Training courses / Workshops offered by the Incident and Emergency Centre

August 2020

IAEA
International Atomic Energy Agency

1 NATIONAL ARRANGEMENTS FOR PREPAREDNESS AND RESPONSE TO NUCLEAR AND RADIOLOGICAL SAFETY AND SECURITY RELATED INCIDENTS AND EMERGENCIES

GENERAL GUIDANCE

Method for Developing Arrangements for Response to Safety and Security Related Nuclear or Radiological Emergencies

This course covers the development of arrangements for response to nuclear or radiological safety and security related emergencies. It provides information concerning methodologies, techniques, and available results of research relating to response to nuclear or radiological emergencies. It also provides a practical, step-by-step method for developing integrated operator, local and national capabilities for emergency response.

Development of Protection Strategy for Nuclear or Radiological Emergencies

The purpose of the workshop is to train personnel from response organizations on how to develop, justify and optimize a protection strategy for a nuclear or radiological safety or security related emergency, as required in Requirement 5 of *IAEA Safety Standards Series No. GSR Part 7, Preparedness and Response for a Nuclear or Radiological Emergency*. The workshop addresses the main aspects that need to be taken into account for the development of protection strategies for nuclear emergencies: approaches for development of a protection strategy; planning basis, including hazard assessment; processes of justification and optimization of the strategy; considerations for a justified and optimized strategy; consultation with interested parties and dosimetric concepts relevant to the development of protection strategies.

GENERAL GUIDANCE

Application of *GSR Part 7— Preparedness and Response for a Nuclear or Radiological Emergency*

The programme includes discussions of GSR Part 7 requirements and their potential implementation challenges and areas that could require further guidance and support. The course focuses on all types of GSR Part 7 requirements (General, Functional and Infrastructural), with particular emphasis on the definition of roles and responsibilities of authorities in Emergency Preparedness and Response, dosimetric criteria (generic criteria and reference levels); hazard assessment and emergency preparedness categories; protection strategies; urgent and early protective actions and other response actions; protection of emergency workers; termination of a safety or security related nuclear or radiological emergency; development of emergency plans and procedures; provision of resources, training and exercises; and quality management for emergency preparedness and response.

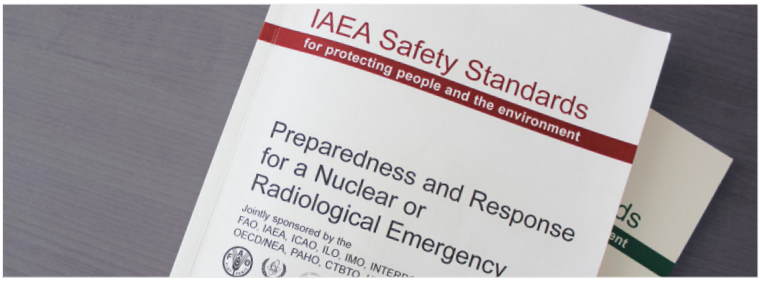
Arrangements for Termination of a Safety or Security Related Nuclear or Radiological Emergency

The programme focuses on the necessary steps and considerations, based on IAEA safety standards, to declare the termination of a nuclear or radiological emergency. It highlights different arrangements that need to be in place such as: procedures for adapting and lifting protective actions; medical follow-up and provision of mental health and psychosocial support; infrastructural elements necessary to support an adequate capability for response during the transition phase, and the facilitation of smooth and prompt resumption of social and economic activity. This training provides as well as relevant guidance for this transitional phase that will allow moving from the emergency exposure situation to either an existing or planned exposure situation after the emergency is terminated.

COMBINED EMERGENCIES

Preparedness and Response for a Nuclear or Radiological Emergency Combined with Other Incidents or Emergencies

The training course provides a general introduction to selected elements necessary for effective preparedness and response for safety or security related nuclear or radiological emergencies taking place either triggered by, or in coincidence with, other or incidents and emergencies (“combined emergencies”). Guidance is given on how to meet the requirements provided in the *IAEA Safety Standards Series No. GSR Part 7* from the perspective of a combined emergency, discussing potential difficulties, practical examples and challenges that need to be overcome. The training course includes case studies to illustrate the guidance provided during the theoretical lectures and discusses examples of past combined emergencies.



