First Responder Training for Radiological/Nuclear Events

David C Howell
Radiation Safety Officer

Wake Forest University
School of Medicine
National Domestic Preparedness Consortium

Since 1998 has identified, developed, tested and trained more than 750,000 state and local emergency responders:

- Center for Domestic Preparedness (Alabama)
- New Mexico Institute of Mining & Technology
- Louisiana State University
- Texas A&M University
- Department of Energy's Nevada Test Site
NTS Training Courses

(Conducted onsite in Nevada)
WMD Radiological/Nuclear Course for Hazardous Material Technicians
(Conducted by request at your jurisdiction)
WMD Radiological/Nuclear Responder Operations
WMD Radiological/Nuclear Awareness + Train-the-Trainer
Personal Radiation Detector + Train-the-Trainer
Secondary Screener Radiation Isotope Identifier Device
Primary Screener Backpack Basic
Intended Audience

- Law Enforcement
- Emergency Medical Services
- Emergency Management
- Firefighting
- Hazardous Materials (HAZMAT)
- Public Works
Intended Audience

- Governmental Administrative
- Public Safety Communications
- Medical
- Public Health
- Other skilled support personnel that provide immediate support services during prevention, response and recovery operations
Nevada & location of NNSS (still referred to as ‘NTS’)
Areas of Nevada Test Site
Nevada Test Site Facts

- Massive outdoor laboratory, national experimental center and training facility located 65 miles northwest of Las Vegas
- From 1951 to 1992 it was the location of 1,021 nuclear detonations and radiological dispersal tests
- ~1,360 mi$^2$ of secluded and secure land provide a safe environment for training in realistic WMD scenarios (area larger than Rhode Island)
- >10,000 emergency responders trained annually
Training at NTS

- Sunday: fly to Las Vegas
- Monday: 8-hour class in Las Vegas
- Tuesday, Wednesday, Thursday: at Nevada Test Site (classroom/outdoor training exercises)
- Thursday PM: return to Las Vegas
- Friday: fly home
- Government pays all expenses
Nevada Test Site
Subsidence craters at Yucca Flat
July 6, 1962 - Operation Plowshare: 104 kiloton blast displaced 12 million tons of earth and created a crater 320 feet deep and 1,280 feet wide (Sedan crater)
1. Ground Zero (4 Actual Nuclear Detonations 1952-57)
2. RDD in Downtown (Buses & Cars)
3. RDD at Airport (Planes & Trucks)
4. RDD at Rail Station (Locomotive)
5. Rail Station/Classroom
6. Industrial Site/Clandestine Laboratory
7. Attacks on Tractor Trailer Transport
8. Airliner Debris Field
9. Participant Staging Area
10. Contaminated Restaurant and Strip Mall
11. Residences/Safe-houses
12. Railroad Tunnel
13. Crashed/Damaged Vehicles
Surveying at T-1
Surveying at T-1
Entry/Search/Rescue/Assess

Phoenix Test Facility
Victim Assistance

Practice contamination surveys and dry/spot/wet decontamination of WMD victims
Monitoring

Actual radiation sources are used at NTS; each trainee wears a Canberra MiniRadiac to monitor their radiation dose during exercises; alarms are set at certain points to indicate threshold radiation levels.

You will be exposed to a few mrem during training.
During exercises, each trainee is assigned and carries a Ludlum 14C survey meter with a pancake probe for contamination surveys (cpm) and scintillation probe for measuring exposure rates (μR/h, mR/h) from sources.
If you or anyone you know/work/train with in an emergency response capacity is interested, visit [www.ctosnnsa.org](http://www.ctosnnsa.org) for more information & application to register (classes are weekly)

You can also call me at 336.716.1202 or email dhowell@wfubmc.edu
Sun Tzu – “The Art of War”

“It is easy to prevail over those who have not thought ahead.”
Our Goal...
A little humor...

THE GOVERNMENT IS NAGGING US TO GET RID OF OUR DANGEROUS RADIOACTIVE WASTE.

ON A TOTALLY DIFFERENT TOPIC, I'M GIVING EACH OF YOU A MOTIVATIONAL PAPERWEIGHT THAT SAYS, "NICE GOING."

TRY TO AVOID LICKING THEM.

I'VE BEEN LOOKING OVER THE HEALTH CARE BILL. IT'S REALLY GOING TO COVER EVERYBODY.

IF YOU CAN'T AFFORD TO SEE A DOCTOR, YOU GET REFERRED TO THE AIRPORT FOR A FREE X-RAY AND COMPLETE "ENHANCED PAT-DOWN."

THERE'S EVEN A COUPON INCLUDED FOR A NO-WAIT SECURITY CHECKUP.

"MENTION AL-QAEDA AND GET A FREE COLONOSCOPY."
Any Questions?