

Joint Radiation Emergency Management Plan *of the International Organizations*

JOINTLY SPONSORED BY THE
EUROPEAN COMMISSION, FAO, IAEA, OECD/NEA, PAHO, UN/OCHA, UN/OOSA, WHO, WMO



IN CO-OPERATION WITH ICAO



DATE EFFECTIVE: 1 DECEMBER 2002



INTERNATIONAL ATOMIC ENERGY AGENCY

Joint Radiation Emergency Management Plan

of the International Organizations

Jointly sponsored by:

European Commission

Food and Agriculture Organization of the United Nations

International Atomic Energy Agency

Nuclear Energy Agency of the
Organisation for Economic Co-operation and Development

Pan American Health Organization

United Nations Office for the
Co-ordination of Humanitarian Affairs

United Nations Office for Outer Space Affairs

World Health Organization

World Meteorological Organization

In co-operation with the:

International Civil Aviation Organization



INTERNATIONAL ATOMIC ENERGY AGENCY

This publication has been prepared by the:
Emergency Preparedness and Response Unit
Radiation Safety Section
International Atomic Energy Agency
Wagramer Strasse 5
P.O. Box 100
A-1400 Vienna, Austria

JOINT RADIATION EMERGENCY MANAGEMENT PLAN OF THE INTERNATIONAL ORGANIZATIONS
IAEA, VIENNA, 2002
EPR-JPLAN (2002)

© IAEA, 2002

Printed by the IAEA in Austria
November 2002

Foreword

The Convention on Early Notification of a Nuclear Accident (the ‘Early Notification Convention’) and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (the ‘Assistance Convention’) are the prime legal instruments that establish an international framework to facilitate the exchange of information and the prompt provision of assistance in the event of a nuclear accident or radiological emergency, with the aim of minimizing the consequences. The International Atomic Energy Agency (IAEA) has specific functions allocated to it under these Conventions, to which, in addition to a number of States, the World Health Organization (WHO), the World Meteorological Organization (WMO) and the Food and Agriculture Organization of the United Nations (FAO) are full Parties. Since 1989, the arrangements between these organizations for facilitating the practical implementation of those articles of the two Conventions that are operational in nature have been documented by the IAEA in the Emergency Notification and Assistance Technical Operations Manual (ENATOM)¹. The manual is intended for use primarily by Contact Points as identified in the Conventions.

Pursuant to the obligations placed on it by the Conventions, the IAEA regularly convenes the Inter-Agency Committee on Response to Nuclear Accidents (IACRNA)², whose purpose is to co-ordinate the arrangements of the relevant international intergovernmental organizations (‘international organizations’) for preparing for and responding to nuclear or radiological emergencies. Although the Conventions assign specific response functions and responsibilities to the IAEA and the Parties, various international organizations have — by virtue of their statutory functions or of related legal instruments — general functions and responsibilities that encompass aspects of preparedness and response. Moreover, some regional organizations (e.g. the European Union) are party to legally binding treaties and have directives and regulations that bear on emergency response arrangements among some States. There are also bilateral agreements between some international organizations that also have relevance to preparedness and response arrangements.

In March 2002, the IAEA Board of Governors approved a Safety Requirements document to be issued according to the IAEA’s statutory function “to establish ... standards of safety for protection of health and minimization of danger to life and property”. These Safety Requirements, entitled “*Preparedness and Response for a Nuclear or Radiological Emergency*” (GS-R-2), are being jointly sponsored by the FAO, IAEA, the International Labour Organisation (ILO), the OECD Nuclear Energy Agency (NEA/OECD), the United Nations Office for the Co-ordination of Humanitarian Affairs (OCHA), the Pan American Health Organization (PAHO) and WHO. These safety standards imply additional expectations with regard to operational emergency response arrangements.

It has been recognized by the organizations responsible for emergency response, and reflected in the above requirements, that good planning in advance of an emergency can substantially improve the response. Moreover, one of the most important features of emergency response plans is to have clear lines of responsibility and authority. With this in mind, the IAEA, the organizations party to the Conventions, and some other international organizations that participate in the activities of the IACRNA develop and maintain this “*Joint Radiation Emergency Management Plan of the International Organizations*” (the Joint Plan), which describes: the objectives of response; the organizations involved in response, their roles and responsibilities, and the interfaces among them and between them and States; operational concepts; and preparedness arrangements. These practical arrangements are reflected in the various organizations’ own emergency plans.

¹ EPR-ENATOM (2002): Emergency Notification and Assistance Technical Operations Manual, IAEA, Vienna (2002). This manual describes the conceptual link between the IAEA, all other relevant international intergovernmental organizations, States that are IAEA Member States and/or Parties to one or both Conventions, and other States under the terms of the two Conventions.

² The Inter-Agency Committee for the Co-ordinated Planning and Implementation of Response to Accidental Releases of Radioactive Substances (now renamed as IACRNA) was established following a meeting of representatives of FAO, UNEP, ILO, UNSCEAR, WMO, WHO and IAEA at the Special Session of the IAEA General Conference in September 1986.

The IAEA is the main co-ordinating body for development and maintenance of the Joint Plan. All States irrespective whether they are party to one or other of two Conventions are invited to use the arrangements described here when providing relevant information about nuclear or radiological emergencies, in order to minimize the transnational radiological consequences and to facilitate the prompt provision of information and assistance.

This document is the second edition of the Joint Plan. The first edition was co-sponsored by the FAO, IAEA, Nuclear Energy Agency of the Organisation for Economic Co-operation and Development, OCHA, the WHO and the World Meteorological Organization (WMO). The second edition is additionally co-sponsored by the European Commission (EC), PAHO and the United Nations Office for Outer Space Affairs (OOSA), in co-operation with the International Civil Aviation Organization (ICAO).

The Joint Plan does not prescribe arrangements between the participating organizations, but describes a common understanding of how each organization will act during a response and in making preparedness arrangements. It describes the arrangements as envisaged from 1 December 2002, by which time each participating organization will have initiated the steps necessary for harmonizing its own response plans and arrangements with the Joint Plan. The subsequent edition is envisaged for release in December 2004.

Although the Joint Plan is being distributed to the Parties to the two Conventions as an Annex to ENATOM, it is not restricted in its availability. The current version of the Joint Plan will be maintained on the IAEA's public web site under <http://www.iaea.org/ns/rasanet/programme/emergency/inter-liaison.htm>.

EDITORIAL NOTE

The views expressed do not necessarily reflect those of the governments of States that are Member States of participating organizations or of other relevant international organizations, or of the governments of other States.

Although great care has been taken to maintain the accuracy of information contained in this manuscript, the IAEA, the other cosponsoring organizations and their Member States do not assume any responsibility for consequences that may arise from its use.

NOTES FOR THE USER

This Plan describes arrangements operative from 1 December 2002 and supersedes the previous edition, EPR-JPLAN(2000). All copies of the previous edition should now be removed from operational response systems and either archived or destroyed.

The 2002 edition incorporates the following main changes over the previous 2000 edition:

- New participating organizations (EC, ICAO, OOSA, PAHO); their associated legal bases, capabilities in response and preparedness, and integration into the response operations.
- Changes resulting from the adoption of the FAO/IAEA/ILO/NEA(OECD)/OCHA/PAHO/WHO Safety Requirements No. GS-R-2, Preparedness and Response for a Nuclear or Radiological Emergency, including: 1) removal of the “Transboundary Emergency” Class; and 2) matching the concepts of operations to the definition of ‘transnational emergency’ from GS-R-2. In addition the Plan no longer uses the ‘Alert’ class.
- Updated concepts of operations to reflect recent experience gained in response to real events and in exercises.
- Recommendations of the Working Group of IACRNA on International Exercises with regard to frequency and nature of ‘full-scope’ exercises.
- Restructuring to make the document simpler to use.

For further information, feedback and copies, please contact the Secretariat of the Inter-Agency Committee on Response to Nuclear Accidents, Emergency Preparedness and Response Unit, International Atomic Energy Agency, Vienna International Centre, A-1400 Austria.

facsimile number: +43 1 26007 29309;

telephone number: +43 1 2600 22028;

e-mail address: eru3@iaea.org.

Note that this contact information is for routine correspondence purposes only and not for use during emergency situations.

Contents

1.	INTRODUCTION.....	1
1.1.	Purpose and objectives	1
1.2.	Scope	2
1.3.	Participating international organizations	2
1.4.	Relationship to other plans	2
2.	PLANNING BASIS	3
2.1.	Hazard identification and vulnerabilities	3
2.2.	National responsibilities	4
2.3.	Functions of relevant international organizations	4
2.4.	Co-ordination	4
2.5.	Response objectives	5
2.6.	Authorities for the Plan	5
2.7.	Financing	5
2.8.	Guiding principles	5
3.	EMERGENCY RESPONSE	7
3.1.	General responsibilities	7
3.2.	Principal responsibilities	7
3.3.	Specialized responsibilities.....	7
3.4.	Concept of operations	8
3.5.	Unconfirmed reports of an emergency.....	10
3.6.	Initial notification or advisory message.....	11
3.7.	Activation and immediate response actions.....	12
3.8.	Emergency communications	20
3.9.	Co-ordination of inter-agency response	21
3.10.	Provision of advice and assistance	22
3.11.	Public information	24
3.12.	Emergency deactivation	24
3.13.	Post-emergency follow-up	25
4.	EMERGENCY PREPAREDNESS.....	27
4.1.	General responsibilities	27
4.2.	Inter-Agency Committee on Response to Nuclear Accidents (IACRNA)	27
4.3.	Basis for preparedness	28
4.4.	Inter-agency procedures and arrangements	29
4.5.	Financing	30
4.6.	Feedback from actual responses	30
4.7.	Training and exercises	30
4.8.	Reviews of the Joint Plan and inter-agency arrangements	31

4.9. Change process31
4.10. Research32
4.11. Co-operation in developing national capabilities.....32

DISTRIBUTION33

APPENDIX A: LEGAL INSTRUMENTS, RESOLUTIONS AND OTHER RELEVANT SOURCES

APPENDIX B: AUTHORITIES, RESPONSIBILITIES AND CAPABILITIES OF INTERNATIONAL ORGANIZATIONS IN RESPONSE

APPENDIX C: CAPABILITIES OF INTERNATIONAL ORGANIZATIONS FOR EMERGENCY PREPAREDNESS ACTIVITIES

APPENDIX D: DEFINITIONS AND ABBREVIATIONS

APPENDIX E: PUBLICATIONS OF RELEVANCE TO RESPONSE OPERATIONS

1. INTRODUCTION

1.1. Purpose and objectives

The purpose of the *“Joint Radiation Emergency Management Plan of the International Organizations”* (Joint Plan) is to describe the inter-agency framework for preparedness for and response to an actual, potential or perceived nuclear or radiological emergency.

In particular, its objectives are to:

1. provide a common understanding of the emergency response objectives, responsibilities, authorities and capabilities of each participating international organization;
2. provide an overall concept of operations between the international organizations based on specific authorities for timely, effective and co-ordinated response to nuclear or radiological emergencies;
3. facilitate development of agreements among the participating international organizations on practical issues, if appropriate;
4. provide a common understanding of the process for improving and changing the inter-agency response arrangements;
5. provide a common understanding of roles and responsibilities of the participating international organizations with respect to: international standards; supporting national capabilities through provision of guidance and training; relevant research, emergency exercises and other planning considerations;
6. guide the managers in each participating organization who must ensure that all appropriate arrangements are given the necessary support within their organizations;
7. facilitate the well founded development, maintenance and training of plans and procedures for each organization;
8. draw the attention of personnel in States and international organizations³ to these arrangements and to facilitate their developing compatible arrangements, if appropriate.

³ Particularly those not participating in the Joint Plan.

1.2. Scope

The 'Joint Plan' describes the arrangements of the participating international organizations⁴ for responding to any nuclear or radiological emergency (including a conventional emergency that has actual, potential or perceived radiological consequences), and the measures for developing, maintaining, exercising and improving these arrangements

Although the Plan may refer to international organizations other than those participating, these references are only understandings by the participating organizations and do not necessarily represent the understandings of those not participating in the Plan.

1.3. Participating international organizations

The **European Commission (EC)**, the **Food and Agriculture Organization of the United Nations (FAO)**, the **International Atomic Energy Agency (IAEA)**, the **International Civil Aviation Organization (ICAO)**, the **Nuclear Energy Agency of the Organisation for Economic Co-operation and Development (NEA/OECD)**, the **Pan American Health Organization (PAHO)**, the **United Nations Office for the Co-ordination of Humanitarian Affairs (OCHA)**, the **United Nations Office for Outer Space Affairs (OOSA)**, the **World Health Organization (WHO)** and the **World Meteorological Organization (WMO)** participate in the co-operative arrangements described in this Plan.

1.4. Relationship to other plans

The application of this Joint Plan is limited to the participating international organizations and it is not intended to interfere with, or be applicable to, the domestic and national emergency response obligations and responsibilities of sovereign States. The Joint Plan is formally made available to all States and relevant international organizations as an Annex to the Emergency Notification and Assistance Technical Operations Manual (ENATOM). The Joint Plan does not include procedures for its implementation.

The Joint Plan and the plans and procedures of other participating organizations (for example, the ENATOM, the internal plan and procedures of the IAEA (NAREAP), those for the WHO (REMPAN) and EC (ECURIE) systems, the procedures of the WMO (WMO-No. 485; WMO-TD/No. 778) and the relevant annexes of the Chicago Convention of ICAO) are intended to be in harmony..

⁴ In the context of this Plan, the term 'international organization' is used to mean only 'international intergovernmental organizations' and excludes non-governmental organizations.

2. PLANNING BASIS

2.1. Hazard identification and vulnerabilities

Throughout the world, but particularly in technologically advanced countries, there are a large number of nuclear installations, the regulatory bodies for which require the development and maintenance of site specific emergency preparedness and response plans. There are also many other types of facilities and practices that involve radiation or radioactive material used for agricultural, industrial, medical, scientific and other purposes. Such facilities and practices include, for example, the manufacture and transport of radioisotopes and their uses; uses of radiation generators and radioactive sources; and satellites using radioactive material.

2.1.1. Emergencies specific to nuclear installations

Although the probability of severe emergencies at nuclear installations⁵ is low, if such emergencies do occur at installations of certain types, then precautionary/urgent protective actions may need to be taken near the site (including in any neighbouring State if the border is close). Regulatory authorities require detailed emergency response arrangements for these installations, including an emergency classification scheme to initiate relevant response operations both on and off the site according to the emergency class. If there is a significant release of radioactive material, there will be a need to monitor radiation and contamination levels out to greater distances in order to review any initial protective actions and consider more extensive agricultural countermeasures. Other States may need access to technical and administrative information to enable them to provide advice on trade and travel and other protection issues to their domestic population and to nationals working abroad. Even for events without significant radiological releases, there may be considerable public anxiety, and national competent authorities in other States might be expected to provide detailed information to their government/public regarding the status and nature of the emergency.

2.1.2. Emergencies not specific to nuclear installations

For certain types of reactor or fuel cycle facility (such as some research reactors or critical assemblies) as well as other facilities involving radiation or radioactive material (such as radiopharmaceutical manufacturing facilities, hospitals, research laboratories,

⁵ This relates to threat categories I and II as defined in FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna.

industrial irradiators)⁶, and for certain types of emergency at large nuclear installations, the radiological consequences of an event will always be localized (for example, radioactive spills, fuel handling emergencies, loss of shielding or loss of control for a large gamma emitter). Other radiological emergencies can occur when, for example, an uncontrolled radiation source (a so-called 'orphan' source) or radioactive contamination appears in the human environment; an accident or deliberate act leads or may lead to a release of radioactive material to the environment, exposing workers or the public; an accident during transport of radioactive material; or a space object containing radioactive material falls back to earth.

Although emergencies such as these would be expected to affect few people, they are more likely⁷ than a severe release from a nuclear installation, and the impact on people and the environment, although generally local in extent, may still be serious. Their scale can range, for example, from the serious exposure of a single individual to a powerful unshielded source up to several hundreds of people being contaminated following the breakup and dispersal of such a source in an urban area.

2.1.3. Unconfirmed nuclear or radiological emergencies

Situations may occur that might indicate a possible undiscovered or unconfirmed nuclear or radiological emergency⁸ or threat thereof, for example, the appearance of traces of radionuclides in the air, food or other commodities, or an unsubstantiated rumour. Competent authorities in States and relevant international organizations may need rapid confirmation or investigation of such situations, possibly to avoid unwarranted spreading of rumours.

2.2. National responsibilities

The Plan is based on the fundamental precept that States have the ultimate responsibility to protect life, property, the environment and quality of life on their territories, and takes account of their rights and duties under international law.

2.3. Functions of relevant international organizations

For any nuclear or radiological emergency, if requested, the IAEA and other relevant international organizations have been assigned functions in facilitating the provision of assistance⁹. In the case of an emergency of actual, potential or perceived radiological significance for more than one State ('transnational emergency'), the IAEA and other relevant international organizations have functions related to the emergency exchange of relevant information.

2.4. Co-ordination

In order for them to be effective, the participating organizations need to co-ordinate and integrate their response actions among themselves and with the relevant

⁶ This relates to threat category III as defined in the FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna.

⁷ The IAEA typically assists countries to respond to radiological emergencies around four times per year.

⁸ The IAEA typically receives a few reports per month about possible emergencies that require verification.

⁹ Such assistance includes assessing the situation, providing relevant information, response management, interpreting relevant international standards and guidance, medical treatment of victims, field monitoring teams and mitigating the emergency situation and longer term consequences.

competent authorities, ensuring clear lines of responsibility and authority. Co-ordination is also needed in planning and exercising in advance of any emergency to facilitate an effective, prompt and appropriate response in a real event.

2.5. Response objectives

The objective of the joint emergency response of the participating international organizations, in the context of this Plan, is to provide a co-ordinated, appropriate and timely response to a nuclear or radiological emergency that has actual, potential or perceived radiological consequences in order to minimize the consequences to people, property and the environment, and to lay the foundations for an effective recovery.

2.6. Authorities for the Plan

Each organization participating in the Joint Plan has various statutory and other legally assigned functions. Appendix A of the Joint Plan lists the various legal instruments, resolutions of the UN General Assembly, regulations, standards and inter-organizational agreements that together provide the formal basis for the Plan. Specific decisions of executive bodies and/or specific regulations are also referred to in the text as appropriate.

2.7. Financing

The cost of each organization's participation in support of this Plan is the sole responsibility of that organization, unless other agreements or mechanisms exist.

2.8. Guiding principles

Emergency response and preparedness actions by the participating organizations are carried out in a manner consistent with the stated purposes of the relevant international Conventions and UN General Assembly resolutions, and with relevant requirements of international standards, in particular with the:

- FAO/IAEA/ILO/OECD(NEA)/PAHO/WHO *International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, IAEA Safety Series No. 115 (1996)*, and more specifically
- FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO *Preparedness and Response for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GS-R-2 (2002)*.

Moreover, as general principles for establishing emergency response arrangements among international organizations:

- a) an overall co-ordinating authority and structure shall be identified according to international agreements and rules;
- b) the roles and responsibilities of all relevant response organizations are clearly defined and documented, and that they are informed of their role and responsibilities;

- c) arrangements are co-ordinated in respect of response to particular radiation emergency threats and in relation to plans for conventional emergencies;
- d) sufficient resources will be made available for response, and are available for the development and maintenance of arrangements; and
- e) clear response co-ordination mechanisms and interaction protocols shall be developed, documented and available to all relevant response organizations.

3. EMERGENCY RESPONSE

3.1. General responsibilities

Each international organization participating in the rendering of prompt assistance and exchange of relevant information in the event of a nuclear or radiological emergency does so in a spirit of co-operation. Bilateral or multilateral arrangements, or where appropriate a combination of these, between States for preventing or minimizing injury and damage are an inherent part of this co-operation.

3.2. Principal responsibilities

Under Article 2, States Parties to the Early Notification Convention shall notify affected States and the IAEA of a significant transboundary release, and provide through the IAEA relevant information to other States Party, IAEA Member States or relevant international organizations.

Under Article 2, States Parties to the Assistance Convention may call for assistance, and IAEA Member States may request assistance from other States Parties directly or through the IAEA, and from the IAEA, or where appropriate from other competent international organizations. Furthermore, the IAEA Board of Governors¹⁰ has authorized the IAEA Secretariat to respond to requests for emergency assistance from a State that is neither party to the Assistance Convention nor a Member State of the IAEA. A State may also request that the IAEA co-ordinate at the international level assistance that may become available (Article 2 of the Assistance Convention). These articles place an important role on the IAEA as focal point for the response.

