

IAEA EMERGENCY PREPAREDNESS AND RESPONSE

PUBLICATIONS CATALOGUE



IEC
Incident and
Emergency Centre

TABLE OF CONTENTS

SAFETY STANDARD SERIES

3

IAEA Safety Standards Series No. GSG-14

Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency3

IAEA Safety Standards Series No. GSG-11 Arrangements for the Termination of a Nuclear or Radiological Emergency4

IAEA Safety Standards Series No. GSR Part 7 Preparedness and Response for a Nuclear or Radiological Emergency4

IAEA Safety Standards Series No. GSG-2 Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency ..5

IAEA Safety Standards Series No. GS-G-2.1 Arrangements for Preparedness for a Nuclear or Radiological Emergency5

EPR SERIES

6

OPERATIONAL ARRANGEMENTS: INCIDENT AND EMERGENCY COMMUNICATION

6

EPR-IEComm Operations Manual for Incident and Emergency Communication6

EPR-Assessment and Prognosis Operations Manual for IAEA Assessment and Prognosis during a Nuclear or Radiological Emergency7

EPR-IEComm International Radiation Monitoring Information System7

EPR-IEComm International Radiological Information Exchange (IRIX) Format.....8

EPR-JPLAN Joint Radiation Emergency Management Plan of the International Organizations8

RESPONSE AND ASSISTANCE

9

EPR-RANET IAEA Response and Assistance Network9

EPR-Harmonized Assistance Capabilities

Guidelines on the Harmonization of Response and Assistance Capabilities for a Nuclear or Radiological Emergency9

FUNDAMENTALS AND PLANNING

10

EPR Protection Strategy Considerations in the Development of a Protection Strategy for a Nuclear or Radiological Emergency 10

EPR-Combined Emergencies

Preparedness and Response for a Nuclear or Radiological Emergency Combined with Other Incidents or Emergencies 10

EPR-Embarking Considerations in Emergency Preparedness and Response for a State Embarking on a Nuclear Power Programme. 11

EPR-Lessons Learned Lessons Learned from the Response to Radiation Emergencies (1945–2010) 11

EPR-D-Values Dangerous Quantities of Radioactive Material (D-Values) 12

EPR-Exercise Preparation, Conduct and Evaluation of Exercises to test Preparedness for a Nuclear or Radiological Emergency 12

EPR-Method Method for Developing Arrangements for Response to a Nuclear or Radiological Emergency 13

IAEA-TECDOC-1092 Generic Procedures for Monitoring in a Nuclear or Radiological Emergency 13

RADIOLOGICAL EMERGENCIES

14

EPR-First Responders Manual for First Responders to a Radiological Emergency, 14

IAEA-TECDOC-1162 Generic Procedures for Assessment and Response during a Radiological Emergency 14

RESEARCH REACTOR EMERGENCIES

15

EPR-Research Reactor Generic Procedures for Response to a Nuclear or Radiological Emergency at Research Reactors 15

EPR-Research Reactor Attachment 1 - Generic Procedures for Response to a Nuclear or

Radiological Emergency at TRIGA Research Reactors..... 15

NUCLEAR POWER PLANT EMERGENCIES

16

EPR-NPP-OILs Operational Intervention Levels for Reactor Emergencies and Methodology for Their Derivation..... 16

EPR-NPP-PPA Actions to Protect the Public in an Emergency due to Severe Conditions at a Light Water Reactor 16

IAEA-TECDOC-955 Generic Assessment Procedures for Determining Protective Actions during a Reactor Accident 17

MEDICAL EPR	18
EPR-Medical Physicists Guidance for Medical Physicists Responding to a Nuclear or Radiological Emergency	18
Safety Reports Series No. 101 Medical Management of Radiation Injuries	18
EPR-Pocket Guide for Medical Physicists	
Pocket Guide for Medical Physicists Supporting Response to a Nuclear or Radiological Emergency	19
EPR-Internal Contamination	
Medical Management of Persons Internally Contaminated with Radionuclides in a Nuclear or Radiological Emergency	19
EPR-Biodosimetry Cytogenetic Dosimetry: Applications in Preparedness for and Response to Radiation Emergencies	20
EPR-Medical Generic Procedures for Medical Response During a Nuclear or Radiological Emergency	20
PUBLIC COMMUNICATION IN EMERGENCIES	21
EPR-Public Communication Plan Method for Developing a Communication Strategy and Plan for a Nuclear or Radiological Emergency	21
EPR-Public Communication Communication with the Public in a Nuclear or Radiological Emergenc	21
<u>ACCIDENT REPORTS</u>	<u>22</u>
The Radiological Accident in Ventanilla (2019).....	22
The Radiological Accident in Chilca (2018).....	23
The Radiological Accident in Lia (2014).....	23
The Radiological Accident in Nueva Aldea (2009)	24
The Radiological Accident in Cochabamba (2004)	24
Accidental Overexposure of Radiotherapy Patients in Bialystok (2004).....	25
The Radiological Accident in Gilan (2002)	25
The Radiological Accident in Samut Prakarn (2002).....	26
The Criticality Accident in Sarov (2001)	26
The Radiological Accident in Yanango (2000).....	27
The Radiological Accident in Istanbul (2000)	27
The Radiological Accident in Lilo (2000).....	28
Report on the Preliminary Fact Finding Mission Following the Accident at the Nuclear Fuel Processing Facility in Tokaimura (1998)	28
The Radiological Accident in the Reprocessing Plant at Tomsk (1998)	29
The Radiological Accident in Tammiku (1998)	29
Accidental Overexposure of Radiotherapy Patients in San José, Costa Rica (1998)	30
Lessons Learned from Accidents in Industrial Radiography (1998).....	30
The Radiological Accident at the Irradiation Facility in Nesvizh (1996).....	31
An Electron Accelerator Accident in Hanoi (1996)	31
The Radiological Accident in Soreq (1993).....	32
The Radiological Accident in San Salvador (1990)	32
The Radiological Accident in Goiânia (1988)	33
OTHER ACCIDENT REPORTS	
The Fukushima Daiichi Accident (2015).....	34
Chernobyl: Looking Back to Go Forward (2008)	34
The Chernobyl Accident: Updating of INSAG-1 (1993).....	35
Report of the President's Commission on the Accident at Three Mile Island: The Need for Change: The Legacy of TMI (1979).....	35
<u>TRAINING MATERIALS</u>	<u>36</u>
Radiological Emergencies.....	36
Peer Review Services in EPR.....	36

SAFETY STANDARD SERIES

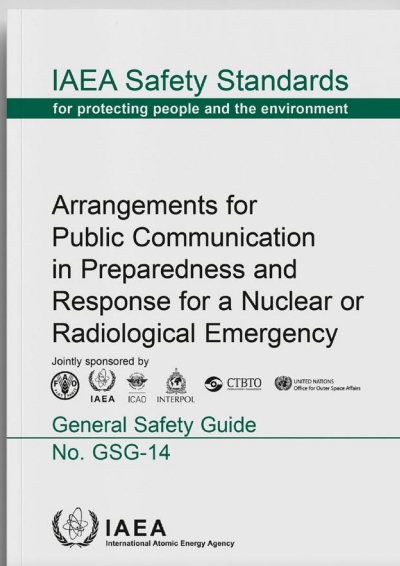
IAEA Safety Standards Series No. GSG-14 Arrangements for Public Communication in Preparedness and Response for a Nuclear or Radiological Emergency

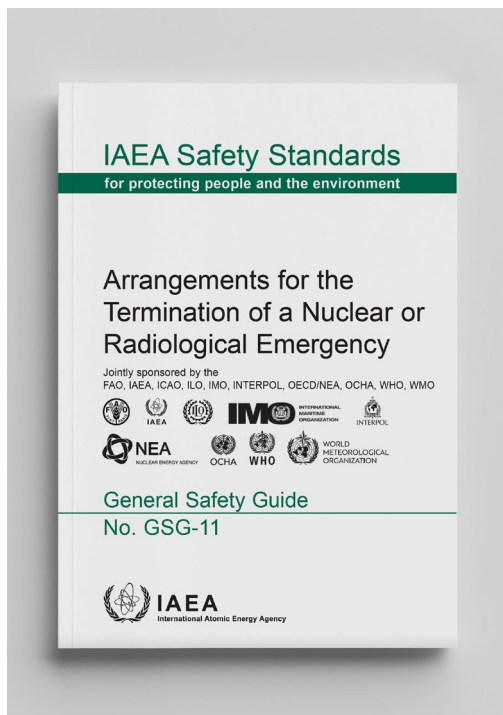
DESCRIPTION

This Safety Guide supports Member States in developing arrangements for communicating with the public and media and coordinating official information in the response to a nuclear or radiological emergency. These arrangements facilitate the successful implementation of protective actions and the delivery of consistent messages. Specifically, the Safety Guide describes the infrastructure and processes needed to provide useful, timely, truthful, consistent, clear and appropriate information to the public in the event of a nuclear or radiological emergency; respond to incorrect information and rumours; and respond to requests for information from the public and from the news and information media. It will help ensure effective and uniform public information and media communications arrangements during nuclear and radiological emergencies. The guidance is applicable for such emergencies, irrespective of the initiator, whether that be natural event, human error, mechanical or other failure, or a nuclear security event.

Date published: 2020

Language: English



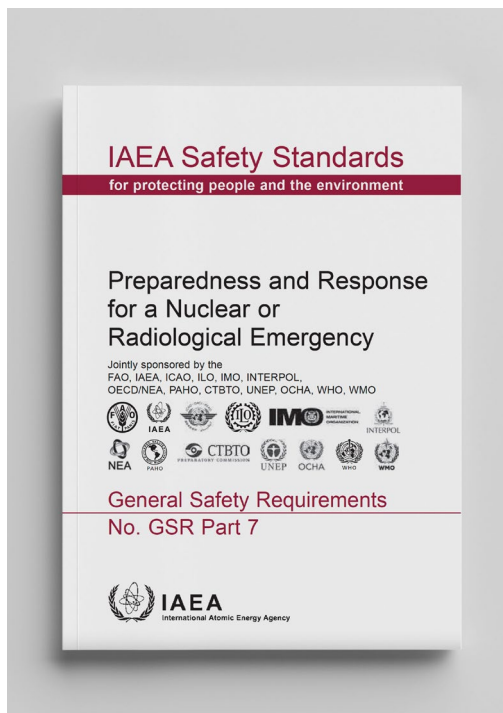


IAEA Safety Standards Series No. GSG-11 Arrangements for the Termination of a Nuclear or Radiological Emergency

DESCRIPTION

This publication provides guidance and recommendations on arrangements to be made at the preparedness stage, as part of overall emergency preparedness, for the termination of a nuclear or radiological emergency and the subsequent transition from the emergency exposure situation to either a planned exposure situation or an existing exposure situation. It elaborates the prerequisites that need to be fulfilled so that responsible authorities can declare the nuclear or radiological emergency ended, and it gives detailed guidance on adapting and lifting protective actions. This publication, jointly sponsored by international organizations (FAO, IAEA, ICAO, ILO, IMO, INTERPOL, OECD/NEA, UN OCHA, WHO and WMO) is intended to assist Member States in the application of IAEA Safety Standards Series Nos GSR Part 3 and GSR Part 7.

Date published: 2020
Languages: English, Spanish



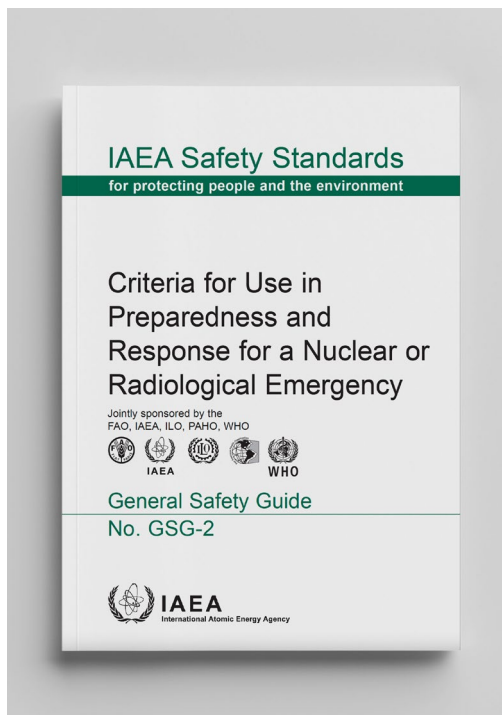
IAEA Safety Standards Series No. GSR Part 7 Preparedness and Response for a Nuclear or Radiological Emergency

DESCRIPTION

This publication, jointly sponsored by the FAO, IAEA, ICAO, ILO, IMO, INTERPOL, OECD/NEA, PAHO, CTBTO, UNEP, OCHA, WHO and WMO, is the new edition establishing the requirements for preparedness and response for a nuclear or radiological emergency which takes into account the latest experience and developments in the area. It supersedes the previous edition of the Safety Requirements for emergency preparedness and response, Safety Standards Series No. GS-R-2, which was published in 2002. This publication establishes the requirements for ensuring an adequate level of preparedness and response for a nuclear or radiological emergency, irrespective of its cause. These Safety Requirements are intended to be used by governments, emergency response organizations, other authorities at the local, regional and national levels, operating organizations and the regulatory body as well as by relevant international organizations at the international level.

Date published: 2015
Languages: Arabic, Chinese, English, French, Russian, Spanish





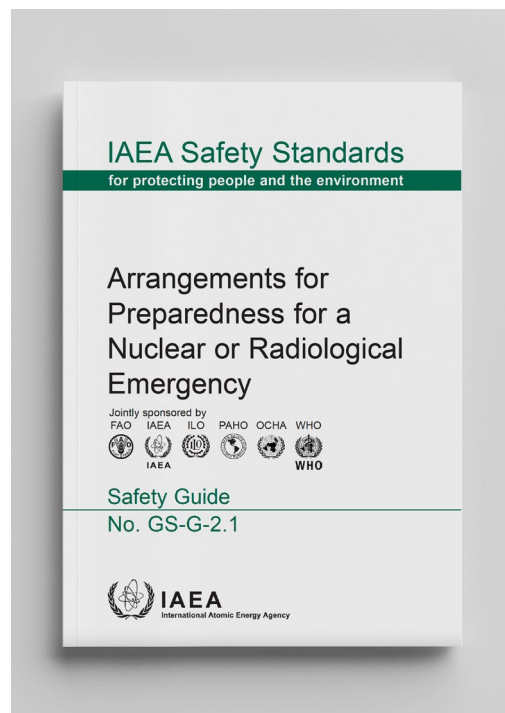
IAEA Safety Standards Series No. GSG-2 Criteria for Use in Preparedness and Response for a Nuclear or Radiological Emergency

DESCRIPTION

This Safety Guide presents a coherent set of generic criteria (expressed numerically in terms of radiation dose) that form a basis for developing the operational levels needed for decision making concerning protective and response actions. The set of generic criteria provides an internally consistent foundation for the application of principles of radiation protection as required in the IAEA Safety Standards. The publication also provides a basis for a plain language explanation of the criteria for the public and for public officials. It is jointly sponsored by 5 international organizations (FAO, IAEA, ILO, PAHO, WHO).

