

Joint Radiation Emergency Management Plan

*of the
International Organizations*

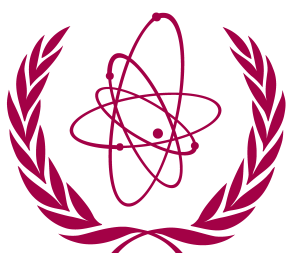
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Joint Radiation Emergency Management Plan

of the International Organizations

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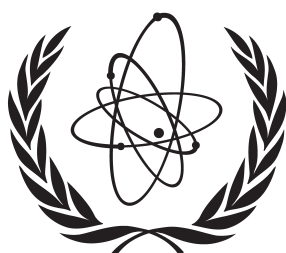
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IAEA

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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 assigned to it under these Conventions, to which, in addition to a number of States, the European Union (EURATOM), 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 issued Safety Requirements, entitled “*Preparedness and Response for a Nuclear or Radiological Emergency*” (GS-R-2), jointly sponsored by the FAO, IAEA, the International Labour Organization (ILO), the OECD Nuclear Energy Agency (OECD/NEA), 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 is recognized by the participating organizations, and reflected in the above requirements, that good planning in advance of an emergency can substantially improve the response. 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. The various organizations reflect these arrangements in their own emergency plans.

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 the two Conventions are invited to adopt arrangements

¹ EPR-ENATOM (2004): Emergency Notification and Assistance Technical Operations Manual, IAEA, Vienna (2004). 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.

that are compatible with those described here when providing relevant information about nuclear or radiological emergencies to relevant international organizations, in order to minimize the radiological consequences and to facilitate the prompt provision of information and assistance.

This document is the fourth edition of the Joint Plan. The third edition was co-sponsored by the European Commission, EUROPOL, FAO, IAEA, INTERPOL, OCHA, OECD/NEA, OOSA, PAHO, UNEP, WHO and WMO in co-operation with the International Civil Aviation Organization (ICAO). The present edition is additionally co-sponsored by the International Maritime Organization (IMO) and in co-operation with United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR).

The Joint Plan does not prescribe arrangements between the participating organizations, but describes a common understanding of how each organization acts during a response and in making preparedness arrangements. It describes the arrangements as envisaged from 1 December 2006, by which time each participating organization needs to have initiated the steps necessary for harmonizing its own response plans and arrangements with the 2006 edition. The subsequent edition is envisaged for release in December 2008.

Although a controlled distribution list is maintained for the Joint Plan and any amendments, it is not restricted in its availability. An up-to-date version is maintained on the IAEA's public web site under <http://www-ns.iaea.org/tech-areas/emergency/inter-liaison.htm>.

DISCLAIMER NOTICE

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 participating 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 2006 and supersedes all previous editions. All copies of previous editions should now be removed from operational response systems and either archived or destroyed.

The 2006 edition incorporates the following main changes over the previous 2004 edition:

- New participating organizations (IMO, UNSCEAR); their associated legal bases, capabilities in response and preparedness, and integration into the response operations.
- New incident and emergency preparedness and response structure at IAEA.
- Additional clarification of arrangements and response tasks.
- Updated contact details.

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Summary

Introduction

This “*Joint Emergency Management Plan of the International Organizations*” (Joint Plan) describes the inter-agency framework for preparedness for and response to an actual, potential or perceived radiation emergency irrespective of its cause.

The application of the Joint Plan is limited to the participating international organizations, namely the **European Commission (EC)**, the **European Police Office (EUROPOL)**, the **Food and Agriculture Organization of the United Nations (FAO)**, the **International Atomic Energy Agency (IAEA)**, the **International Civil Aviation Organization (ICAO)**, the **International Criminal Police Organization (INTERPOL)**, the **International Maritime Organization (IMO)**, the **Nuclear Energy Agency of the Organization for Economic Co-operation and Development (OECD/NEA)**, the **Pan American Health Organization (PAHO)**, the **United Nations Environment Programme (UNEP)**, the **United Nations Office for the Co-ordination of Humanitarian Affairs (OCHA)**, the **United Nations Office for Outer Space Affairs (OOSA)**, the **United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)**, the **World Health Organization (WHO)** and the **World Meteorological Organization (WMO)**. The IAEA is the main coordinating body for maintenance of the Joint Plan, which is issued biennially.