COUNTRIES EMBARKING IN A NUCLEAR POWER PROGRAMME

Emergency Preparedness and Response for Embarking Countries

This course covers international requirements for EPR and highlights how to establish arrangements and capabilities for EPR in countries embarking in a nuclear power programme. It focuses on the different steps to develop, implement and test the capabilities; resources and plans to respond to safety or security related nuclear emergencies; and how to ensure their effectiveness before the start of the commissioning process of the nuclear power plants included in the programme.

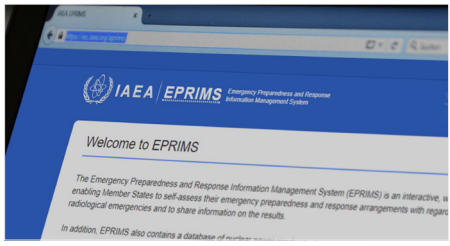
FIRST RESPONDERS

Training for First Responders to a Safety or Security Related Radiological Emergency

The programme offers training on the concepts and operational response steps outlined in the *IAEA's Manual for First Responders to a Radiological Emergency*. The course is based on a task-based manual and provides guidance on first response organization functions, for example: assessment of radiological hazards and establishment of an inner cordoned area; exposure pathways and protective actions; field triage for mass casualties events; monitoring; decontamination of the public, responders, vehicles and equipment; and coordination with law enforcement and other security responders. This training is also available in a version based on the "train the trainers" approach.

NATIONAL EPR TOOLS

Self-Assessment in EPRIMS of National Arrangements Against GSR Part 7 Requirements



This training is aimed at Emergency Preparedness and Response Information Management System (EPRIMS) National Coordinators and Users, to allow participants to master the main steps to conduct a self-assessment of how well national EPR arrangements fulfill GSR Part 7 requirements and to upload the relevant information to EPRIMS. The training covers: main features and structure of EPRIMS, main components of self-assessment against different GSR Part 7 requirements and provides practical hands-on experience in conducting a self-assessment of actual national EPR arrangements. This training is also available in a short webinar format (1.5 hours), in which the main operational aspects of EPRIMS are demonstrated to participants and different exercises are executed regarding the main functionalities of the EPRIMS system, including administration of the system to appoint new users or coordinators.

NUCLEAR POWER PLANTS

Developing On-Site Emergency Plans for NPPs

The programme focuses on providing guidance on the process for development of the On-Site EPR Plan for NPPs and how the elements of the On-Site Plan relate to GSR Part 7 requirements. A sample On-Site EPR plan is provided and explained in working sessions to illustrate the background needed for developing of the On-Site EPR Plan in line with IAEA Safety Standards and other IAEA guidance.

Actions to Protect the Public During an Emergency due to Severe Conditions in a Light Water Reactor

The purpose of the course is to provide participants with relevant IAEA guidance for defining and implementing actions to protect the public in the event of an emergency due to conditions leading to a major release at a Light Water Reactor by providing an understanding of the necessary actions to be planned. It provides a basis for developing the tools and criteria that would be needed in taking protective actions and other response actions. The programme focuses on how to make decisions to protect the public, using as a basis nuclear power plant conditions and results of radiation monitoring carried out after the release of radioactive material. It also looks at ways to help the public understand the radiological health hazard stemming from these types of emergencies.

RESEARCH REACTORS

Preparedness and Response for an Emergency at a Research Reactor

The programme focuses on action guides for the facility emergency response team, instructions, practical procedures and tools that can be adapted by a Member State to build a basic capability to respond to a safety or security related research reactor emergency. Topics covered include: developing procedures for on-site and off-site protective actions; establishing response teams, including structure, roles and responsibilities; organising emergency response actions at a reactor site; and reviewing the threat category of a research reactor site.

RADIATION MONITORING

Radiation Monitoring during Safety or Security Related Nuclear or Radiological Emergencies

The aim of this course is to provide an overview of the main goals of emergency monitoring, and the radiation monitoring methods. It covers all the main components for effective radiation monitoring during emergencies: arrangements for emergency monitoring; monitoring networks; monitoring and sampling; challenges in monitoring; developing a survey strategy; and practical sessions and exercises with monitoring instruments. Generic procedures are explained for the different types of monitoring to be conducted in a safety or security related nuclear or radiological emergency, depending on the goal of the monitoring, type of radionuclides and physical medium, etc.

