

ITEM 12

PERSONNEL TRAINING PROGRAM

hml/2/h

HEALTH PHYSICS
WALTER REED ARMY MEDICAL CENTER
Washington, D.C. 20012

MEMO #2
HSWP-QHP

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PERSONNEL TRAINING PROGRAM

1. Courses of Instruction given at Walter Reed Army Medical Center are as follows:

a. RADIATION SAFETY FOR SUPPORT PERSONNEL: A one-hour briefing for support personnel (e.g. clerical, housekeeping, maintenance, and security personnel) whose duties require them to be in the vicinity of radioactive materials on an infrequent basis but not to work with the materials directly. This briefing is designed to provide the support personnel with basic information on good radiation safety practices and an awareness of principle of ALARA related to their job. Program of Instruction attached.

b. RADIATION SAFETY BRIEFINGS: One-hour briefings for personnel whose duties require them to be in the vicinity of radioactive materials or to work with such material on an infrequent basis under restricted conditions. These briefings are designed to provide specific personnel with basic information on good radiation safety practices relevant to their specific duties. These briefings will be presented to personnel with specified duties involving radioactive material (e.g. Nursing personnel, Fire Department personnel, Animal Handlers). Program of Instruction attached.

c. INTRODUCTORY PRINCIPLES OF RADIATION PROTECTION: An eight (8) hour course for all personnel who work daily with radioactive materials. This course provides the minimum training required for safe practices in the storage, use and handling of radioactive materials. Program of Instruction attached.

d. ADVANCED COURSE-PRINCIPLES OF RADIATION PROTECTION: A twenty (20) hour course for "Principal Users" and "Co-Workers". Such individuals are directly responsible for the use of radioactive materials as authorized by the Radiation Control Committee. Program of Instruction attached.

2. At the discretion of the WRAMC Radiation Control Committee and the Health Physics Office, WRAMC, other courses of instruction pertinent to good radiation safety practices will be offered.

RADIATION SAFETY FOR SUPPORT PERSONNEL

PRESENTED BY: Health Physics Office, WRAMC
FOR : Support Personnel at WRAMC & Supported Activities
LENGTH : One (1) hour

I. Introductory Discussion

- A. State purpose of class
 - 1. Brief support personnel on radiation safety aspects of their job.
- B. Highlight videotape - "Radiation Safety" - NUS Corporation
 - 1. Safe procedures for support personnel
 - (1) For those who receive and carry radioactive materials
 - (2) For those who enter radiation controlled areas
 - (3) For those who make repairs in radiation areas
 - (4) For those who perform cleaning chores in radiation areas
 - 2. The tape will specifically cover:
 - (1) Radiation hazards
 - (2) Warning signs
 - "Caution - Radioactive Materials"
 - "Radioactive - Handle Carefully"
 - "Caution - Radiation Area"
 - (3) Rules to follow when working near radioactive material
 - (a) Security
 - (b) Clerical workers entering a radioactive laboratory
 - (c) Maintenance personnel
 - (d) Custodians
 - (4) What to do in case of a radiation accident
 - (5) Your obligations and rights

II. Show videotape - "Radiation Safety" - NUS Corporation (27 min.)

III. Concluding remarks

- A. Discussion of important points covered in tape and specific information relevant to the support group receiving briefing (i.g. Military/Security Police, clerical, nursing, housekeeping)
- B. Questions
- C. Emphasize
 - (1) Health Physics on call 24 hrs/day for emergencies and to answer questions
 - (2) Call 301-427-5107 for Duty NCO name and number
 - (3) If concerned, call Duty NCO

IV. Training Aids

- A. Videotape - "Radiation Safety"
- B. Radiation signs relevant to group receiving briefing
- C. SOP's relevant to group receiving briefing
- D. Appropriate appendix to this lesson plan relevant to particular support group

RADIATION SAFETY BRIEFINGS

PRESENTED BY: Health Physics Office, WRAMC
FOR : Fire Department Personnel
Nursing Personnel
Animal Handlers
LENGTH : One (1) hour