The Joint Plan is not intended to interfere with the domestic emergency response obligations and arrangements of sovereign States. However all States are invited to consider interfacing with the arrangements described when providing information about radiation emergencies in order to minimize the consequences and to facilitate the prompt provision of information and assistance.

Planning basis

States have the ultimate responsibility to protect life, property, the environment and quality of life on their territories. National regulatory bodies require site-specific emergency plans for their nuclear installations. Despite extensive precautions, if a significant release of radioactive material occurs, other States will need information to be able to advise on any protection issues and consider the need for environmental monitoring. Other radiation emergencies (e.g. involving radioactive sources used in medicine, research or industry), though generally local in extent, are more likely. State authorities and relevant international organizations may need authoritative information to address any public anxiety, including rapid confirmation or investigation of situations indicating a possible radiation emergency. The Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency are the prime legal instruments to facilitate the international exchange of information and prompt provision of assistance. Relevant international organizations have roles under these Conventions, and other statutory and legally assigned functions related to facilitating information exchange and assistance.

Emergency response

Situations warranting specific response under the Joint Plan include: (1) a site area emergency or (2) a general emergency at a nuclear installation, and (3) a missing dangerous source, (4) a space object re-entry, (5) elevated radiation levels of unknown origin, or (6) any other radiation emergency or threat.

In accordance with the relevant Conventions, the IAEA — as the focal organization for response — has the prime responsibility to activate the inter-agency response system. It receives reports of an emergency from a designated competent authority in a State and verifies any unconfirmed reports. It establishes primary functional links with the reporting State and any affected States, providing direct communication with their national radiation emergency response organizations. It also establishes functional links with WMO, WHO, OCHA, FAO and other relevant international organizations. These organizations may establish links with other competent agencies, regional centres and programmes that are prepared to provide assistance. Emergency communication channels include voice, fax, the internet and dedicated networks.

Any participating international organization that receives a request for assistance in response to a radiation emergency will inform the IAEA and other relevant international organizations and coordinate the provision of assistance with them, locally and regionally.

If a State requests the IAEA for assistance under the Assistance Convention: the IAEA 1) informs the relevant international organizations that could provide assistance; 2) evaluates the situation, in coordination with relevant international organizations, and may send an initial assessment team with terms of reference agreed upon with the requesting State; 3) develops, in coordination with other international organizations, a detailed action plan of assistance and, upon acceptance of the plan by the requesting State, obtains authorization for deployment of assets from relevant competent authorities and international organizations.

Emergency preparedness

The Inter-Agency Committee on the Response to Nuclear Accidents (IACRNA), composed of representatives from each participating international organization, is the coordination mechanism to ensure that an effective emergency response capability is developed and maintained among the organizations.

Detailed inter-agency procedures, communication 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 time. The Plan and supporting material is reviewed and updated at least biennially.

The Committee coordinates inter-agency exercises so that participating organizations can periodically exercise its arrangements under the Joint Plan. The participating organizations make efforts to harmonize their programmes for assisting States to strengthen national and regional arrangements. They encourage their counterparts at national level to strengthen their cooperation and ensure that arrangements are coordinated nationally so that they are compatible with the inter-agency arrangements described in the Joint Plan.

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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 a nuclear or radiological emergency irrespective of its cause.

In particular, its objectives are:

1. To provide a common understanding of the emergency response objectives, responsibilities, authorities and capabilities of each participating international organization;
2. To 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 irrespective of their cause;
3. To facilitate development of agreements among the participating international organizations on practical issues, if appropriate;
4. To provide a common understanding of the process for improving and changing the inter-agency response arrangements;
5. To 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. To guide the managers in each participating organization who need to ensure that all appropriate arrangements are given the necessary support within their organization;
7. To facilitate the well founded development, maintenance and training of plans and procedures for each organization;
8. To 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 Joint Plan.