3.3. Specialized responsibilities

The following organizations have, under international agreements, resolutions or other sources, certain specialized responsibilities for response functions in a nuclear or radiological emergency:

European Commission

Food and Agriculture Organization of the United Nations

International Atomic Energy Agency

¹⁰ GOV/1999/15: Financing of the discharge of Agency obligations 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, including the provision of assistance by the Agency in the event of a Nuclear Accident or Radiological Emergency.

International Civil Aviation Organization
Pan American Health Organization
United Nations Office for the Co-ordination of Humanitarian Affairs
United Nations Office for Outer Space Affairs
World Health Organization
World Meteorological Organization

A summary of the critical tasks and the responsible organization(s) are given in Table 1. More details on the responsibilities, authorities and capabilities maintained to meet these responsibilities are described in Appendix B.

3

3.4. Concept of operations

The concept of operations recognizes the pre-eminent role of national governments for protecting life, property and the environment on their territories, consistent with their obligations under international law. The concept of operations recognizes the IAEA's role in co-ordinating response by international organizations to nuclear or radiological emergencies, and OCHA's role in co-ordinating humanitarian response.

The level of the response by the participating international organizations to a specific emergency will depend on many factors, including the nature and location of the emergency, the impact on or the potential for impact on health, property or the environment, the size of any affected area, and the level of interest by the public.

In accordance with the relevant Conventions, the IAEA has the prime responsibility to trigger the activation of the system and acts as the focal organization for the response. It receives reports of an emergency from a designated competent authority in a State and verifies any unconfirmed reports of an emergency. It establishes primary functional links with the reporting State and any potentially affected States as appropriate, providing direct communication with the respective official national emergency response co-ordinating structures. It also establishes functional links with the WMO, WHO, OCHA, FAO and other organizations, as appropriate. These organizations may establish links with other competent agencies, regional centres and programmes that are prepared to provide relevant assistance. The general framework is represented in Figure 1.

In the event of a major conventional disaster or complex emergency, OCHA takes the lead in co-ordinating the overall inter-agency response. If such a major conventional disaster has an associated nuclear or radiological emergency (e.g. an earthquake affecting a reactor), the functions and responsibilities of this Plan remain the same. The IAEA co-ordinates the management of the international response to the nuclear or radiological emergency with OCHA, which has the overall responsibility for co-ordination of the international disaster assistance, should the requesting State not be able to co-ordinate it.

Table 1. Response tasks and responsible organizations

Response task	Responsible organization(s)
Receive from States initial notification or advisory message of nuclear or radiological emergency Additionally receive, if space object re-entry <i>Additionally receive, from European Union Member States or Switzerland</i> Offer good offices	IAEA OOSA EC IAEA
Arrange for advice or assistance on potential radiological hazards, assessment of facility conditions and accident mitigation [R]	IAEA
Inform forthwith other organizations and States of notification received of an emergency with potential for transnational impact, and promptly forward and exchange substantive information on emergency exposing members of the public. Additionally, if space object re-entry Receive notifications from IAEA of emergencies with potential for transnational impact, or requests for assistance Activate inter-agency emergency organization Co-ordinate inter-agency response to nuclear or radiological emergency (not disaster or complex emergency) Co-ordinate overall inter-agency response to disaster or complex emergency	IAEA OOSA WHO, FAO, WMO, OCHA, EC, OOSA, PAHO IAEA IAEA OCHA
Arrange for assistance in atmospheric dispersion predictions [R] Arrange for provision of information to aircraft in flight about atmospheric releases of radioactive materials	WMO ICAO
Arrange for physical and biological dosimetric measurement services ; and assistance in radiological assessment and application of international standards as mentioned in para. 2.8 [R] Arrange for assistance in public health assessment [R] Arrange for assistance in clinical dosimetry following accidental medical exposure [R]	IAEA WHO, PAHO WHO, PAHO, IAEA
Co-ordinate provision of international humanitarian assistance Arrange for advice and support on emergency reception centres, emergency social services , including lodging, food, clothing, registration, inquiry and personal services [R] Arrange for radiation protection support, personnel and equipment for operations in affected areas [R]	OCHA OCHA IAEA
Arrange for assistance in emergency medical diagnosis and treatment of radiation or potentially contaminated casualties [R] Arrange for advice and assistance on longer term medical treatment [R] Arrange for assistance in mitigation of mental health impact [R]	IAEA, WHO, PAHO WHO, PAHO WHO, PAHO
Arrange for advice and assistance on agricultural countermeasures [R] Arrange for assistance in environmental monitoring and sampling programmes for interventions related to food [R] Arrange for assistance in implementation and enforcement of control measures for imported and exported foods and feedstuffs and advice on food control [R] <i>Within European Union render applicable maximum permissible levels of radioactive contamination for foodstuffs and feeding stuffs</i>	FAO IAEA, WHO, PAHO, FAO FAO EC
Arrange for assistance in environmental monitoring and sampling programmes and assessment of long term impact and advice on relocation, resettlement and decontamination [R]	IAEA, WHO, PAHO
Co-ordinate releases of information to the media	IAEA, WHO, EC, OCHA, PAHO, FAO, WMO, (NEA), OOSA

[R] = On request directly by a State or through another relevant international organization.

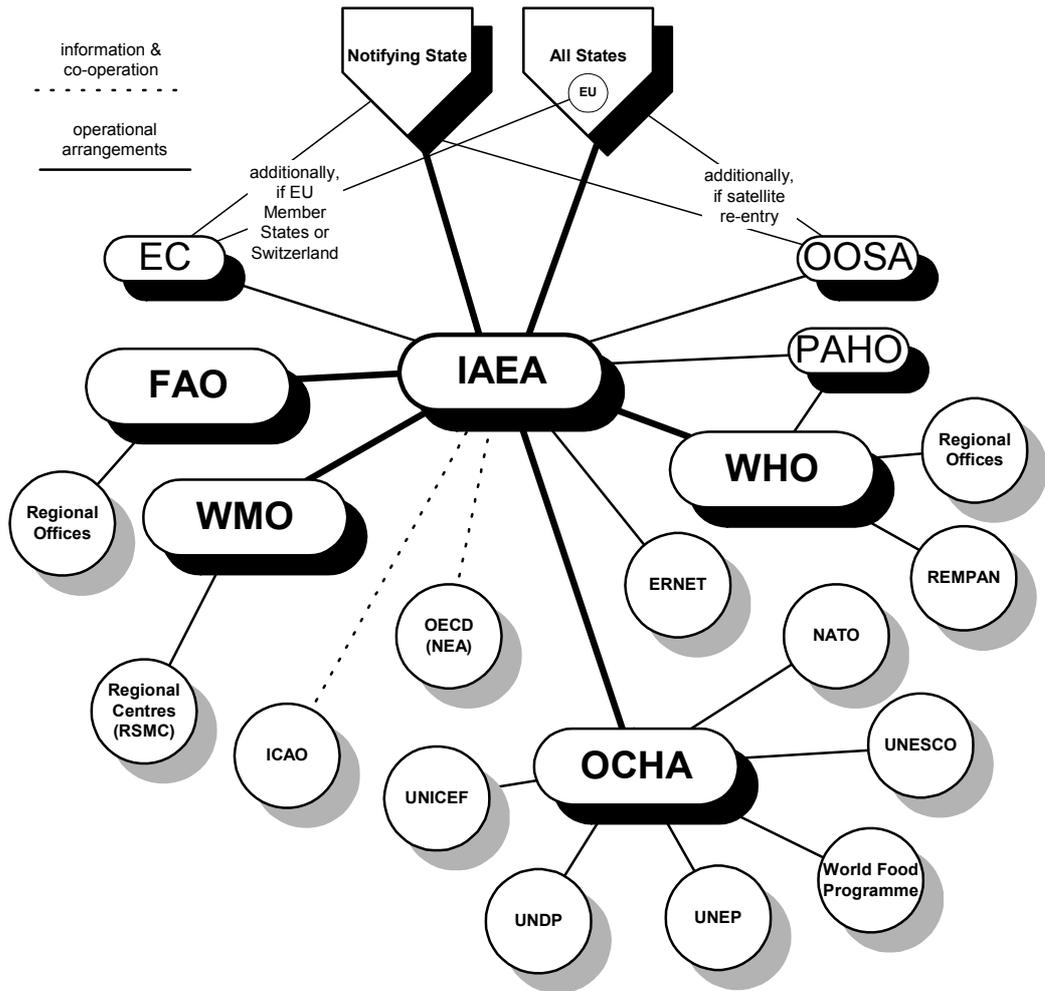


Figure 1. Framework for inter-agency response to nuclear or radiological emergencies.

Depending upon the nature of the event, it can be assumed that certain other relevant international organizations with technical expertise in specific areas related to, or useful for, responding to emergencies, will or may be contacted by a requesting party. These organizations include, for example, the World Customs Organization (WCO), the International Criminal Police Organization (Interpol), the International Labour Organization (ILO), the United Nations Environment Programme (UNEP), the International Maritime Organization (IMO), and the United Nations Educational, Scientific and Cultural Organization (UNESCO). The framework for response outlined in Figure 1 may be used for initiating and co-ordinating requests for assistance.

3.5. Unconfirmed reports of an emergency

If a relevant international organization becomes aware of a possible nuclear or radiological emergency for which the IAEA has not provided any official information, it informs the IAEA respecting relevant aspects of confidentiality. If appropriate, the IAEA verifies the report with the relevant competent authorities and requests an appropriate notification or advisory message (see Section 3.5 below). If the information cannot be substantiated, the IAEA reports this to the original reporter. With the aim of limiting and correcting the spread of false information, the IAEA

may: inform States; post information to ENAC¹¹; and/or, in co-ordination with the relevant States as appropriate, publish information on WORLDATOM¹² and/or issue a press release to the media.

3.6. Initial notification or advisory message

The IAEA expects to receive an initial message from a national competent authority informing it about a nuclear or radiological emergency at one of two levels of formality, namely a 'notification' or an 'advisory':

1. **Notification:** An official announcement by an authorized national or international competent authority submitted under international treaty or according to international standards providing details of an event, particularly an **emergency**, e.g. as required by the Convention on Early Notification of a Nuclear Accident, or under the provisions of outer space treaties or international safety standards¹³.
2. **Advisory:** An official announcement by an authorized competent authority providing details of a nuclear or radiological emergency, without the explicit obligation or expectation to do so under international treaty or according to international safety standards but, inter alia, to: 1) pre-empt legitimate requests from other States Party to the Assistance Convention for 'assistance' in obtaining information¹⁴; 2) trigger the IAEA to offer its good offices¹⁵; 3) provide advance warning to the IAEA, other relevant organizations or other States of a developing situation so that they can be ready to respond should the situation worsen¹⁶; 4) for the IAEA, other relevant international organizations, or other States to initiate an administrative response and/or to provide advice to their governments, public or media on a developing situation of actual, potential or perceived radiological significance; 5) otherwise alert IAEA emergency response staff.

The reporting State sends an initial notification or advisory message to the IAEA indicating the date/time, location and nature of the emergency (normally expected to include an emergency class and/or conditions). The IAEA authenticates/verifies reports with the competent authority of the reporting State that issued it, and takes actions according to the relevant part of Section 3.6 below.

If the emergency takes place in the territory of any of the Member States of the European Union or Switzerland, or if any of these States may be affected by an emergency, those States will additionally notify the European Commission. The EC then activates its urgent radiological emergency data exchange system (ECURIE) to authenticate the message and retransmit it, and any subsequent information, to the designated contact points in each Member State of the European Union and Switzerland.

¹¹ The IAEA's "Emergency Notification and Assistance Convention" protected web site.

¹² WORLDATOM is the IAEA public site on the World Wide Web.

¹³ FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (publication end 2002).

¹⁴ Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 2.

¹⁵ Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 5.

¹⁶ So that, e.g. the IAEA can carry out its functions under the Convention on Early Notification of a Nuclear Accident (1986) – Article 4.

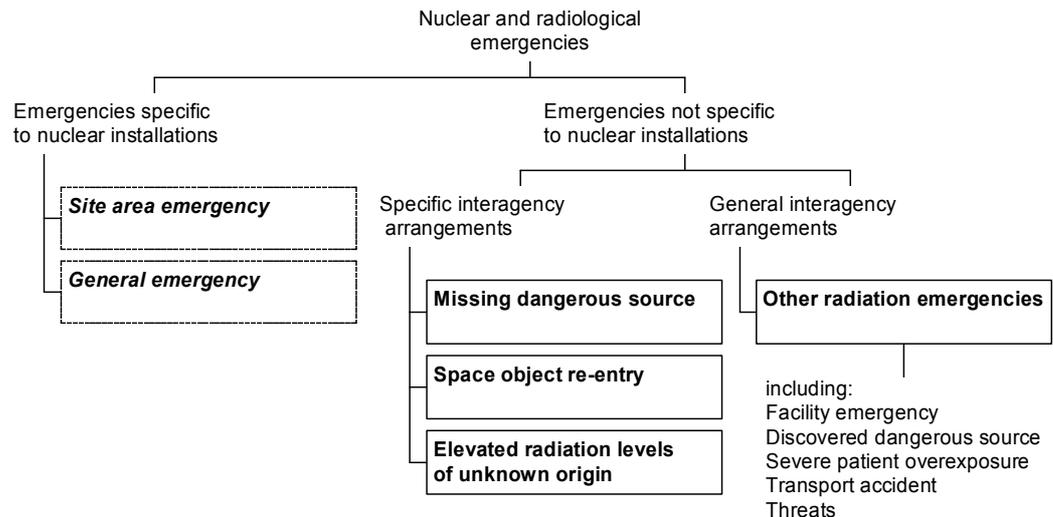


Figure 3. Six sets of emergency conditions, grouped into two classes and four types, used to describe situations that warrant immediate response actions under this Plan.

3

Emergencies specific to nuclear installations

For emergencies specific to nuclear installations⁵, two emergency classes¹⁹ are used to initiate different levels of response by the participating organizations as follows:

1. Site area emergency
2. General emergency

Emergencies not specific to nuclear installations

As well as the two emergency classes that are specific to nuclear installations, there are three specific types of emergency for which the participating organizations have formulated specific response arrangements:

3. Missing dangerous source²⁰
4. Space object re-entry²⁰
5. Elevated radiation levels of unknown origin

Other than for these three specific types of emergency, the participating organizations have formulated general arrangements for all other types of nuclear or radiological emergency:

6. Other radiation emergency or threat²¹

Each emergency class or type and the corresponding immediate response actions to be taken by the various international organizations are described below.

¹⁹ These two classes ('Site area emergency' and 'General emergency' are consistent with those specified in the FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (publication end 2002), Para. 4.19. It is recognized that at that national level, a State/operator may use other classes, including the 'Alert' class specified in GS-R-2, but these are not considered specifically by this Plan.

²⁰ An 'uncontrolled source emergency' as specified in *ibid*.

²¹ This emergency type can also include nuclear emergencies that are not at nuclear installations, 'facility emergencies' and other types of 'uncontrolled source emergencies' as specified in *ibid*.

Emergencies specific to nuclear installations

3.7.2. Site area emergency

Description: Major decrease in the level of protection for those on the site and near the facility. This includes: a major decrease in the level of protection provided to the core of a nuclear reactor or large amounts of spent fuel; conditions where any additional failures could result in a 'general emergency' (see Section 3.7.3 below); doses off the site approaching the urgent protective action intervention levels (e.g. from a release, direct exposure, or a criticality); terrorist or criminal activity with the potential to disrupt performance of critical safety functions or to result in severe release.

Concept of operations:

1) The IAEA offers its good offices to the reporting State ; 2) the IAEA activates partially; 3) it informs all States and WMO, FAO, WHO, OCHA, EC and PAHO of the advisory message received, which it also posts to ENAC; 4) it establishes primary communication channels with the reporting State; 5) the WMO retransmits²² relevant information received from IAEA to all State National Meteorological Services (NMSs); 6) the reporting State provides further information, which the IAEA posts to ENAC; 7) if other competent authorities request information, the IAEA compiles the requests, forwards them to the reporting State, and receives replies, which it posts to ENAC and reports to the requesting competent authorities; 8) if there are a sufficient number of requests for information or a need to counter false rumours, the IAEA sends an advisory message to States²³.

Section 3.10 below describes the response by the international organizations to a request for advice or assistance.

3.7.3. General emergency

Description: Actual or substantial risk of a release or radiation exposure warranting taking urgent protective actions off the site. This includes: actual or projected severe core damage; potential for doses off the site warranting implementation of urgent protective measures, or terrorist or criminal act resulting in an inability to monitor or control critical safety functions needed to protect the core of a nuclear reactor or large amounts of spent fuel, or needed to prevent an unplanned criticality that could expose people off the site.

Concept of operations:

1) The IAEA offers its good offices to the reporting State; 2) the IAEA activates fully; 3) it promptly informs all States, WMO, FAO, WHO, OCHA, EC and PAHO of the notification received, which it also posts to ENAC, and offers its good offices to them; 4) it establishes primary communication channels with the notifying State (if not already done) and with States within 1000km of the nuclear facility (nuclear power reactor), or 50 km (research reactor);

²² As a backup to the IAEA report of the advisory message and to alert National Meteorological Services (NMSs).

²³ The IAEA also provides received INES/NEWS reports to INES national officers and/or NEWS users.

- 5) the WMO activates, and retransmits²⁴ relevant information received from the IAEA to all State NMSs;
- 6) the WHO alerts REMPAN and its regional offices;
- 7) the FAO assigns liaison officers to the IAEA's Emergency Response Centre (ERC) in Vienna;
- 8) the notifying State sends further information to the IAEA, which the IAEA forwards to States, the above international organizations and posts on ENAC; 9) the IAEA confirms that States within 1000 km (for a nuclear power reactor), or 50 km (for a research reactor) have received the relevant information;
- 10) the IAEA may request meteorological and atmospheric dispersion/transport predictions from the lead WMO Regional Specialized Meteorological Centres (RSMCs) whose responsibilities include the reporting State. The other RSMCs receive copies of this request. The lead RSMCs generate basic products based on IAEA request parameters, or with default scenario parameters if none are provided. The IAEA requests distribution of the basic RSMC products, and the lead RSMCs distribute them to the IAEA, WMO and NMSs in the relevant region. Other RSMCs send their products only to the NMSs in their region and the WMO (and not to the IAEA); 11) the IAEA forwards the products to all States and relevant international organizations through ENAC; 12) the RSMCs disseminate²⁵ the information to ICAO meteorological watch offices (MWOs) and world area forecast centres (WAFCs);
- 13) the IAEA may request predefined information on monitoring results and protective actions from other States within 1000 km (for nuclear power reactors) or 50 km (for research reactors) of the emergency site. Those States that were requested provide data to IAEA at regular intervals. The IAEA provides the data in full and summarized on ENAC;
- 14) competent authorities may submit requests for information to the IAEA, who compiles them, forwards them to the relevant State, collates replies, which it posts to ENAC and reports to the requesting competent authority; 15) if there is a need to counter false rumours, the IAEA sends an advisory message to States; 16) the IAEA issues press release(s) and posts to WORLDATOM, to the extent possible in coordination with the notifying and affected States²³.

Section 3.10 below describes the response by the international organizations to a request for advice or assistance.

²⁴ As a backup to the IAEA report of the notification and in order to speedily activate meteorological support.

²⁵ In practice, this information is disseminated to MWOs through NMCs.

Emergencies not specific to nuclear installations

3.7.4. Missing dangerous source

Description: Lost or stolen dangerous²⁶ source, i.e. one that, if not brought under control, could give rise to exposure sufficient to cause severe deterministic effects.

Concept of operations: If the IAEA receives a notification of a missing dangerous source that is of actual, potential or perceived radiological significance for States other than the notifying State²⁷, especially if there is a reasonable suspicion that movement across a national border is involved, then 1a) the IAEA offers its good offices to the notifying State; 2) the IAEA activates partially; 3) the IAEA promptly informs relevant States of the notification received 4) offers its good offices to the relevant States; 5) The notifying State may send additional information to the IAEA; 6) respecting any confidentiality constraints, the IAEA forwards the additional information to relevant competent authorities and posts the notification and additional information on ENAC.

Otherwise 1b) the IAEA offers its good offices to the reporting State.

6) If the event involves criminal activities, the IAEA may establish liaison with INTERPOL, WCO or other relevant organizations; 7) if other competent authorities request information, the IAEA compiles the requests, forwards them to the Notifying or reporting State, and receives replies, which, respecting any confidentiality constraints, it posts to ENAC and reports to the requesting competent authorities.

Section 3.10 below describes the response by the international organizations to a request for advice or assistance.