Date published: 2011

Languages: Arabic, English, French, Russian, Spanish



IAEA Safety Standards Series No. GS-G-2.1 Arrangements for Preparedness for a Nuclear or Radiological Emergency

DESCRIPTION

Under the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, one function of the IAEA is to collect and disseminate to States Parties and Member States information concerning methodologies, techniques and research data relating to emergency response. The primary objectives of this Safety Guide, co-sponsored by FAO, OCHA, ILO, PAHO and WHO, are to provide guidance on preparedness and response for a nuclear or radiological emergency, to describe appropriate responses to a range of emergencies, and to provide background information on past experience, thereby helping the user to better implement arrangements that address the underlying issues.

Date published: 2007

Languages: English, Russian, Spanish



EPR SERIES

OPERATIONAL ARRANGEMENTS: INCIDENT AND EMERGENCY COMMUNICATION

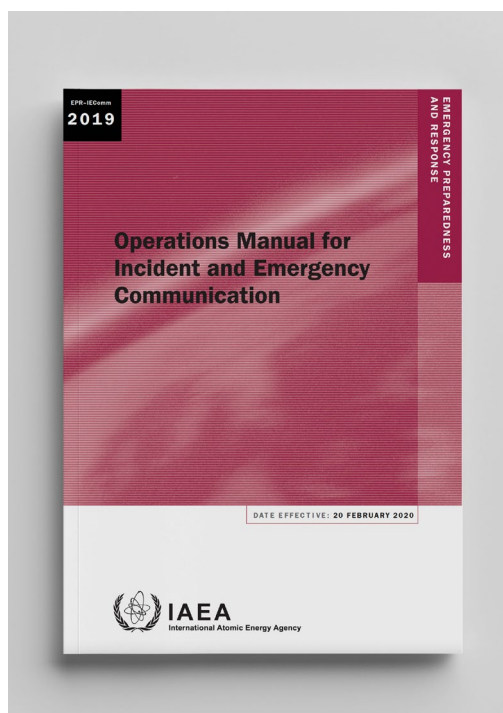
EPR-IEComm

Operations Manual for Incident and Emergency Communication, EPR-IEComm

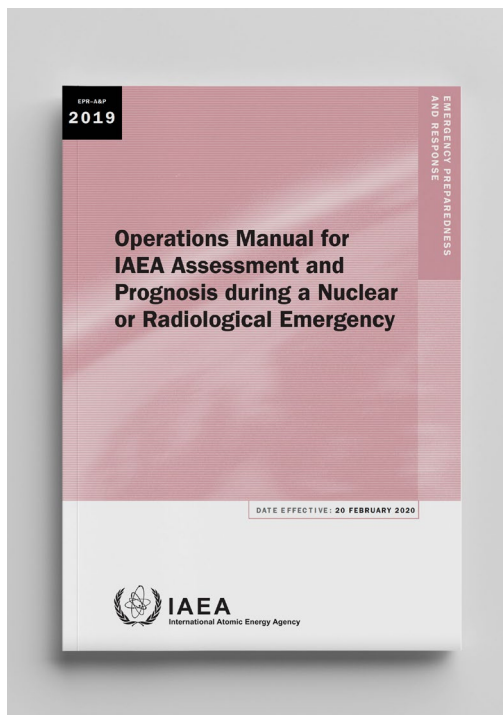
DESCRIPTION

This publication focuses on the medical management of individuals involved in radiation emergencies, especially those who have been exposed to high doses of ionizing radiation. Its primary objective is to provide practical information, to be used for treatment decisions by medical personnel during a radiation emergency. It also addresses general and specific measures for the medical management of individuals who have been internally contaminated with radionuclides. This publication is complementary to other publications developed by the IAEA in the medical area of radiation emergencies.

Date published: 2019
Language: English



OPERATIONAL ARRANGEMENTS: INCIDENT AND EMERGENCY COMMUNICATION



EPR-Assessment and Prognosis

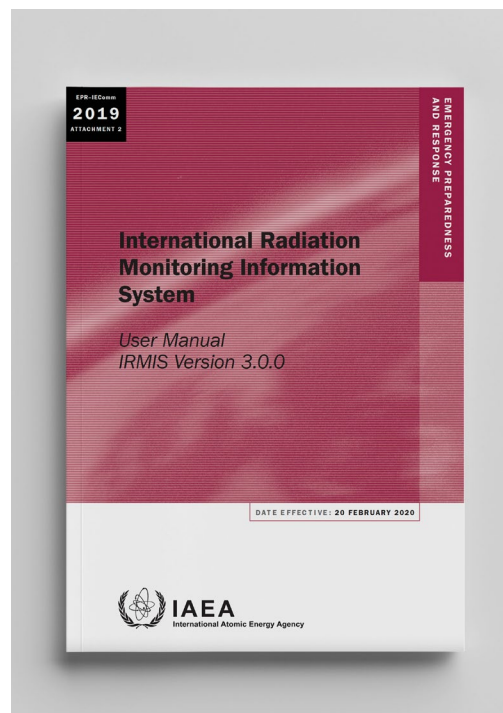
Operations Manual for IAEA Assessment and Prognosis during a Nuclear or Radiological Emergency

DESCRIPTION

This manual provides details of the IAEA assessment and prognosis process, including its technical basis. It is complemented by a dedicated website, which provides access to assessment and prognosis tools and procedures. These tools provide a detailed technical workflow that is populated based on information submitted by the Accident State during a nuclear or radiological incident or emergency. This manual also serves as a companion publication to the Operations Manual for Incident and Emergency Communication (EPR-IEComm 2019), which contains a full documentation of the communication procedures for Contact Points identified under the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency.

Date published: 2019

Language: English



EPR-IEComm

International Radiation Monitoring Information System

DESCRIPTION

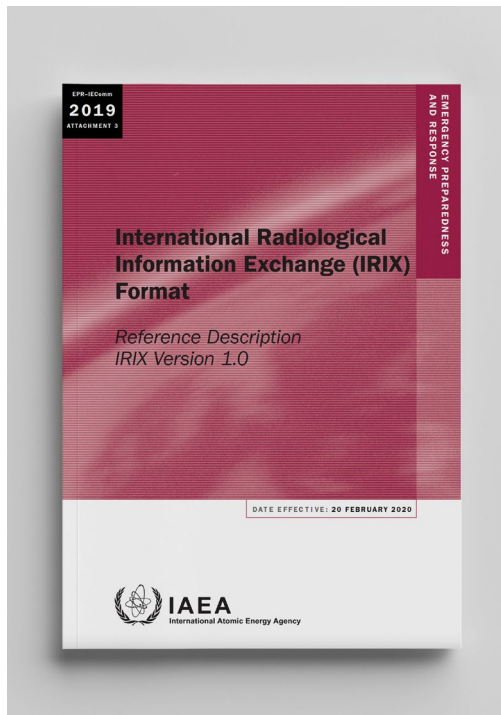
This publication is an attachment to EPR-IEComm (2019). It provides general operational instructions for the International Radiation Monitoring Information System (IRMIS) and information on its concept, description and scope. IRMIS is a client-server based web application that provides Member States a tool to share and visualize large quantities of radiation monitoring data during routine and emergency situations

Date published: 2019

Language: English



OPERATIONAL ARRANGEMENTS: INCIDENT AND EMERGENCY COMMUNICATION



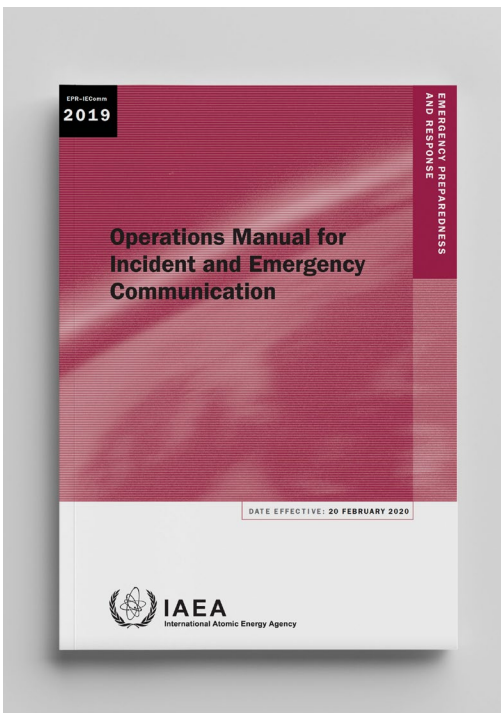
EPR-IEComm

International Radiological Information Exchange (IRIX) Format

DESCRIPTION

The International Radiological Information Exchange (IRIX) is an Extensible Markup Language (XML) information exchange format for the web based exchange of relevant emergency information and data among national and international organizations involved in the response to nuclear and radiological emergencies. This publication is an attachment to EPR-IEComm (2019) and provides a reference description of the IRIX Format version 1.0. The publication includes the format's conceptual information structure and representation in XML. The document draws on the work of the Work Groups and Expert Groups that were established under the International Action Plan for Strengthening the International Preparedness and Response System for Nuclear and Radiological Emergencies

Date published: 2019
Language: English



EPR-JPLAN

Joint Radiation Emergency Management Plan of the International Organizations

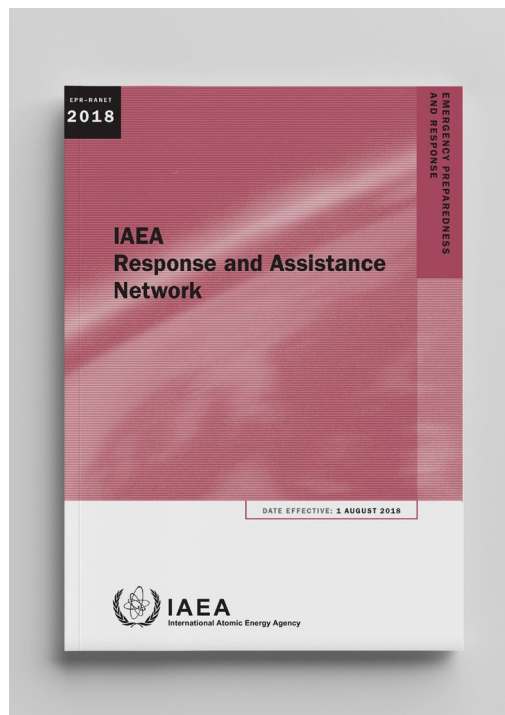
DESCRIPTION

This publication focuses on the medical management of individuals involved in radiation emergencies, especially those who have been exposed to high doses of ionizing radiation. Its primary objective is to provide practical information, to be used for treatment decisions by medical personnel during a radiation emergency. It also addresses general and specific measures for the medical management of individuals who have been internally contaminated with radionuclides. This publication is complementary to other publications developed by the IAEA in the medical area of radiation emergencies.

Date published: 2017
Language: English



RESPONSE AND ASSISTANCE



EPR-RANET

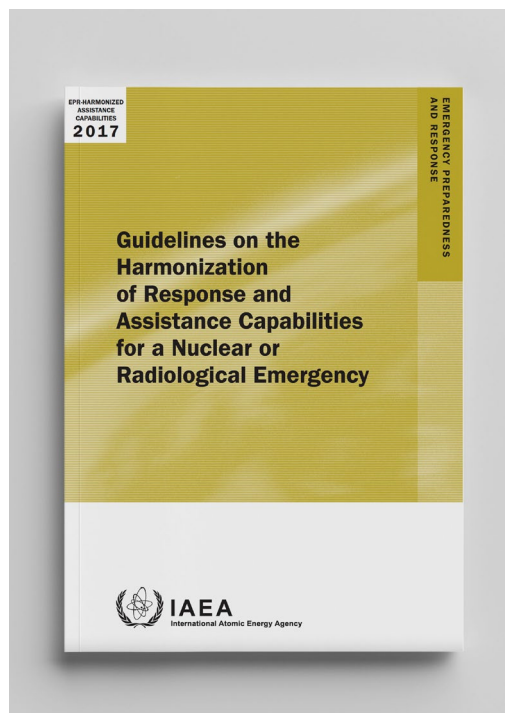
IAEA Response and Assistance Network

DESCRIPTION

This publication is intended for the relevant Competent Authority or Authorities of a State and for organizations that have response capabilities that could be made available for international assistance. It contains guidance on actions to be performed by States providing and requesting international assistance. The Competent Authorities need to review this publication and apply the guidelines, taking into account confidentiality of information, response time, resources (financial, personnel, equipment) and any other constraints. All States Parties to the Assistance Convention are invited to join RANET.

Date published: 2018

Language: English



EPR-Harmonized Assistance Capabilities

Guidelines on the Harmonization of Response and Assistance Capabilities for a Nuclear or Radiological Emergency

DESCRIPTION

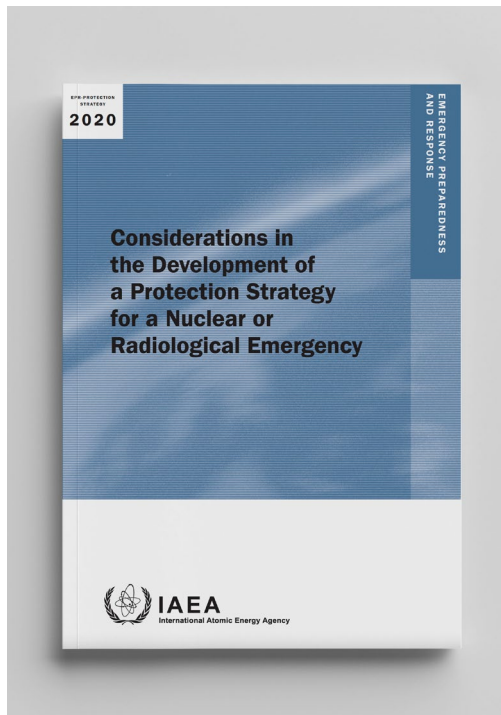
The aim of this publication is to provide guidelines to Member States and relevant international organizations on processes and arrangements that may be implemented as part of emergency preparedness and response (EPR) arrangements to assist in harmonizing national EPR capabilities and international assistance, when requested so that the products of their response operations are comparable and compatible. This publication provides details on the types, contents and formats of data and mapping products that may be generated during a response to nuclear or radiological emergencies. The publication applies the safety principles stated in IAEA Safety Standards Series No. SF 1, Fundamental Safety Principles, primarily Principle 9 on EPR, and it will be of assistance to Member States in meeting the requirements established in IAEA Safety Standards Series No. GSR Part 7, Preparedness and Response for a Nuclear or Radiological Emergency. Requirement 17 of this publication establishes that the “government shall ensure that adequate arrangements are in place to benefit from, and to contribute to the provision of, international assistance for preparedness and response for a nuclear or radiological emergency.” As part of these arrangements, it is required that due account is taken of the “compatibility requirements for the capabilities to be obtained from and to be rendered to different States so as to ensure the usefulness of these capabilities.” These guidelines are intended to help Member States to ensure that compatible response and assistance capabilities are in place.