1.3. Participating international organizations

The **European Commission (EC)**, the **European Police Office EUROPOL**, the **Food and Agriculture Organization of the United Nations (FAO)**, the **International Atomic Energy Agency (IAEA)**, the **International Civil Aviation Organization (ICAO)**, the **International Criminal Police Organization (INTERPOL)**, the **International Maritime Organization (IMO)** the **Nuclear Energy Agency of the Organization for Economic Co-operation and Development (OECD/NEA)**, the **Pan American Health Organization (PAHO)**, the **United Nations Environment Programme (UNEP)**, the **United Nations Office for the Co-ordination of Humanitarian Affairs (OCHA)**, the **United Nations Office for Outer Space Affairs (OOSA)**, the **United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR)**, 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 in parallel with the Emergency Notification and Assistance Technical Operations Manual (ENATOM). The Joint Plan does not include procedures for its implementation.

The Joint Plan is intended to be in harmony with the plans and procedures of other participating organizations (for example, the ENATOM, the internal plan and procedures of the IAEA (RAP), those of the WHO (REMPAN) and EC (ECURIE)

⁴ In the context of this Plan, the term 'international organization' is used to mean 'international intergovernmental organization' including specialized agencies and related organizations of the UN system as well as relevant programmes, offices or entities of the United Nations. It excludes non-governmental organizations.

systems, the procedures of the WMO (WMO-No. 485; WMO-TD/No. 778) and the relevant annexes of the Chicago Convention of ICAO).

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 carrying radioactive material.

2.1.1. Emergencies specific to nuclear installations

Although the probability of 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 the licensee to have 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 Table I of FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (2002).

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 major 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 break-up 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 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 to avoid 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 in a year.

⁸ The IAEA typically receives a few reports about possible emergencies per month that need 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 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, Safety Series No. 115, IAEA, Vienna (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, IAEA, Vienna (2002)*.

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

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

Section
3

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 a useful adjunct to this co-operation.

3.2. Principal responsibilities

Under Article 2, States Parties to the Early Notification Convention forthwith notify affected States and the IAEA of a significant transboundary release and provide relevant information to minimize the consequences. The IAEA forthwith informs States Party, IAEA Member States, other States that may be affected and relevant international organizations of the notification received and, on request, promptly provides them with relevant information received.

Under Article 2, States Parties to the Assistance Convention and/or 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 responsibility 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: EC, EUROPOL, FAO, IAEA, ICAO, IMO, INTERPOL, PAHO, UNEP, OCHA, OOSA, WHO and WMO.

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.

Table 1. Response tasks and responsible organizations

Response task	Responsible
To 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>	IAEA OOSA EC
To offer good offices	IAEA
To 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 Additionally, if space object re-entry	IAEA OOSA
To receive notifications from IAEA of emergencies with potential for transnational impact, or requests for assistance	WHO, FAO, WMO, OCHA, EC, OOSA, PAHO, IMO
To arrange for provision of information to aircraft in flight about atmospheric releases of radioactive materials	ICAO
To arrange for provision of information to vessel at sea or in port about atmospheric releases of radioactive materials	IMO
To facilitate exchange of international criminal intelligence	INTERPOL, EUROPOL
To activate inter-agency emergency organization	IAEA
To co-ordinate inter-agency response to nuclear or radiological emergency	IAEA
To co-ordinate overall inter-agency response to disaster or complex emergency	OCHA
To co-ordinate provision of international humanitarian assistance <i>Within European Union inform of applicable maximum permissible levels of radioactive contamination for foodstuffs and feeding stuffs</i>	OCHA EC
To arrange for advice or assistance (on request directly by a State or through another relevant international organization) on: potential radiological hazards, assessment of facility conditions and accident mitigation atmospheric dispersion predictions physical dosimetric measurement services; radiological assessment and application of international standards as mentioned in para. 2.8 public health assessment biological and clinical dosimetry re-establishing disrupted police services emergency reception centres, emergency social services , including lodging, food, clothing, registration, inquiry and personal services radiation protection support, personnel and equipment for operations in affected areas emergency medical diagnosis and treatment of radiation or potentially contaminated casualties longer term medical treatment mitigation of mental health impact agricultural countermeasures environmental monitoring and sampling programmes for interventions related to food implementation and enforcement of control measures for imported and exported foods and feedstuffs and on food control investigating crimes and seeking international suspects environmental monitoring and sampling programmes and assessment of long term impact and advice on relocation, resettlement and decontamination response on a vessel at sea or in port	IAEA WMO IAEA WHO, PAHO WHO, PAHO, IAEA INTERPOL OCHA IAEA IAEA, WHO, PAHO WHO, PAHO WHO, PAHO FAO IAEA, WHO, PAHO, FAO FAO INTERPOL IAEA, WHO, PAHO, UNEP, FAO IMO
To confer and agree , to the extent possible, on the content of any media releases	IAEA, WHO, EC, EUROPOL, INTERPOL, OCHA, PAHO, FAO, WMO, UNSCEAR, NEA, OOSA, IMO
To assess the levels and effects of the radiation exposure and disseminate findings to the UN General Assembly, the scientific community and the public	UNSCEAR

