

Course Title:	Training Course for Radiation Protection Officers of Medical Diagnostic and Interventional X-ray Facilities (TC-RMX)
Duration:	3 days (24 hours)
Target Participants:	<p>Individuals to be designated as RPO, namely:</p> <ol style="list-style-type: none"> 1. Qualified Physician – Diplomate or Fellow of the Philippine College of Radiology; or 2. Medical Physicist – individual who completed at least 24 units of a Master of Science in Applied Physics major in Medical Physics or any similar degree and oversees medical and/or health physics work in a radiology department; or 3. Radiologic or X-ray Technologist – duly licensed by the Professional Regulation Commission (PRC) and with training on a course of radiation protection. <p>Only qualified radiologic or X-ray technologists who will be designated as RPO are required to have additional training from third party providers.</p> <p>Qualified physicians and certified medical physicists can attend the training on a voluntary capacity or as part of their capacity building and continuing professional development for PRC license renewal, especially on topics of regulatory requirements.</p> <p>A minimum of ten (10) participants is required to push through with the course. A maximum of thirty (30) participants will be accepted.</p>
Pre-requisite:	The participant should have had a formal education to a level equivalent to a university degree, preferably in physics, chemistry, life sciences, or engineering.
Goal:	<p>As the specialized training provider, the PNRI Nuclear Training Center has tailored this course to ensure the technical competence among medical staff to manage radiation safety in accordance with national and international standards and to meet the regulatory mandates of the Food and Drug Administration – Center for Device Regulation, Radiation Health, and Research (FDA-CDRRHR).</p> <p>Specifically, the course aims to equip participants with a sufficient level of knowledge and understanding in the following areas: fundamental concepts of radiation physics, radiation biology, and radiation protection. legal and regulatory framework for radiation protection and safety of diagnostic and interventional X-ray facilities, key components of a radiation protection program, and the duties and responsibilities of a Radiation Protection Officer.</p>

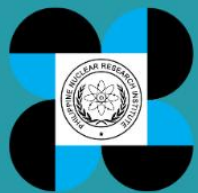
To apply for a course,
 scan me



NUCLEAR TRAINING CENTER
 Commonwealth Avenue, Diliman, Quezon City
 PO Box 213 UP Quezon City | PO Box 932 Manila

Email: ntc@pnri.dost.gov.ph
 Telephone (632) 8929-60-10 to 19 loc. 236
 Direct Line: (632) 8920-8788





Objectives:	<p>The end of the course, learners will be able to:</p> <ul style="list-style-type: none"> • Understand the principles of radiation protection and safety as applied to medical diagnostic and interventional radiology. • Apply national regulations and international standards related to medical exposure. • Perform basic dose assessment and implement appropriate protection and safety measures. • Fulfill the roles and responsibilities of an RPO in a medical diagnostic and interventional X-ray facility under FDA-CDRRHR guidelines.
Nature and Scope:	<p>This course consists of lectures, exercises, and examinations to be facilitated in by PNRI lecturers and guest subject matter experts.</p>
Application Requirements:	<p>(1) Application Form; (2) Recommendation letter; (3) Training Fee of Php 4,200.00 per participant</p> <p>Requirements must be submitted to: Nuclear Training Center, Philippine Nuclear Research Institute Commonwealth Avenue, Diliman, Quezon City Tel. No.: 89296011 to 19 local 236, Email: ntc@pnri.dost.gov.ph</p>
Course Content:	<p><u>Day 1: Radiation Fundamentals and Regulatory Framework</u></p> <p>Session 1: Introduction to the Concept of the RPO (60 mins.)</p> <ul style="list-style-type: none"> • Explain the role, responsibilities, and duties of an RPO who is designated to oversee diagnostic radiology and image guided interventional procedures. • Describe the difference between the roles of the RPO, the qualified expert and the medical physicist. • Describe how the relevant interested parties interact to ensure regulatory compliance. <p>Session 2: Fundamentals of Radiation and X-rays (90 mins.)</p> <ul style="list-style-type: none"> • Explain how X-rays are produced. • Describe the types of ionizing radiation and their interactions with matter • Describe the features of an X-ray generator used for diagnostic radiology and image guide interventional procedures. • Describe the difference between the primary beam and scattered radiation. <p>Session 3: Quantities and Measurements (90 mins.)</p> <ul style="list-style-type: none"> • Explain the need for physical, radiation protection and operational quantities. • Describe how workers and the public could receive a radiation dose during diagnostic radiology and image guided interventional procedures. • Describe, in quantitative terms, the difference between applied voltage and radiation energy for X-ray generating systems.