Date published: 2017

Language: English



FUNDAMENTALS AND PLANNING



EPR-Protection Strategy

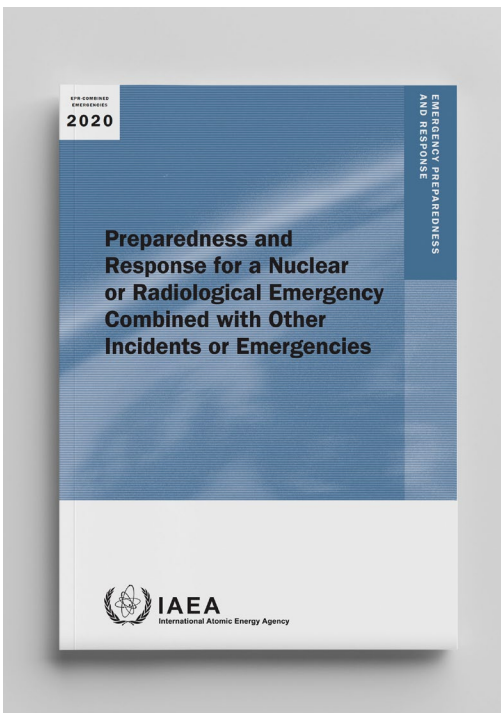
Considerations in the Development of a Protection Strategy for a Nuclear or Radiological Emergency

DESCRIPTION

This publication provides Member States with practical guidance and a stepwise approach for the development, justification and optimization of a protection strategy for a nuclear or radiological emergency, for the application of reference levels and generic criteria within the protection strategy as well as on the implementation of the strategy during an emergency response. It also elaborates in more detail on the planning basis necessary to support the development of a justified and optimized protection strategy as well as on the processes of justification and optimization to be applied by responsible authorities in a State. A template outline of a protection strategy that can be used by States when developing their protection strategy and examples of protection strategies for postulated nuclear or radiological emergencies associated with facilities, activities and sources in the five emergency preparedness categories (EPCs) described in the IAEA Safety Standards Series No. GSR Part 7 are also given in this publication.

Date published: 2020

Language: English



EPR-Combined Emergencies

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

DESCRIPTION

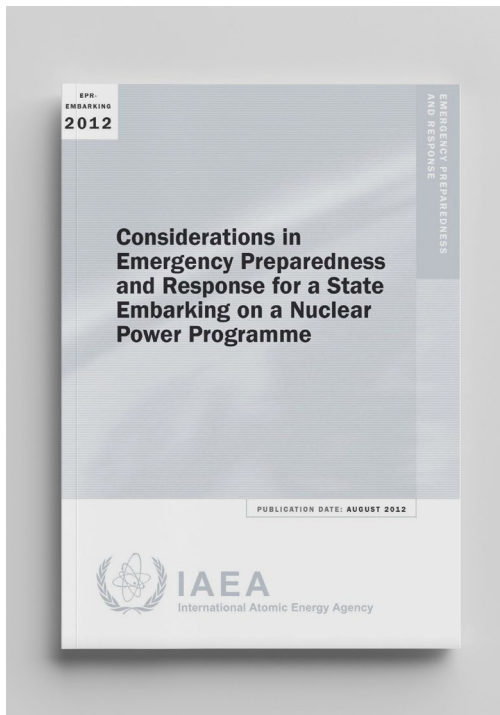
This publication addresses the preparedness and response for a nuclear or radiological emergency initiated and/or affected by conventional emergencies, natural events, security events and/or big national or global health crisis (referred to as a 'combined emergency'). It describes potential challenges in meeting each of the requirements established in the IAEA Safety Standards Series No. GSR Part 7 should a combined emergency occurs with the purpose to provide Member States with relevant considerations to be taken into account when establishing the national radiation EPR framework under an all-hazards approach.

Date published: 2020

Language: English



FUNDAMENTALS AND PLANNING



EPR-Embarking

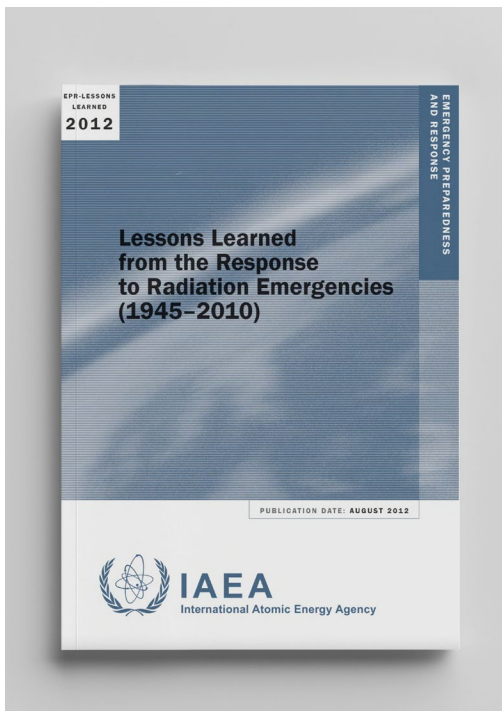
Considerations in Emergency Preparedness and Response for a State Embarking on a Nuclear Power Programme

DESCRIPTION

The publication aims to assist those States that are considering embarking on a nuclear power programme (1) to develop an adequate level of emergency preparedness and response to radiation emergencies prior to commissioning their first Nuclear Power Plant and (2) to ensure the maintenance of the emergency preparedness and response programme throughout the lifetime of the facility. The intention is to support the Member States to apply the international requirements and recommendations on emergency preparedness and response formulated in the IAEA Safety Standards.

Date published: 2012

Languages: Arabic, English, French, Russian, Spanish



EPR-Lessons Learned

Lessons Learned from the Response to Radiation Emergencies (1945–2010)

DESCRIPTION

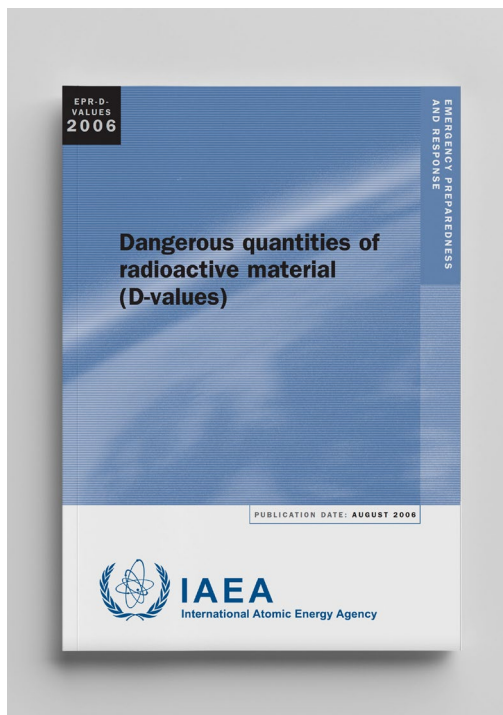
This publication provides a review of the lessons from the response to a number of radiation emergencies with the purpose of consolidating these lessons. These lessons demonstrate the necessity of establishing arrangements for emergency preparedness and response, as required in the IAEA Safety Standards in EPR area.

Date published: 2012

Languages: Arabic, English, French, Russian, Spanish



FUNDAMENTALS AND PLANNING



EPR-D-Values

Dangerous Quantities of Radioactive Material (D-Values)

DESCRIPTION

A D value is the quantity of radioactive material which is considered a dangerous source. A dangerous source is one that, if uncontrolled, could result in death or a permanent injury which decreases that person's quality of life. Various IAEA documents concerning emergency preparedness and safety and security of radioactive sources list D values for a limited set of radionuclides. This document describes, in detail, the basis for the D-values given in various Agency documents and provides D-values for over 400 radionuclides that may be relevant in the event of a nuclear or radiological emergency.

Date published: 2006

Languages: Arabic, English, French, Russian, Spanish



EPR-Exercise

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

DESCRIPTION

These materials are designed for the training course on preparation, conduct and evaluation of exercises to test preparedness for a nuclear or radiological emergency.

They contain information on:

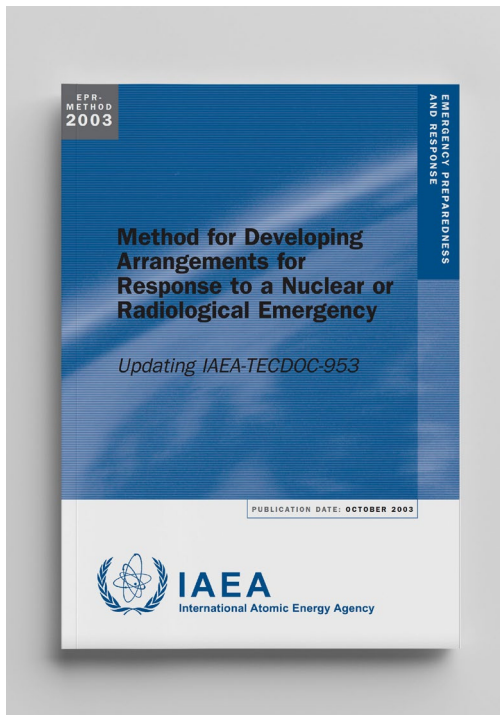
1. emergency exercise concepts, terminology, preparation process, conduct and evaluation;
2. practical knowledge and the ability to prepare, conduct and evaluate an exercise to test national preparedness for a nuclear or radiological emergency;
3. example scenarios for exercises and knowledge on how to customize the standard exercise package, and to organize and conduct this customized standard exercise at the national level.

Date published: 2006

Language: English



FUNDAMENTALS AND PLANNING



EPR-Method

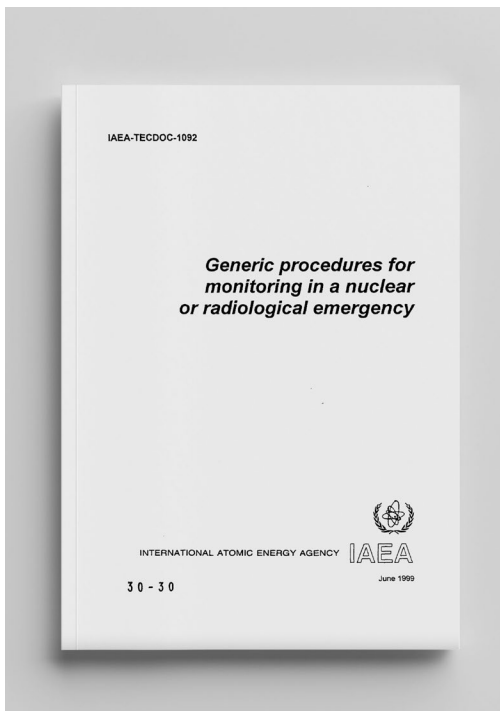
Method for Developing Arrangements for Response to a Nuclear or Radiological Emergency

DESCRIPTION

This publication provides a practical resource for emergency planning and fulfils, in part, functions assigned to the IAEA in the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. If used effectively, it will help users to develop a capability to adequately respond to a nuclear or radiological emergency.

Date published: 2003

Languages: Arabic, English, French, Russian, Spanish



IAEA-TECDOC-1092

Generic Procedures for Monitoring in a Nuclear or Radiological Emergency

DESCRIPTION

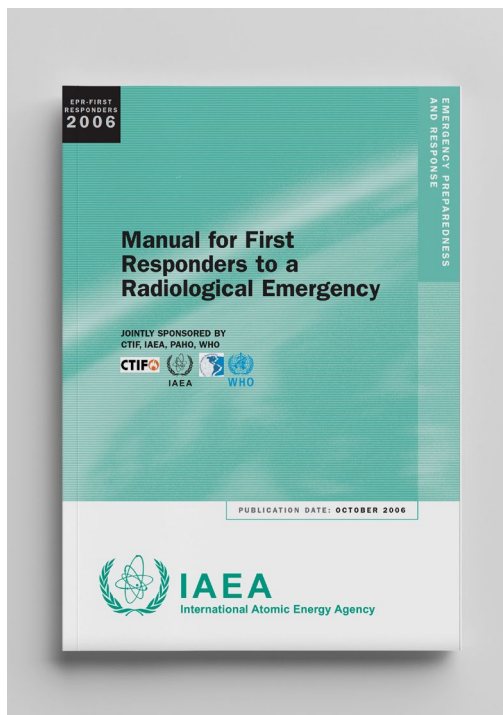
This manual provides practical guidance for environmental and source monitoring during a nuclear or other radiological emergency. It also gives technical requirements and procedures for radiation monitoring, environmental sampling and laboratory analyses in response to a nuclear or other radiological emergency. Any use of the materials provided in this manual needs to be done carefully in light of recent developments in the area (such as latest IAEA safety standards and technical guidance).

