

Radiation Safety Video Library

The Radiation Safety Video Library is a simple way to meet requirements for nurses, housekeeping, security, administrators, radiology and nuclear medicine personnel. Each video presents critical training information to radiation safety personnel in an enjoyable, easy to watch style. Each video focuses on a specific facet of radiation safety, which gives personnel greater flexibility and convenience to learn at their own pace. Videos are available separately or as a complete nine volume set. See links at left for a complete description of each volume.

Safety education is mandated for all personnel working in or frequenting radiation areas as required by the NRC, OSHA, JCAHO and many state regulatory agencies. Volume 3 through 9 of the Radiation Safety Video Library has been approved by the ASRT for continuing education credits. (Call for CE credit information.)

Radiation Safety Video Library - Volume 1 - Environmental Services

Environmental services personnel must deal with radiation areas and radioactive materials every day. Departments such as radiology, nuclear medicine, and radiation oncology are just such areas where environmental services personnel need to be informed about radiation safety practices. This video discusses the basics of radiation safety for the housekeeping staff; what to do and what not to do when encountering radioactive materials or radiation areas.

In this video, the viewer follows the environmental services manager through a typical orientation day. During this day he introduces areas where radiation may be encountered while discussing how to recognize these areas and what precautions to take while working in them. The viewer is introduced to the international radiation warning sign and standard operating procedures used in areas displaying this sign. He explains what radiation is; the use of time, distance, and shielding for protection; the philosophy of ALARA (As Low As Reasonably Achievable); and precautions to take regarding radioactive waste.

After viewing this video, your employee's understanding of his or her role in the radiation safety program, and of radiation itself, should be adequate to carry out their assigned tasks. In order to reinforce this comprehension, we recommend you use the additional materials supplied with this kit to design a training course uniquely tailored to your needs. These materials include: a test; answer key providing in-depth discussions of the questions; sign-up sheets; certificates; a glossary; and suggestions on how to effectively use these materials. Furthermore, reference sheets are provided to be filled out by the Radiation Safety Officer so that each employee can have a copy of the names and phone numbers of the people within your facility and geographical area who may be of assistance during an emergency. (26 min)

VOL1-VHS or VOL1-DVD Volume 1: Environmental Services

Radiation Safety Video Library - Volume 2 – Security

Security guards are perhaps the only individuals who must deal with radioactive materials from the moment they arrive at a facility, to their storage in, and final disposal from the hot lab. Securing and monitoring areas where radiation is used, such as radiology, nuclear medicine, and radiation oncology, are routinely part of a security guard's job. This video is designed to cover the unique tasks imposed on security guards by these responsibilities.

In the video, security guard Miller explains these various tasks as the viewer follows him through a typical day. During this day, he introduces areas where radiation may be encountered. He discusses the international radiation warning sign and standard operating procedures used in areas displaying this sign. He explains what radiation is; the use of time, distance, and shielding for protection; the philosophy of ALARA (As Low As Reasonably Achievable); and precautions to take during the receipt and proper storage of radioactive shipments.

After viewing this video, your employee's understanding of his or her role in the radiation safety program, and of radiation itself, should be more than adequate. In order to reinforce this comprehension, we recommend you use the additional materials supplied with this kit to design a training course uniquely tailored to your needs.

These materials include: a test; answer key providing in-depth discussion of that test; sign-up sheets; certificates; a glossary; and suggestions on how to effectively use these materials. Furthermore, reference sheets are provided enabling each employee to maintain a copy of the names and phone numbers of important people within your facility and geographical area who may be of assistance during an emergency. (31 min)

VOL2-VHS or VOL2-DVD Volume 2: Security

Radiation Safety Video Library - Volume 3 **I-131 Patients: Procedures for Nurses**

In this video, Traci, a journalism student, is interviewing nurse Stiles looking for a good story. Nurse Stiles takes Traci through the entire I-131 procedure from the preparation for the patient's arrival to his final release. During this time, Traci learns about radiation, ALARA (As Low As Reasonably Achievable), the use of time, distance, and shielding for protection, the preparation of the room for the I-131 patient, and procedures to follow while the patient occupies the room.