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.

3.4. 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 impact on health, property or the environment, the size of any affected area, and the level of public interest.

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 authority¹¹ 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 assistance¹². 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.

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, may be contacted by a requesting party. These organizations include, for example, the World Customs Organization (WCO), the International Labour Organization (ILO), 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.

¹¹ 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.

¹² Europol and Interpol have an operational agreement that provides for the exchange of criminal intelligence. Within the framework of this agreement, a Europol Liaison Officer has been placed at Interpol Headquarters to facilitate and support the information flow between the two organizations and to encourage cooperation.

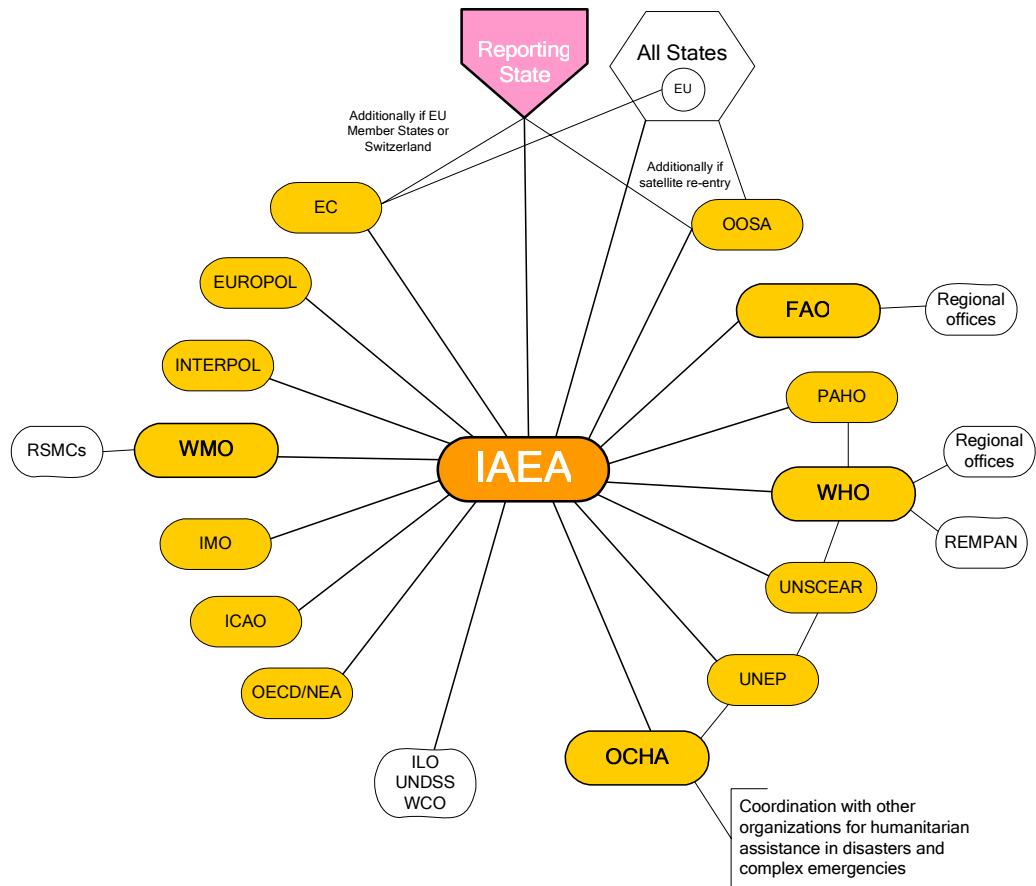


Figure 1. Framework for inter-agency response to nuclear or radiological emergencies. Each organization also has links with the relevant authorities in its own member states for performing its usual functions.