Date published: 1999

Language: English



RADIOLOGICAL EMERGENCIES



EPR-First Responders

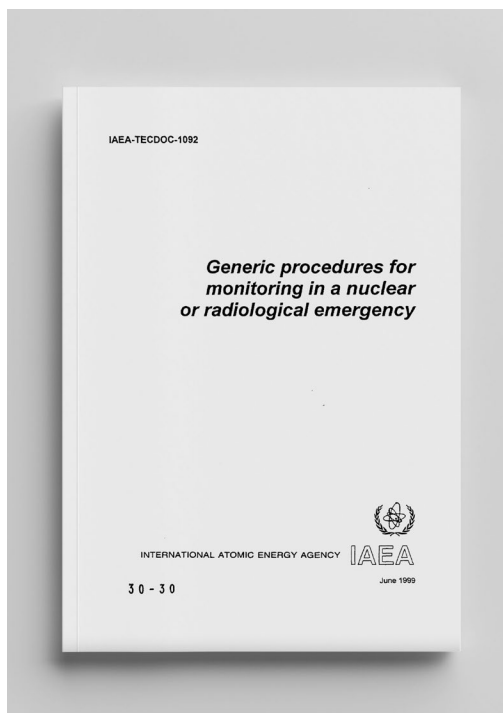
Manual for First Responders to a Radiological Emergency

DESCRIPTION

The aim of this manual is to provide practical guidance for the first responders who will respond during the first few hours to a radiological emergency and for the national officials who would support this early response. This manual provides guidance in the form of action guides, instructions and data that can be easily applied by a State to build a basic capability to respond to a radiological emergency.

Date published: 2006

Language: English



IAEA-TECDOC-1162

Generic Procedures for Assessment and Response during a Radiological Emergency

DESCRIPTION

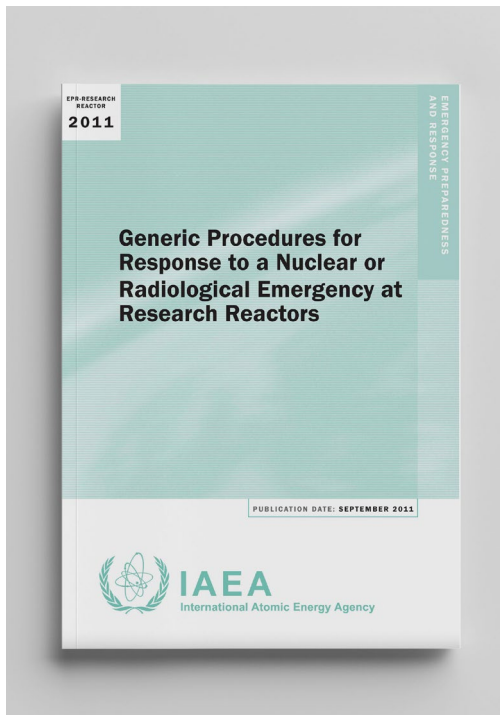
This manual provides generic response procedures to protect the public and emergency workers for different types of radiological emergencies; including the accidents involving sealed and unsealed radioactive materials, radiation generators, and transport accidents. It does not cover reactor accidents or reprocessing plants or other large nuclear facilities. This manual is also applicable to radiological emergencies that could result from deliberate acts, such as terrorist activities, although the security aspects of the response to such events are not within the scope of this publication. Any use of the materials provided in this manual needs to be done carefully in light of recent developments in the area (such as latest IAEA safety standards and technical guidance).

Date published: 2000

Languages: English, Russian



RESEARCH REACTOR EMERGENCIES



EPR-Research Reactor

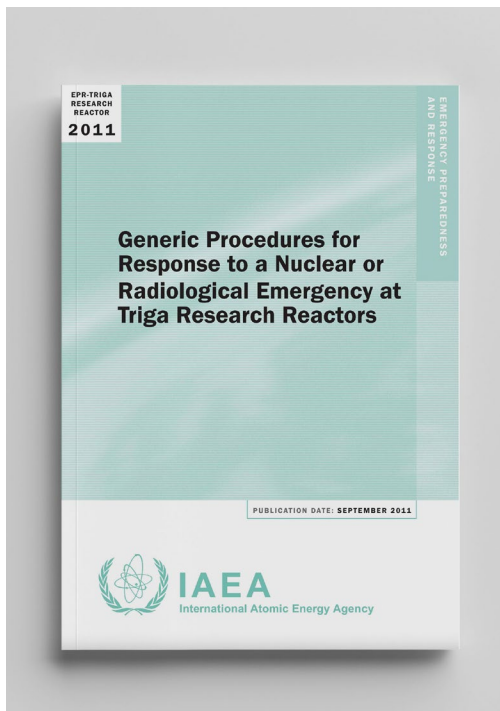
Generic Procedures for Response to a Nuclear or Radiological Emergency at Research Reactors

DESCRIPTION

The aim of this publication is to provide practical guidance for the first responders who will respond during the first few hours to a radiological emergency and for the national officials who would support this early response. This publication provides guidance in the form of action guides, instructions and data that can be easily applied by a State to build a basic capability to respond to a radiological emergency.

Date published: 2011

Languages: Arabic, English, French, Russian



EPR-Research Reactor - Attachment 1

Generic Procedures for Response to a Nuclear or Radiological Emergency at TRIGA Research Reactors

DESCRIPTION

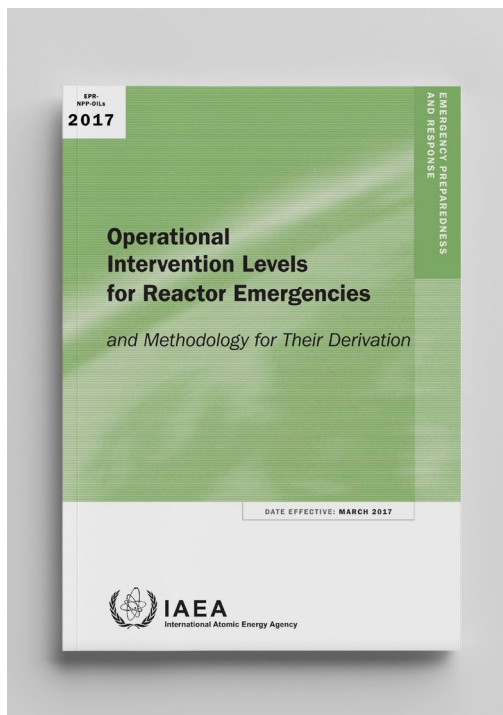
This publication provides specific guidance in developing arrangements for preparedness and response to emergencies at TRIGA research reactors. It contains information on the unique behaviour of TRIGA fuel during accident conditions; it describes design characteristics of TRIGA research reactors and provides specific symptom-based emergency classification for this type of research reactor.

Date published: 2011

Language: English



NUCLEAR POWER PLANT EMERGENCIES

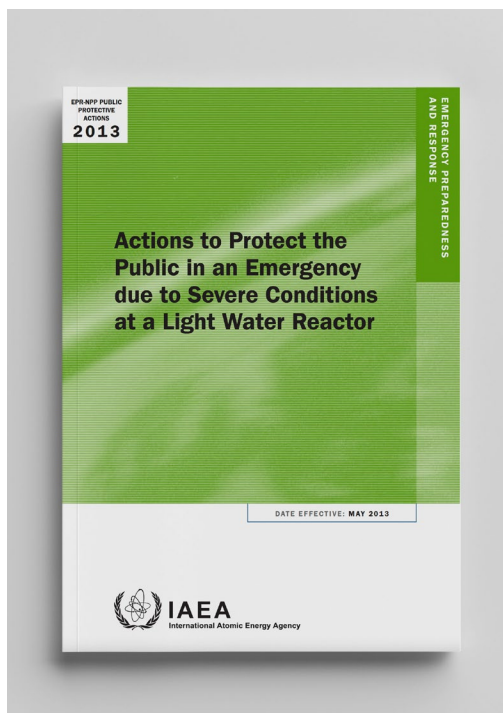


EPR-NPP-OILs

Operational Intervention Levels for Reactor Emergencies and Methodology for Their Derivation **DESCRIPTION**

This publication addresses operational intervention levels (OILs) for a severe release of radioactive material from an LWR or its spent fuel, for the following monitoring results: (a) dose rate measurements above the ground; (b) dose rate measurements and beta count rates from the skin; (c) concentrations of marker radionuclides in food, milk and drinking water samples; and (d) dose rate measurements from the thyroid. The general methodology presented in this publication is generically applicable for deriving default OIL values for other reactor types or for radiological emergencies, but needs to be adapted.

Date published: 2017
Language: English



EPR-NPP-PPA

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

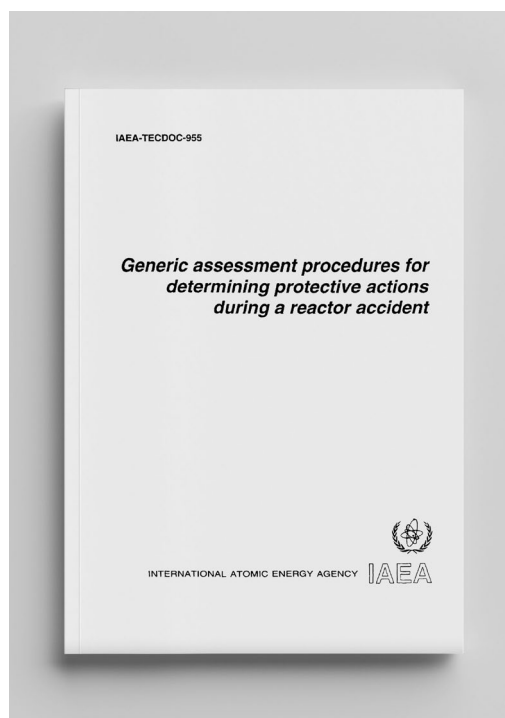
DESCRIPTION

This publication is part of the IAEA's Emergency Preparedness and Response (EPR) series. It provides the basic information and criteria needed by a decision maker in order to protect the public during an emergency involving severe fuel damage in a light water reactor (LWR) or graphite moderated reactor (RBMK) core and/or spent fuel pool. This publication applies to reactors with power levels greater than 30 MW(e) (100 MW(th)) and to spent fuel pools that contain reactor fuel that needs to be actively cooled in order to prevent overheating and failure of the fuel. It takes account of the lessons learned from response to past emergencies, including the accident at TEPCO's Fukushima Daiichi Nuclear Power Station in 2011, and from latest research, while ensuring consistency with IAEA Safety Standards in EPR area.

Date published: 2013
Languages: English, Russian, Spanish



NUCLEAR POWER PLANT EMERGENCIES



IAEA-TECDOC-955

Generic Assessment Procedures for Determining Protective Actions during a Reactor Accident

DESCRIPTION

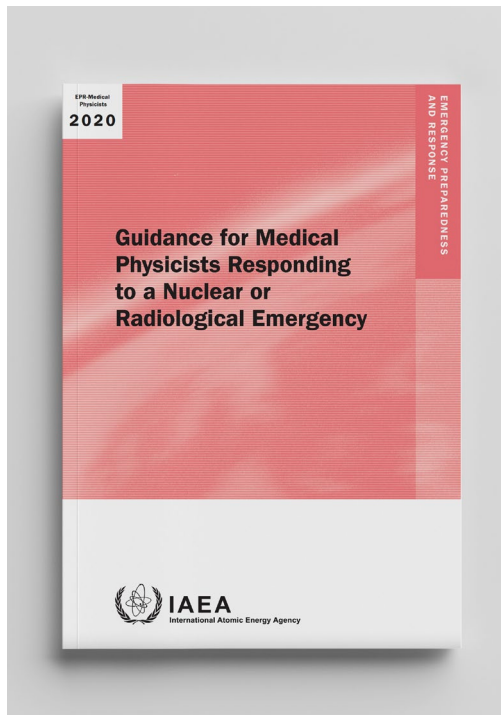
This manual provides technical procedures for determining protective actions for the public and controlling dose to emergency workers for accidents at a nuclear reactor. These include: procedures for classifying an accident, projecting consequences, coordinating environmental monitoring, interpreting environmental data, determining public protective actions and controlling emergency worker doses. This manual describes an emergency assessment organizational structure recommended for the optimum implementation of the accident assessment procedures. Any use of the materials provided in this manual needs to be done carefully in light of recent developments in the area (such as latest IAEA safety standards and technical guidance).

Date published: 1997

Languages: English, Russian



MEDICAL EPR



EPR-Medical Physicists

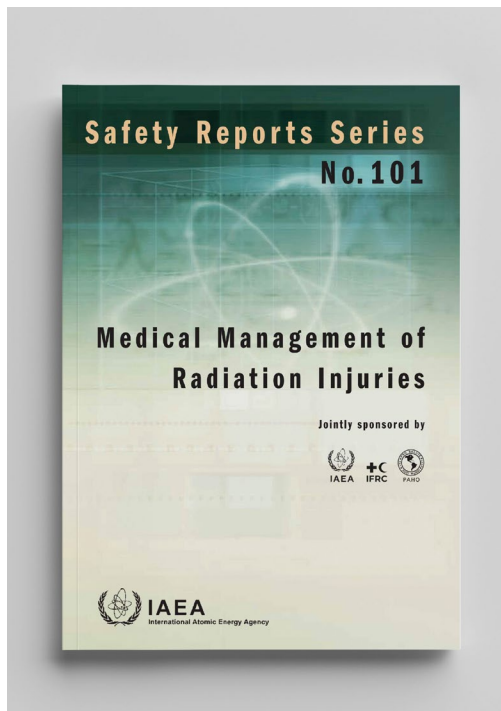
Guidance for Medical Physicists Responding to a Nuclear or Radiological Emergency

DESCRIPTION

This publication focuses on guiding medical physicists in their response to operational conditions during radiological emergencies. It will guide the trained experts in medical physics to act appropriately in a nuclear or radiological emergency and ensure that an efficient and coordinated contribution is made to the management of such an emergency. The knowledge of these experts in medical physics can be vital in the preparedness and response to nuclear or radiological emergencies.

Date published: 2020

Language: English



Safety Reports Series No. 101

Medical Management of Radiation Injuries

DESCRIPTION

This publication focuses on the medical management of individuals involved in radiation emergencies, especially those who have been exposed to high doses of ionizing radiation. Its primary objective is to provide practical information, to be used by medical personnel for decisions related to the treatment of radiation injuries. It also addresses general and specific measures for the medical management of individuals who have been internally contaminated with radionuclides. This publication is complementary to other publications developed by the IAEA in the medical area of radiation emergencies.

