

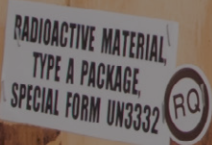
case study

ARGON™

World leaders in CBRN/  
HazMat training systems

# Hands-On Radiation Training Without Live Sources

How the Tennessee Emergency  
Management Agency (TEMA)  
implemented simulator-based  
radiological training



## Introduction

As the reliance on the use of radioactive materials in medicine, industry and agriculture has continued to grow, so too has the awareness of ensuring their safe transportation, handling and disposal.

For those working in a first responder capacity, there is also the increased risk of encountering an incident or emergency that involves some form of radioactive hazard.

In his role as a Radiological Specialist for the Tennessee Emergency Management Agency (TEMA), Ken Cochran, is responsible for the radiological training of a broad range of response personnel.

Among the programs offered by TEMA is the Modular Emergency Radiological Response Team (MERRTT) program which provides responders with a practical, hands-on introduction to the fundamentals of radioactive materials, the use of radiological survey instrumentation and the techniques required for decontamination.

Recognizing that there was the opportunity to enhance the agency's hands-on training capability, in 2019 Cochran began looking into simulator-based technology that was compatible with the Mirion / Canberra [CDV-718A](#) survey meter.

His research led him to the discovery of Argon Electronics' simulator training product range and the eventual purchase of the [DT616-SIM](#) Beta Gamma simulator probe and simulation sources.

In this Q&A with Argon Electronics' North American business development Manager, Sergeant Major (Rtd.) Bryan Sommers, Cochran describes his experience of sourcing, procuring and implementing simulator training technology.

## **When did you first become aware of the potential applications of simulator detectors for CBRN training?**

Around the beginning of 2019 I began searching online for something along the same lines as our old GPS training probes, which the detector manufacturer was no longer servicing or providing updates for.

I came across the simulator probes from Argon Electronics which looked perfect for our needs and which offered much more flexibility than the GPS trainers.

## **What was your experience of purchasing simulators from Argon?**

Once I read the fact sheet specifications, and spoke further with Steven Pike regarding exactly how I wanted to use the simulator probes, I was immediately convinced that they were exactly what I was looking for to supplement our radiological emergency response training courses.

The only problem I ran into when trying to make a purchase was the fact that as a state government agency, I could not buy directly from a firm located outside the U.S.

My interest was piqued though when Steven suggested I utilize a US based intermediary as a means of shipping the simulator probes.

I obtained approval to do just that and the Tennessee Emergency Management Agency became the first U.S. Emergency Management entity to order simulator training equipment from Argon.

## What are your recollections of using the simulator training tools for the first time?

I first tested the equipment in my office, where I have access to live radioactive calibration sources, and compared it with the actual readings from the live sources.

I was so impressed that I couldn't wait until the next training class was scheduled.

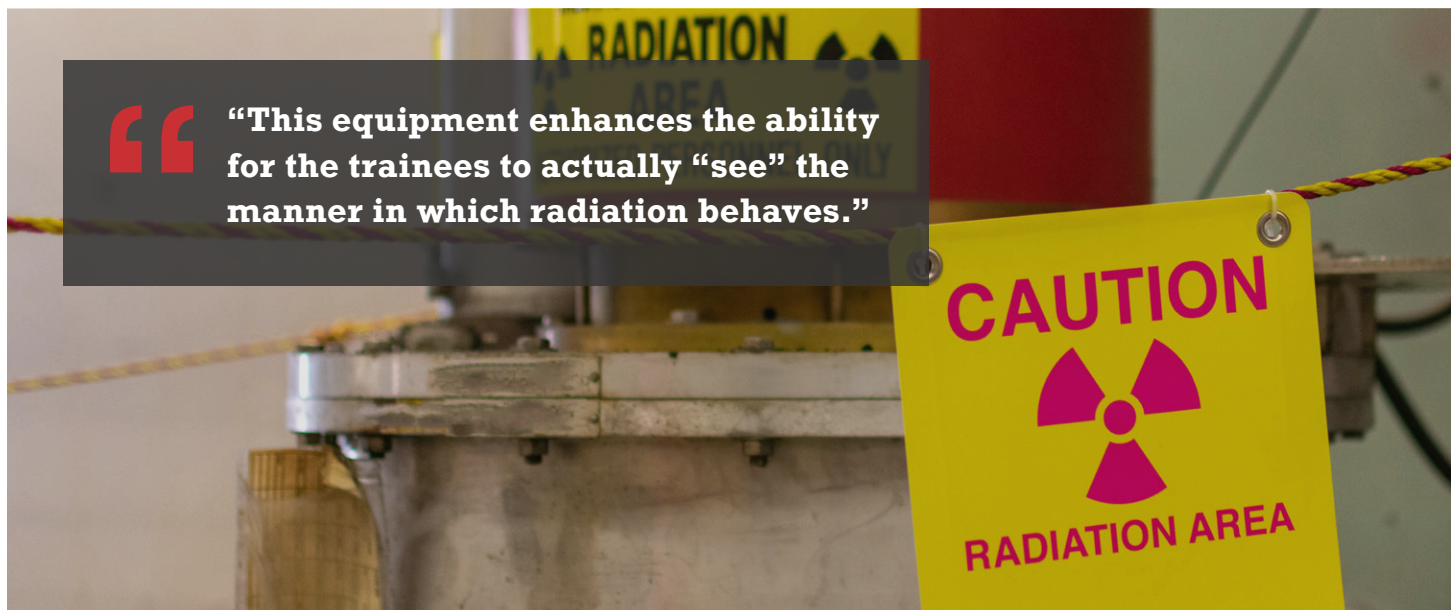
The equipment was first used in a MERRTT training program for a group of firefighters.