EMERGENCY EXERCISES

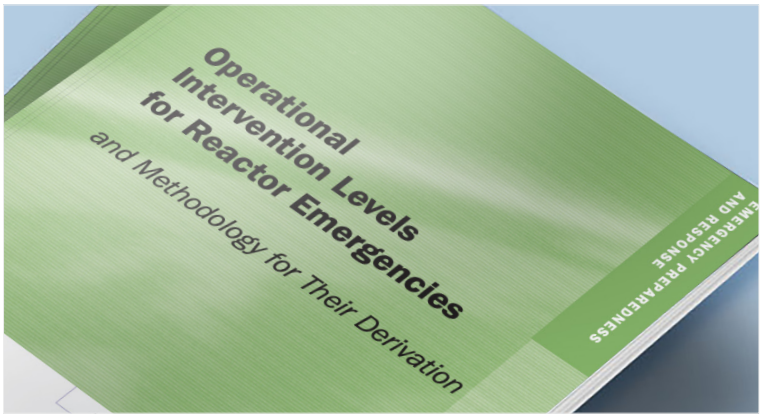
Preparation, Conduct and Evaluation of Exercises to Test Preparedness and Response for a Nuclear or Radiological Emergency

This training course is designed for emergency responders and organizations that want to enhance their ability to hold effective and meaningful emergency exercises. The purpose of the training course is to: enhance participants' awareness of the need for a regular system of drills and exercises; familiarize participants with how to prepare, conduct and evaluate an emergency response exercises; make participants aware of how exercises are used to improve the emergency response system; and acquaint participants with the method to implement the knowledge within the framework of the project. This training provides guidance on how to prepare, conduct and evaluate nuclear or radiological emergency exercise irrespective of the emergency's origin, including those triggered by nuclear security events.

OPERATIONAL CRITERIA

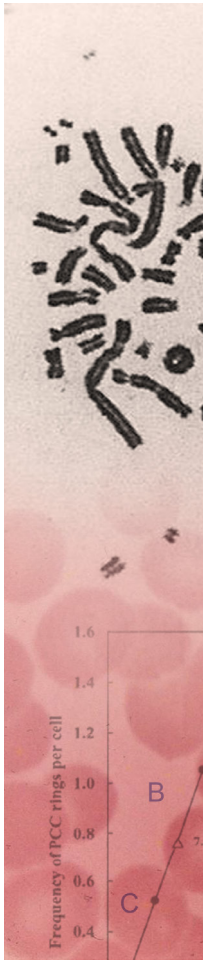
Development and Use of *Operational Intervention Levels (OILs) for Reactor Emergencies*

This course covers topics including: practical considerations for the use of OILs during a response to safety or security related emergencies taking place at nuclear power plants; the methodology for deriving default OIL values; general considerations concerning the revision of default OIL values to account for different underlying assumptions or methodological approaches; and a review of the data used to calculate IAEA's default OIL values.



Development and Use of *Operational Intervention Levels (OILs) for Radiological Emergencies*

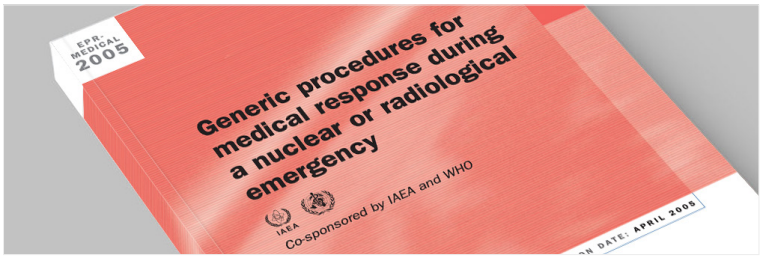
This course covers topics including: practical considerations for the use of OILs during a response to safety or security related radiological emergencies; the methodology for deriving default OIL values; general considerations concerning the revision of default OIL values to account for different underlying assumptions or methodological approaches; and a review of the data used to calculate the IAEA's default OIL values.