Date published: 2020

Language: English



MEDICAL EPR

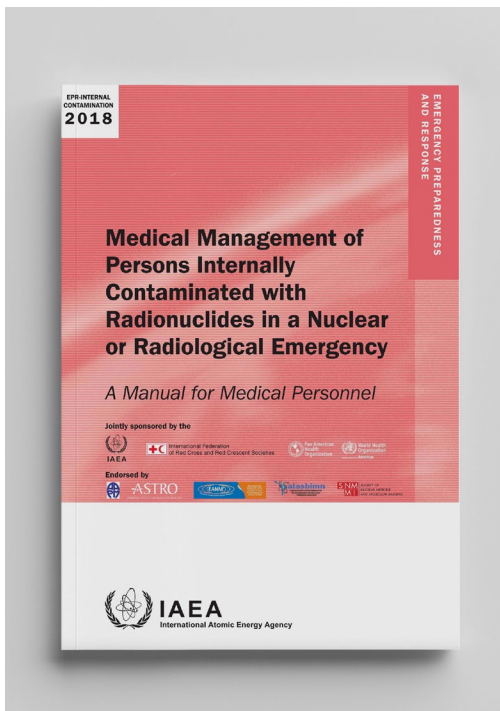


EPR-Pocket Guide for Medical Physicists **Pocket Guide for Medical Physicists Supporting Response to a Nuclear or Radiological Emergency**

DESCRIPTION

This pocket guide is a quick reference guide to be used by medical physicists supporting the response to nuclear or radiological emergencies. It includes basic information and procedures and aims to help medical physicists contribute to the management of radiation emergencies in an efficient and coordinated manner.

Date published: 2020
 Language: English



EPR-Internal Contamination **Medical Management of Persons Internally Contaminated with Radionuclides in a Nuclear or Radiological Emergency**

DESCRIPTION

This publication focuses on the medical management of internal contamination with radionuclides. This publication provides practical information, to be used for treatment decisions by medical personnel during a radiation emergency. It seeks to present this information in a clear and straightforward way that can be easily understood and followed even by someone who does not have any background knowledge or experience in this specific area. It may also be used by policy makers and health authorities in charge of planning the general as well as the medical response to radiation emergencies.

Date published: 2018
 Language: English



MEDICAL EPR

EPR-Biodosimetry

Cytogenetic Dosimetry: Applications in Preparedness for and Response to Radiation Emergencies

DESCRIPTION

This publication provides the user with technical information for selecting and implementing, in a standardized manner, the appropriate cytogenetic technique to ensure comparable dose assessment following accidental exposure to ionizing radiation. The publication describes the four possible cytogenetic methods. It is appropriate to have all these techniques readily available in main geographical regions, but, given a degree of international cooperation and networking, it is not necessary to have all of them available in each national biological dosimetry laboratory.

Date published: 2011

Languages: Arabic, Chinese, English, French, Russian, Spanish

EPR-Medical

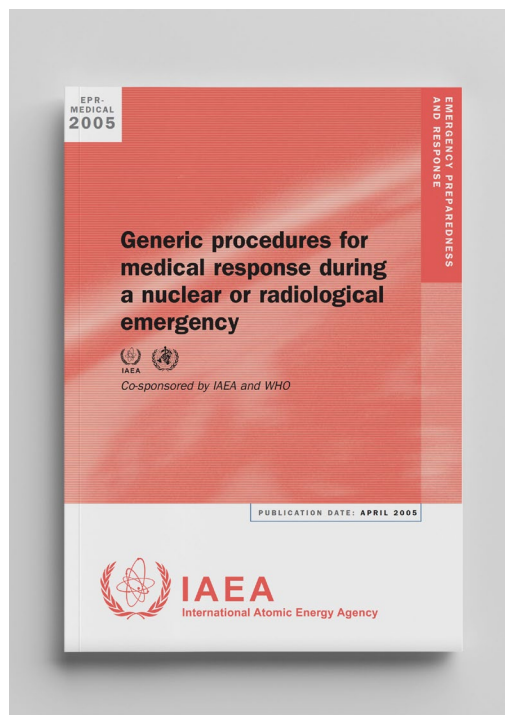
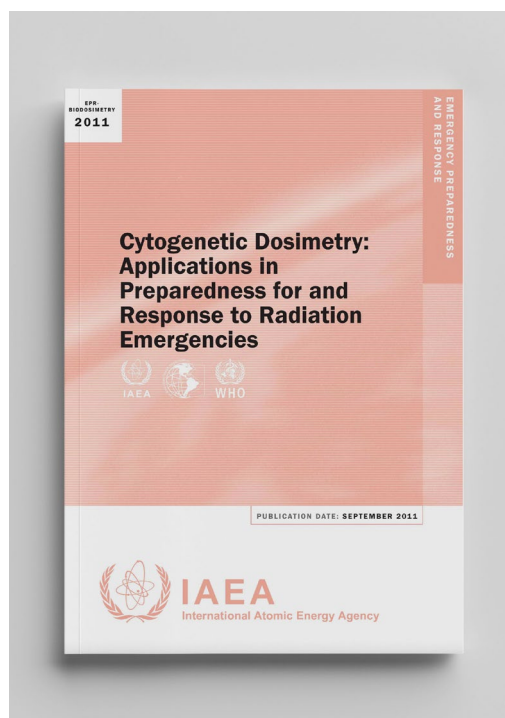
Generic Procedures for Medical Response During a Nuclear or Radiological Emergency

DESCRIPTION

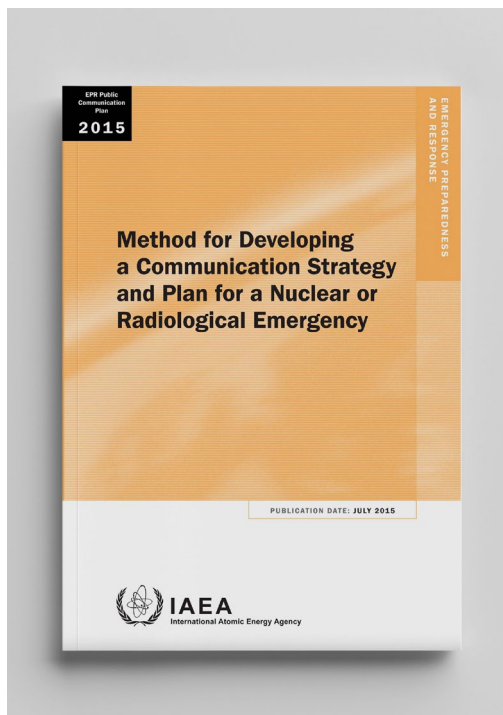
The aim of this manual is to provide the medical community with practical guidance for medical emergency preparedness and response, describing the tasks and actions of different members of the national, regional or local medical infrastructure in accordance with international standards. This document provides generic response procedures for medical personnel responding to different types of radiation emergencies and at the different stages of the emergency response (at the scene of the emergency, pre-hospital, hospital), and during the early post-emergency stage (about 1-2 months afterwards).

Date published: 2005

Language: English



PUBLIC COMMUNICATION IN EMERGENCIES



EPR-Public Communication Plan

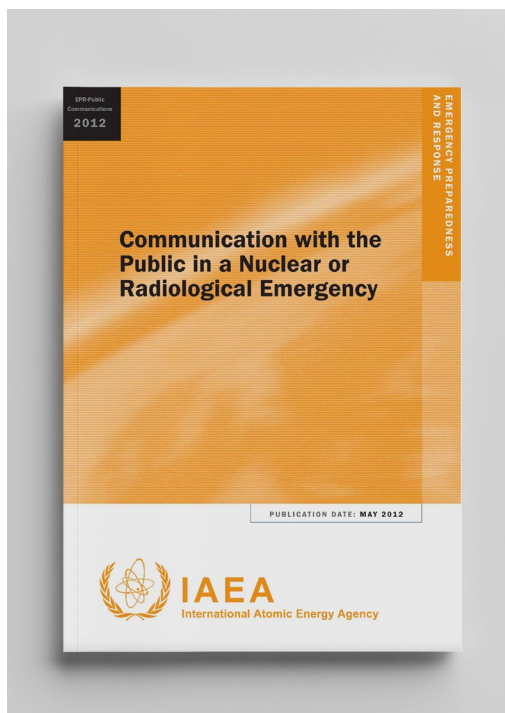
Method for Developing a Communication Strategy and Plan for a Nuclear or Radiological Emergency

DESCRIPTION

This publication provides guidance in the form of action guides and information sheets that can be easily applied by a State to build a basic capability to respond to a nuclear or radiological emergency. This guidance should be adapted to fit the user State's organizational arrangements, language, terminology, concept of operation and capabilities

Date published: 2015

Languages: English, Spanish



EPR-Public Communication

Communication with the Public in a Nuclear or Radiological Emergency

DESCRIPTION

The aim of this publication is to provide practical guidance for public information officers on the preparation for and response to a nuclear or radiological emergency, and to fulfil in part functions assigned to the IAEA in the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (Assistance Convention), as well as meeting requirements stated in IAEA Safety Standards Series No. SF-1, Fundamental Safety Principles, and in IAEA Safety Standards No. GS-R-2, Preparedness and Response for a Nuclear or Radiological Emergency.

This publication provides guidance in the form of action guides and information sheets that can be easily applied by a State to build a basic capability to respond to a nuclear or radiological emergency. This guidance should be adapted to fit the user State's organizational arrangements, language, terminology, concept of operation and capabilities

Date published: 2012

Language: English



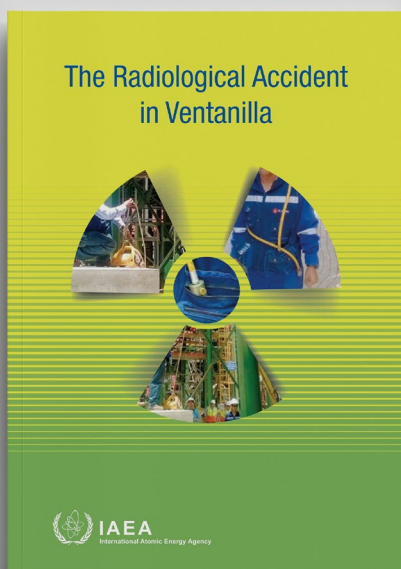
ACCIDENT REPORTS

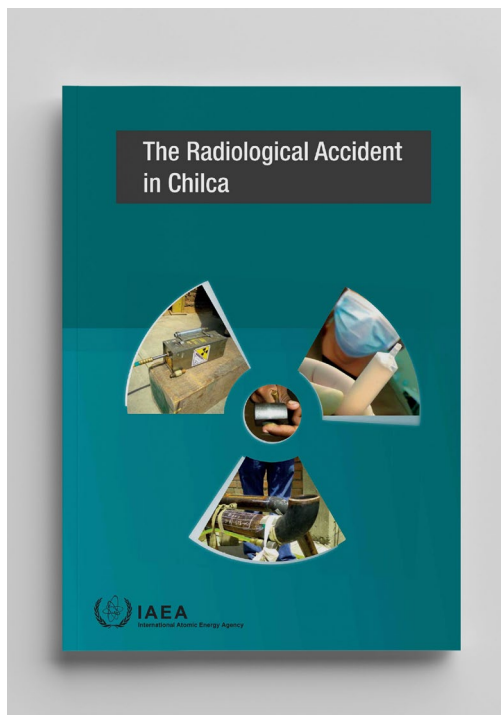
Accident Report The Radiological Accident in Ventanilla

DESCRIPTION

This publication addresses the chronology of events and circumstances of the radiological accident in Ventanilla, Peru, in February 2014. The information includes a detailed description of the international assistance provided by the IAEA, the health consequences and dose assessment for the affected individual, and the medical management of the case. This information and the lessons learned from the accident, relating to its circumstances, the notification, medical response, dose assessment and response at national and international levels are key aspects for Member States to consider when analysing their response procedures to radiological emergencies. The intention is to aid in the identification of necessary actions to be implemented in order to avoid or prevent potential similar accidents.

Date published: 2019
Language: English





Accident Report

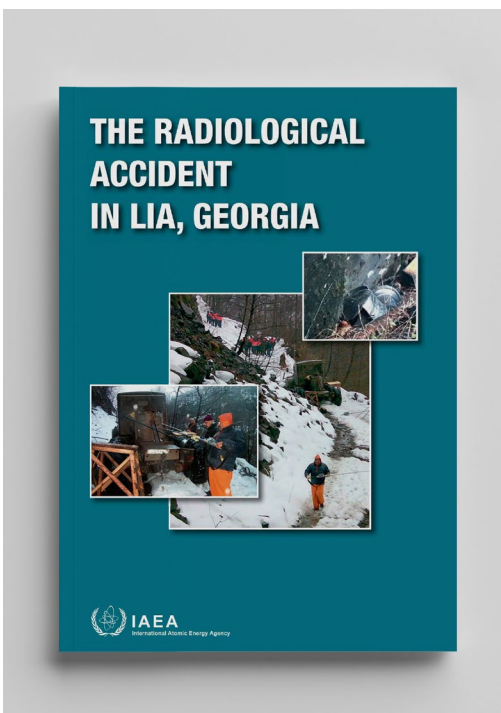
The Radiological Accident in Chilca

DESCRIPTION

Under the Convention on Assistance in the Case of a Nuclear or Radiological Emergency, the Peruvian authorities requested assistance from the IAEA in relation to the radiological accident that occurred during non-destructive testing using a nuclear radioactive source in the district of Chilca, Peru, in 2012. This assistance related to dose assessment and medical management of those involved in the accident was provided during 2012 and 2013. The report gives a detailed account and analysis of the event, as well as the actions taken in order to assist organizations responsible for radiation protection, source safety and emergency preparedness and response in identifying lessons to be learned that may help to prevent similar accidents.

Date published: 2018

Language: English



Accident Report

The Radiological Accident in Lia, Georgia

DESCRIPTION

Under the Convention on Assistance in Case of a Nuclear Accident or Radiological Emergency, the Georgian authorities requested assistance from the IAEA in relation to the 2001 radiological accident in Lia. This assistance related to advice on the dose assessment, source recovery and medical management of those involved in the accident. This report provides the detailed information on the accident and presents the findings and conclusions and lessons learned from the treatment of the overexposed victims. The aim is to help to avoid similar occurrences by improving safety, and to minimize the consequences of any such events that do occur.

Date published: 2014

Language: English



Accident Report The Radiological Accident in Nueva Aldea

DESCRIPTION

For more than 20 years, the IAEA has provided support and assistance to its Member States under the terms of the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, and has produced follow-up reports on radiological accidents that have occurred. A number of such accident reports have now been published and the findings and conclusions of these reports have provided a basis for safety improvements. This report provides detailed information on the accident that occurred in Nueva Aldea, Chile, in 2005. The findings and conclusions and lessons learned from this event will help to avoid similar occurrences by improving safety, and to minimize the consequences of any such events that do occur.

