



Medical Effects of Ionizing Radiation Field Course

Defense Nuclear Weapons School
Kirtland Air Force Base, New Mexico
2–6 June 2008



2 June 08 (Mon., day 1)		Min.	Instructors
0745–0800	Administrative Processing	15	Staff
0800–0850	Introduction Discuss AFRRRI’s radiological program, show “Radiological Terrorism” clinician’s training film, and provide brief overview of MEIR course.	50	Maj Ross and CDC film
0850–0900	Break	10	
0900–0950	Nuclear/Radiological Threat Assessment Introduce and discuss the nuclear/radiological threat.	50	Mr. Woodruff
0950–1000	Break	10	
1000–1050	Radiological Math I Introduce and practice basic radiological math techniques.	50	Maj Ross
1050–1100	Break	10	
1100–1150	Physical Principles of Ionizing Radiation Describe the process by which radiation interacts with matter.	50	Mr. Woodruff
1150–1300	Lunch	70	
1300–1350	Radiation Biology Describe the energies released by ionizing radiation and their effects on biological systems.	50	Maj Ross
1350–1400	Break	10	
1400–1450	The Late Effects of Ionizing Radiation Explain long-term, low-level, and chronic high-dose sub-lethal exposures of ionizing radiation.	50	Mr. Woodruff
1450–1500	Break	10	
1500–1550	Radiation Math II Introduce and practice intermediate radiological math techniques.	50	Maj Ross
1550–1600	Break	10	
1600–1650	Radiation Dispersal Devices Describe what RDDs (e.g., “dirty bombs”) are and what can be done about them.	50	Mr. Woodruff



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3 June 08 (Tues., day 2)		Min.	Instructors
0800–0850	Management of Internal Contamination List the methods for removal of internally deposited radioactive materials in the body.	50	TBD
0850–0900	Break	10	
0900–0950	Plutonium Toxicology and Therapy Describe routes of plutonium contamination and methods of therapy.	50	TBD
0950–1000	Break	10	
1000–1050	Acute Radiation Syndrome & Trauma I Recall the underlying causes of radiation sickness. Explain treatments available for persons affected by radiation sickness and treatments being developed.	50	TBD
1050–1100	Break	10	
1100–1150	Acute Radiation Syndrome & Trauma II Recall the underlying causes of radiation sickness. Explain the treatments available for persons affected by radiation sickness and treatments being developed.	50	TBD
1150–1300	Lunch	70	
1300–1350	Nuclear Weapons Effects Explain the effects and hazards of the blast, thermal energy, and fallout characteristics released from a nuclear detonation.	50	Maj Ross
1350–1400	Break	10	
1400–1450	Radiation Accidents Discuss effects of high levels of radiation exposure, locally and systemically, in humans.	50	Mr. Woodruff
1450–1500	Break	10	
1500–1550	Protective Action Guides Explain actions/advice for public health protection and dose minimization.	50	Maj Ross
1550–1600	Break	10	
1600–1650	AFRRI MRAT and Special Teams Describe the functions and response roles of the DoD and federal special teams using NUWAX/NARP for elaboration.	50	Mr. Woodruff



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4 June 08 (Wed., day 3)		Min.	Instructors
0800–0850	<p>Film: “Weapons of Mass Destruction for the First Responder” Shows scenarios for radiation, chemical and biological weapons involving large numbers of casualties.</p> <p>Film: “Emergency Department Response to Radiation Accident” Steps taken from the time a contaminated patient enters a hospital emergency room until transfer or release, including wound decontamination and protection of medical personnel.</p>	50	Office of Domestic Preparedness film and REAC/TS film
0850–0900	Break	10	
0900–0950	<p>Psychological Factors of Ionizing Radiation Describe psychological reactions of populations exposed to the effects of a nuclear detonation, and both real and perceived widespread radionuclide contamination.</p>	50	TBD
0950–1000	Break	10	
1000–1050	<p>Hands-on RADIAC Familiarization Demonstrate procedures for Radiac use.</p>	50	Maj Ross & DNWS staff
1050–1100	Break	10	
1100–1150	<p>Online Radiation Resources and the Biodosimetry Assessment Tool (BAT) Explain how the BAT software program can provide diagnostic information on radiation casualties.</p>	50	Mr. Woodruff
1150–1300	Lunch	70	
1300–1430	<p>Preparation Time for Group Tabletop Exercise Scenarios Review resources then groups meet to prepare for the exercise on the fourth day.</p>	90	Maj Ross
1500–1700	Optional but recommended visit to Atomic Museum in Old Town Albuquerque	120	Self-guided tour



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5 June 08 (Thurs., Day 4)		Min.	Instructors
0800–0920	Group Tabletop Scenario-Driven Exercise Given a hypothetical scenario, including signs and symptoms of possible radiation injuries that could be encountered by military members, participants will work as a multidisciplinary group to provide diagnoses and treatment plans using the skills learned during the course lectures.	80	Maj Ross
0920–0930	Break	10	
0930–1020	Personal Protective Equipment Use of personal protective equipment	50	Mr. Woodruff & DNWS staff
1020–1030	Break	15	
1030–1150	Contamination Control Theory and Operation–Part 1 Participants will learn to don and doff personal protective equipment and will practice contamination control including frisking and avoiding cross contamination.	80	Maj Ross & DNWS staff
1150–1300	Lunch	70	
1300–1425	Contamination Control Theory and Operation–Part 2 Participants will learn to don and doff personal protective equipment and will practice contamination control including frisking and avoiding cross contamination.	85	Maj Ross & DNWS staff
1430–1500	Break	10	
1500–1630	Field Training Drills Practical field skills in radiation detection, surveying and decontamination while wearing personal protective equipment.	90	Mr. Woodruff & DNWS staff



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6 June 08 (Fri., Day 5)		Min.	Instructors
0730–0820	Personal Protective Equipment Dress out in personal protective equipment.	50	Maj Ross & DNWS staff
0820–0830	Break	10	
0830–1020	Field Training Exercise (FTX)–Simulated Airplane Crash Practice finding, treating and recovering casualties in a radiologically contaminated environment.	110	Maj Ross & DNWS staff
1020–1030	Break	10	
1030–1100	In-Class Discussion of FTX Students will provide self critique and will be provided staff critique of their performance in field exercise. Will include search for causalities, patient management, radiation protection and controls.	30	Maj Ross & DNWS staff
1100–1130	Course Summation and Critiques	30	Maj Ross