCTIONS: RADIOACTIVE MATERIAL — Handle per 49 CFR 173 & IAEA SSR-6. Keep upright. Do not stack. Segregate from undeveloped film. Notify consignee RSO upon delivery.										
DESCRIPTION OF ARTICLES — HAZARDOUS MATERIALS (DOT 49 CFR / IAEA CLASS 7)										
Plg #	Pcs	Package Type	Wt (Lbs)	HM	Proper Shipping Name / Description	UN #	Class	PG	TI	Activity / Radioisotope
1	1	Overpack/Drum	28 lbs	HM	Radioactive Material, Type A Package, Non-Special Form	UN 2916	7	II	10.0	400 Ci Cs-137 (14,800 GBq)
2	1	Overpack/Drum	14 lbs	HM	Radioactive Material, Type A Package, Non-Special Form	UN 2916	7	II	3.1	10 Ci Cs-137 (370 GBq)
3	1	Overpack/Drum	8 lbs	HM	Radioactive Material, Excepted Package, Instruments or Articles	UN 2910	7	—	1.0	5X100 µCi Co-60 (18.5 MBq)
4	1	Overpack/Drum	6 lbs	HM	Radioactive Material, Excepted Package, Limited Quantity of Material	UN 2910	7	—	1.0	89 µCi Am-241 (3.29 MBq)
5	1	Overpack/Drum	42 lbs	HM	Radioactive Material, Type A Package, Non-Special Form	UN 2916	7	II	10.0	176 Ci Cs-137 (6,512 GBq)
6	1	Overpack/Drum	5 lbs	HM	Radioactive Material, Excepted Package, Limited Quantity of Material	UN 2910	7	—	1.0	280 µCi Cs-137 (10.36 MBq)
TOTALS: 6 plgs			103 lbs	Aggregate Transport Index: 28.2 6 of 6 HM						
24-HR EMERGENCY CONTACT: 1-800-555-COYOTE CHEMTREC: 1-800-424-9300										
SHIPPER'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations (49 CFR / IAEA SSR-6 / IMDG Code). This is a simulation for exercise purposes only.										
Shipper Signature / Date:		Carrier / Driver Signature:		Radiation Safety Officer:						
Manifest #AWC-2026-0615-NV PRO: PRO-7749312-A BOL: BOL-2026-06-8841				Page 1 of 1 Form AWC-HM-001 Rev 3						
★ TRAINING DOCUMENT — NOT FOR ACTUAL SHIPMENT — MIRION CONNECT 2026 ★										

FOR TRAINING / EXERCISE USE ONLY			
RADIOACTIVE			
 YELLOW-III IAEA Class 7 / DOT 49 CFR 173 PACKAGE 1 OF 6			
CONTENTS			
Radionuclide:	Cs-137		
Activity:	400 Ci (14,800 GBq)		
Quantity:	1 Source		
Physical Form:	Special Form / Solid		
TRANSPORT DATA			
UN Number:	UN 2915	Category:	YELLOW-III
Proper Name:	Radioactive Material, Type A Package, Non-Special Form		
Hazard Class:	7 — Radioactive Material Transport Index: 10.0		
Criticality Index:	N/A		
SHIPPER: Mirion Technologies (IST) 2 Science Road Glenwood, IL 60425		CONSIGNEE: Mirion Connect 2026 M Pavilion, Henderson, NV St Rose Pkwy & Bowes Ave	
EXERCISE LABEL — NOT FOR ACTUAL SHIPMENT — MIRION CONNECT 2026			

ID/Decon Team – Mirion Training

Actions

- Mark any areas constituting Danger Zone (>10R/h) relative to entry/egress point
- Prioritize investigation (in order):
 - Placards
 - Shipping paperwork
 - Shipment markings
- Obtain pictures of approach, all items before moving/touching
- Do not remove any contaminated material
- Identify isotopes if able to safely do so

Equipment

- Event Response Incident Form
- AccuRad Sim
- SPIR-Ace
- RDS-100P
- Red radio

AN/PDR-77/RDS-100P



AccuRad



SPIR-Ace



Advancing Radiation Safety.
Empowering Progress.

© 2026 Mirion Technologies. All rights reserved.

Gear up and meet at the Command Post!



Survey for:

Defense RAD-NUC Event Simulation Forum



Please take a moment
to fill out a short survey
on this session.

Thank you