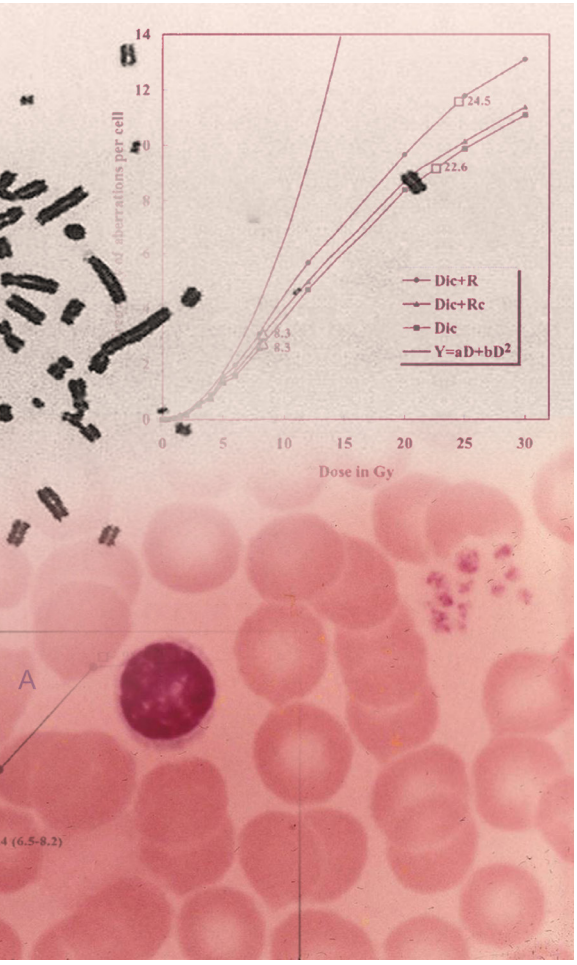


MEDICAL RESPONSE

Medical Response to Nuclear or Radiological Emergencies: Training for Doctors

The training course on medical response to safety or security related nuclear or radiological emergencies provides guidance on early diagnosis, general management, treatment and other elements related to the organisation of the medical response. The topics covered include responding first at the scene; managing overexposed or contaminated patients; protecting responders; transferring patients; setting up the emergency area; diagnosis and radiological considerations; and advanced techniques and methods to diagnose, assess, and treat overexposed individuals. The course is based on IAEA and WHO co-sponsored publications, particularly the *Generic Procedures for Medical Response During a Nuclear or Radiological Emergency, Co-sponsored by IAEA and WHO, EPR–Medical 2005*.





Cytogenetic Dosimetry: Applications in a Nuclear or Radiological Emergency

Cytogenetic dosimetry uses chromosome and cell analysis in cases of actual or suspected overexposure to ionizing radiation. It estimates whole body absorbed doses, providing relevant information for the medical treatment of an exposed individual. This training course provides knowledge on how to select and implement cytogenetic techniques to ensure comparable dose.

Response to Nuclear or Radiological Emergencies: Training for Medical Physicists

In this training for medical physicists, the following topics are covered: radiation basics; dose assessment and reconstruction; radiation measurements and instrumentation; monitoring and decontamination of people; biological effects of radiation; protection strategies for the public and emergency workers; general principles of medical management; mental health effects; and effective communication. It is based on IAEA publications, particularly the *Guidance for Medical Physicists in Support of a Nuclear or Radiological Emergency, IAEA EPR–Medical Physicist 2020.*

2 COMMUNICATION WITH THE PUBLIC DURING NUCLEAR AND RADIOLOGICAL SAFETY AND SECURITY RELATED INCIDENTS AND EMERGENCIES

COMMUNICATION STRATEGY AND PROGRAMME

Communication with the Public in a Safety or Security Related Nuclear or Radiological Emergency

The programme covers topics including the preparation of a strategy for public communication that is tailored to relevant scenarios and key audiences. The programme also includes modules on risk perception, media relations and spokesperson selection. The course uses lessons learned from past emergencies, highlighting best practices. Work sessions and exercises based on simulated scenarios are also included.