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 or intergovernmental organizations and requests an appropriate notification or advisory message (see Section 3.6 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 on ENAC¹³; and/or, in co-ordination with the relevant States as appropriate, publish information on IAEA.ORG¹⁴ 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

¹³ The IAEA’s “Emergency Notification and Assistance Convention” protected web site.

¹⁴ IAEA.ORG is the IAEA public site on the World Wide Web.

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 standards¹⁵.

- 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: 1) to pre-empt legitimate requests from other States Party to the Assistance Convention for 'assistance' in obtaining information¹⁶; 2) to trigger the IAEA to offer its good offices¹⁷; 3) to 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 worsen¹⁸; 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) to otherwise alert IAEA emergency 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 a report with the competent authority of the reporting State that issued it, and takes actions according to the relevant part of Section 3.7 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 information exchange system (ECURIE) to authenticate the message and retransmit it, and any subsequent information, to the designated contact points¹⁹ in each Member State of the European Union, and Switzerland.

In the case of a re-entry or possible re-entry of a satellite or other space object with nuclear power sources²⁰ on board, the launching State²¹ of the satellite or space object shall additionally transmit notifications to other concerned States and OOSA²² (see Section 3.7.6 below for subsequent actions).

¹⁵ FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (2002).

¹⁶ Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 2.

¹⁷ Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 5.

¹⁸ So that, e.g. the IAEA can carry out its functions effectively under the Convention on Early Notification of a Nuclear Accident (1986) – Article 4.

¹⁹ 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.

²⁰ Including nuclear reactors and radioisotope thermal generators.

²¹ The State that exercises jurisdiction and control over a space object with nuclear power sources on board at a given point in time.

²² Principles Relevant to the Use of Nuclear Power Sources in Outer Space, Principle 5, UN General Assembly Resolution 47/68 of 14 December 1992.