Unlike most video courses, this kit is not a "one size fits all" designed to produce one video which applies to all types of radiation safety. Rather, the tape is designed to deal specifically with the problems faced by nurses caring for I-131 therapy patients. It provides nurses not only with the basic facts of radiation safety, such as what radiation is and how it is measured, but also provides important information concerning safety procedures unique to providing care to I-131 therapy patients; information that a general radiation safety tape would not include. Building upon this background, specific information relating to your institution may then be taught.

The accompanying book contains a wealth of additional teaching tools and information. A test, an answer key explaining why wrong answers are incorrect, certificates, and a glossary of terms are provided to aid in teaching and evaluating the material learned. Sign-up sheets and answer sheets are provided to aid you in keeping accurate records of your in-service training. A guide for the safe handling of radioactivity is provided which could be posted in each therapy room. Also included are questions nurses have asked after viewing the video along with detailed answers to clarify points raised in the video. This video was produced using the Nuclear Regulatory Commission's (NRC) guidelines. (37 min.)

VOL3-VHS or VOL3-DVD Volume 3: I-131 Therapy Patients Procedures for Nurses

Radiation Safety Video Library - Volume 4
Brachytherapy: Procedures for Nurses

This video begins by introducing two characters; John, the local medical school "whiz-kid", and Robin, a nursing student who is studying for a brachytherapy exam. As John and Robin take an imaginary tour through the hospital they discuss, and quiz each other on the information nurses need to know. This information includes such topics as basic radiation safety (for example: time, distance, shielding, the philosophy of ALARA), various brachytherapy procedures, and the radionuclides employed, the characteristics of these nuclides, procedures to use when in the patient's room, basic NRC regulations concerning radioactive materials, personnel monitoring devices, as well as a wealth of additional information useful and necessary for nurses.

The book provides educational tools including a test, answer sheets, answer guides, sign-up sheets for hospital records, a list of objectives, a glossary, common questions asked by nurses concerning brachytherapy procedures, a discussion of general safety procedures and a copy of the Nurses Instructions. (37 min.)

VOL4-VHS or VOL4-DVD Volume 4: Brachytherapy Patients Procedures for Nurses

Radiation Safety Video Library - Volume 5
General Radiation Safety for Radiology

This video introduces the concepts of dosimetry, in addition to covering all the relevant topics in radiation safety for radiology. The video begins with a discussion and definition of radiation. The discussion then moves to the basic units used to measure radiation as well as the concepts of absorbed dose and dose equivalency as now used in radiation protection. Once introduced to the basics of radiation and the methods of detecting it, viewers will understand how to protect themselves from the dangers of radiation. The video closes with details of radiation levels around typical x-ray machines such as CT scanners, C-arms, and portable x-ray machines.

Some of the concepts covered in the video are ALARA, time, distance, shielding; film badges, TLDs, stochastic and non-stochastic effects, basic risk factors and protective clothing. By the end of the video the viewer should have a working knowledge of each of these concepts and devices. They should understand the basic legal regulations governing the maximum allowable exposure limits, as well proper means of wearing film badges and TLD's. This includes what to do or how to take precautions if one is pregnant.

Like our other volumes in this series, this volume also includes materials in addition to the video. Such materials include a test; answer keys, (both a short answer key providing the correct answer, and a more detailed answer key which explains why the wrong answer choices are incorrect), sign-up sheets, general safety procedures, a glossary providing definitions of terms used in the video, certificates, and information pertaining to important regulations and agreement states. All of this is provided in the book that accompanies the video.

When used in tandem, the video and its accompanying material provide a powerful training kit that can be used to facilitate the competence of your employees. This kit will help you not only meet the requirements of in-service training, but provide guidance in developing the safest working environment possible. (40 min.)