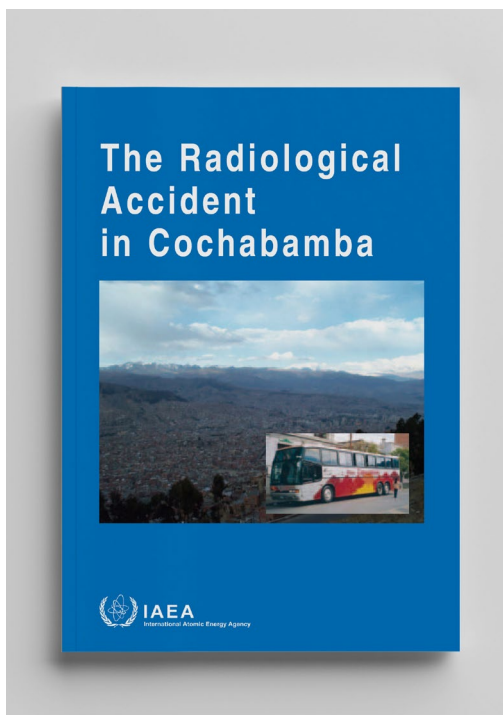
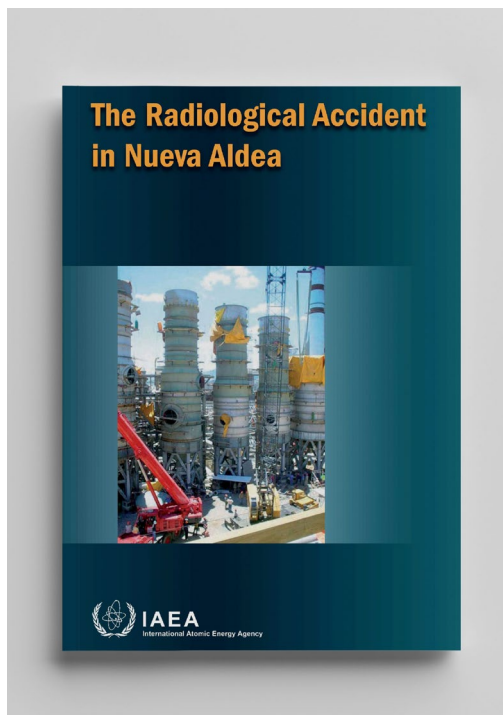
Date published: 2009
Language: English

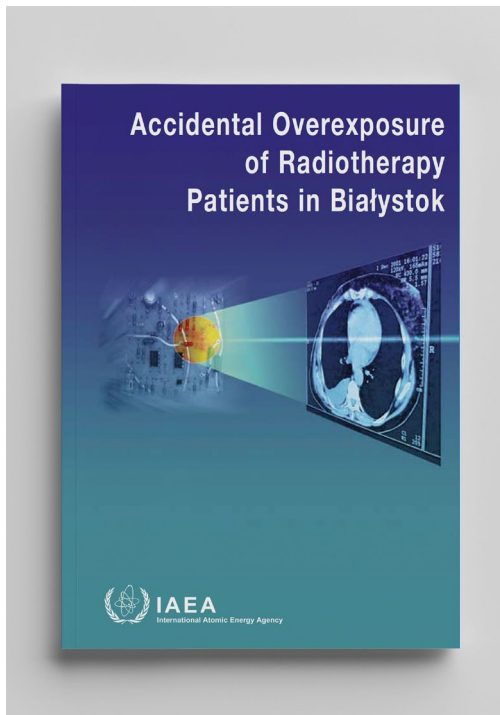
Accident Report The Radiological Accident in Cochabamba

DESCRIPTION

In April 2002 an accident involving an industrial radiography source containing Ir-192 occurred in Cochabamba, Bolivia, some 500 km from the capital, La Paz. The source, in a remote exposure container, remained exposed within a guide tube, although this was not known at the time. The container, guide tube and other equipment were transported from Cochabamba to La Paz as cargo on a passenger bus. This bus had a full load of passengers for most of the eight hour journey. The equipment was subsequently collected by employees of the company concerned and transferred by taxi to the company's shielded facility. This publication gives an account of the event, the doses received and the medical assessment. It also presents information relevant to national authorities and regulatory organizations, emergency planners and a broad range of specialists, including physicists, radiation protection officers and medical specialists. It is hoped that dissemination of the information contained in the report will help reduce the likelihood of similar accidents occurring or, if they do occur, help mitigate their consequences.

Date published: 2004
Language: English





Accident Report

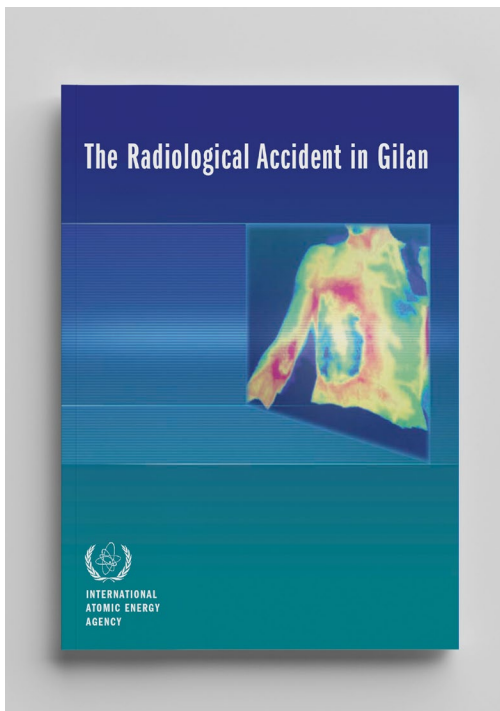
Accidental Overexposure of Radiotherapy Patients in Białystok

DESCRIPTION

An accidental overexposure occurred in the Białystok Oncology Centre which affected five patients undergoing radiotherapy. This report gives an account of the event, the subsequent dose assessment and the clinical consequences for the patients. It also discusses the lessons learned and provides recommendations for preventing similar events from occurring. As such the report is likely to be of use to the manufacturers and users of accelerators, and to national bodies.

Date published: 2004

Language: English



Accident Report

The Radiological Accident in Gilan

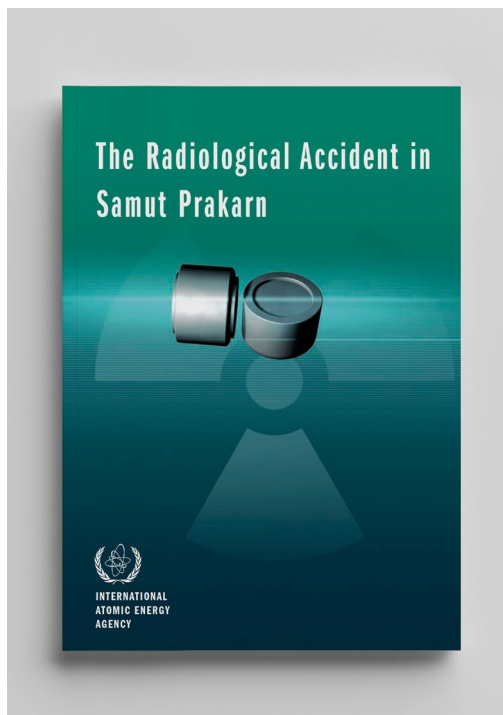
DESCRIPTION

On 24 July 1996 a serious accident occurred at the Gilan combined cycle fossil fuel power plant in the Islamic Republic of Iran. A worker unknowingly put an unshielded 185 GBq iridium-192 source used for industrial radiography in his pocket. As a result of exposure to the iridium source, the worker suffered from severe haematopoietic syndrome (bone marrow depression) and an unusually extended localized radiation injury requiring plastic surgery. This report gives a detailed account of the medical aspects of the accident and the lessons learned.

Date published: 2002

Language: English





Accident Report

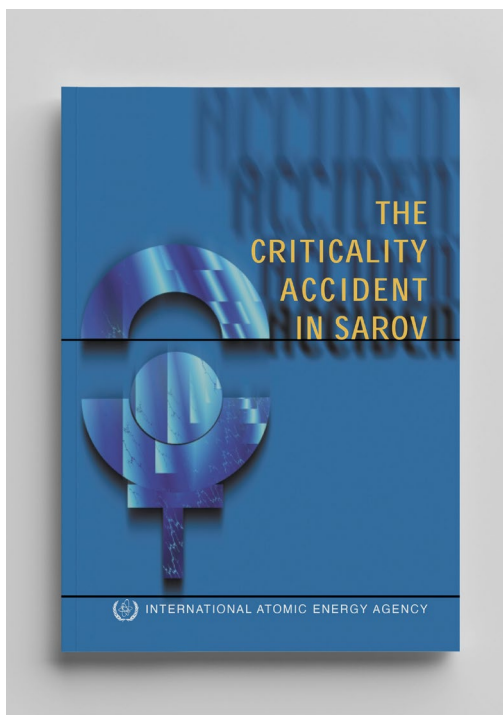
The Radiological Accident in Samut Prakarn

DESCRIPTION

In late January and early February 2000 a radiological accident occurred in Samut Prakarn, Thailand, when a disused Co-60 teletherapy head was partially dismantled, taken from an unsecured storage location and sold as scrap metal. Altogether, ten people received high doses from this source, out of whom three died within two months of the accident as a consequence of their exposure. The present report gives an account of the circumstances which led to the accident, the medical aspects and the lessons learned.

Date published: 2002

Language: English



Accident Report

The Criticality Accident in Sarov

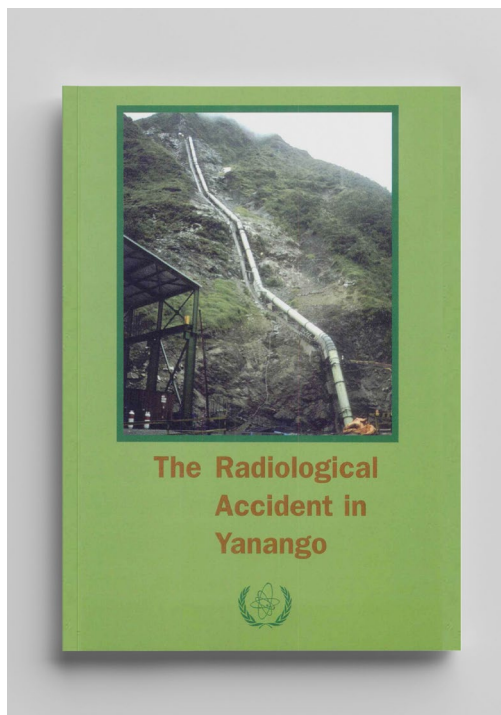
DESCRIPTION

On 17 June 1997 a physicist working as a senior technician at the Nuclear Centre, Sarov, in the Russian Federation, was severely exposed as a result of a criticality accident with an assembly of highly enriched uranium. The exposure, which caused a high neutron radiation dose, led to death within three days despite prompt medical attention. This is the first report that the IAEA has published on a criticality accident. It is based on the information provided by the Russian authorities and addresses the circumstances leading to the accident as well as the medical management of the patient.

Date published: 2001

Language: English





Accident Report

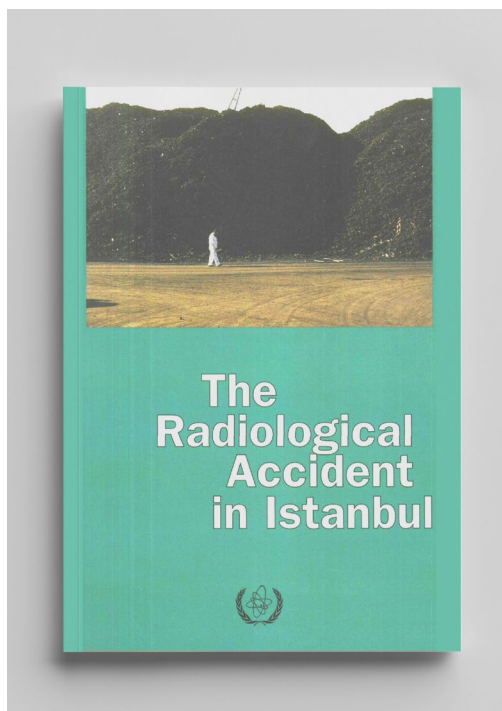
The Radiological Accident in Yanango

DESCRIPTION

In February 1999 a serious radiological accident occurred in Yanango, Peru, when a welder picked up an ^{192}Ir industrial radiography source and put it in his pocket for several hours. This action resulted in his receiving a high radiation dose that necessitated the amputation of one leg. His wife and children were also exposed, but to a much less extent. The purpose of this report is to provide an account of the circumstances of the accident and its medical aspects.

Date published: 2000

Language: English



Accident Report

The Radiological Accident in Istanbul

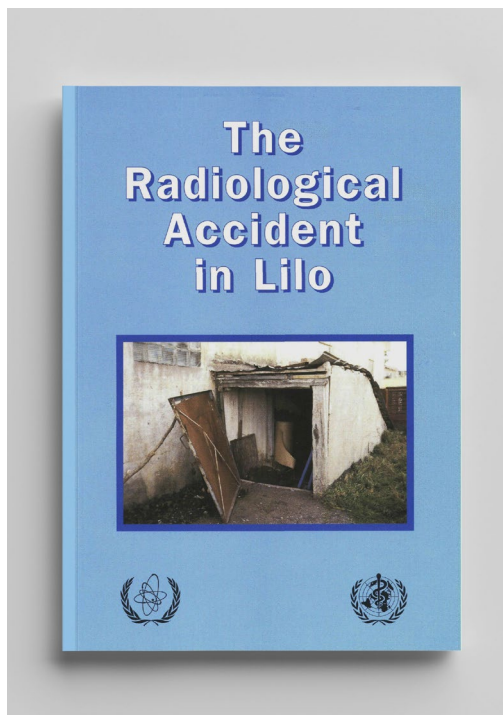
DESCRIPTION

A serious radiological accident occurred in Istanbul, Turkey, in December 1998 and January 1999 when two packages used to transport ^{60}Co teletherapy sources were sold as scrap metal. The persons who purchased the two packages opened them and broke open the shielded containers, thereby unknowingly exposing themselves and several others to radiation from at least one unshielded ^{60}Co source. The persons who dismantled the containers suffered from acute radiation syndrome. Altogether, eighteen persons were admitted to hospital, out of which ten exhibited clinical signs and symptoms of acute radiation exposure. The present report gives an account of the circumstances which led to the accident and the medical aspects, and the lessons learned.