The weather outside was terrible so we utilized a big garage used for parking fire trucks to simulate locating a radiation source of unknown activity.

All the firefighters were extremely impressed that we were able to do what we did without using live radiological sources.

## What types of scenarios is the equipment most commonly used for?

We primarily use the products in exercises involving the search for unknown illicit sources and transportation incidents involving Department of Transportation packaging.



## **How have trainees responded to the technology?**

They all love it. I have actually loaned the equipment out within the agency for similar training as well as to a local fire house for their in-house refresher training.

## **How has the technology impacted your instructors' approach to radiation training?**

Everyone who has used it has been impressed with its versatility, ease of use, and general overall design, to the point that they are all coming up with new, unique scenarios for the training classes.

## **What benefits have you seen as a result of introducing simulators?**

This equipment enhances the ability for the trainees to actually “see” the manner in which radiation behaves and to experience the ease with which it can be successfully detected.

What do you think the most significant future radiological challenges are likely to be?

I still feel that it is only a matter of time before we are confronted with the challenges of a deliberate, targeted act from an individual or group whose purpose is to kill, maim or otherwise cause harm to citizens and way of life.

The right training is going to be vital to ensure we're prepared for any intentional act of violence.



## **Are there any radiation training ‘gaps’ that you believe need to be addressed?**

I think we are doing as much as we can to train our emergency responders and to provide them with the tools they need to safely protect themselves and the public from the potential harm from radiological incidents.

The only ‘gaps’ are the ones inflicted on our training externally, such as the impact of the COVID-19 pandemic.

## **What advice would you give to organizations considering introducing simulators into their training programs?**

Purchase as many simulators as you can with the available funds you have, as soon as you can and share your training scenarios with those in your field of emergency response.

Without doubt, these are the most realistic and economical training tools you can use without exposing your emergency responders to life-threatening live agents and materials.



**“Without doubt, these are the most realistic and economical training tools you can use without exposing your emergency responders to life-threatening live agents.”**

## DT616-SIM Probe Set

The DT616-SIM beta / gamma radiation hazard training simulator probe enables students to experience all of the operational features of their Mirion/Canberra AN/VDR-2, PDR-77 and RDS100 survey meters without the need to change the calibration of their actual instrument - and with no requirement for a live radiation source.

The training system responds to safe electromagnetic and magnetic sources - removing all regulatory, environmental and health and safety concerns and allowing exercises to be set up in any location, including public buildings.

Students can safely train for all aspects of critical search, reconnaissance, survey/location and decontamination as well as gaining a practical understanding of isodoserate mapping, safe demarcation, shielding and inverse square law.

Features of the DT616-SIM include:

- Powered by the user meter.
- No requirement for preventative maintenance or calibration of the students' real instruments
- Simulation of the effects of partial or complete contamination, cross contamination and decontamination via an Instructor Remote Control (IRC)
- The ability to set up multi-detector and multi-isotope training within the same scenario
- Compatibility with the PlumeSIM Wide-Area CBRNe/HazMat Training System
- Compatibility with other Argon radiation training simulators.



**“Students can safely train for all aspects of critical search, reconnaissance, survey/location and decontamination.”**

Beta Gamma, Alpha and Beta simulation probes for use with AN/PDR-77 and RDS100 radiac meters. The Beta Gamma simulator probe works with AN/VDR-2 and CD V-718 series meters ▶



## Ken Cochran



Ken Cochran has 20+ years' experience in Hazardous Waste Management and has served four years as a Naval Surface Warfare Officer.

On joining TEMA, he turned his attention to the study of radiation and radioactive materials and has completed Modular Emergency Response Radiological Transportation Training (MERRTT) Train-the-Trainer courses at a variety of locations including the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico and the Nevada Nuclear Test Site.

In his role at TEMA Cochran is responsible for instructing firefighters and other emergency responders in the basics of radiation.

He also carries out radiological surveys of secure radioactive material shipments using the Adaptable Radiation Area Monitor (ARAM).

# Request Argon's online product demonstration



**Retired Army Sergeant Major  
Bryan Sommers**

If you're interested in Argon's simulators consider signing up for a free, online product demonstration with one of the members of our team.

We will walk you through the details of any simulators you're interested in, including chemical and radiological detectors simulators, as well as exercise training solutions. This will be your opportunity to ask our experts any questions about our simulators.

Discover how Real Experience Training can enhance your HazMat and CBRNe training today!

**REQUEST ONLINE DEMO**