3.7.5. Space object re-entry

Description: A satellite or other space object with nuclear power source(s) or dangerous radioactive sources on board has given rise to a risk of re-entry of radioactive materials to the Earth in the near future, or such re-entry is occurring or has occurred.

Concept of operations:

- 1) The launching State notifies the IAEA, OOSA, and other concerned States;
- 2) OOSA immediately and effectively disseminates the information provided in such notifications, and in information released through official communications to Member States of the United Nations and other appropriate international organizations, such as the IAEA;

²⁶ **Examples of 'dangerous sources'** as defined here would be the following: industrial radiography and teletherapy sources; irradiators; radiothermal generators (RTG); fixed industrial gauges involving high activity sources; high dose rate (HDR) and low dose rate (LDR) brachytherapy sources; well logging sources and similar sources.

The following **would not be considered** 'dangerous sources': moisture density gauges and fixed industrial gauges involving lower activity sources and similar sources.

²⁷ According to para. 4.15 of the Safety Requirements: Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2 (publication end 2002).

3) the IAEA offers its good offices to the launching State, forthwith informs all States, WMO, FAO, WHO, OCHA, EC and PAHO of the notification received, which it also posts to ENAC, and offers its good offices to them; 4) if re-entry is imminent, is occurring or has occurred, the IAEA partially activates, establishes primary communication channels with the competent authority of the launching State and OOSA;

5) the launching State provides subsequent updates to the IAEA, OOSA and concerned States as frequently as practicable so as to allow the international community to be informed of the situation and have sufficient time to initiate any national response activities deemed necessary; the IAEA posts the information on ENAC;

6) in the case of landfall of the satellite or space object, or component parts thereof, the launching State (and where appropriate, affected States) inform the IAEA, which confirms that all potentially affected States have been informed;

7) where necessary, OOSA transmits requests from States for assistance in identification of satellites, space objects or their component parts that may be of a hazardous or deleterious nature;

8) the IAEA offers its good offices to any affected States and may establish primary communication channels with them; 9) if there is a need to counter false rumours, IAEA and OOSA, in co-ordination with the launching and any affected State(s), may issue a press release.

Section 3.10 below describes the response by the international organizations to a request for advice or assistance.

3.7.6. Elevated radiation levels of unknown origin

Description: Unusually high²⁸ but confirmed levels of ambient radiation or radioactive contamination in air, food or commodities believed to come from an unknown origin in another State, raising suspicion of an emergency situation of actual, potential or perceived radiological significance for other States.

Concept of operations: 1) The IAEA offers its good offices to the notifying State, 2) the IAEA activates partially; 3) it promptly informs other relevant competent authorities (and FAO if the high levels are in food) of the notification received, which it also posts to ENAC, and offers its good offices to them; 4) it establishes primary communication channels with the notifying State; 5) the IAEA may request relevant information from competent authorities (and FAO if appropriate) to identify the origin of the high levels; 6) the IAEA posts information received on ENAC and, when the origin is located, requests information from the relevant State; 7) if other competent authorities request information, the IAEA compiles the requests, forwards them to the relevant State and/or FAO, compiles replies, which it posts on ENAC and reports to the requesting authorities; 8) if there is a need to counter false rumours, IAEA in co-ordination with relevant States (and FAO if appropriate) may issue a press release.

²⁸ For example, radiation levels at least ten times above normal.

Section 3.10 below describes the response by the international organizations to a request for advice or assistance.

3.7.7. Other radiation emergency or threat

Description: Any other radiological emergency not specifically addressed above²⁹, which is of actual, potential or perceived radiological significance for more than one State³⁰ – or for which the reporting State wants: to pre-empt legitimate requests for information to protect health, property or the environment under the Assistance Convention³¹; to obtain the IAEA's good offices³², to provide advanced warning to the IAEA in order that it can prepare to meet its obligations³³; or to provide information to other competent authorities that they may initiate an administrative response and/or provide advice to their governments, public or media regarding protection issues³⁴.

Concept of operations:

- 1) The IAEA immediately offers its good offices to the reporting State.
- 2) If the IAEA receives notification that the event is of actual, potential or perceived radiological significance for States other than the notifying State³⁰, a) the IAEA activates partially; respecting any confidentiality constraints, promptly informs relevant States, WMO, FAO, WHO, OCHA, EC and PAHO as appropriate of the notification; establishes primary communications channels with the notifying State; offers its good offices to relevant States and international organizations; and respecting any confidentiality constraints, posts the notification to ENAC;

Otherwise b) the IAEA informs other relevant States, international organizations and/or posts appropriate information on ENAC according to the request of the reporting State.
- 3) The notifying/reporting State sends additional information to the IAEA, which the IAEA, respecting any confidentiality constraints, forwards to States as appropriate and posts on ENAC;

²⁹ For example, a 'facility emergency' as specified in Safety Requirements: Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2; a discovered dangerous ('orphan') source, an accidental medical exposure giving rise to severe overexposure (but not underexposure) of patients; a transport accident; or other threat

³⁰ This includes: 1) a significant transboundary release from a facility other than a nuclear installation; 2) an event that could result in a significant transboundary release (atmospheric or aquatic) (e.g. dam burst carrying radioactive material downstream into another country, specific terrorist threat); 3) discovery of the loss or illicit removal of a dangerous source that has been transported across or is suspected of having been transported across a national border; 4) an event resulting in significant disruption to international trade or travel; 5) an event warranting the taking of protective actions for foreign nationals or embassies in the State in which it occurs; 6) an event resulting or potentially resulting in severe deterministic effects and involving a fault/problem (such as in equipment or software) that could have serious implications for safety internationally; 7) diagnosis of medical symptoms that may have resulted from accidental exposure outside the State; 8) an event resulting in or potentially resulting in great concern among the population of more than one State owing to the actual or perceived radiological hazard (e.g. detonation of a so-called 'dirty bomb').

³¹ Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 2.

³² Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 5.

³³ Convention on Early Notification of a Nuclear Accident (1986) – Article 4.

³⁴ For example, a transportation accident or report of a non-specific terrorist threat.

- 4) If the emergency involves a dangerous²⁶ source that is damaged, stuck, involved in fire or has lost its shielding, found or detected (including those being used for criminal or terrorist purposes), then the IAEA places staff on standby. Information about the exact location of the source will be withheld until the source has been made safe and secure.
- 5) If the event involves criminal activities of an international nature the IAEA may establish liaison with INTERPOL, WCO or other relevant organizations, as appropriate.
- 6) If a release in the atmosphere is involved, the IAEA will inform WMO and request meteorological transport model predictions from the lead WMO RSMCs. The RSMCs disseminate³⁵ the information to ICAO MWOs and WAFCs.
- 7) If the emergency involves contamination of water, surface, people or commodities that may warrant urgent protective actions, or for which precautionary protective actions have been taken, the IAEA places staff on standby, and informs WHO (PAHO if in the Americas), and FAO as appropriate. This includes events involving rupture of a dangerous source, terrorist use of radioactive material, release of radioactive material from a facility, vehicle, vessel or aircraft, accidental or deliberate contamination of public areas, food, water, commodities or ventilation systems.
- 8) If the event involves serious overexposures or requires medical treatment, the IAEA establishes primary communications with WHO (and PAHO if in the Americas), and takes steps to protect patient confidentiality.
- 9) If the event is a complex emergency or disaster with a radiological component, the IAEA establishes primary communication channels with OCHA, and they reach agreement on who shall take the lead to co-ordinate the overall emergency response; the radiological response component is co-ordinated by the IAEA.
- 10) If other competent authorities request information, the IAEA compiles the requests, forwards them to the relevant State, compiles replies, which, respecting any confidentiality constraints, it posts to ENAC and reports to the requesting competent authorities.
- 11) If there are a sufficient number of requests for information or a need to counter false rumours, the IAEA, respecting any confidentiality constraints, sends an advisory message to States/relevant international organizations and/or in co-ordination with relevant States and international organizations may issue a press release²³.

Section 3.10 below describes the response by the international organizations to a request for advice or assistance.

³⁵ In practice, this information is disseminated to MWOs through NMCs.

3.8. Emergency communications

Communication channels include:

- facsimile and submission to a protected web site (ENAC) for sending a notification to or requests for assistance from the IAEA;
- facsimile, email and telephone for messages (advisory messages or additional information) to and from the IAEA;
- email for liaison purposes among international organizations and for requesting information; and
- ENAC for retrieval of passive information from a protected web site.

Contact details are established in advance of any emergency and are intended to be independent of person in post.

Figure 4 provides an overview of the concept of operations for information exchange over protected web sites. Further to the initial notification, the reporting State may submit additional information to the IAEA Emergency Response Centre (ERC), which rapidly authenticates the source, reviews the information to ensure it is clear and not obviously in error and, respecting any confidentiality constraints: 1) reports the information as appropriate to States and/or relevant international organizations; and 2) posts the information as appropriate on the ENAC protected web site.

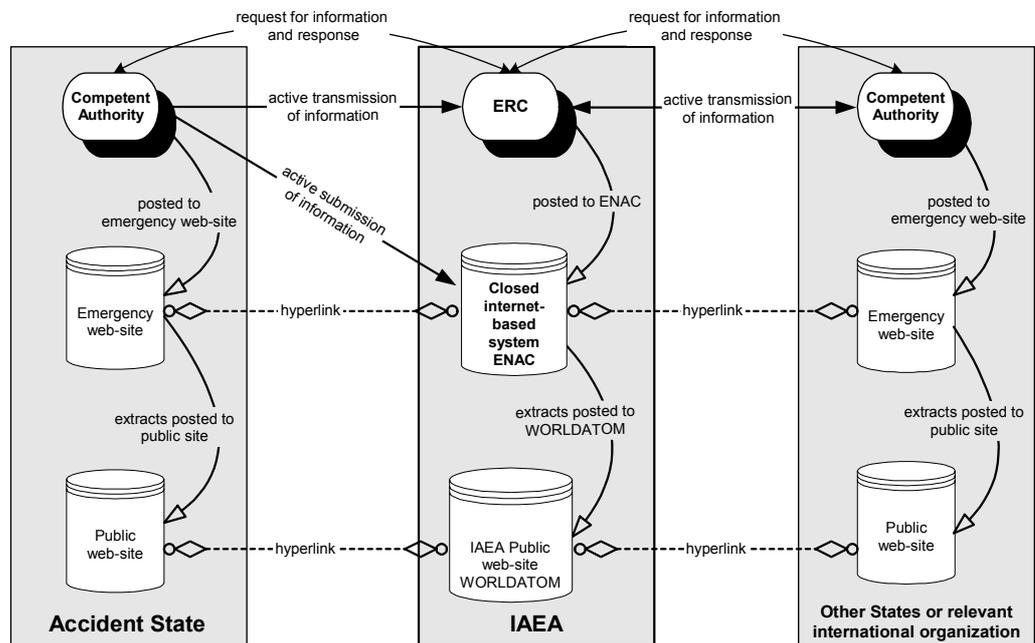


Figure 4. Concept of operations for emergency information exchange.

States or relevant international organizations may request assistance from the IAEA to obtain relevant information. If the information is available, the IAEA will provide the information. If not, it requests the reporting State or other State or relevant international organization to provide it. The relevant international organizations respond in a timely manner to the request and provide the information to the IAEA.

Respecting any confidentiality constraints, the IAEA 1) actively reports the information as appropriate to the requesting State; and/or 2) posts the information as appropriate on the ENAC protected web site, and/or 3) establishes hyperlinks to the relevant party's web site.

Unless information has been provided on a confidential basis, or if the IAEA judges that it is not prudent to release information, the IAEA may extract relevant official information submitted to it and post on the IAEA WORLDATOM public web site (see Public Information). The ENAC protected site provides hyperlinks to the IAEA public web site and to other relevant web sites, such as the INES/NEWS web site.

NOTE

International organizations should clearly mark information as to whether 1) it is **for the receiving organization's use only**; 2) it is **for use by relevant authorities only**; or 3) it is **for general use** and if so, after what delay, if any. In general, information that is needed to mitigate the consequences of the emergency in other States should not be confidential, but information on patients and the exact location of found dangerous sources shall normally only be provided on a strict need-to-know basis.

3

3.9. Co-ordination of inter-agency response

The objectives of inter-agency co-ordination are to:

- make the most efficient use of each organization's capabilities;
- arrive at a common understanding of the situation, its consequences, and the way it is expected to develop, through exchange of information (which may include monitoring and technical data);
- achieve a common approach on developing emergency related advice requested by Member States and on statements to the media and the public; to exchange information regarding actions taken or information released in areas of concern to a single organization;
- promote the efficient provision of assistance to Member States, since several organizations may be approached with the same request;
- facilitate ad hoc agreements on the division of work among international organizations which may be needed in an emergency situation to solve any other practical problems.

The organizations will co-operate using the structure outlined in Figure 1 in order to achieve the objectives.

Extended responses

During an extended emergency period, the IAEA will arrange for regular telephone or video conference calls, with the relevant international organizations. The IAEA maintains a dedicated telephone line for communication with other international organizations.

If a nuclear or radiological emergency is of such magnitude that the response of the IAEA and other organizations will continue for several days and considerable technical co-ordination will be required, each relevant international organization will consider sending a knowledgeable staff member to IAEA headquarters in Vienna to participate directly in the emergency response and assessment. If such an emergency requires the mobilization of major resources for humanitarian relief, the IAEA will consider sending a liaison officer to OCHA in Geneva to provide technical advice to the humanitarian relief effort.

3**3.10. Provision of advice and assistance****3.10.1. Provision of technical advice**

If, following a request by a State for advice or services of any relevant international organization, the subject matter of the advice requested involves the competence of more than one organization, the relevant organizations shall, to the extent possible, confer and agree on the advice to be provided. Technical advice shall, to the extent possible, be in accordance with the FAO/IAEA/ILO/OECD(NEA)/PAHO/WHO “*International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources*”, *IAEA Safety Standards Series No. 115 (1996)* and FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO *Preparedness and Response for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GS-R-2 (2002)*. A list of other relevant technical publications that can serve as input for the provision of technical advice during an emergency may be found in Appendix E.

Respecting any confidentiality constraints, copies of any authoritative technical reports should be sent to the IAEA for possible posting on the ENAC, or for establishing a hyperlink in ENAC to the relevant organization’s site on the World Wide Web.

3.10.2. Provision of assistance

Any participating international organization that receives a request for assistance in response to a nuclear or radiological emergency will inform the IAEA and other relevant international organizations of such a request and co-ordinate the provision of such requested assistance with those organizations, as appropriate, according to their respective roles. Those organizations with regional structures will ensure that other relevant organizations are consulted regarding any assistance to be provided through their regional offices, including UNDP.

Preparation

If a State calls for, or requests, assistance from or through the IAEA under the Assistance Convention:

- 1) The IAEA’s ERC, which is the focal point for response, informs the relevant international organizations that may be able to provide assistance and co-ordinates the resources to be allocated.
- 2) The ERC will evaluate the situation and, in co-ordination with relevant international organizations, provide initial advice to competent authorities.

- 3) The ERC may send an initial assessment team consisting of technical staff member(s) or qualified expert(s) with terms of reference agreed with the requesting State. These terms of reference shall prescribe the objectives of the initial assessment mission (to include evaluation of the situation and advice on the deployment of ERNET³⁶ resources, resources from States Parties to the Assistance Convention or those of other relevant international organizations), team leadership, communication protocols, media arrangements etc.
- 4) If the ERC alerts the appropriate ERNET points of contact, competent authorities and other relevant international organizations. The ERNET resources or those of States Parties to the Assistance Convention or of other relevant international organization inform the ERC regarding their availability and if required the resources are placed on standby.
- 5) The ERC develops, in co-ordination with other international organizations, an action plan of assistance including all technical, financial, legal, diplomatic, organizational and logistic aspects, and the terms of reference of individual teams. The terms of reference will include mission objectives, team leadership, communication protocols, media arrangements, etc. Upon acceptance of the action plan by the requesting State, the ERC will obtain authorization for deployment of teams from relevant competent authorities. Additional resources may be placed on standby.

3

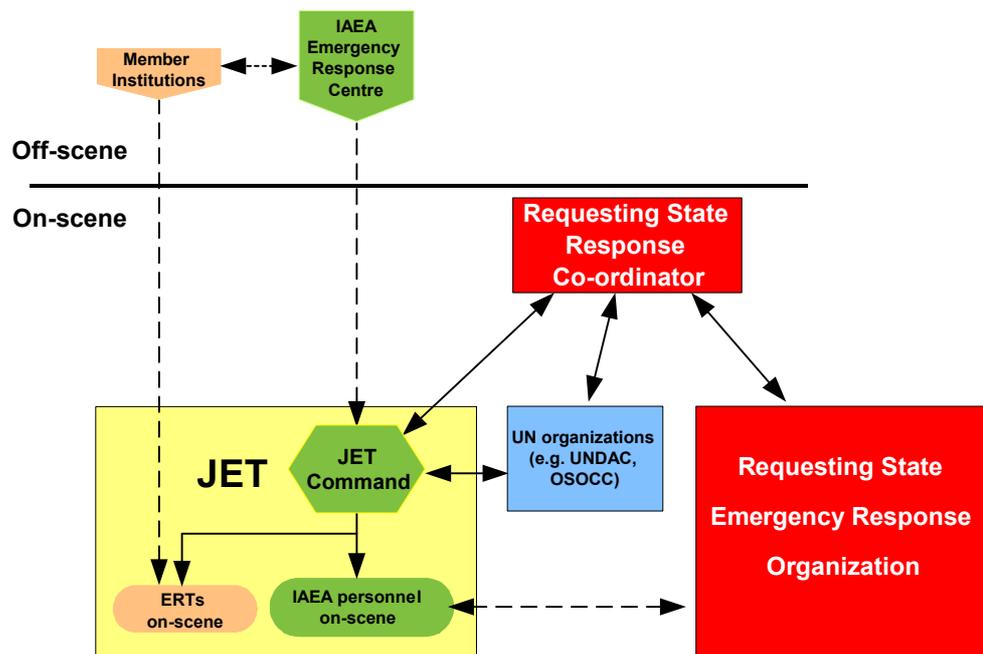


Figure 5. Concept of operations for on-scene response.

Joint Emergency Team (JET)

A requesting State is responsible for the overall direction, support, and supervision of any assistance within its territory. In the field, the joint emergency team (JET) is formed by the IAEA to provide the requested assistance, and is managed and co-ordinated by the JET command as illustrated in *Figure 5*. The JET Chairperson is responsible for directing and co-ordinating the JET activities according to the agreed

³⁶ EPR-ERNET: IAEA Emergency Response Network, IAEA, Vienna (2002).

terms of reference and the action plan, and for establishing and maintaining communications with the requesting State's officials, the representatives of relevant UN organizations, the ERC and the emergency response team (ERT) Leaders. During operations in the requesting State, all response work will be co-ordinated by the JET command, in close co-operation with the requesting State's emergency response organization.

ERNET capabilities The ERNET response activities include radiation monitoring, radionuclide identification, source recovery, assessment of radiological and medical consequences and logistic support for JET operations. Radiation monitoring activities include environmental and source monitoring, sampling and sampling handling, and reporting of measurement data utilizing ground based and/or aerial platforms. Radionuclide identification includes in situ gamma spectrometry and/or laboratory sample analyses. Source recovery includes the activities necessary to render safe radioactive sources. Assessment activities include evaluation of monitoring data and of the radiological consequences of the emergency, including external and internal dose assessment. Medical activities include the evaluation of the medical consequences, provision of advice or consultation to attending medical staff or assistance with medical care as necessary, and assistance in decontamination and decorporation. The activities also include radiopathology, bioassay and biodosimetry studies as appropriate.

Logistical support includes transportation, communication, accommodation, sanitation and food and water as necessary.

3.11. Public information

Any media releases will be factual and based on the role, responsibility and actions taken by the relevant organization. Where the subject matter of the media release involves the competence of more than one organization, the relevant organizations confer and agree, to the extent possible, on the content of any media releases. Should this not be possible, the organizations should limit their media releases to their own area of competence. Copies of any releases should be provided to the IAEA for posting on ENAC, or for establishing a hyperlink in ENAC to the relevant organization's web site on the World Wide Web.

Any assisting organization shall make every effort to obtain clearance with a requesting State or organization before releasing information to the media/public on the assistance provided in connection with a nuclear or radiological emergency.

3.12. Emergency deactivation

When the emergency situation is under control and has stabilized, the IAEA's Emergency Response Centre (ERC) will inform those contact points that have been activated that the ERC is deactivating, and will post the status of the ERC on the ENAC.