VOL5-VHS or VOL5-DVD Volume 5: General Radiation Safety for Radiology

Radiation Safety Video Library - Volume 6 - Cardiac Catheterization Lab

In this video, Dr. Gordon stops by to chat with the radiation physicist, Dr. Dan McBrayer, about radiation safety in the catheterization lab. Brad asks a number of questions on the pretext that he is being asked the same questions by his fiancé's younger brother concerning the area where Brad will be spending much of his day, the cardiac catheterization lab. Dan helps his friend out by explaining to him units of radiation dose, personnel occupational limits, methods and devices used to measure these doses, risk from low levels of radiation, ALARA; and the all important time, distance and shielding. He shows Brad the x-ray machine, where the primary beam emerges, the radiation levels in various parts of the room during a typical procedure, and the concept of scatter. They finally demonstrate the protective clothing that should be worn and the optimal placement of personnel monitoring devices.

An attractive book contains a test covering the material presented in the video. A short answer key is provides the correct answer and a more detailed answer key explains why the wrong answer choices are incorrect. In addition, you will find sign-up sheets, general safety procedures, a glossary providing definitions of terms used in the video, a bibliography suggesting additional reading material, certificates and information pertaining to important regulations and state agencies. The test has become an attractive feature because of the increasing compliance requirements regarding documentation of in-service education along with some evidence that the trainee has retained some understanding of the material presented. The accompanying teaching guide assists the trainer by providing methods that can be used to effectively present the material. (27 min.)

VOL6-VHS or VOL6-DVD Volume 6: Procedures for Cardiac Catheterization

Radiation Safety Video Library - Volume 7 **Radiation and the Pregnant Worker**

Under the regulation effective January 1, 1994, (10 CFR Part 20.1208) the dose to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 mSv). Because the monitoring requirements are 10% of this, any occupational worker who might receive more than 50 mrem (0.5 mSv) annually must be monitored (film badged) if that person becomes pregnant so that the fetal dose can be recorded. Further, the worker must declare her pregnancy to her supervisor before the institution is responsible for the additional protection of the fetus. Because each worker must understand her requirements and the potential hazards to her fetus, she must be instructed concerning the fetal hazard, her responsibility to her fetus and pertinent radiation safety issues. This instruction must be provided to working females who would fall under the monitoring requirement at employment and annually thereafter. In order to assist employers in this training we have produced this unique and informative video.

The importance of radiation protection for the pregnant worker may be belied by the casual atmosphere in which much of the information is presented. We have found this topic to be very worrisome to many people; to cause them undo anxiety and stress. Such anxiety can prevent a clear consideration of the issues involved with prenatal exposure to ionizing radiation. This anxiety can also prevent effective communication of the pertinent information between individuals. In order to reduce these difficulties we have chosen a casual atmosphere in which to present the necessary information; an atmosphere where people usually feel most relaxed and at ease, their homes.

The viewer is therefore invited into Joni's house as she, and her close friend Barb, have coffee. During their conversation Barb clearly explains what steps Joni should take to protect herself and her baby from the harmful effects of ionizing radiation. Barb discusses why certain procedures are in effect, the reasons for regulations and the new regulations that must now be enforced. In order to explain the necessity for these regulations, Barb briefly discusses the stages through which a pregnancy progresses, the types of exposure (both internal and external) a fetus may encounter, how the radiation dose is determined, and the effect of exposure to ionizing radiation on the fetus during each stage of the pregnancy.

Barb also mentions little practices Joni should adopt to help ensure she maintains her radiation dose as low as reasonable achievable (ALARA). Finally, or perhaps we should say "first", Barb presents Joni with a copy of "The U.S. Nuclear Regulatory Commission Regulatory Guide 8.13: Instruction Concerning Prenatal Radiation Exposure". This is an invaluable source that pregnant workers, and those who will be working with them, should read. In fact, all institutions should require any employed female of reproductive age who might receive 50 mrem (0.5 mSv) of occupational exposure in a year to read this guide. She should also state that she understands the information and that she understands her responsibility to inform her supervisor of her pregnancy as soon as possible. This declaration of pregnancy must be submitted in writing along with the approximate date of conception. In order to fulfill their obligation to women of child bearing age, the institution must define the populations of workers who may receive in the course a year, 50 mrem (0.5 mSv). These workers must then be instructed at employment and annually thereafter with the information contained in the regulatory guide and of their obligation to declare their pregnancy. It was because of these additional requirements, that this video was produced.