TOPICS

1. Radiation Hazards
2. Radioactive Material Usage and Radiation Areas at WRAMC and Supported Activities
3. Radiation Safety Principles: Time, Distance, Shielding; ALARA
4. Warning Signs
5. Radiation Detection Instruments
6. Personnel Dosimetry
7. Radiation Safety Procedures relevant to Specific Personnel Receiving Briefing (e.g. Fire Department Personnel, Nursing Personnel, Animal Handlers)
8. Emergency Procedures

INTRODUCTORY PRINCIPLES OF RADIATION PROTECTION

PRESENTED BY: Health Physics Office, WRAMC
 FOR : Radiation Workers at WRAMC, supported Activities
 LENGTH : Eight (8) hours

SUBJECT	TIME	DESCRIPTION/CONTENT
1. Course Introduction	30 min.	Brief overview of the scope and purpose of course. WRAMC Radiation Safety Program.
2. Characteristics of Ionizing Radiation	45 min.	Sources of radiation (natural vs man-made) Descriptions of alpha particles, beta particles, and gamma rays (origin, mass, charge, length of travel, etc.)
3. Units of Radiation Dose and Quantities	30 min.	Units of activity, half life, specific activity; units of dose, rad roentgen, rem.
4. Biological Hazards of Ionizing Radiation	105 min.	Radiation effects on biological systems and human response to radiation exposures. Potential hazards associated with radioactive material.
5. Personnel Dosimetry	30 min.	Types of personnel dosimeters, film badge construction, proper wear of the film badge, interpretation of film exposure. Personnel dosimeters, bioassay, right of workers to be informed of radiation exposure and bioassay results.
6. Radiation Detection Instrumentation	60 min.	Selection of appropriate survey instrument; demonstration of correct use of beta-gamma, alpha survey instruments.
7. Safety Procedures in Radioisotope Use	60 min.	Radiological safety procedures, hazards involved in radioisotope use, guidelines for safe use. Preparation of work areas, clean up, and monitoring. Principles of time, distance, and shielding. Obligation of worker to report unsafe condition.
8. Emergency Procedures	30 min	Appropriate response to emergency situations.
9. Exam/Critique	30 min.	Multiple choice exam on course content. Critique of exam.
10. Closing Summary	30 min.	Restatement of purpose of course, WRAMC Radiation Safety Program, role of HPO. Give phone numbers and people to contact.

ADVANCED COURSE: PRINCIPLES OF RADIATION PROTECTION

PRESENTED BY: Health Physics Office, WRAMC
 FOR : "Principal Users" and "Co-Workers" at
 WRAMC, Supported Activities
 LENGTH : 20 hours

SUBJECT	TIME	DESCRIPTION/CONTENT
1. Prerequisite: "Introductory Principles of Radiation Protection"	480 min	See Course Outline
2. Sources of Radiation and Potential Hazards Associated with Radioactive Material	60 min	Sources of Radiation from consumer products and common laboratory equipment, radiation used at WRAMC and areas where radioactive material is used or stored. Potential hazards associated with radioactive materials.
3. External Sources of Radiation	160 min	Radiation therapy-dose/effect; Research areas - exposures; Personnel Dosimetry; Radiation Protection-Time, Distance, Shielding calculations, maximum permissible exposure levels; ALARA.
4. Internal Exposure	160 min	Nuclear Medicine-dose/effect; Sources of Internal Exposures in Research and medical areas; Bioassay; Dose estimates; radiation protection and maximum permissible exposure levels; ALARA.
5. Emergency Planning and Procedures; Response to Unsafe Conditions	120 min	Plans, Instructions, and appropriate personnel response to emergencies or unsafe conditions.
6. Responsibilities/Rules/Regulations	30 min	Responsibilities of Authorized Users of Radioactive Materials; Dept of Army, NRC, FDA, and WRAMC rules/regulations with respect to radioactive materials; instructions to workers.
7. Special Topics in Radiation Protection	130 min	Topics include: Instrumentation, mathematics pertaining to the Use and Measurement of Radioactivity; Radiation Biology; and Radiopharmaceutical chemistry.
8. Practicum	60 min	Demonstration by student of understanding of subject material.