3.13. Post-emergency follow-up

The IAEA in consultation with the Inter-Agency Committee on Response to Nuclear Accidents (IACRNA) will, to the extent possible, encourage relevant organizations to take co-ordinated and appropriate action to ensure any long term follow-up and to learn lessons from the emergency and the response to it.

4. EMERGENCY PREPAREDNESS

4.1. General responsibilities

The Inter-Agency Committee on Response to Nuclear Accidents (IACRNA) is the co-ordination mechanism to ensure that an effective emergency response capability, in the scope of this Plan, is developed and maintained.

4.2. Inter-Agency Committee on Response to Nuclear Accidents (IACRNA)

IACRNA is composed of representatives from each participant international organization designated by the respective executive head. It is chaired by the IAEA and meets periodically.

Terms of reference

1. To co-ordinate preparedness arrangements for response to nuclear and radiological emergencies by, *inter alia*, developing, maintaining and exercising the “*Joint Radiation Emergency Management Plan of the International Organizations*”.
2. To work towards co-ordinated and consistent international standards on preparedness and response to nuclear and radiological emergencies, and their practical implementation in Member States and States Parties to the Conventions; and to strongly encourage its participating organizations to meet the relevant standards.
3. To exchange relevant information among organizations concerning their respective plans, activities and harmonization of these plans.
4. To identify new areas for inter-agency co-operation, to co-ordinate joint actions (including drills and exercises) related to preparedness and response for nuclear and radiological emergencies.
5. To review this Joint Plan biennially and issue amendments as appropriate.

It brings to the attention of the respective Executive Head policy issues that cannot be resolved by the Committee.

Steering Group

A steering group manages the work of the IACRNA, and comprises the following organizations, which have specific legal responsibilities, statutory obligations or technical capabilities that should be fully integrated into the development of preparedness for response to a nuclear or radiological emergency.

- European Commission
- Food and Agriculture Organization of the United Nations
- International Atomic Energy Agency
- Nuclear Energy Agency of the Organisation for Economic Co-operation and Development
- Pan-American Health Organization
- United Nations Office for the Co-ordination of Humanitarian Affairs
- World Health Organization
- World Meteorological Organization.

Specific capabilities to meet the responsibilities are described in Appendix C. It is recognized that special capabilities or responsibilities should not be duplicated or inconsistent.

InterAgency Committee on Response to Nuclear Accidents (IACRNA)

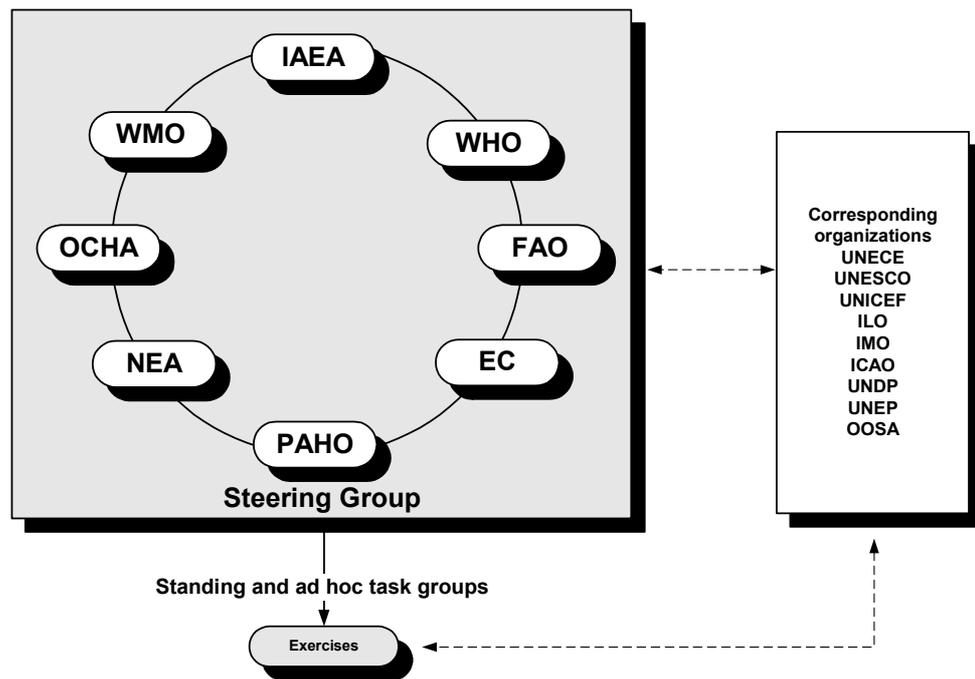


Figure 6. Structure for developing and maintaining preparedness.

4.3. Basis for preparedness

The basis for preparedness derives from obligations on States Parties to the Conventions on Early Notification of a Nuclear Accident and on Assistance in the Case of a Nuclear Accident or Radiological Emergency; and from the relevant safety

standards on emergency preparedness and response to a nuclear or radiological emergency³⁷, using the guiding principles expressed in Section 2.8 above.

Implementation and maintenance

It is the responsibility of the Secretariat of IACRNA to co-ordinate the maintenance and updating of this Joint Plan. Support will be provided by all participating organizations. The Secretariat of the IACRNA will serve as the office of record for the Plan and supporting materials, and will maintain files related to the planning effort. The Secretariat and participating organizations will maintain a list of any controlled copies of the Joint Plan and Joint Plan holders to ensure appropriate changes are received by all relevant parties.

It is the responsibility of the representatives of participating organizations to ensure that appropriate arrangements are made within their organizations to carry out their functions in line with the Plan.

Working Groups

To address major preparedness tasks, the steering group establishes, on a needs basis, standing and/or ad hoc working groups. The main functions of these working groups are to:

1. execute any mandates assigned to them by the steering group;
2. conduct any feasibility studies as directed by the steering group; and
3. make recommendations, as necessary, for the steering group's consideration.

These working groups are composed of persons designated by the organizations as their representatives and will report to the steering group. The individuals assigned to any of the working groups should have authority to commit the necessary resources to implement the major agreed operational procedures within the organizations they are representing. They should communicate regularly to update the status of their ongoing work and to make necessary decisions. Additional experts or advisers may be co-opted to the working group as appropriate.

Working groups constitute an operational arrangement that exists solely to support the steering group through the Joint Plan. Each organization will meet the costs for the participation of their representatives in any working groups. The working groups will submit the results of their assigned tasks to the steering group for approval.

4.4. Inter-agency procedures and arrangements

Detailed inter-agency procedures, communications channels and response arrangements, including those for providing media information, are documented separately from this Plan, are formalized by a simple exchange of letters between the parties, and may be independently updated from time to time³⁸. They are based on the Joint Plan and harmonized with it, are maintained by the relevant participating international organizations, are controlled and forwarded to the IACRNA Secretariat.

³⁷ FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO *Preparedness and Response for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GS-R-2 (2002)*.

³⁸ A list of current inter-agency procedures is given in Appendix A.

These procedures describe the standard response actions to be taken by each participating international organization during an emergency. The implementation of and change to these procedures and associated checklists or proformas shall be done in an orderly, co-ordinated and agreed manner.

4.5. Financing

Each organization shall make arrangements to cover their own expenses for all the activities related to the preparedness activities of this Joint Plan.

4.6. Feedback from actual responses

Following response to an actual emergency and if appropriate, the IACRNA Secretariat will compile a short critique of deficiencies in the Joint Plan and inter-agency arrangements, and initiate any appropriate follow-up corrective actions.

4.7. Training and exercises

Each organization participating in this Plan, in conjunction with relevant States, will periodically exercise their arrangements under this Plan. Each organization will co-ordinate its exercises with the Steering Group to avoid duplication and invite participation by other organizations.

Large scale joint international command-post exercises (so-called 'full scope' exercises), including the notification phase, will be organized not less frequently than once in four years. They will be based on a national emergency exercise that meets the following conditions:

1. The host country must be an IAEA Member State, be Party to the Early Notification Convention, and apply the current ENATOM arrangements.
2. The national warning points, competent authorities and operator must be participants in the exercise.
3. The host country must be prepared to simulate an emergency involving a serious release into the environment involving off-site protective actions.
4. The exercise must last a minimum of 24 hours from the first message sent to the IAEA.
5. The host country must guarantee communication links and information exchange with the IAEA's ERC throughout the exercise.
6. The host country must designate at least one person to work over an 18-month period with the IACRNA to prepare the international part of the exercise, especially the drafting of exercise manuals, and preparing and conducting the exercise evaluation.

The IACRNA steering group will invite countries to host such exercises and expect to receive offers at least two years in advance. The IAEA will liaise with the countries offering to host the exercise and with the steering group in order to decide which country will host the exercise. This decision will take into account available resources and the expressed objectives of international organizations intending to participate. Detailed preparation should begin no later than eighteen months before the scheduled date of the exercise. Preparation, conduct and evaluation is co-ordinated through arrangements made by the steering group, as appropriate, where — after agreement by the participating organizations — States will be officially invited, in a co-ordinated fashion, to participate in the agreed joint ‘full scope’ exercise. A *Guide for Participants* and an *Exercise Manual* will be distributed to national controllers designated for such an exercise. Joint emergency exercises will require an evaluation of deficiencies in the Plan and inter-agency arrangements, and appropriate follow-up.

Training

Participating organizations will assist each other and Member States with planning and training activities designed to improve preparedness on the basis of this Plan. Each organization should co-ordinate its training programmes with the Steering Group to avoid duplication and make its training available to other organizations.

4.8. Reviews of the Joint Plan and inter-agency arrangements

4

The Joint Plan and supporting material shall be reviewed and updated at such times as may be necessary, but in no case less than biennially. This update will be preceded by a thorough review of the Plan’s contents.

Items that are subject to more frequent change and will be reviewed not less frequently than annually for possible updating include, but are not limited to, the following:

- appendices to the Joint Plan;
- emergency plans and inter-agency procedures of the participating organizations.

In conducting the Plan review, input from all organizations, participating and co-operating, and also from States Parties, will be sought. The Committee may identify nuclear and radiological emergency management areas that could be improved and will suggest corrective actions.

4.9. Change process

This Joint Plan and the attendant inter-agency procedures will be maintained in an up to date form incorporating a biennial review cycle and change process. The objective of the change process is to ensure an orderly introduction of changes to the system so that 1) parties are clear what arrangements are in effect at any given time, and know how to respond to an ongoing emergency; 2) parties have adequate advance time and information available to them to make any necessary changes to their plans and arrangements and to train affected personnel before the new release comes into effect.

The change process and review cycle, illustrated in Figure 7, will be co-ordinated and implemented by the steering group.

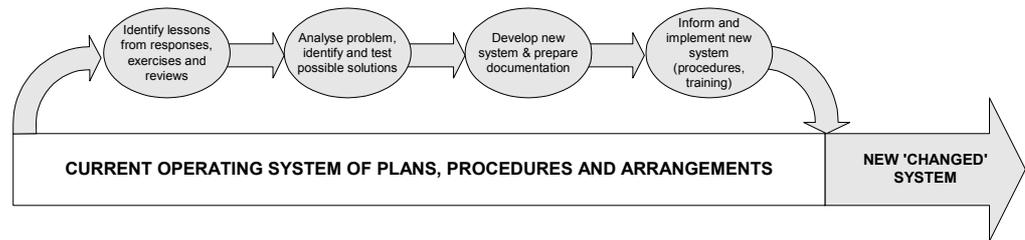


Figure 7. Concept of process for managing major changes.

4.10. Research

As part of the change process, regular reviews and feedback from exercises and real responses will lead to lessons being identified. The steering group will recommend and prioritize actions to be taken on the basis of the lessons learned. The identification of possible solutions may involve research, feasibility studies, workshops, and fostering of technical discussions. Programmes for addressing the lessons to be learned and for developing possible solutions will be co-ordinated to the extent possible by the steering group.

4.11. Co-operation in developing national capabilities

Several international organizations have legal and other statutory obligations to provide technical co-operation in the development of national and regional capabilities. Such technical co-operation may take the form of equipment provision, expert missions, reviews and services, training courses and workshops, fellowships and diplomatic initiatives. In order to optimize the resources available for such initiatives, the participating organizations of the steering group will, to the extent reasonable and achievable, take steps to share plans in advance, consult with each other as appropriate, and harmonize co-operation programmes.

In addition, relevant international organizations will encourage their counterparts at national level to strengthen their co-operation as appropriate and ensure that arrangements are co-ordinated nationally in a manner that they may easily dovetail with the interagency arrangements described in the Joint Plan.

Distribution

Controlled distribution of this Plan is as follows:

By	To
EC	National contact points, competent authorities and national correspondents of the ECURIE system
FAO	Permanent Missions of Member States to the FAO; Regional and National Offices
IAEA	Contact points and competent authorities of Parties to the Convention on Early Notification of a Nuclear Accident and to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency
	Permanent Missions of Member States to the IAEA
	Secretariats of WHO, FAO, NEA(OECD), WMO, EC, OCHA, PAHO, CTBTO, OOSA, UNICEF, NATO, UNECE, UNESCO, ILO, IMO, ICAO, UNEP, Interpol, WCO, Europol.
	UN Resident Representative (UNDP) in each State
ICAO	Contracting States of ICAO
NEA	Members of the Committee on Radiation Protection and Public Health (CRPPH); Members of the Working Party on Nuclear Emergency Matters; other relevant NEA committees
OCHA	Member States of the United Nations
OOSA	Member States of the United Nations
PAHO	Member States of PAHO
WHO	Member institutes of the WHO/REMPAN system,
	Permanent Missions of Member States to the WHO
WMO	Permanent Representatives of WMO Member States and RSMCs



Appendix A

Legal instruments, resolutions and other relevant sources

The following International Conventions and resolutions of the UN General Assembly define specific and primary responsibilities for aspects of planning for and response to nuclear or radiological emergencies: Refs [9,10,11,12,19].

The following resolution of the UN General Assembly defines specific and primary responsibilities for planning for and response to humanitarian emergencies in general: Ref. [17].

The following Statutes define general responsibilities for planning, decisions or actions that may pertain to preparedness and/or response to nuclear or radiological emergencies: Refs [1,2,4].

The following Memorandum of Understanding apportions specific responsibilities for planning and response to nuclear or radiological emergencies: Ref. [21].

Relevant decisions of executive bodies and/or regulations and general co-operation agreements between organizations that pertain to nuclear or radiological emergencies are referred to in the text, as appropriate.

Statutes of participating organizations

1. Constitution of the World Health Organization
2. Constitution of the Food and Agriculture Organization of the United Nations
3. Convention on International Civil Aviation (Chicago, 1944)
4. Statute of the International Atomic Energy Agency
5. Charter of the United Nations
6. World Meteorological Convention
7. Constitution of the Pan American Health Organization
8. EURATOM treaty (EU Member States 1957)

Relevant conventions and treaties

9. Convention on Early Notification of a Nuclear Accident (1986)¹
10. Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986)²
11. Treaty on Principles covering the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (1967)
12. Convention on Registration of Objects launched into Outer Space (1975)
13. Convention on International Civil Aviation: Annex 3 – Meteorological Service for International Air Navigation, paragraphs 3.2.1e), 3.2.13, 3.3.1d), 3.5.1g), 3.3.10, 10.1.7e), 10.3.2b)3) and Appendix 1 Model SN
14. Convention on International Civil Aviation Annex 4 – Aeronautical Charts, Appendix 2, Item 72
15. Convention on International Civil Aviation Annex 11 – Air Traffic Services, paragraphs 4.2.1.c) and 6.2.2.2.1f)
16. Convention on International Civil Aviation Annex 15 – Aeronautical Information Services, paragraph 5.1.1.1v), Appendix 1, ENR 5.3.2

General Assembly Resolutions

17. General Assembly Resolution No. 46/182, Strengthening of the co-ordination of humanitarian emergency assistance of the United Nations (1992)
18. General Assembly Resolution 47/68, The Principles Relevant to the Use of Nuclear Power Sources in Outer Space adopted on 14 December 1992

Inter-Agency agreements

19. Memorandum of Understanding between the Director General of the International Atomic Energy Agency and the United Nations Disaster Relief Co-ordinator, 1977
20. Relationship Agreement: Agreement between the International Atomic Energy Agency and the World Health Organization, entered into force May 28, 1959. INFCIRC 20, Part III

¹ INFCIRC 335: Party to the Convention on Early Notification of a Nuclear Accident, entered into force 27 October 1986 (WMO, FAO, WHO).

² INFCIRC 336: Party to the Convention on Assistance in the Case of a Nuclear Accident, entered into force 26 February 1987 (WMO, FAO, WHO).

21. Agreement between the Directors General of the IAEA and WHO to improve co-ordination in the planning and implementation of programmes, 1988
22. Agreement between the International Atomic Energy Agency and the World Meteorological Organization, February 1960.

Other agreements

23. Special Agreement between the European Union and Switzerland for exchange of information in case of a nuclear accident

Working arrangements between agencies

24. Working Arrangements between the International Civil Aviation Organization and the World Meteorological Organization (ICAO Doc 7475)
25. Meteorological assessment support in a nuclear emergency – co-operative arrangements between WMO and IAEA, [in preparation]
26. Co-operative arrangements between FAO and IAEA for the provision of technical support during a nuclear emergency and its aftermath, [in preparation]

A

Regulations, Directives and Decisions

27. Council Decision of European Union, 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency (87/600/Euratom)
28. Council Regulation Euratom 3954/87 laying down maximum permitted levels of radioactive contamination in foodstuffs and animal feedingstuffs following a nuclear accident or any other case of radiological emergency
29. Council Directive of 13 May 1996 laying down basic safety standards for the health protection of the general public and workers against the dangers of ionizing radiation (96/29/Euratom)
30. IAEA Board of Governors: GOV/1999/15: Financing of the discharge of Agency obligations 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, including the provision of assistance by the Agency in the event of a Nuclear Accident or Radiological Emergency

Standards

- 31.** FAO/IAEA/ILO/OECD(NEA)/PAHO/WHO International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No. 115, IAEA, Vienna (1996)
- 32.** FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (2002)



Appendix B

Authorities, responsibilities and capabilities of international organizations in response

EUROPEAN COMMISSION (EC)

Address	Official address	Office responsible for nuclear emergency response
	European Commission 200 rue de la Loi/ Wetstraat 200 B-1049 Brussels BELGIUM http://europa.eu.int/	European Commission DG Environment C.4 Radiation Protection Wagner Building L-2920 LUXEMBOURG http://europa.eu.int/comm/environment/radprot
Responsibilities and authorities	The European Commission, which acts as the Secretariat for the European Union, has obligations to the EU and to Switzerland in the event of a nuclear accident or radiological emergency, namely:	

- to forward an alert message and further information to all Member States of the European Union³ and to Switzerland⁴;
- to render applicable maximum permissible levels of radioactive contamination for foodstuffs and animal feedingstuffs; and to communicate information about cases of non-compliance among EU Member States⁵.

While the European Commission is neither a party to the Convention on Early Notification of a Nuclear Accident, nor to the Convention on Assistance in the Case

³ Council Decision of 14 December 1987 on Community arrangements for the early exchange of information in the event of a radiological emergency (87/600/EURATOM).

⁴ Special Agreement with Switzerland for exchange of information in the case of a nuclear accident, whereby Switzerland has all rights and duties as defined in the Council Decision 87/600/EURATOM. Similar agreements are being negotiated with EU candidate countries (Bulgaria, Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, Slovakia, Slovenia and Turkey).

⁵ Council Regulation 3954/87/EURATOM laying down maximum permitted levels of radioactive contamination in foodstuffs and animal feedingstuffs following a nuclear accident or any other case of radiological emergency.

of a Nuclear Accident or Radiological Emergency, it has written to the depository of the Conventions stating that it will act as if it were bound by the Conventions⁶.

Organization and capabilities

The focus for response within the European Commission is the DG Environment unit C.4, Radiation Protection. This office maintains a 24 hour standby duty for nuclear and radiological emergencies within the EU Member States and Switzerland. Unit C.4 operates the European Community Urgent Radiological Information Exchange (ECURIE) system, which provides the technical communication platform for forwarding alert messages and further information to all EU Member States and Switzerland.

The European Commission has no responsibility for management of countermeasures within the European Union, but it can provide some assistance through its humanitarian office (ECHO).