Date published: 2000

Language: English





Accident Report

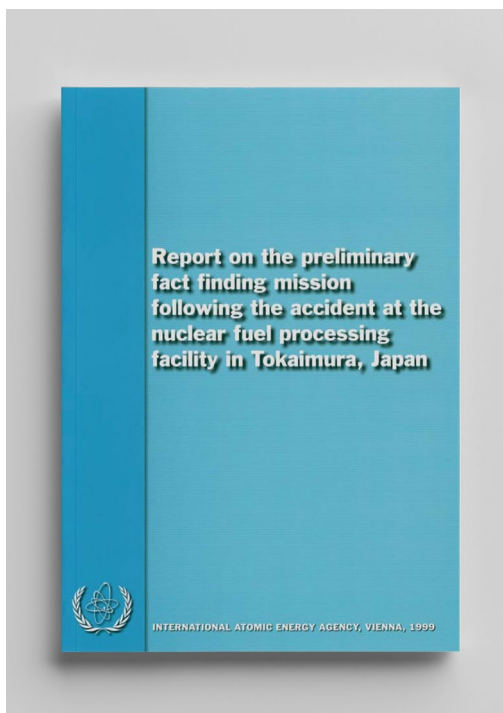
The Radiological Accident in Lilo

DESCRIPTION

The radiological accident described in this report took place in Lilo, Georgia, when sealed radiation sources were abandoned by a previous owner at a site without following established regulatory safety procedures. As a consequence, 11 individuals at the site were exposed for a long period of time to high doses of radiation which resulted inter alia in severe radiation induced skin injuries. The present report, which is co-sponsored by the World Health Organization, provides information on the medical management of radiation induced skin injuries as well as a comprehensive report on the circumstances and details of the accident and the lessons to be learned.

Date published: 2000

Language: English



Accident Report

Report on the Preliminary Fact Finding Mission Following the Accident at the Nuclear Fuel Processing Facility in Tokaimura

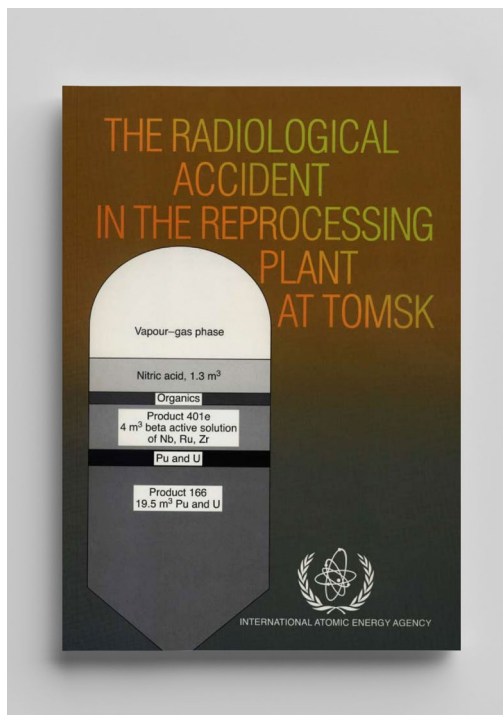
DESCRIPTION

Following the accident on 30 September 1999 at the nuclear fuel processing facility at Tokaimura, Japan, the IAEA's Emergency Response Centre received numerous requests for information about the event's causes and consequences from Contact Points under the Conventions on Early Notification of a Nuclear Accident and on Assistance in the Case of a Nuclear Accident or Radiological Emergency. Although the lack of transboundary consequences of the accident meant that action under the Early Notification Convention was not triggered, the Emergency Response Centre issued several advisories to Member States which drew on official reports received from Japan. After discussions with the Government of Japan, the IAEA dispatched a team of three experts from the Secretariat on a fact finding mission to Tokaimura from 13 to 17 October 1999. This preliminary report by that team documents key technical information obtained during the mission.

Date published: 1998

Language: English





Accident Report

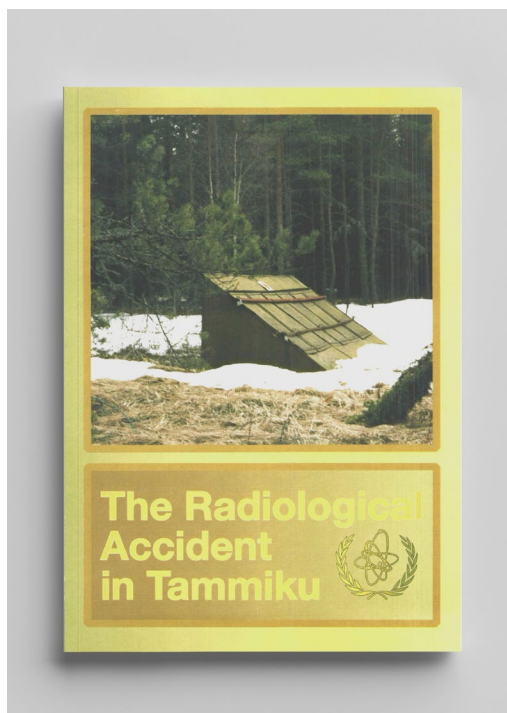
The Radiological Accident in the Reprocessing Plant at Tomsk

DESCRIPTION

On 6 April 1993 a major radiological accident occurred at a plutonium extraction facility at a location then known as Tomsk-7, Russian Federation. The accident blew the concrete cover off the reaction vessel and led to widespread contamination of the site and the surrounding area up to a distance of 28 km. The report describes the events leading up to the accident and the radiological consequences. It provides a detailed description of the decontamination and recovery operations and gives an analysis of their effectiveness.

Date published: 1998

Language: English



Accident Report

The Radiological Accident in Tammiku

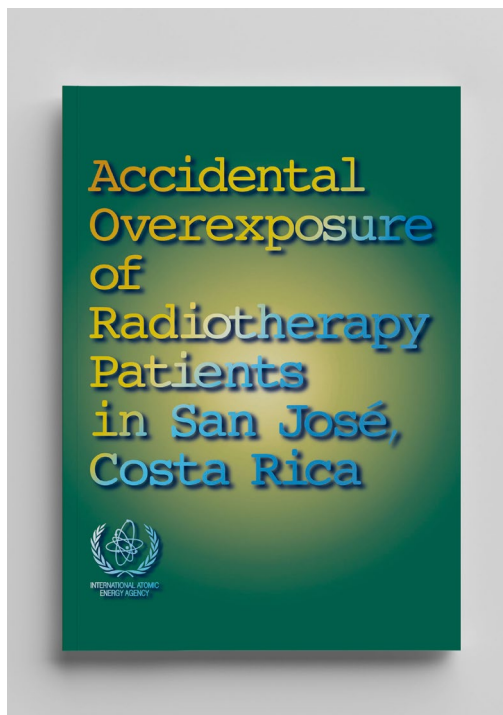
DESCRIPTION

In October 1994 three members of the public entered the radioactive waste repository at Tammiku, Estonia, without authorization and removed a metal container enclosing a radiation source, which one of them placed in his pocket. This action resulted in the death of one person and injury to a number of others. The purpose of this report is to provide information so that similar accidents can be avoided in the future.

Date published: 1998

Language: English





Accident Report

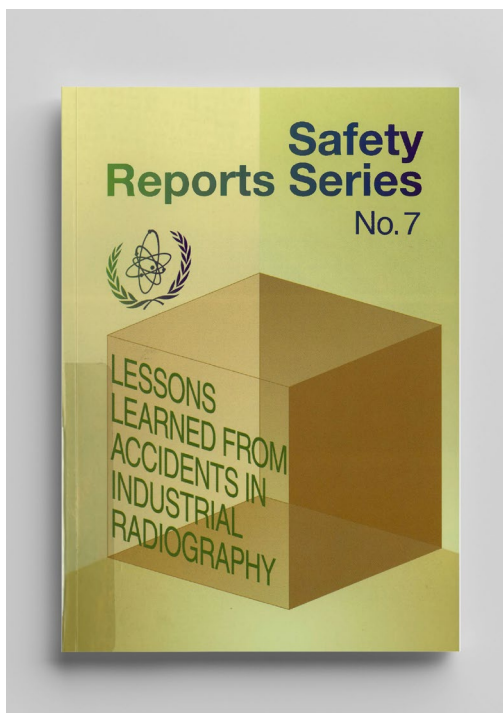
Accidental Overexposure of Radiotherapy Patients in San José, Costa Rica

DESCRIPTION

This report summarizes the assessment made of an accidental overexposure of radiotherapy patients that occurred at the San Juan de Dios Hospital in San José, Costa Rica, in August and September 1996. The assessment was carried out by an Expert Team convened by the IAEA in July 1997 at the request of the Government of Costa Rica. The findings of the Expert Team's assessment are presented in two parts: (1) an evaluation of the doses to patients by analysing the treatment records and physical measurements; and (2) a medical examination of patients, together with the autopsy findings for those who died. Thirty cross-sectional images are reproduced that show the dose reconstructions made for some of the patients. The purpose of the report is to foster information exchange with a view to preventing similar accidents elsewhere in the future.

Date published: 1998

Languages: English, Spanish



Safety Reports Series No. 7

Lessons Learned from Accidents in Industrial Radiography

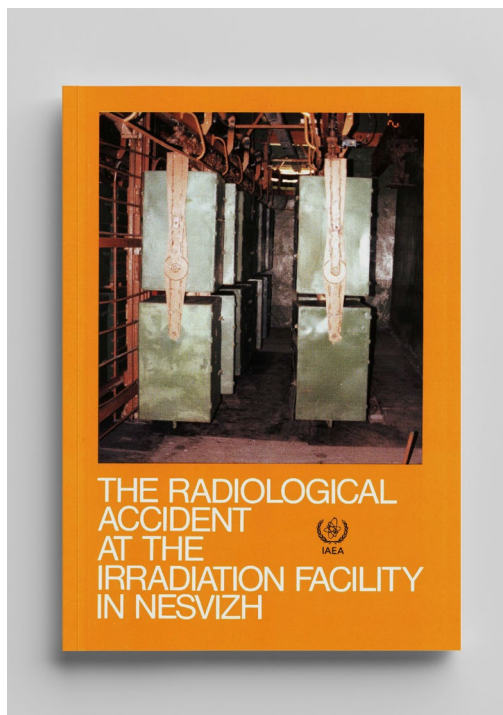
DESCRIPTION

This Safety Report contains the findings of extensive research in terms of the lessons that can be learned from accidents which have occurred in industrial radiography, both in developed and developing countries. The review was carried out by a team of regulatory authorities, manufacturers and safety advisers. The objectives were to draw lessons from the initiating events of the accidents, the contributing factors and the consequences, and to identify several measures that, if implemented, would improve safety performance in industrial radiography.

Date published: 1998

Language: English





Accident Report

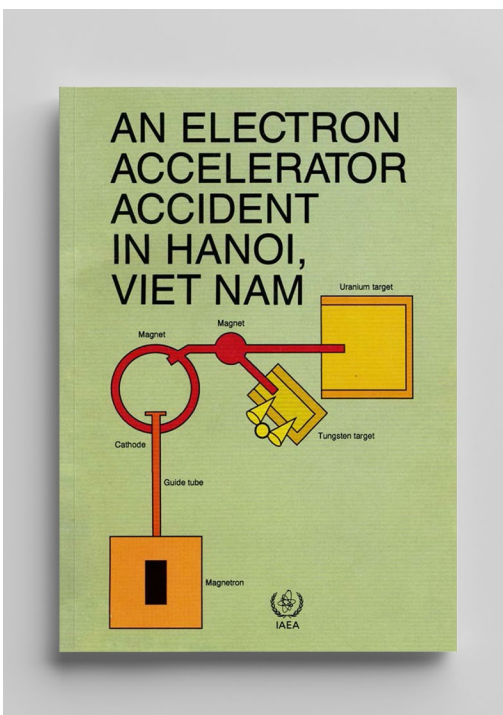
The Radiological Accident at the Irradiation Facility in Nesvizh

DESCRIPTION

On 26 October 1991, a fatal radiological accident occurred at an industrial sterilization facility in Nesvizh, Belarus. Following a jam in the internal product transport system, the operator entered the irradiation chamber to clear the fault. In doing so, he bypassed a number of safety features, leaving the controls in a position such that exposure was imminent. It was estimated that he received a whole body dose of 11 Gy, with localized areas of up to 20 Gy. Despite intensive medical treatment, he died 113 days later. The significant feature of this case was related to the medical management. In its post-accident review, the IAEA also brought to light other circumstances of the accident. The present report documents the causes and consequences of the accident and defines the lessons learned with a view to assisting those people with responsibility for the safety of such facilities and those medical authorities who might be involved in the management of a radiation event.

Date published: 1996

Language: English



Accident Report

An Electron Accelerator Accident in Hanoi

DESCRIPTION

On 17 November 1992 a radiological accident occurred at an electron accelerator facility in Hanoi, Viet Nam. An individual entered the irradiation room without the operators' knowledge and unwittingly exposed his hands to the X ray beam. His hands were seriously injured and one hand had to be amputated. The report details the circumstances of the accident, its medical consequences and the governmental response.

Date published: 1996

Languages: Chinese, English



Accident Report

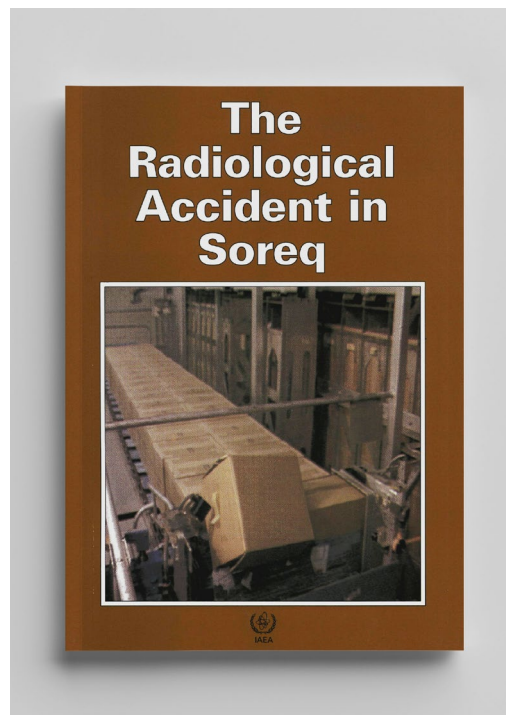
The Radiological Accident in Soreq

DESCRIPTION

On 21 June 1990 a fatal radiological accident occurred at an industrial irradiation facility at Soreq, Israel. An operator entered the irradiation room by circumventing safety systems and was acutely exposed, with an estimated whole body dose of 10–20 Gy. The accident, like earlier accidents at similar irradiators, was the consequence of the contravention of operating procedures. An IAEA review team investigated the causes of the accident. This report presents its findings and recommendations and describes the clinical management of the patient, particularly of the haematological phase. The medical treatment included the use of emerging therapies with haematopoietic growth factor drugs which may rescue the overexposed patient, albeit in this case only temporarily. The report is intended for regulatory authorities responsible for the regulation and inspection of irradiators, operating organizations and physicians who may need to treat overexposed patients.