In order to assist you we have reproduced the NRC Regulatory Guide 8.13 along with the current draft of the rewrite of this guide. We have also included the conclusions of a recently released National Council on Radiation Protection Commentary 9 which provides a concise summary. You will also find a test, answer guide, and answer sheets to provide a record to the facility that those who watched the video understood the information presented. (27 min.)

VOL7-VHS or VOL7-DVD Volume 7: Pregnancy and the Radiation Worker

Radiation Safety Video Library - Volume 8
General Radiation Safety for Nuclear Medicine

In this story the viewer is introduced to Kevin who has just shown up to his first day at work in a nuclear medicine department. His new supervisor immediately begins questioning poor Kevin on his knowledge of radiation safety. Their ensuing dialogue ranges across a wide variety of subjects, including: a discussion of the units used to measure radiation (both the old units and the new SI units); ALARA, time, distance and shielding; how to protect yourself while giving injections; how to safely handle and store radioactive materials (including radioactive gasses); what to do if radioactive materials are spilled; how to handle radioactive patients; types of detectors used in nuclear medicine departments; surveys that need to be conducted; personnel monitoring devices; and finally, tips on practices one can employ to maintain a safe working environment.

In addition to the video, DTC Video has provided a series of materials one can use with the tape either to create a whole course or just to record the fact that employees indeed saw the tape. These materials include: suggestions on how to present the video most effectively; a set of objectives to be learned; an exam to test the retention of knowledge; a variety of answer keys, answer sheets and sign-up sheets, and a certificate to show the viewer has successfully completed the in-service. DTC Video has also included reference materials that are helpful in maintaining a safety program. These references include: a discussion on who is responsible for radiation safety; a list of agreement states; a form you can use to record important phone numbers; as well as selected sections of the code of federal regulations, 10 CFR Parts 20 and 35 which cover the federal laws dealing with radiation safety and the use of radioactive material in medicine. (40 min.)

VOL8-VHS or VOL8-DVD Volume 8: General Radiation Safety for Nuclear Medicine

Radiation Safety Video Library - Volume 9
ALARA and the Administrator

In this video you will meet Lindsay, a man just hired as an administrator, who must fill the shoes of a local legend; who is now enjoying his retirement party. Lindsay is quite naturally a bit nervous as he meets his new staff, a staff upon which he must rely heavily. As their conversation develops all the pertinent information regarding Lindsay's new responsibilities with respect to ionizing radiation is discussed. This includes an explanation of the hospital's radioactive materials license, what the administrator must do to maintain that license, and the radiation safety committee. Further, the duties of the Radiation Safety Officer are also explored as well as the delegation of authority that must be granted to the Radiation Safety Officer. Finally, Lindsey and his new staff discuss the ALARA program; explaining exactly what this program must entail and how the management must be committed to its implementation. This includes a discussion of the "management's commitment to the ALARA program" and what can happen if that commitment is not fulfilled.

The book includes a variety of written reference sources to aid the administrator in mastering this information, much of which is presented in greater detail than can be done in a video tape. This book includes relevant regulations concerning the administrator's specific duties as well as the training requirements for the hospital staff. We have enclosed a short compendium of the administrator's duties in the areas of radiation oncology, nuclear medicine, and radiology. Finally, for those who may be new to all this, we have enclosed a glossary of relevant terms used both in radiation physics and in the state and federal regulations of the NRC. (16 min.)

VOL9-VHS or VOL9-DVD Volume 9: ALARA for Administrators