**FOOD AND AGRICULTURE ORGANIZATION
OF THE UNITED NATIONS (FAO)**

Address

Headquarters

Regional Auxiliary Office

Food and Agriculture Organization of the United Nations (FAO)
Via delle Terme di Caracalla
I-00100 Rome, ITALY
<http://www.fao.org/>

FAO/IAEA Joint Division
International Atomic Energy Agency
P.O. Box 100
Wagramer Strasse 5
A-1400, Vienna, AUSTRIA

B

Responsibilities and authorities

The Food and Agriculture Organization of the United Nations has statutory functions that are relevant to the response to a nuclear accident, namely “the Organization⁷ collects, analyses, interprets and disseminates information relating to nutrition, food and agriculture (including fisheries, marine products, forestry and primary forestry products).” It also “promotes and, where appropriate, recommends national and international action with respect to [inter alia] the improvement of the processing, marketing and distribution of food and agricultural products; [and] the adoption of international policies with respect to agricultural commodity arrangements.”

The function of the Organization is :

- to furnish such technical assistance as governments may request;
- to organize, in co-operation with the governments concerned, such missions as may be needed to assist them to fulfil the obligation arising from...this Constitution⁷;
- generally to take all necessary and appropriate action to...promote common welfare...for the purpose of raising levels of nutrition and standards of life of the peoples under their respective jurisdictions; and securing improvements in the efficiency of the production and distribution of food ...

⁶ Letter of Head of the Delegation of the Commission of the European Communities to the Director General of the International Atomic Energy Agency, 12 February 1992.

⁷ Constitution of the Food and Agriculture Organization of the United Nations.

The FAO is a full party to the Early Notification and Assistance Conventions⁸, and as such, is competent to “monitor and evaluate the world food security situation, to advise governments on measures to be taken in terms of agricultural, fisheries and forestry practices to minimize the impact of radionuclides and to develop emergency procedures for alternative agricultural practices and for decontamination of agricultural, fisheries and forestry products, soil and water”; and to provide related assistance upon the request or acceptance of governments, without prejudice to the national competence of each of its Member States.

With regard to its obligations as a Party to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, the FAO:

- co-operates...to facilitate prompt assistance in the event of a nuclear accident or radiological emergency to minimize its consequences and to protect life... from the effects of radioactive releases;
- may agree on bilateral or multilateral arrangements or, where appropriate, a combination of these, for preventing or minimizing injury and damage which may result in the event of a nuclear accident or radiological emergency;
- shall promptly decide and notify a requesting State Party, directly or through the IAEA, whether it is in a position to render the assistance requested, and the scope and terms of the assistance that might be rendered;
- shall, within the limits of its capabilities, identify and notify the IAEA of experts, equipment and materials which could be made available for the provision of assistance to other States Parties in the event of a nuclear accident or radiological emergency and the terms, especially financial, under which such assistance could be provided;
- should, where the assistance involves personnel, designate in consultation with the requesting State, the person who should be in charge of and retain immediate operational supervision over the personnel and the equipment provided by the personnel. The designated person should exercise such supervision in co-operation with the appropriate authorities of the requesting State;
- shall make known to the IAEA and to other States Parties, directly or through the IAEA, its competent authorities and point of contact authorized to make and receive requests for and to accept offers of assistance. Such points of contact...shall be available continuously, and shall promptly inform the IAEA of any changes that may occur in the information;
- shall protect the confidentiality of any confidential information that becomes available...in connection with the assistance in the event of a nuclear accident or radiological emergency;
- shall make every effort to co-ordinate with the requesting State before releasing information to the public on the assistance provided in connection with a nuclear accident or radiological emergency.

B

⁸ Convention on Early Notification of a Nuclear Accident, Instrument of Accession, 16 Oct. 1990.

Capabilities

The FAO can provide assistance in 1) assessing radioactive contamination of the agricultural environment and especially produce; 2) applying operational intervention levels as an important tool in the control of intake of radioactive contamination, and 3) facilitating international trade of agricultural produce.

It can supply the assistance through the provision of background and scientific information, some financial assistance, through the fielding of specialized teams and by providing, in co-operation with the IAEA, analytical services.

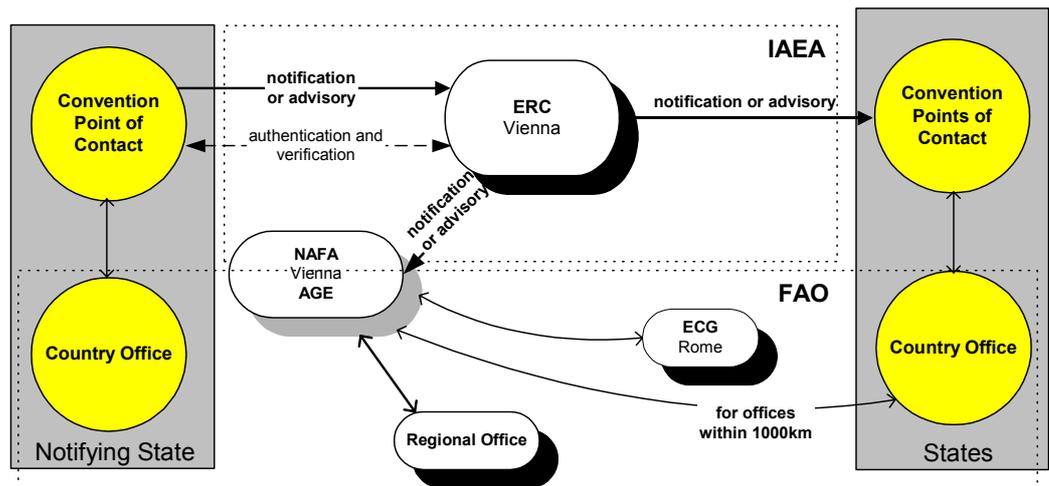
FAO manages its emergency response through the Emergency Co-ordination Group (ECG). In the case of nuclear emergencies the FAO/IAEA Joint Division (NAFA/AGE), located in Vienna, is the lead technical Division of the FAO. Operational details are specified in the Co-operative Arrangements between FAO and the IAEA for the Provision of Technical Support during a Nuclear Emergency and its Aftermath. The essential aspects may be accessed on the Division's web site.⁹ Responsibilities include:

- providing relevant technical information in response to requests from FAO Member States or Parties to the Assistance Convention;
- ensuring that the relevant FAO Regional and National Offices are kept informed on the nature of any emergency;
- providing information on countermeasures and decision support products;
- maintaining a database of experts;
- participating in exercises and telecommunications drills.

B

Organization

The schematic chart below shows how IAEA and FAO co-operate to notify and provide assistance to States during an emergency.



⁹ <http://www.iaea.org/programmes/nafa/dx/emergency.html>

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

Address	International Atomic Energy Agency Vienna International Centre P.O. Box 100 Wagramer Strasse 5 A-1400 Vienna, AUSTRIA http://www.iaea.org/worldatom/
Responsibilities and authorities	The International Atomic Energy Agency has statutory obligations to “establish... standards of safety for...protection of health and minimization of danger to life and property...and to provide for their application upon request”. The safety requirements ¹⁰ imply expectations of the IAEA:

- to receive notifications from Member States of a Transnational emergency and to inform States that may be affected;
- to facilitate States in obtaining information with the aim of minimizing the consequences;
- to maintain and disseminate appropriately an up-to-date list of contact points for receiving emergency notifications and information, and requests for assistance or verification from the IAEA.

Moreover, under the Conventions on Early Notification of a Nuclear Accident and on Assistance in the Event of a Nuclear Accident or Radiological Emergency of which the IAEA is depositary, the IAEA is also assigned specific functions in case of a nuclear accident or radiological emergency, in particular:

- immediately after being notified of an event under the terms of the Early Notification Convention, to forthwith inform States Parties, Member States, and other States, that are or may be physically affected, and relevant international intergovernmental organizations, of a notification received;
- to promptly provide any State Party, Member State or relevant international organization with the information received (consistent with confidentiality constraints);
- to co-operate with States to facilitate prompt assistance to minimize consequences and to protect life, property and the environment from the effects of radioactive releases;
- to use its best endeavours ... to promote, facilitate and support the co-operation between States Parties;
- to promptly transmit a request for assistance to other States and international organizations which may possess the necessary resources;
- if so requested by the requesting State, to co-ordinate the provision of requested assistance at the international level;
- to transmit requests for assistance and relevant information;

¹⁰ FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (2002).

- to make available to a State Party or a Member State requesting assistance in the event of a nuclear accident or radiological emergency appropriate resources allocated for this purpose, including resources for conducting an initial assessment of the accident or emergency;
- to offer its good offices to the States Parties and Member States in the event of a nuclear accident or radiological emergency;
- to establish and maintain liaison with relevant international organizations for the purposes of obtaining and exchanging relevant information and data, and make a list of such organizations available to States Parties, Member States and the aforementioned organizations;
- to provide an up to date list of competent (national) authorities and (national) points of contact and points of contact of international organizations and provide it to State Parties, Member States and to relevant international organizations.

In addition, the IAEA will:

- authenticate and verify rumours of nuclear or radiological emergencies and provide authoritative information to requesting Parties, without undue delay;
- ensure that Member States' representatives are appropriately briefed on any developing situation;
- ensure that there are frequent, accurate, and reliable releases of information to the media in co-ordination with the relevant States and other relevant international organizations;
- interact with other relevant international or intergovernmental organizations to co-ordinate the response of international organizations to a nuclear accident or radiological emergency or a request for assistance;
- review the response by the notifying State and by affected States to identify areas where significant gaps in the response with regard to nuclear/radiation safety may exist, and in those cases, to offer the good offices and advice of the IAEA.

The IAEA has a Memorandum of Understanding with OCHA¹¹, which encompasses the specific responsibilities of OCHA and IAEA in a nuclear accident or radiological emergency; disaster related activities in respect of which OCHA and IAEA will co-operate; requests for disaster relief assistance; joint action in the field and missions to disaster areas; exchange of information; confidential information; and financial arrangements. In particular, it recognizes that OCHA's role is that of an overall co-ordinator of all aspects of disaster relief assistance, and that the IAEA has operational responsibilities for co-ordinating relevant technical and scientific assistance following a radiation accident. On request, the IAEA will advise OCHA about any special precautions or preparations which should be taken or made by relief personnel. In a disaster situation following a radiation accident, the IAEA will arrange for members of its staff to join any UNDAC team, and to be responsible for the assessment of relevant technical and scientific requirements. OCHA will, at its discretion, send representatives to the disaster area for on the spot assessment of emergency relief requirements other than those of a technical or scientific nature.

¹¹ Memorandum of Understanding between the Director General of the International Atomic Energy Agency and the United Nations Disaster Relief Co-ordinator, 1977.

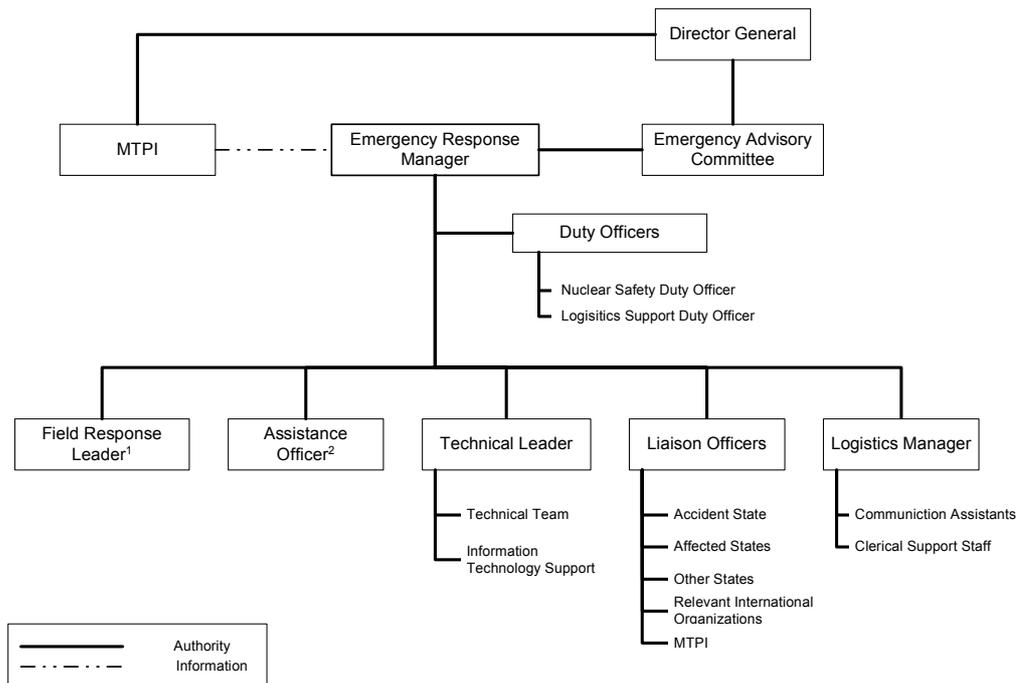
Capabilities

The IAEA maintains an equipped emergency response system and trained personnel to meet its responsibilities, in particular:

- a 24-hour on-call system of duty officers with technical expertise and a duty Emergency Response Manager to respond to a notification and activate the system;
- teams of technical experts — with expertise in nuclear, radiation and waste safety — for round the clock operation if needed 1) to ensure that the initial and any additional information received from the notifying State is verified and together with any other relevant information made available to the IAEA is consistent and coherent before providing to contact points; 2) to review the trend assessment made by the notifying State and, based on the information available, to evaluate the adequacy of that assessment; 3) to review the response by the notifying State and by affected States and based on information available, identify areas where safety related gaps in the response may exist; 4) to compile and disseminate relevant available information and, as appropriate, IAEA guidance on generic and operational intervention levels, action levels and assessment methodologies, techniques and tools; 5) to facilitate requesting States to assess their needs;
- logistics support for round the clock operation, if needed;
- teams for direct liaison with competent authorities of the Notifying State and Member States, emergency contact points of other International Organizations, and Permanent Representatives to the IAEA;
- an emergency fund of US \$500 000 for provision of assistance to Member States or States Parties to the Assistance Convention; up to US \$100 000 for emergency assistance to a non-Member State not party to the Convention;
- telecommunications system (round the clock) with a high degree of redundancy and reliability for receipt of notification and incoming communications, including dedicated telephone lines for notification purposes and assistance requests, and after activation, solely for the notifying State; and for receiving and sending fax messages, if needed, to over 300 nationally designated emergency contact points;
- full and secure Internet capabilities; an Early Notification and Assistance Convention (ENAC) web based system with active pages for exchanging relevant emergency related information;
- video conference facilities for emergency liaison activities;
- an on-line subscription to electronic news network, satellite TV and radio connections for monitoring public information and responding to rumours;
- databases of: contact points; potential resources (health physicists, medical doctors, medical physicists (qualified experts), equipped emergency response teams, equipment and materials, specialized facilities and services); power and research reactors around the world; missing and found sources;
- standing arrangements for dosimetry services and assessment activities;

- public and media information personnel; International Nuclear Event Scale and NEWS system;
- trained personnel and emergency arrangements for rapid field deployment to nuclear or radiological emergencies with appropriate monitoring equipment;
- the Emergency Response Network (ERNET), composed of trained teams from Member States, to supplement IAEA field teams with specialities in aerial survey; radiation monitoring; radionuclide identification; source recovery; assessment and advice; medical support; bioassay; radiopathology; biodosimetry; and radiation protection.

Organizational structure of IAEA during activation



1 only activated on deployment of field mission
2 only activated on receipt of request for assistance during full activation

The organizational structure of the IAEA when activated is as shown in the diagram. With regard to the interaction with other relevant international organizations during activation, several positions are relevant:

An international organization **Liaison Officer** is the primary focal point and maintains lines of communications between the IAEA and other relevant organizations for the purposes of exchange of information and for sending and receiving offers of assistance from other organizations.

The **Emergency Response Manager** is the focal point for the operational and tactical management of the response;

The **Director Public Information (MTPI)** is the focal point for co-ordination of any joint media releases.

The **Head, Emergency Advisory Committee** is the focal point for co-ordination of any strategic decision making.

The office of the **Director General** is the focal point for policy co-ordination in this area.

References

EPR-ENATOM (2002): Emergency Notification and Assistance Technical Operations Manual, IAEA, Vienna (2002).

EPR-ERNET (2002): IAEA Emergency Response Network, IAEA, Vienna (2002).

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)

Address

International Civil Aviation Organization
999 University Street
Montreal, Quebec, Canada
H3C 5H7
<http://www.icao.org/>

Responsibilities and authorities

The ICAO is an organization based on the Convention on Civil Aviation signed in 1944. It became a specialized agency of the United Nations in 1947. The aims and objectives of ICAO are to develop standards and recommended practices for international air navigation and to foster the planning and development of international air transport so as to: a) ensure the safe and orderly growth of international civil aviation throughout the world; b) encourage aircraft design and operation for peaceful purposes; c) encourage the development of airways, airports, and air navigation facilities for international civil aviation; d) meet the needs of the people of the world for safe, regular, efficient and economical transport; e) prevent economic waste caused by unreasonable competition; f) ensure that the rights of Contracting States are fully respected and that every Contracting State has a fair opportunity to operate international airlines; g) avoid discrimination between Contracting States; h) promote safety of flight in international air navigation; and i) promote generally the development of all aspects of international civil aeronautics.

The following responsibilities are attributed to Contracting States and to the meteorological centres operated by them by virtue of provisions in Annex 3 — *Meteorological Service for International Air Navigation* to the Convention on International Civil Aviation:

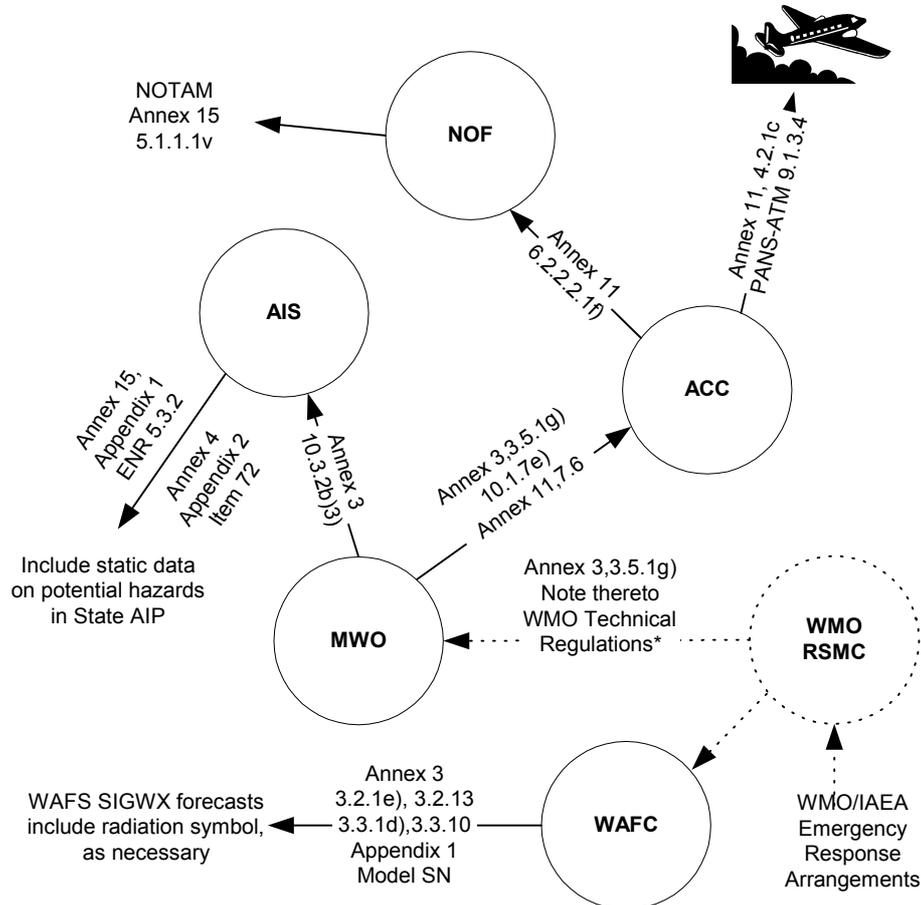
- for world area forecast centres (WAFCs) to receive information concerning the accidental release of radioactive material into the atmosphere, originating from its associated WMO regional specialized meteorological centre (RSMC) for the provision of transport model products for radiological environmental emergency response, in order to include the information received in significant weather forecasts;
- for meteorological watch offices (MWOs) to supply information received concerning the accidental release of radioactive materials into the atmosphere, in the area for which it maintains watch or adjacent areas, to its associated area control centre (ACC) and flight information centre (FIC), as agreed between the meteorological and air traffic services (ATSS) authorities concerned, and to aeronautical information service units, as agreed between the meteorological and appropriate civil aviation authorities concerned;
- for ATS Units to disseminate the information received to aircraft in flight or about to depart for the affected flight information regions (FIRs).



Capabilities

The procedures for initial notification of aeronautical meteorological centres concerned that an accident has occurred are being developed between IAEA and ICAO, in co-ordination with the WMO.