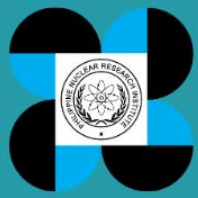
To apply for a course,
scan me



NUCLEAR TRAINING CENTER
 Commonwealth Avenue, Diliman, Quezon City
 PO Box 213 UP Quezon City | PO Box 932 Manila

Email: ntc@pnri.dost.gov.ph
 Telephone (632) 8929-60-10 to 19 loc. 236
 Direct Line: (632) 8920-8788





Session 4: Radiation Sources, Facilities and Equipment Used in Diagnostic Radiology and Image Guided Interventional Procedures (90 mins.)

- Describe the modalities and types of machines used in diagnostic radiology and image guided interventional procedures.
- Summarize the typical examination and exposure protocols and modality-specific parameters.
- Compare the typical patient doses in each of the modalities.

Session 5: Health Effects of ionizing Radiation (90 mins.)

- Compare the two types of radiation effects (deterministic and stochastic effects).
- Describe the magnitude of effective and equivalent doses that could be received by workers under standard clinical conditions and in the event of reasonably foreseeable accidents.
- Explain the general circumstances that could lead to a dose significant enough to cause deterministic effects.

Session 6: Principles of Radiation Protection (90 mins.)

- Explain the three basic principles of radiation protection (justification, optimization, and dose limitation).
- Describe appropriate actions to take in the event that a worker receives a dose in excess of an investigation level or a dose limit.
- Describe dose limitation arrangements for pregnant female workers.

Day 2: Radiation Safety Applications in Diagnostic Radiology and Emergency Preparedness

Session 7: Control Measures and Dose Reduction Techniques (90 mins.)

- Explain the hierarchy of control measures.
- State the factors that determine radiation dose resulting from exposure to X-rays used in diagnostic radiology and interventional radiology procedures
- Be familiar with appropriate shielding materials used in diagnostic and interventional radiology.
- Be familiar with the safety and warning features of different equipment.
- Describe the administrative controls used in diagnostic radiology and image guided interventional procedures.
- Appreciate the appropriate use, care and testing of the personal protective equipment.

Session 8: Framework for Radiation Protection and Safety (90 mins.)

- Explain the role, function, and status of the key international organizations.
- Explain the national framework for radiation protection and safety of workers and the public.
- State in general terms the national framework for the radiation protection of patients.
- Explain the role and responsibilities of the professional societies and associations.

To apply for a course,
scan me



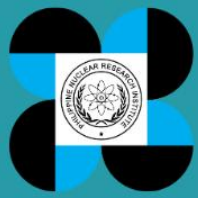
NUCLEAR TRAINING CENTER

Commonwealth Avenue, Diliman, Quezon City
 PO Box 213 UP Quezon City | PO Box 932 Manila

Email: ntc@pnri.dost.gov.ph

Telephone (632) 8929-60-10 to 19 loc. 236
 Direct Line: (632) 8920-8788





Session 9: General Responsibilities of Employers and Authorized Parties (90 mins.)

- State the objectives and purpose of the safety assessment.
- Describe the implications of the conditions specified in the authorization.
- Explain the obligations of the employer and the authorized party to employ personnel with appropriate training for the RPO and workers.
- Describe national requirements for the authorization of facilities where diagnostic radiology and image guided interventional procedures are carried out and authorization of the related activities.

Session 10: Radiation Protection Program (60 mins.)

- Describe the criteria for developing the radiation protection program based on a radiological evaluation.
- Explain the key elements of the radiation protection program.
- Compare the working arrangements in controlled, supervised, and undesignated areas.
- Establish controlled and supervised areas based on the type of X-ray equipment.

Session 11: Emergency Preparedness and Response (90 mins.)

- Identify reasonably foreseeable radiological incidents during diagnostic radiology, and image guided interventional procedures, and their consequences.
- State the roles and responsibilities for EPR within the operating organization.
- Describe the content of an emergency plan and the procedures for implementing it.
- Explain the arrangements for estimating the doses received during an incident.

Day 3: The RPO's Role

Session 12: Regulatory Control (300 mins.)

- Review of the principles of diagnostic and interventional X-ray machine operation, schematics, and quality assurance.
- Legal and Regulatory Framework for radiation protection and safety of diagnostic and interventional X-ray facilities.
- National basic radiation protection and safety requirements for planned exposure situations and role of RPOs.
- FDA Authorization requirements and processes.
- Preparation, development, and implementation of a Radiation Protection Program (RPP).

To apply for a course,
scan me



Email: ntc@pnri.dost.gov.ph
 Commonwealth Avenue, Diliman, Quezon City
 PO Box 213 UP Quezon City | PO Box 932 Manila



NUCLEAR TRAINING CENTER
 Telephone (632) 8929-60-10 to 19 loc. 236
 Direct Line: (632) 8920-8788