Date published: 1993

Language: English



Accident Report

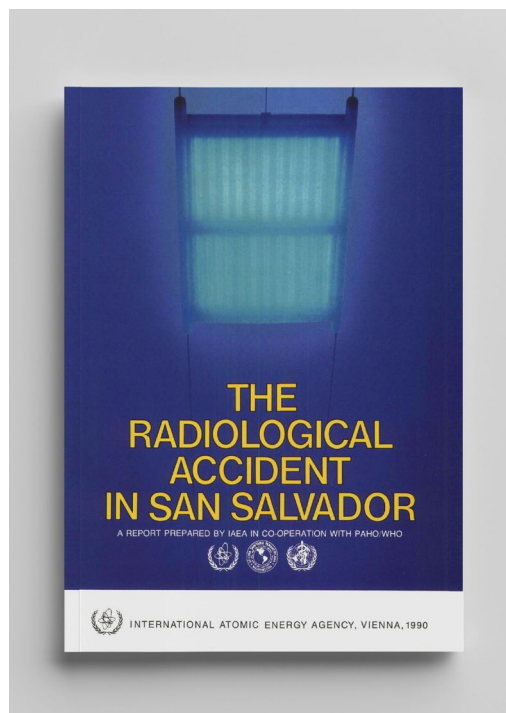
The Radiological Accident in San Salvador

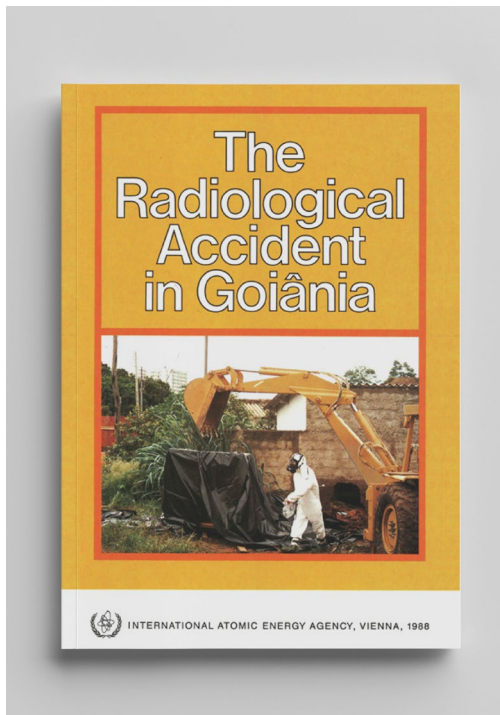
DESCRIPTION

On 5 February 1989, a radiological accident occurred at an industrial irradiation facility near San Salvador, El Salvador. Medical products are sterilized at the facility by irradiation by means of an intensely radioactive cobalt-60 source in a movable source rack. This source rack became stuck in the irradiation position. The operator bypassed the irradiator's degraded safety systems and entered the radiation room with two other workers to free the source rack manually. The three men were exposed to high radiation doses and developed the acute radiation syndrome. They received initial hospital treatment in San Salvador and subsequent, more specialized treatment in Mexico City. The legs and feet of two men were so seriously injured that amputation was required. The worker who had been most exposed died six and a half months after the accident from lung damage due to irradiation complicated by injury sustained during treatment. The report describes the accident and the response to it and presents lessons derived for operators and suppliers of irradiators, national authorities, medical staff and international organizations. Detailed information on dosimetric and medical aspects of the accident is presented in appendices and annexes.

Date published: 1990

Languages: English, French, Russian, Spanish





Accident Report

The Radiological Accident in Goiânia

DESCRIPTION

The Government and authorities in Brazil were faced with a tragic accident in Goiânia resulting from the misuse of a strongly radioactive medical teletherapy source not under radiation protection surveillance. The present report is divided into four parts: a chronology of destruction of the source, discovery of the accident and initial response; a description of the human consequences and the dosimetry and treatment of seriously exposed and contaminated persons; an account of the assessment of the environmental contamination and the remedial actions taken; and observations and recommendations. Appendices and annexes give an assessment of the effectiveness of international co-operation in the emergency response, and provide further information on: public communications; radiological survey equipment; guidelines for the discharge of patients; radiological protection; chemical decontamination; and the lessons learned.

Date published: 1988

Languages: English, French, Russian, Spanish



OTHER ACCIDENT REPORTS

The following publications have been issued by the IAEA as a non-series publication or were published by the relevant Member State.

Accident Report The Fukushima Daiichi Accident

DESCRIPTION

The Fukushima Daiichi Accident consists of a Report by the IAEA Director General and five technical volumes. It is the result of an extensive international collaborative effort involving five working groups with about 180 experts from 42 Member States with and without nuclear power programmes and several international bodies. It provides a description of the accident and its causes, evolution and consequences, based on the evaluation of data and information from a large number of sources available at the time of writing. The Fukushima Daiichi Accident will be of use to national authorities, international organizations, nuclear regulatory bodies, nuclear power plant operating organizations, designers of nuclear facilities and other experts in matters relating to nuclear power, as well as the wider public. The set contains six printed parts and five supplementary CD-ROMs. Contents: Report by the Director General; Technical Volume 1/5, Description and Context of the Accident; Technical Volume 2/5, Safety Assessment; Technical Volume 3/5, Emergency Preparedness and Response; Technical Volume 4/5, Radiological Consequences; Technical Volume 5/5, Post-accident Recovery; Annexes. The Report by the Director General is also available separately in Arabic, Chinese, French, Russian, Spanish and Japanese.

Date published: 2015

Languages: Arabic, Chinese, English, French, Japanese, Russian, Spanish

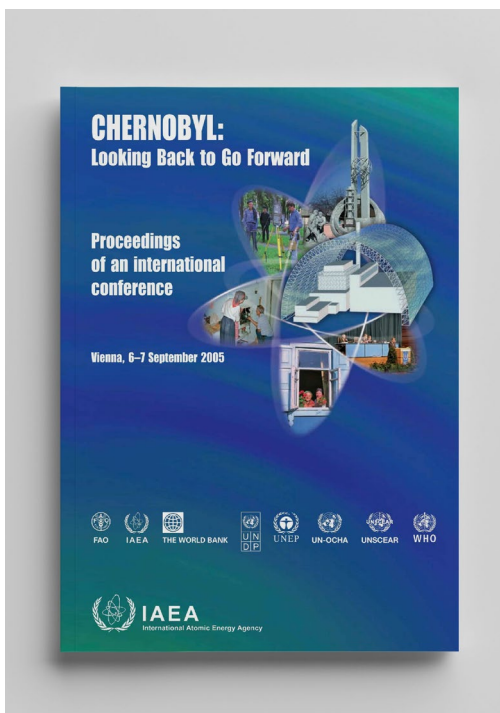
Accident Report Chernobyl: Looking Back to Go Forward

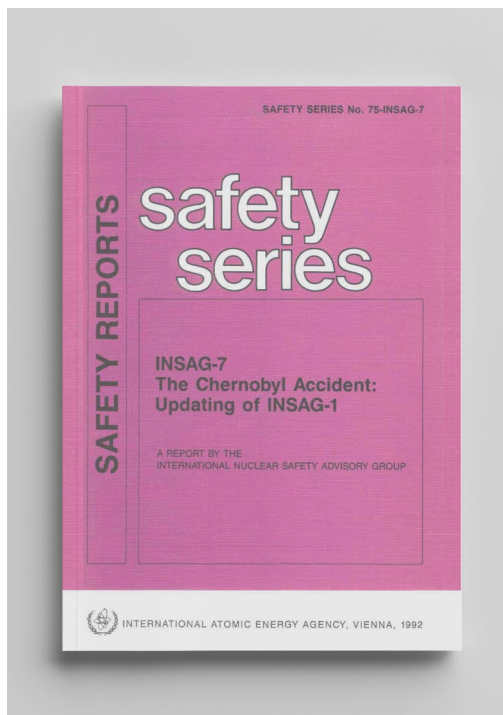
DESCRIPTION

These proceedings present the findings and recommendations of the Chernobyl Forum and the discussions held during the international conference "Chernobyl: Looking Back to Go Forwards" held in Vienna in September 2005. The Chernobyl Forum was a project initiated in 2003 by the IAEA, in cooperation with FAO, UNDP, UNEP, UN-OCHA, UNSCEAR, WHO and the World Bank as well as the competent authorities of Belarus, the Russian Federation and Ukraine, to find consensus on the environmental consequences and health effects attributable to radiation exposure arising from the accident as well as to provide advice on environmental remediation and special health care programmes, and to suggest areas in which further research is required.

Date published: 2008

Language: English





INSAG Series No. 7

The Chernobyl Accident: Updating of INSAG-1

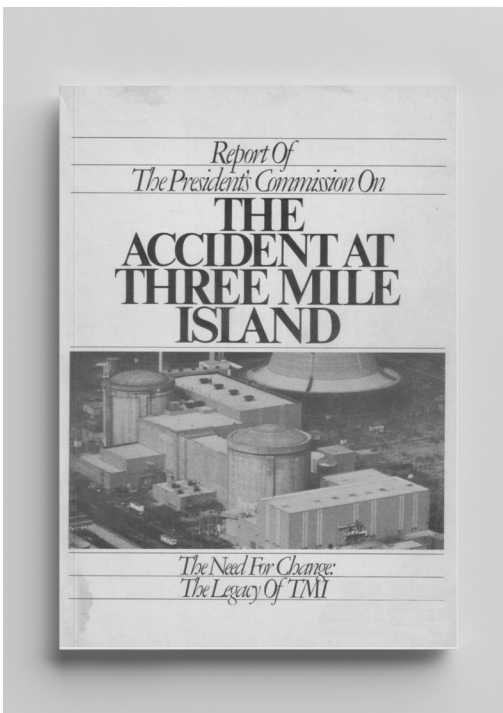
DESCRIPTION

The purpose of this report is to update findings of the International Nuclear Safety Advisory Group's Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident (INSAG-1), published in September 1986, in the light of further information that has been revealed since that meeting. INSAG stands by the general conclusions of INSAG-1 about the accident's causes and their implications for the safety of the Chernobyl type light water cooled graphite moderated RBMK reactors. However, the new information, which derives from studies made in the then USSR on the physical origins of the accident, has led INSAG to shift the emphasis of its conclusions from the actions of the operating staff to faulty design of the reactor's control rods and safety systems. Deficiencies in the regulation and management of safety matters throughout the Soviet nuclear power industry have also been revealed and are discussed. Two detailed Soviet reports on the causes and circumstances of the Chernobyl accident, translated into English by the IAEA, and a statement of measures that have been taken to enhance the safety of RBMK reactors are included.

Contents: 1. Introduction; 2. Features of the reactor; 3. The accident; 4. More recent analyses of the fault scenario; 5. Views of INSAG; 6. Conclusions on factors contributory to the accident; Appendix: Measures to improve the safety of RBMK plants; Annex I: Report by a commission to the USSR State Committee for the supervision of safety in industry and nuclear power; Annex II: Report by a working group of USSR experts.

Date published: 1993

Languages: English, French, Russian, Spanish



Accident Report

Report of the President's Commission on the Accident at Three Mile Island: The Need for Change: The Legacy of TMI

DESCRIPTION

As cited by the Homeland Security Digital Library: "On March 28, 1979, the United States experienced the worst accident in the history of commercial nuclear power generation. Two weeks later, the President of the United States established a Presidential Commission. The President charged the 12-member Commission whose purpose was to conduct a comprehensive study and investigation of the accident involving the nuclear power facility on Three Mile Island in Pennsylvania. The Commission concluded that: To prevent nuclear accidents as serious as Three Mile Island, fundamental changes will be necessary in the organization, procedures, and practices -- and above all -- in the attitudes of the Nuclear Regulatory Commission and, to the extent that the institutions we investigated are typical, of the nuclear industry."

Date published: 1979

Language: English



TRAINING MATERIALS

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 Portable Digital Tool for Assisting
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Online Course:
 Medical Response to Radiation
 Emergencies

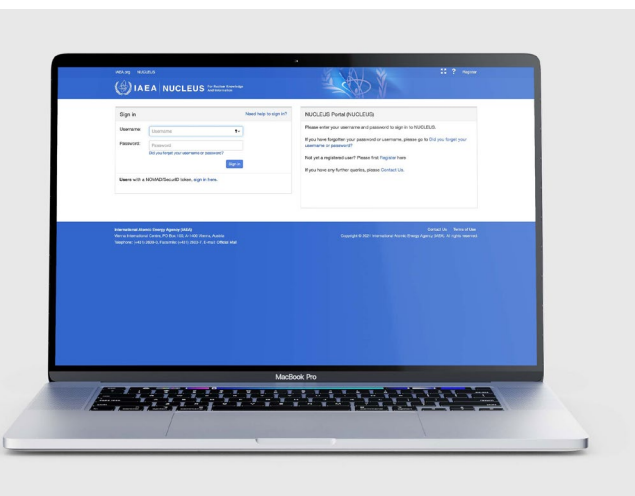
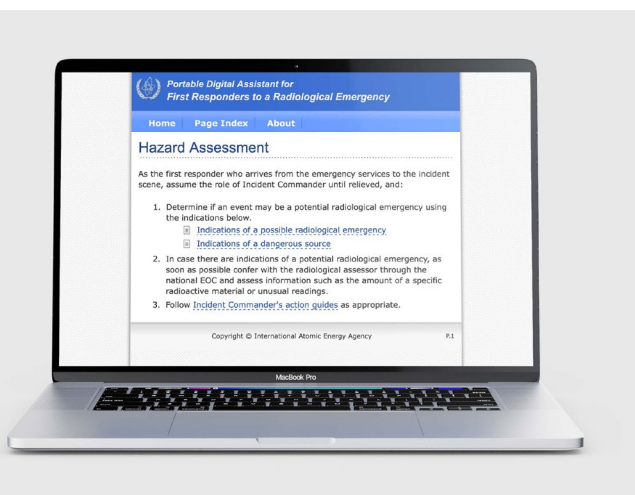
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