The governing ICAO regulatory provisions are displayed in the figure below.



*In practice, this information is disseminated to MWOs through NMCs.

The pertaining details of an accidental release of radioactive materials into the atmosphere such as the nature, time and exact location of the accident are to be provided by the IAEA to the WMO warning point for distribution to the national meteorological centres concerned. Subsequently, this information and forecast charts for the trajectory and definition of radioactive material is promptly disseminated from the WMO RSMCs to the aeronautical meteorological centres for onward communication to the ACCs/FICs. A symbol indicating “radioactive materials in the atmosphere” should be included in the WAFS significant weather (SIGWX) charts.

The ACC will notify the associated international NOTAM Office (NOF) in order to issue the corresponding notice to airmen (NOTAM) related to the hazard essential to personnel concerned with flight operations.

The inclusion of static data on potential hazards is included in contracting States’ air information publications (AIPs).

PAN AMERICAN HEALTH ORGANIZATION (PAHO)

Address

Pan American Health Organization
525 23rd Street, NW
Washington, DC 20037
USA

Tel: +1 (202) 974-3222 (Radiological Health Program)
Tel: +1 (202) 974-3434 (Emergency Preparedness Program)
E-mail: RadNucDC@paho.org (Radiological Health Program)
E-mail: disaster@paho.org (Emergency Preparedness Program)

Responsibilities and Authorities

The Pan American Health Organization (PAHO) was founded in 1902 and enjoys international recognition as a specialized health agency of the Organization of the American States and as part of the United Nations system, serving since 1949 as the Regional Office for the Americas of the World Health Organization.

PAHO has more than 2000 staff members between its headquarters in Washington, D.C., its 27 country offices, and its nine scientific centers, all working primarily with the countries of Latin America and the Caribbean in dealing with priority health issues.

According to the PAHO constitution, the Governing Bodies set the organization's mandates. For emergency preparedness and response, for formulating plans of action for various types of disasters, and for radiation safety standards which address nuclear and radiological emergencies, the following resolutions were approved:

1980: "To assist the health sectors of Member Countries in the development of disaster preparedness programs also in case of natural or technological disasters of public health importance."

1985: "To strengthen the Organization's technical co-operation and co-ordination in preparing the health sector to respond effectively to health problems caused by technological disasters, such as explosions and chemical accidents, as well as by displacements of large population groups caused by natural or man-made disasters."

1987: "To strengthen their health emergency preparedness programmes prior to a disaster by allocating the necessary personnel and budget according to the vulnerability of the country to natural disasters, chemical or nuclear accidents, or other emergency situations likely to affect the public health."

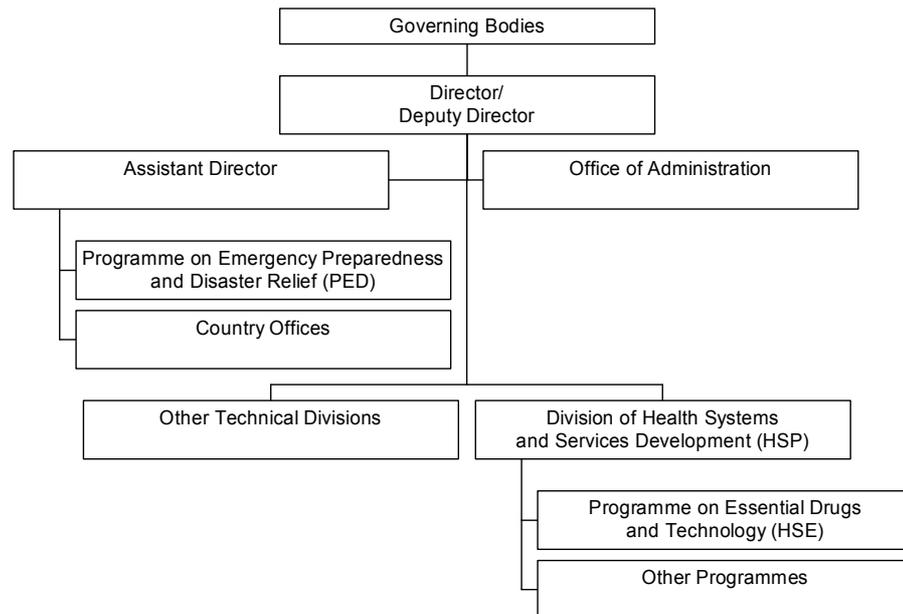
1994: "To endorse the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources.

"To urge the Member States to draw on the guidance provided by the International Basic Safety Standards when establishing regulations and operational criteria in the field of radiation safety.

"To ask the Director, in accordance with the availability of resources from the Organization, to continue to cooperate with the Member States in the development and implementation of national plans on radiation safety."

B

Organizational Structure



Capabilities

In the area of radiological emergencies, two programmes are collaborating closely: Radiological Health (RAD), within the Program of Essential Drugs and Technology (HSP/HSE) and the Program of Emergency Preparedness and Disaster Relief (PED).

PAHO initiated radiological health programmes in the 1950s. RAD currently has three lines of work: a) radiology services, b) radiation safety, and c) radiological emergencies. PED has more than 25 years of experience in response to all types of disasters — natural, man-made and complex — to which the Region of the Americas is vulnerable.

Should an emergency occur in the United States and Canada, PAHO's 38 Member States will perceive its role at the international level as purely informational. Should the nuclear or radiological emergency occur in a Latin American or Caribbean country, the Ministries of Health involved are likely to request PAHO to provide technical experts, while multisectoral disaster institutions such as civil protection, foreign affairs or others may request support to co-ordinate the international response in the public health and medical fields. This technical co-operation will be provided through consultation with PAHO Collaborating Centers, especially REAC/TS in the USA, relying heavily on REMPAN for medical assistance, and on the international collaboration of specialized agencies such as the IAEA and co-ordination agencies such as the United Office for the Co-ordination of Humanitarian Affairs (OCHA).

PAHO has response capacity in:

- emergency co-ordination and evaluation of the needs of an affected country;
- co-ordination of a PAHO/HQ task force on biological, chemical and radiological terrorism and international health assistance;
- mobilization of a cadre of experts from among a wide variety of disciplines to assist an affected country to manage the aftermath of an emergency situation;
- provision of authoritative information on the health situation to the international community and alerting neighbouring countries if necessary;
- mobilization of SUMA, the humanitarian supply management system, which helps make the process more transparent and accountable.

UNITED NATIONS OFFICE FOR THE CO-ORDINATION OF HUMANITARIAN AFFAIRS (OCHA)

Address

Emergency Services Branch
United Nations Office for the Co-ordination of Humanitarian Affairs
Palais des Nations,
CH-1211 Geneva 10, SWITZERLAND

Tel: +41 (22) 917 1172

Fax: +41 (22) 917 0257

Email: OCHAGVA@UN.ORG

http://www.reliefweb.int/ocha_ol/index.html

**Responsibilities
and authorities**

The Office for the Co-ordination of Humanitarian Affairs (OCHA) is part of the United Nations Secretariat and is headed by the Emergency Relief Co-ordinator, who has the mandate to co-ordinate UN assistance in humanitarian crises that go beyond the capacity and mandate of any single UN agency. The Emergency Relief Co-ordinator, under the aegis of the General Assembly and working under the direction of the Secretary-General, has the following responsibilities¹²:

- processing requests from affected Member States for emergency assistance requiring a co-ordinated response;
- maintaining an overview of all emergencies through the systematic pooling and analysis of early warning information;
- organizing, in consultation with the government of the affected country, a joint inter-agency needs assessment mission and preparing a consolidated appeal to be issued by the Secretary General;
- actively facilitating, through negotiation if needed, access by operational organizations to emergency areas for the rapid provision of emergency assistance through modalities such as the establishment of temporary relief corridors;
- managing, in consultations with the operational organizations concerned, the central emergency revolving fund and assisting in the mobilization of resources;
- serving as a focal point with governments and intergovernmental and non-governmental organizations concerning United Nations emergency relief operations and, when appropriate and necessary, mobilizing their emergency relief capacities, including through consultations in the capacity as Chairman of the inter-agency standing committee (IASC);
- actively promoting, in close collaboration with concerned organizations, the smooth transition from relief to rehabilitation and reconstruction as relief operations under their aegis are phased out.

OCHA has a Memorandum of Understanding with the IAEA¹³, which encompasses: the specific responsibilities of OCHA and the IAEA in a radiation emergency; disaster related activities in respect of which OCHA and the IAEA will co-operate; requests

¹² General Assembly Resolution A/RES/46/182, 1992 on Strengthening of the co-ordination of humanitarian emergency assistance of the United Nations.

¹³ Memorandum of Understanding between the Director General of the International Atomic Energy Agency and the United Nations Disaster Relief Co-ordinator, 1977.

for disaster relief assistance; joint action in the field and missions to disaster areas; exchange of information; confidential information; financial arrangements. In particular, it recognizes OCHA's role as that of an overall co-ordinator of all aspects of disaster relief assistance, and that the IAEA has operational responsibilities for co-ordinating relevant technical and scientific assistance following a radiation accident. On request, the IAEA will advise OCHA of any special precautions or preparations to be taken or made by relief personnel. In a disaster situation following a radiation accident, the IAEA will arrange for members of its staff to join any UNDAC team, and to be responsible for the assessment of relevant technical and scientific requirements. OCHA will, at its discretion, send representatives to the disaster area for on the spot assessment of emergency relief requirements other than those of a technical or scientific nature.

Capabilities

When a major emergency or disaster occurs, OCHA consults with the UN Country Team through the Office of the United Nations Resident Co-ordinator/Representative in the country(ies) concerned and undertakes inter-agency consultation at headquarters to reach agreement on the main humanitarian priorities for action. OCHA then provides support for the co-ordination of activities within the country, if necessary. It also assists in resource mobilization by launching international appeals and by monitoring progress of relief efforts, if so requested.

The Under Secretary-General for Humanitarian Affairs is the Emergency Relief Co-ordinator (UN)ERC, who is responsible for co-ordination among humanitarian entities. The (UN)ERC achieves this mainly through his/her chairing of the inter-agency standing committee (IASC), which brings together all major humanitarian actors, both within and outside the UN system. The IASC works to develop a shared analysis of a given crisis and to ensure inter-agency decision making on the response to complex emergencies and on the development of humanitarian policies.

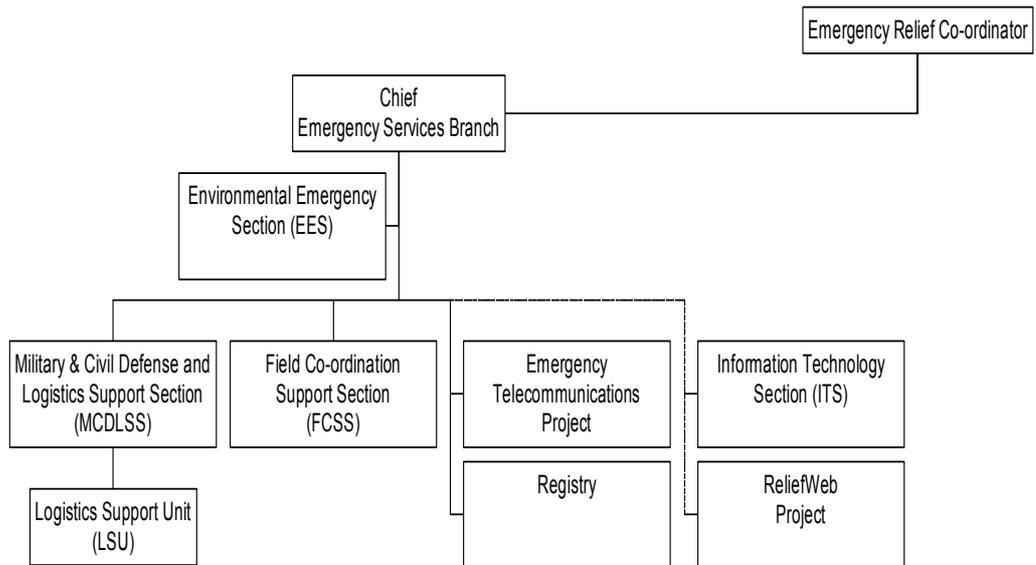
The Emergency Services Branch (ESB) in close co-operation with the Response Co-ordination Branch (RCB) in Geneva is the focal point within OCHA for mobilizing and co-ordinating international disaster response and can be contacted on a 24 hour basis in an emergency, when OCHA:

- alerts and mobilizes the international community, in particular emergency relief services of donor governments, the United Nations system, intergovernmental and non-governmental organizations. OCHA can organize and lead a United Nations inter-agency mission to the disaster affected area to carry out a multisectoral assessment of the effects of an emergency to ensure co-ordinated planning and the formulation of an overall UN response, if so requested;
- when the situation warrants and, subject to the availability of funds, will provide an emergency cash grant through the Office of the United Nations Resident Representative/Co-ordinator if the government launches an international appeal for assistance immediately after the occurrence of the disaster;
- is ready to act as an expeditious channel for donor contributions, relying on simple and quick administrative procedures;

- if required, and in consultation with the United Nations Resident Co-ordinator/Representative, can field a United Nations Disaster Assessment and Co-ordination (UNDAC) team to assist in emergency assessment and field co-ordination during the initial relief phase. The UNDAC team consists of qualified and specially trained national emergency management experts, as well as OCHA staff, who are on permanent standby. Team members can leave within hours, accompanied by means of communication. The UNDAC team works under the authority of the United Nations Resident Co-ordinator/Representative and co-operates with the local emergency management authorities in carrying out assessment and co-ordination tasks at a disaster site, or assists them in co-ordinating incoming and locally available assistance capacities;
- alerts and co-ordinates search and rescue (SAR) teams from different countries when the situation warrants it;
- can assist in the establishment of an on-site operations co-ordination centre, which has the dual purpose of providing the local emergency management authority of an affected country with a system for co-ordinating the operational activities of international relief agencies, and of providing a framework for co-operation and co-ordination among international relief teams at a disaster site;
- can assist, on request, in mobilizing and co-ordinating a specialized environmental emergency assistance;
- can assist in establishing and co-ordinating secure and reliable telecommunications during the emergency response phase;
- can assist in identifying needs for and accessing technical and logistics resources in support of field co-ordination;
- can mobilize and co-ordinate the deployment of military, civil protection and civil defence assets, which include specialized personnel and equipment required for disaster relief operations (e.g. aircraft, helicopters, ships, nuclear decontamination facilities, field hospitals, water purification units);
- maintains a central register of disaster management capacities, which may be available for international assistance, including assistance relating to international search and rescue teams, on emergency stockpiles of disaster relief items, on disaster management expertise, on military and civil defence assets, on customs focal points, on contacts for disaster response, and on major donors for emergency humanitarian assistance.



Organization for response



**UNITED NATIONS OFFICE FOR OUTER SPACE AFFAIRS
(OOSA)**

Address

United Nations Office for Outer Space Affairs
Vienna International Centre
P.O. Box 500
A-1400 Vienna, AUSTRIA

Tel. +43 (1) 26060-4950
Fax +43 (1) 26060-5830
E-mail: oosa@oosa.un.or.at
URL: <http://www.oosa.unvienna.org/>

Responsibilities and authorities

The Office for Outer Space Affairs has been designated to fulfil the responsibilities of the United Nations Secretary-General in accordance with the provisions of certain instruments adopted by the General Assembly, which are particularly relevant to the use of nuclear power sources in outer space.

The Principles Relevant to the Use of Nuclear Power Sources in Outer Space adopted by the General Assembly on 14 December 1992 (G.A. Res. 47/68) stipulate that:

- any State launching a space object with nuclear power sources on board shall, prior to the launch, ensure that a thorough and comprehensive safety assessment is conducted. This safety assessment shall cover all relevant phases of the mission and shall deal with all systems involved, including the means of launching, the space platform, the nuclear power source and its equipment and the means of control and communication between ground and space. The results of the safety assessment shall be made publicly available prior to each launch, and the Secretary-General of the United Nations shall be informed on how States may obtain such results of the safety assessment as soon as possible prior to each launch;

- any State launching a space object with nuclear power sources on board shall, in a timely fashion, inform States concerned and the Secretary-General of the United Nations in the event that this space object is malfunctioning with a risk of re-entry of radioactive materials to the Earth. Such notifications shall include information on the space object's system parameters (including the name of launching State or States and address of the authorities which may be contacted for additional information or assistance in case of accident; international designation; date and territory or location of launch; information required for the best prediction of orbit lifetime, trajectory and impact region; and general function of spacecraft) and the radiological risk of nuclear power source(s) (including the type of nuclear power source — radioisotopic/reactor; and the probable physical form, amount and general radiological characteristics of the fuel and contaminated/activated components likely to reach the ground);
- information provided in the case of a risk of re-entry of radioactive materials to the Earth shall be updated as frequently as practicable, with the frequency of dissemination of the updated information increasing as the anticipated time of re-entry into the dense layers of the Earth's atmosphere approaches so that the international community will be informed of the situation and will have sufficient time to plan for any national response activities deemed necessary;
- upon notification of an expected re-entry into the Earth's atmosphere of a space object containing a nuclear power source on board and its components, all States possessing space monitoring and tracking facilities, in the spirit of international co-operation, shall communicate the relevant information that they may have available on the malfunctioning space object with a nuclear power source on board to the Secretary-General of the United Nations and the State concerned as promptly as possible in order to allow States that might be affected to assess the situation and take any precautionary measures deemed necessary.

B

In accordance with Article XI of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies, adopted by the General Assembly on 19 December 1966 (G.A. Res. 2222 (XXI)):

- Upon receipt of the information provided in accordance with the above-mentioned Principles, the Office for Outer Space Affairs acting on behalf of the Secretary-General has a general obligation to disseminate the same, immediately and effectively.

The Office for Outer Space Affairs, on behalf of the Secretary-General, also fulfils certain responsibilities relating to the registration of launched space objects generally (including those with nuclear power sources on board) in accordance with the Convention on Registration of Objects Launched into Outer Space adopted by the General Assembly on 12 November 1974 (G.A. Res. 3235 (XXIX)), which may be applicable in the case of risk of re-entry of radioactive materials to the Earth. Specifically:

- the Office maintains a central register of space objects launched into Earth orbit or beyond based upon information provided by States Parties, which includes the following information for each space object: (a) name of launching State or States; (b) an appropriate designator of the space object or its registration number; (c) date and territory or location of launch; (d) basic orbital parameters; and (e) general function of the space object. There is full and open access to the information in this register;
- the Office transmits requests to other States Parties for assistance in the identification of space objects which have caused damage to a State or its nationals, or which may be of a hazardous or deleterious nature, where operation of the provisions of the Convention have not otherwise enabled such identification.

Organization and capabilities

The Office for Outer Space Affairs has the existing capacity to maintain the central register of space objects in both hard copy and electronic format with an online searchable index.

The professional staff of the Office consists of both scientifically and legally trained personnel with particular focus and specialization in matters pertaining to space-related activity, and would be available to provide background and technical assistance upon request.

In addition, the Office has the continuing support of United Nations public and media information personnel, correspondence and translation units etc., facilitating the necessary immediate and effective dissemination of information received.

The Office maintains direct and continuing contact and liaison with competent authorities of Member States, national space agencies, and representatives to the United Nations in Vienna.

WORLD HEALTH ORGANIZATION (WHO)

Address

World Health Organization
20, Avenue Appia
CH-1211 Geneva
SWITZERLAND
<http://www.who.int/home-page/>

Responsibilities and authorities

The World Health Organization (WHO) has the statutory general responsibilities relevant to emergency response¹⁴:

- to act as the directing and co-ordinating authority on international health work;
- to furnish appropriate technical assistance and, in emergencies, necessary aid upon the request or acceptance of governments;
- to establish and maintain effective collaboration with the United Nations, specialized agencies, governmental health administrations, professional groups and such other organizations as may be deemed appropriate;
- to assist governments, upon request, in strengthening health services;

¹⁴ Constitution of the World Health Organization, Chapter II – Functions, Article 2.

- to promote, in co-operation with other international agencies where necessary, the improvement of nutrition, housing, sanitation, recreation, economic or working conditions and other aspects of environmental hygiene;
- to study and report on, in co-operation with other international agencies where necessary, administrative and social techniques affecting public health and medical care from a preventive and curative point of view, including hospital services and social security;
- to provide information, counsel and assistance in health;
- to assist in developing an informed public opinion worldwide on matters of health.

WHO is a full party to the Early Notification and Assistance Conventions¹⁵ and, as such, is competent to act as the directing and co-ordinating authority in international health work in matters covered by the Convention, and to provide related assistance upon the request or acceptance of governments, without prejudice to the national competence of each of its Member States.