SOCIAL MEDIA

Social Media Simulator Training

The social media training realistically simulates the volume and tonality of online public communication during a safety or security related nuclear or radiological emergency. The simulator is a secure, restricted platform that allows participants to test and drill messaging methods. The training and exercises are conducted and controlled remotely. The training supports public information officers in strengthening preparedness to effectively communicate via social media.

INTERNATIONAL NUCLEAR AND RADIOLOGICAL EVENT SCALE

Training for INES National Officers

This course aims to explain what INES is, why it is used, and to present the key criteria for rating events. It covers the rating procedure; impact on people and environment; impact on radiation barriers and controls; defence in depth, which includes radiation sources and transport, reactors at power, and other facilities. The course presents actual cases to explain the basis for the rating criteria, rating process and its outcome.

3 ARRANGEMENTS FOR INTERNATIONAL RESPONSE TO NUCLEAR AND RADIOLOGICAL SAFETY AND SECURITY RELATED INCIDENTS AND EMERGENCIES

CONTACT POINTS OPERATIONAL KNOWLEDGE

Notification, Reporting and Requesting Assistance in the Case of a Nuclear or Radiological Emergency

The aims of the workshop are to enhance official Contact Points' knowledge and ability to use the IAEA's arrangements and resources for official communication between Member States and the IAEA's Incident and Emergency Centre during a safety or security related nuclear or radiological emergency. These include arrangements for international notification, reporting, requesting and providing international assistance. The Contact Points are identified under the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in Case of Nuclear Accident or Radiological Emergency.

4 eLEARNING

Medical Response to Radiation Emergencies

This course provides training in the medical response to a safety or security related nuclear or radiological emergency. The online modules cover radiation protection; arrangements in medical preparedness and response; and medical management of individuals involved in nuclear or radiological emergencies. These modules were developed for the 'Advanced Training for Medical Doctors' course, and the content is also suitable for medical physicists.

Communication with the Public in a Nuclear or Radiological Emergency

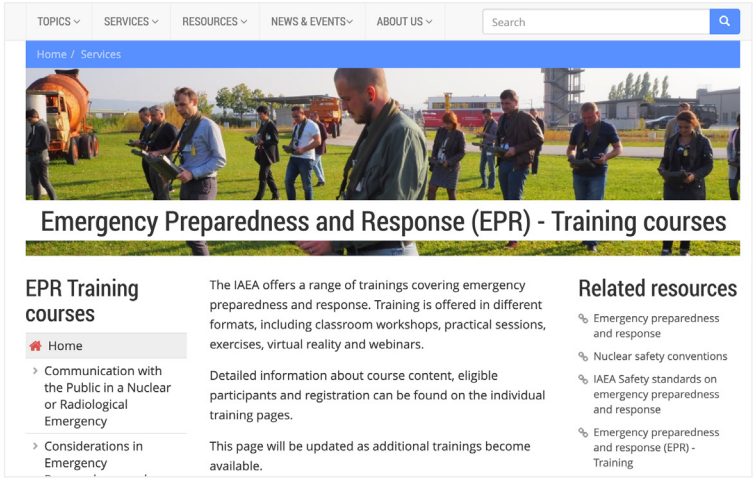
This course provides practical guidance for Public Information Officers (PIOs) on how to prepare for and respond to safety and security related nuclear or radiological emergencies. The modules describe how to coordinate sources of official public information to ensure consistent information is provided to the public before, during and after an emergency. Through lessons learned from past emergencies, simulated scenarios and exercises, as well as best practices for emergency communication, PIOs acquire skills in delivering the information the public needs to make informed decisions about their safety.

5 WEBINARS

The IEC offers webinars on a regular basis to provide training opportunities for participants around the world. The interactive format allows participants to overcome distance, gather virtually, and discuss the training material. The IEC webinars cover all the topics mentioned in this catalogue and more.

For course applications, and more information:

https://www.iaea.org/services/education-and-training/training-courses/epr/



IAEA INCIDENT AND EMERGENCY CENTRE

The IEC is the global focal point for international emergency preparedness and response (EPR) to nuclear and radiological incidents and emergencies, regardless of whether they arise from accidents, negligence, deliberate acts (i.e. safety or security related) or natural disasters.

The IEC is the world's centre for the coordination of the international EPR framework.

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