With regard to its obligations as a Party to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, WHO:

- co-operates...to facilitate prompt assistance in the event of a nuclear accident or radiological emergency to minimize its consequences and to protect life... from the effects of radioactive releases;
- may agree on bilateral or multilateral arrangements or, where appropriate, a combination of these, for preventing or minimizing injury and damage which may result in the event of a nuclear accident or radiological emergency;
- shall promptly decide and notify a requesting State Party, directly or through the IAEA, whether it is in a position to render the assistance requested, and if so, the scope and terms of the assistance that it might render;
- shall, within the limits of its capabilities, identify and notify the IAEA of experts, equipment and materials which could be made available for the provision of assistance to other States Parties in the event of a nuclear accident or radiological emergency as well as the terms, especially financial, under which such assistance could be provided;
- should, where the assistance involves personnel, designate in consultation with the requesting State, the person who should be in charge of and retain immediate operational supervision over the personnel and the equipment provided by the personnel. The designated person should exercise such supervision in co-operation with the appropriate authorities of the requesting State;
- shall make known to the IAEA and to other States Parties, directly or through the IAEA, its competent authorities and point of contact authorized to make and receive requests for and to accept offers of assistance. Such points of contact...shall be available continuously, and shall promptly inform the IAEA of any changes in the information;

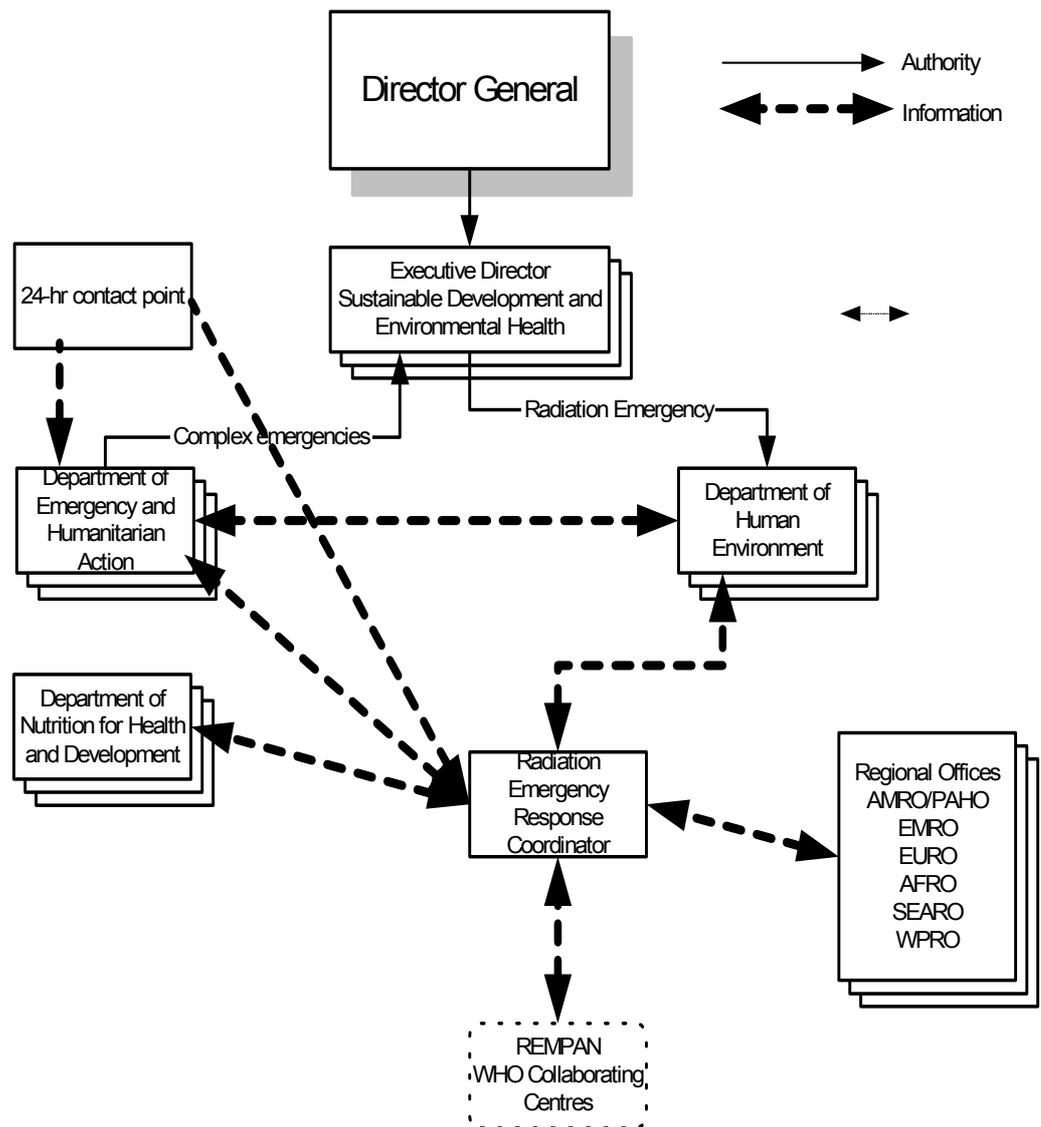
B

¹⁵ Conventions on Early Notification of a Nuclear Accident and on Assistance in the Case of a Nuclear Accident or Radiological Emergency, Instrument of Accession, 28 July 1988.

- shall protect the confidentiality of any confidential information that becomes available...in connection with the assistance in the event of a nuclear accident or radiological emergency;
- shall make every effort to co-ordinate with the requesting State before releasing information to the public on the assistance provided in connection with a nuclear accident or radiological emergency.

Organizational block diagram

The following diagram illustrates the organization of WHO for responding to nuclear and radiological emergencies.



B

Response capabilities

The resources in the World Health Organization are:

- 7 experts in radiation medicine, radiobiology, radiation epidemiology and radiation protection;

- 2 experts in radiation epidemiology at IARC/WHO;
- 1 expert in food irradiation and nutrition;
- internet, computing and communication facilities;
- generic emergency drugs and supplies;
- funds allocated for general emergency and humanitarian actions (there are no separate funds for radiation emergencies);
- the Radiation Emergency Medical Preparedness and Assistance Network (WHO/REMPAN), which provides access to more than 200 specialists from 13 collaborating centres and 3 liaison institutes in Member States, with expertise in radiation medicine, radiation epidemiology, radiation protection, medical dosimetry and monitoring of radioactivity in the environment. Medical and dosimetry equipment and medical facilities are available in these collaborating WHO/REMPAN centres.

WORLD METEOROLOGICAL ORGANIZATION (WMO)

Address

World Meteorological Organization
7 bis, Avenue de la Paix
CH-1211 Geneva 2
C.P. 2300
SWITZERLAND
<http://www.wmo.int/>

Responsibilities and authorities

Within the United Nations, the Geneva based WMO provides the authoritative scientific voice on the state and behaviour of the Earth's atmosphere and climate. The purposes of WMO are to facilitate international co-operation in the establishment of networks of stations for making meteorological, hydrological and other observations; and to promote the rapid exchange of meteorological information, the standardization of meteorological observations and the uniform publication of observations and statistics.

The WMO is a full party to the Early Notification and Assistance Conventions¹⁶ and, as such, the WMO:

- co-operates...to facilitate prompt assistance in the event of a nuclear accident or radiological emergency to minimize its consequences and to protect life...from the effects of radioactive releases;
- shall promptly decide and notify a requesting State Party, directly or through the IAEA, whether it is in a position to render the assistance requested, and the scope and terms of the assistance that might be rendered;

¹⁶ Convention on Early Notification of a Nuclear Accident, Instrument of Accession, 16 Oct. 1990.

- shall, within the limits of its capabilities, identify and notify the IAEA of experts, equipment and material that could be made available for the provision of assistance to other States Parties in the event of a nuclear accident or radiological emergency and the terms, especially financial, under which such assistance could be provided;
- should, where the assistance involves personnel, designate in consultation with the requesting State, the person who should be in charge of and retain immediate operational supervision over the personnel and the equipment provided by the personnel. The designated person should exercise such supervision in co-operation with the appropriate authorities of the requesting State;
- shall make known to the IAEA and to other States Parties, directly or through the IAEA, its competent authorities and point of contact authorized to make and receive requests for and to accept offers of assistance. Such points of contact...shall promptly inform the IAEA of any changes in the information;
- shall protect the confidentiality of any confidential information that becomes available...in connection with the assistance in the event of a nuclear accident or radiological emergency.

Capabilities

WMO manages its Emergency Response Activity programme as part of the World Weather Watch (WWW) programme. The programme is co-ordinated under the technical responsibility of the WMO Commission for Basic Systems. The activities of WMO include provision of environmental observational data and meteorological analyses and forecasts, operation of the WMO Global Telecommunication System (GTS) in support of the Early Notification and Assistance Conventions and, from certain dedicated centres of the WMO Global Data Processing System (GDPS), provision of specialized transport model forecast products. In addition, the National Meteorological Services (NMSs) advise governments in matters related to an environmental emergency in accordance with pertinent national regulations. The IAEA has implemented procedures in co-ordination with WMO for obtaining meteorological support from designated RSMCs.

At present the IAEA issues notification messages using fax machines and other technologies as means of communications and the WMO offers the Global Telecommunications Network (GTS) as a backup network. The WMO Regional Telecommunication Hub (RTH) Offenbach dispatches relevant messages to the GTS which will use the WMO abbreviated bulletin heading WNXX01 for global distribution.

At present, there are eight designated RSMCs in Bracknell and Toulouse (for Europe and Africa); Washington and Montreal (for North, Central and South America); Beijing, Obninsk and Tokyo (for Asia); and Melbourne (for South West Pacific). They use sophisticated atmospheric simulation models to provide information on actual and anticipated dispersion/disposition of pollutants in the atmosphere. National meteorological centres using the products provide interfaces and services to the national authorities concerned.

Regional and global arrangements for the provision of transport model products for environmental emergency response are specified in the WMO Manual on the GDPS



(WMO No. 485)¹⁷ and essential aspects may be accessed on the WMO web site under: WWW, Programmes, Emergency Response Activities, Transport model products:

(http://www.wmo.ch/index-en.html)

A list of contact points for the RSMCs and national meteorological centres (NMCs) is available on the WMO web site under: WWW, Programmes, Emergency Response Activities:

(http://www.wmo.ch/index-en.html)

Besides the responsibility for co-ordinating the overall participation and contribution of WMO in the emergency response system, the WMO Secretariat operates an office for the Emergency Response to Nuclear Accidents (ERNA). The office has a dedicated fax line/receiver set. Staff members regularly monitor the office during normal office hours.

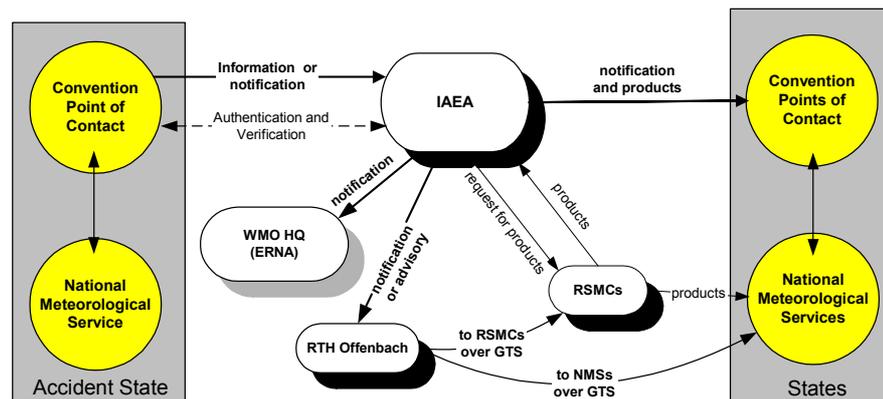
The responsibilities of WMO ERNA are:

- providing relevant information to WMO Members' national meteorological and hydrological services (NMHSs), i.e. to their NMCs, if so requested;
- acting as backstop for the provision of all available information with respect to the known or potential radiological release and any meteorological information provided by the accident States or other verified sources to dedicated specialized centres of the GDPS;
- participating in exercises and telecommunication drills;
- maintaining, updating and disseminating the lists of delegated authorities and NMSs operational contacts.



Organization

The organization chart illustrates the manner in which the IAEA and WMO cooperate in order to notify and provide meteorological products to States during an emergency.



¹⁷ WMO-No. 485 Manual on the Global Data-processing System, (Annex IV to the WMO Technical Regulations), Appendices I-1, I-3 and II-7. Documentation on RSMC support for environmental emergency response (targeted to meteorologists at NMSs) WMO-TD/No. 778.



Appendix C

Capabilities of international organizations for emergency preparedness activities

This appendix addresses the activities each organization makes with regard to preparedness for nuclear or radiological emergencies, including research, fostering information exchange, technical co-operation, exercises and training, both within their own organizations and in support of development in their Member States.

EUROPEAN COMMISSION (EC)

Responsibilities and authorities

The European Commission has responsibility to maintain its preparedness to forward the alert message and subsequent additional information to ECURIE Member States and to implement the Community foodstuff and animal feedstuff regulations in emergency situations.

While it has no responsibility to do so, the Commission co-ordinates a number of activities to improve emergency preparedness and to promote related research not only within the EU Member States but also in Central and Eastern European Countries (CEECs) and in countries of the former Soviet Union (FSU).

Capabilities

The European Commission co-operates with its Member States and candidate countries for membership, in the field of emergency preparedness in order to improve and harmonize preparedness arrangements in Europe. The following projects have important functions in emergency preparedness:

- EURDEP (European Union Radiological Data Exchange Platform) is a voluntary data exchange system for environmental radiation data between the EU Member States and CEECs. Data exchange by EURDEP is a continuous operation, which can be intensified in the case of a nuclear or radiological accident.
- The RODOS (Real-time On-line Decision Support) programme provides tools for decision making and situation assessment in nuclear emergency response. The tools include not only atmospheric dispersion but also the subsequent dispersion in the environmental compartments and the consequent potential exposure and health risk to the general public.

- The OSEP (off-site emergency preparedness) programme is a European Commission initiative to provide a co-ordinated approach for technical assistance to CEECs and FSU countries in nuclear or radiological emergency preparedness and associated data exchange.
- In addition, the Commission promotes training courses for off-site emergency planning and response for experts in the Member States and Candidate Countries.

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS (FAO)

Responsibilities and authorities

The Food and Agriculture Organization of the United Nations has statutory functions that are relevant to response preparedness arrangements for a nuclear or radiological emergency, namely “the Organization¹⁸ collects, analyses, interprets and disseminates information relating to nutrition, food and agriculture (including fisheries, marine products, forestry and primary forestry products)”. It also ‘promotes and, where appropriate, recommends national and international action with respect to [inter alia] the improvement of the processing, marketing and distribution of food and agricultural products; [and] the adoption of international policies with respect to agricultural commodity arrangements.’”

Capabilities

The FAO may provide support to preparedness development through its stated function, namely:

- to furnish such technical assistance as governments may request;
- to organize, in co-operation, with the governments concerned, such missions as may be needed to assist them to fulfil the obligation arising from...this Constitution; and
- generally to take all necessary and appropriate action to...promote common welfare...for the purpose of raising levels of nutrition and standards of life of the peoples under their respective jurisdictions; and securing improvements in the efficiency of the production and distribution of food...

With regard to nuclear accidents, in 1994 the FAO together with IAEA published technical material on agricultural countermeasures following a nuclear accident¹⁹, and together with WHO, the Codex Alimentarius Commission sets international guidelines for acceptable levels of radionuclides in foodstuffs moving in international trade. The FAO is a co-sponsoring organization of the “*International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources*” and of the “*Safety Requirements: Preparedness and Response for a Nuclear or Radiological Emergency*” issued by the IAEA.

¹⁸ Constitution of the Food and Agriculture Organization of the United Nations.

¹⁹ “Guidelines for agricultural countermeasures following a release of radionuclides” ([http://www-infocris.iaea.org/EN/w3.exe\\$ShowRef?Ref=1397](http://www-infocris.iaea.org/EN/w3.exe$ShowRef?Ref=1397))

INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)

Responsibilities and authorities

The IAEA is authorized under its Statutes “to establish...standards of safety for protection of health and minimization of danger to life and property...and to provide for the application of these standards...”, in particular:

Jointly with other relevant international organizations, the IAEA has issued the FAO/IAEA/ILO/OECD(NEA)/PAHO/WHO “*International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources*” and the FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO “*Safety Requirements: Preparedness and Response for a Nuclear or Radiological Emergency*” and associated Safety Guides under formal procedures that require formal consultation with Member States.

The IAEA is the depository of the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, and has specific obligations with regard to preparedness actions, namely:

- to collect and disseminate to States Parties and Member States information concerning i) experts, equipment and materials that could be made available in the event of nuclear accidents or radiological emergencies; ii) methodologies, techniques and available results of research relating to response to nuclear accidents or radiological emergencies;
- to assist a Member State when requested in preparing both emergency plans in the case of nuclear accidents or radiological emergencies and the appropriate legislation;
- to develop appropriate training programmes for personnel to deal with nuclear accidents and radiological emergencies (including radiation emergency medical training programmes and materials in co-operation with the WHO)
- to develop appropriate radiation monitoring programmes, procedures and standards;
- to conduct investigations into the feasibility of establishing appropriate radiation monitoring systems;
- to establish and maintain liaison with relevant international organizations for the purpose of obtaining and exchanging relevant information and data, and to make a list of such organizations available to States Parties, Member States and the aforementioned organizations;
- to maintain an up to date list of national authorities and points of contact and of points of contact of relevant international organizations and to provide it to States Parties and Member States and to relevant international organizations.



Capabilities

In support of its statutory obligations the IAEA:

- issues manuals, technical reports and documents on emergency preparedness and response;
- issues associated training material and computer tools which form the basis of technical co-operation support;
- provides legal advice to help Member States and States Parties conclude bilateral/multilateral agreements on emergency preparedness and response;

- offers an emergency preparedness review (EPREV) service to appraise the adequacy of national emergency planning arrangements and emergency exercises;
- organizes meetings, conferences and symposia in order to provide the opportunity for information exchange on the results of recent research, policy directions and guidance, practical arrangements, and consultation with Member States and States Party to the Conventions.

In support of its obligations under the Conventions on Early Notification of a Nuclear Accident and on Assistance in the Case of a Nuclear Accident or Radiological Emergency, it provides the Secretariat of the Inter-Agency Committee on Response to Nuclear Accidents (IACRNA), and specifically provides guidance for its Member States on emergency monitoring methods, procedures and strategies, and assists in the development of emergency plans and associated training material.

**Organization for
Emergency
Preparedness**

Overall responsibility for preparedness of the IAEA to respond to nuclear or radiological emergencies, for developing standards on emergency preparedness and response and providing for their implementation in Member States is the responsibility of the Head, Emergency Preparedness and Response Unit, Division of Radiation and Waste Safety, International Atomic Energy Agency, Vienna.

Specific responsibility for preparedness of the Emergency Response Centre to respond to nuclear or radiological emergencies is assigned to the Co-ordinator, Emergency Assistance Services, Emergency Preparedness and Response Unit, Division of Radiation and Waste Safety, International Atomic Energy Agency, Vienna.

INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO)

There are no Secretariat personnel assigned for real-time emergencies. The necessary response will be undertaken by the relevant meteorological centres in ICAO Contracting States.

NUCLEAR ENERGY AGENCY OF THE ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT (NEA)

The fundamental mission of the Nuclear Energy Agency (NEA) of the Organisation for Economic Co-operation and Development (OECD) is to contribute to the viability of the nuclear power option through international co-operation aimed at pooling the expertise of Member countries, disseminating information, and developing consensus opinions on important issues.

The NEA has no statutory role in the response to nuclear emergency situations, but has, for many years, been actively involved in efforts to improve nuclear accident emergency planning, preparedness and management. The NEA's Committee on Radiation Protection and Public Health (CRPPH) established a standing working party on nuclear emergency matters to discuss current developments and future ideas with NEA Member countries and international organizations. The NEA's working party

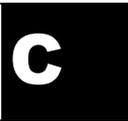
on nuclear emergency matters can offer advice in nuclear preparedness and encourage improved nuclear preparedness strategies and nuclear emergency response internationally. The NEA's role in developing and testing innovative approaches to emergency planning, preparedness and management is expected to be formalized in a memorandum of understanding between the IAEA and the NEA. The NEA offers:

- to identify areas in emergency planning, preparedness and management that could usefully be improved;
- to develop and test with interested countries innovative ideas, approaches and concepts to facilitate international and national emergency management;
- to develop follow-up strategies, through workshops and expert group meetings, to address identified issues and to formulate new approaches for international testing;
- to provide a forum for experts in emergency response, outside the context of the legal requirements of international notification and assistance conventions;
- to participate, as appropriate, in the development, planning, preparation and organization of international nuclear emergency exercises, jointly sponsored by the IAEA, the EC, WHO, WMO and any other interested international organization;
- to participate in the overall assessment and analysis of lessons to be learned from such exercises.

With the mandate from the representatives of NEA Member countries on CRPPH, the NEA will:

- provide a standing working party on nuclear emergency matters to discuss future developments and improvements in emergency planning, preparedness and response and to develop innovative ideas and approaches to facilitate international and national emergency responses;
- issue scientific reports, strategy reports/proceedings of workshops on advancements in emergency planning, preparedness and response;
- establish and organize planning committees for the preparation of international nuclear emergency exercises, co-ordinated with other appropriate international organizations;
- organize follow-up workshops for overall exercise assessment and post exercise analysis of lessons learned;
- issue reports on the final overall assessment of an international nuclear emergency exercise.

The NEA/OECD is a cosponsoring organization of the *“International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources”* and of the *“Safety Requirements: Preparedness and Response for a Nuclear or Radiological Emergency”* issued by the IAEA.



PAN AMERICAN HEALTH ORGANIZATION (PAHO)

Responsibilities and Authorities

According to the PAHO constitution, the Governing Bodies set the organization's mandates. In regard to emergency preparedness and response and the formulation of plans of action for various types of disasters, and in regard to radiation safety standards, which address radiological and nuclear emergencies, the resolutions approved by the Governing Bodies are listed in Appendix B.

Capabilities

The Pan American Health Organization is a decentralized institution, providing its co-operation in preparedness for radiological and nuclear accidents to its member states through its country offices and collaborating centres by means of:

- the creation, compilation, adaptation, translation, publication and dissemination of documents and publications;
- training programmes;
- internet networks;
- direct consultation.

The most relevant activities in prevention and preparedness of radiological emergencies are as follows:

- analysis of past accidents/disasters;
- strengthening national radiation safety programmes;
- provision of guidelines for the organization and development of imaging, and radiotherapy services;
- strengthening national institutions to develop programmes for the planning, operation, maintenance, and renovation of the physical and technological infrastructures;
- promotion of legislation/regulations on the authorization of radiation sources and practices that may lead to harmful exposures;
- development of national policies on radioactive waste management;
- calibration of radiation beams for diagnosis and treatment;
- review of physical and clinical dosimetry;
- location, characterization and conditioning of radioactive sources;
- development and implementation of quality control and quality assurance programmes, including audits;
- development of response teams for radiological/nuclear emergencies;
- participation in/organization of radiological/nuclear simulation exercises

The lessons learned from actual disaster operations can be incorporated into high level training programmes and these perishable data may be preserved in the form of publications and training materials in the Costa Rica Base Disaster Information Center.

The compilation of formal and informal literature regarding emergencies and radiological/nuclear accidents may be made available on the web site www.crid.or.cr/crid/index.htm. Additional information may be found in PAHO's Internet web page: www.paho.org.

PAHO is a co-sponsor of the *“International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources”* and of the *“Safety Requirements: Preparedness and Response for a Nuclear or Radiological Emergency”* issued by the IAEA.

UNITED NATIONS OFFICE FOR THE CO-ORDINATION OF HUMANITARIAN AFFAIRS (OCHA)

International relief assistance supplements national efforts to improve the capacities of developing countries to mitigate the effects of natural disasters expeditiously and effectively and to cope efficiently with all emergencies. The United Nations is charged²⁰ with assisting developing countries to strengthen their capacity to respond to disasters, at the national and regional levels, as appropriate. In the disaster preparedness activities of OCHA, technical co-operation missions are sent to countries vulnerable to natural disasters to give advice to the Government on the establishment or improvement of disaster relief machinery, the formulation of emergency plans, the training of personnel, and other measures which should be taken in advance of a disaster. The Memorandum of Understanding²¹ with the IAEA recognizes that the IAEA will provide, upon request from the Government of a country or from OCHA, advice on the special precautions that should be taken into account in formulating emergency plans necessary for dealing with any radiation accident that may occur.

On the basis of existing mandates and drawing upon monitoring arrangements available within the system, the United Nations is charged with building upon the existing capacities of relevant organizations and entities of the United Nations, for the systematic pooling, analysis and dissemination of early warning information on natural disasters and other emergencies. As a matter of OCHA policy, early warning information should be made available in an unrestricted and timely manner to all interested Governments and concerned authorities.

The OCHA is a co-sponsor of “*Safety Requirements: Preparedness and Response for a Nuclear or Radiological Emergency*” issued by the IAEA.

WORLD HEALTH ORGANIZATION (WHO)

The World Health Organization has the statutory responsibilities²²:

C

Responsibilities and authorities

- to promote, in co-operation with other specialized agencies where necessary, the prevention of accidental injuries;
- to promote improved standards of teaching and training in the health, medical and related professions;
- to standardize diagnostic procedures as necessary;
- to develop, establish and promote international standards with regard to food, biological, pharmaceutical and similar products.

Development and maintenance of preparedness within its own organization:

Capabilities

- As part of their duties, one professional at WHO headquarters, in co-operation with 6 persons in charge from 6 WHO regional offices, co-

²⁰ General Assembly Resolution A/RES/46/182, 1992 on Strengthening of the co-ordination of humanitarian emergency assistance of the United Nations.

²¹ Memorandum of Understanding between the Director General of the International Atomic Energy Agency and the United Nations Disaster Relief Co-ordinator, 1977.

²² Constitution of the World Health Organization, Chapter II, Article 2.

ordinates and maintains activities of the global network of WHO collaborating centres within REMPAN; one full time professional in the regional office for Europe develops and maintains a system for public health preparedness at the regional level and, in co-operation with WHO headquarters and other regional offices, in particular the regional office for the Americas, worldwide.

- Regular meetings of WHO/REMPAN collaborating centres aim at improving co-ordination and communication within the network, information and experience exchange.
- All WHO/REMPAN collaborating centres have individual plans of activities including training and exercises.

Together with FAO, the Codex Alimentarius Commission sets international guidelines for acceptable levels of radionuclides in foodstuffs moving in international trade.

The WHO is a co-sponsoring organization of the *“International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources”* and of the *“Safety Requirements: Preparedness and Response for a Nuclear or Radiological Emergency”* issued by the IAEA.

Development of preparedness in Member States:

- Thirteen associated WHO/REMPAN collaborating centres provide assistance to national health authorities in developing and improving medical and public health preparedness for nuclear accidents or radiological emergencies. Further WHO collaborating centres dealing with radiation induced effects can be requested to provide assistance as needed.

Budget

Annual budget includes direct staff costs for day to day activities related to co-ordination of REMPAN. The WHO/REMPAN collaborating centres themselves obtain financial support from their Governments. The WHO allocates annually about US \$50 000 for REMPAN meetings and other relevant arrangements.

WORLD METEOROLOGICAL ORGANIZATION (WMO)

Expert services can be requested through the Secretary-General of WMO if a country and its national meteorological service need the assistance of experts in the field of atmospheric transport, e.g. dispersion and deposition models, and for example, their characteristics and performance or the interpretation and evaluation of the output products. Such service can also be requested when a country and its national hydrological service need the assistance of experts in the assessment, monitoring and prediction of the transport and dilution of radioactive material in surface and subsurface water bodies.



Appendix D

DEFINITIONS AND ABBREVIATIONS

The following definitions apply only for the purpose of this Joint Plan:

Accident	Any unintended event, including operating errors, equipment failures or other mishaps, the consequences or potential consequences of which are not negligible from the point of view of protection or safety.
Accidental medical exposure	Any therapeutic treatment delivered to either the wrong patient or the wrong tissue, or using the wrong pharmaceutical, or with a dose or dose fractionation differing substantially from the values prescribed by the medical practitioner or which may lead to undue acute secondary effects; any equipment failure, accident, error, mishap or other unusual occurrence with the potential for causing a patient exposure significantly different from that intended.
Advisory	An official report to a national or international authority by an authorized competent authority providing details of an actual, potential or perceived nuclear or radiological emergency, without the explicit obligation or expectation to do so under international treaty or according to international safety standards, but, <i>inter alia</i> , to: 1) pre-empt legitimate requests from other States Parties to the Assistance Convention for 'assistance' in obtaining information (cf. notification); 2) trigger the IAEA to offer its good offices; 3) provide advance warning to the IAEA, other relevant organizations or other States of a developing situation so that they can be ready to respond should the situation worsen; 4) for the IAEA, other relevant international organizations, or other States to initiate an administrative response and/or to provide advice to their governments, public or media on a developing situation of actual, potential or perceived radiological significance; 5) otherwise alert IAEA emergency response staff.
Authentication	The process of confirming that a message received comes from an authentic source (cf. verification).
Competent authority	A contact point that is authorized to issue a notification , advisory , request for assistance or other emergency information as appropriate, and to reply to requests for information or assistance.



Complex emergency	Humanitarian crisis in a country, region or society where there is a total or considerable breakdown of authority resulting from internal or external conflict and in which case the United Nations may authorize international response that goes beyond the mandate or capacity of any single agency and/or the ongoing UN country programme ²³ .
Contact point	A generic term for an organization, designated by a State or an international organization, that has a role to play in international exchange of information in response to a nuclear or radiological emergency .
Dangerous source	A source that could, if not under control, give rise to exposure sufficient to cause a severe deterministic health effect (one for which generally a threshold of dose exists above which the severity of the effect is greater for a higher dose, and that is fatal or life threatening or results in a permanent injury that decreases the quality of life)
Disaster	Serious disruption of the functioning of a society, causing widespread harm to people, property or the environment, that exceeds the ability of the affected society to cope using its own resources ²³ .
Emergency	A non-routine situation or event that necessitates prompt action primarily to mitigate a hazard or adverse consequences for human health and for safety, for the quality of life, for property or for the environment. This includes situations for which prompt action is warranted to mitigate the effects of a perceived hazard, and those for which the principal cause is an accident or deliberate act. It includes nuclear or radiological emergencies and conventional emergencies such as fires, release of hazardous chemicals, storms or earthquakes.
Emergency plan	A description of the objectives, policy and concept of operations for the response to an emergency and of the structure, authorities and responsibilities for a systematic, co-ordinated and effective response. The emergency plan serves as the basis for the development of other plans, procedures and checklists.
Emergency preparedness	The capability to take actions that will effectively mitigate the consequences of an emergency for human health and safety, quality of life, property or the environment.
Emergency procedures	A set of instructions describing in detail the actions to be taken by response personnel in an emergency .
Emergency response	The performance of actions primarily to mitigate the consequences of an emergency on human health and safety, quality of life, property and the environment. It may also provide a basis for the resumption of social and economic activity.
Launching State	The State that exercises jurisdiction and control over a space object with nuclear power sources on board at a given point in time

²³ This is a general definition used by the international humanitarian assistance community that is not specific to nuclear accidents or radiological emergencies.

Notification	An official report submitted promptly to a national or international authority by an authorized competent authority under international treaty or according to international standards providing details of an emergency or potential emergency, e.g. as required by the Convention on Early Notification of a Nuclear Accident ²⁴ , or under the provisions of outer space treaties or international safety standards ²⁵ (cf. Advisory).
Notifying State	The State that is responsible for providing notification and information to potentially affected States and the IAEA of an event of actual, potential or perceived radiological significance for other States. This includes: 1) the State Party that has jurisdiction or control over the facility or activity (including space objects) in accordance with Article 1 of the Early Notification Convention, or 2) the State that initially detects, or discovers evidence of, a transnational emergency, for example by: detecting significant increases in atmospheric radiation levels of unknown origin; detecting contamination in transboundary shipments; discovering a dangerous source that may have originated in another State; or diagnosing medical symptoms that may have resulted from exposure outside the State.
Nuclear installation	A nuclear fuel fabrication plant, nuclear reactor (including subcritical and critical assemblies), research reactor, nuclear power plant, spent fuel storage facility, enrichment plant, reprocessing facility or nuclear-powered vessel.
Nuclear or radiological emergency	An emergency in which there is, or is perceived to be, a hazard due to: a) the energy resulting from a nuclear chain reaction or from the decay of the products of a chain reaction; or b) radiation exposure
Transnational emergency	A nuclear or radiological emergency of actual, potential or perceived radiological significance for more than one State. This includes: 1) a significant transboundary release (however, a transnational emergency does not necessarily imply a significant transboundary release .); 2) a general emergency at a facility or other event that could result in a significant transboundary release (atmospheric or aquatic); 3) discovery of the loss or illicit removal of a dangerous source that has been or is suspected of having been transported across a national border; 4) an emergency resulting in significant disruption to international trade or travel; 5) an emergency warranting the taking of protective actions for foreign nationals or embassies in the State in which it occurs; 6) an emergency resulting or potentially resulting in severe deterministic effects and involving a fault/problem (such as in equipment or software) that could have serious implications for safety internationally; and 7) an emergency resulting in or potentially resulting in great concern among the population of more than one State owing to the actual or perceived radiological hazard.
Verification	The process of confirming the accuracy of the information in a message (cf. authentication).

²⁴ Note that this is different from the definition provided in the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, co-sponsored by the International Atomic Energy Agency, Food and Agriculture Organization of the United Nations, International Labour Organisation, OECD Nuclear Energy Agency, Pan American Health Organization and the World Health Organization, published by the IAEA as Safety Series No. 115, Vienna (1996).

²⁵ FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (2002)



ABBREVIATIONS

ACC	Area Control Centre (of ICAO)
EC	European Commission
ECHO	European Commission Humanitarian Office
ECURIE	European Community Urgent Radiological Information Exchange
ENAC	Emergency Notification and Assistance Convention (web site) of the IAEA
ENATOM	Emergency Notification and Assistance Technical Operations Manual
ERC	Emergency Response Centre of the IAEA
ERNET	Emergency Response Network of the IAEA
ESB	Emergency Services Branch (of OCHA)
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIC	Flight Information Centre (of ICAO)
IACRNA	Inter-Agency Committee on Response to Nuclear Accidents
IAEA	International Atomic Energy Agency
ICAO	International Civil Aviation Organization
ILO	International Labour Organization
IMO	International Maritime Organization
Interpol	International Criminal Police Organization
MWO	Meteorological Watch Office
NAREAP	Nuclear Accident/Radiological Emergency Assistance Plan (of the IAEA)
NATO	North Atlantic Treaty Organization
NEA	Nuclear Energy Agency of the OECD
NMHS	National Meteorological and Hydrological Service
NMS	National Meteorological Service
OCHA	United Nations Office for the Co-ordination of Humanitarian Affairs
OECD	Organisation for Economic Co-operation and Development
OOSA	United Nations Office for Outer Space Affairs
OSOCC	On-site Operations Co-ordination Centre (of OCHA)
PAHO	Pan American Health Organization
REMPAN	Radiation Emergency Medical Preparedness and Assistance Network (of the WHO)
RCB	Response Co-ordination Branch (of OCHA)
RSMC	Regional Specialized Meteorological Centre (of the WMO)
RTH	Regional Telecommunications Hub (of the WMO)
SIGWX	Significant weather chart (of ICAO)
UNDAC	United Nations Disaster Assessment and Co-ordination Team (of OCHA)
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
(UN)ERC	Emergency Relief Co-ordinator (of OCHA)
UNICEF	United Nations Children's Fund
WAFC	World Area Forecast Centre (of ICAO)
WCO	World Customs Organization
WHO	World Health Organization
WMO	World Meteorological Organization



Appendix E

PUBLICATIONS OF RELEVANCE TO RESPONSE OPERATIONS

General

INTERNATIONAL ATOMIC ENERGY AGENCY, Emergency Notification and Assistance Technical Operations Manual, Emergency Preparedness and Response Series EPR-ENATOM, IAEA (2002)

INTERNATIONAL ATOMIC ENERGY AGENCY, IAEA, Emergency Response Network ERNET, Emergency Preparedness and Response Series EPR-ERNET 2000, IAEA, Vienna (2002)

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, INTERNATIONAL ATOMIC ENERGY AGENCY, INTERNATIONAL LABOUR ORGANIZATION, OECD NUCLEAR ENERGY AGENCY, PAN AMERICAN HEALTH ORGANIZATION, WORLD HEALTH ORGANIZATION, International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No. 115, IAEA, Vienna (1996)

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, INTERNATIONAL ATOMIC ENERGY AGENCY, INTERNATIONAL LABOUR ORGANIZATION, OECD NUCLEAR ENERGY AGENCY, UNITED NATIONS OFFICE FOR THE COORDINATION OF HUMANITARIAN AFFAIRS, PAN AMERICAN HEALTH ORGANIZATION, WORLD HEALTH ORGANIZATION, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (2002)

EUROPEAN COMMISSION, Radiological protection principles for urgent countermeasures to protect the public in the event of accidental releases of radioactive material, Radiation Protection 87, European Commission, Directorate General Environment (1997).

EUROPEAN COMMISSION, Radiation Protection Principles for Relocation and Return of People in the Event of Accidental Releases of Radioactive Materials, Radiation Protection 64, European Commission, Directorate General Environment (1993).



INTERNATIONAL ATOMIC ENERGY AGENCY, Intervention Criteria in a Nuclear or Radiation Emergency, Safety Series No. 109, IAEA, Vienna (1994)

INTERNATIONAL ATOMIC ENERGY AGENCY, Method for the Development of Emergency Response Preparedness for Nuclear or Radiological Accidents, IAEA-TECDOC-953, IAEA (1997)

INTERNATIONAL ATOMIC ENERGY AGENCY, OECD NUCLEAR ENERGY AGENCY, The International Nuclear Event Scale (INES) User's Manual, 2001 Edition, IAEA-INES-2001, Vienna (2001)

Transport accidents

INTERNATIONAL ATOMIC ENERGY AGENCY, Regulations for the Safe Transport of Radioactive Material, Safety Standards Series No. TS-R-1 (ST-1 Revised), IAEA, Vienna (2000)

INTERNATIONAL ATOMIC ENERGY AGENCY, Planning and Preparing for Emergency Response to Transport Accidents Involving Radioactive Material, IAEA Safety Guide No. TS-G-1.2 (ST-3), IAEA, Vienna (2002)

Reactor accidents

INTERNATIONAL ATOMIC ENERGY AGENCY, Generic Assessment Procedures for Determining Protective Actions during a Reactor Accident, IAEA-TECDOC-955, IAEA, Vienna (1997)

Radiological emergencies

INTERNATIONAL ATOMIC ENERGY AGENCY, Generic Procedures for Assessment and Response during a Radiological Emergency, IAEA-TECDOC-1162, IAEA, Vienna (2000)

Emergency monitoring

INTERNATIONAL ATOMIC ENERGY AGENCY, Generic Procedures for Monitoring in a Nuclear or Radiological Emergency, IAEA-TECDOC-1092, IAEA, Vienna (1999)

Meteorology

WORLD METEOROLOGICAL ORGANIZATION, Manual on the Global Data-processing System, (Annex IV to the WMO Technical Regulations), Appendices I-1, I-3 and II-7, WMO-No. 485

WORLD METEOROLOGICAL ORGANIZATION, Documentation on RSMC support for environmental emergency response, WMO-TD/No. 778.

Medical aspects

INTERNATIONAL ATOMIC ENERGY AGENCY, WORLD HEALTH ORGANIZATION, Diagnosis and Treatment of Radiation Injuries, Safety Reports Series No. 2, IAEA, Vienna (1998)

INTERNATIONAL ATOMIC ENERGY AGENCY, WORLD HEALTH ORGANIZATION, Planning the Medical Response to Radiological Accidents, Safety Reports Series No. 4, IAEA, Vienna (1998)

Food and agriculture

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, INTERNATIONAL ATOMIC ENERGY AGENCY, Guidelines for Agricultural Countermeasures Following an Accidental Release of Radionuclides, Technical Reports Series No. 363, IAEA, Vienna (1994)

EUROPEAN COMMISSION, EU Food Restriction Criteria for Application after an Accident, Radiation Protection 105, European Commission, Directorate General Environment (1998)



1	INTRODUCTION
2	PLANNING BASIS
3	EMERGENCY RESPONSE
4	EMERGENCY PREPAREDNESS
A	LEGAL AUTHORITIES
B	RESPONSE ROLES
C	PREPAREDNESS ROLES
D	DEFINITIONS AND ABBREVIATIONS
E	BIBLIOGRAPHY