3

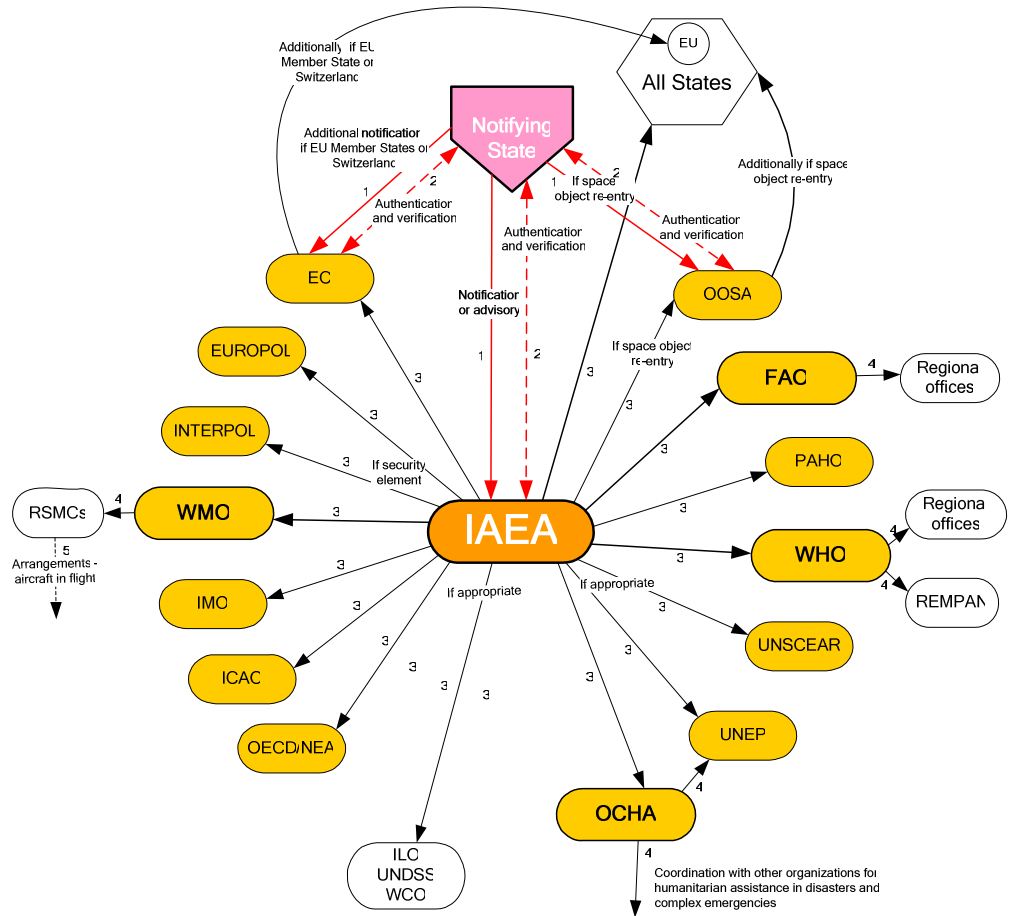


Figure 2. Concept of operations for initial notification or advisory of a nuclear or radiological emergency, and initial activation process. Numbers indicate the order in which information will be cascaded. In addition to the processes shown here, the notifying State is normally expected to notify affected States directly. Note also that in practice, information is disseminated from Regional Specialized Meteorological Centres (RSMCs) to Meteorological Watch Offices (MWOs) through National Meteorological Centres (NMCs).

3.7. Activation and immediate response actions

Six sets of emergency conditions (two classes of emergency specific to nuclear installations and four types of emergency not specific to nuclear installations) are used to describe various situations that warrant immediate response actions by various participating organizations under this Plan (Figure 3):

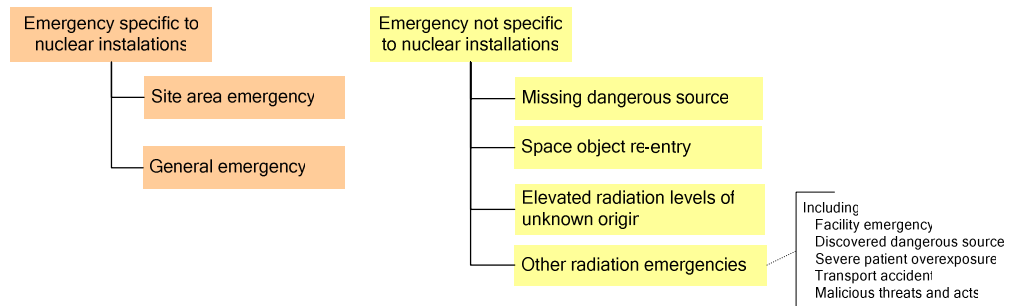


Figure 3. Six sets of emergency conditions, grouped into two classes and four types, used to describe situations that warrant immediate response actions under this Plan

Emergencies specific to nuclear installations For emergencies specific to nuclear installations⁵, two emergency classes²³ 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 source²⁴
4. Space object re-entry²⁴
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 threat²⁵

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

Emergencies specific to nuclear installations

3.7.1. 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 3.7.2 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, INTERPOL, EUROPOL, EC and PAHO of the advisory message received, which it also posts on ENAC; 4) it establishes primary communication channels with the reporting State; 5)

²³ 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 (2002), Para. 4.19. It is recognized that at 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.

²⁴ An 'uncontrolled source emergency' as specified in *ibid*.

²⁵ 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*.

the WMO retransmits²⁶ relevant information received from IAEA to all State National Meteorological Services (NMSs); 6) the reporting State provides further information, which the IAEA posts on 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 on ENAC and reports to the requesting competent authorities; 8) if there are a sufficient number of requests for information or a need to counter rumours, the IAEA sends an advisory message to States²⁷.

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

3.7.2. 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) the IAEA promptly informs all States, WMO, FAO, WHO, OCHA, INTERPOL, EUROPOL, EC, UNSCEAR and PAHO of the notification received, which it also posts on 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 1000 km of the nuclear facility (nuclear power reactor), or 50 km (research reactor);
- 5) the WMO activates, and retransmits²⁸ 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 (AGE) to the IAEA's Incident and Emergency Centre (IEC) in Vienna; FAO's Nuclear Emergency Crisis Network of Technical Experts (ECN) is put on standby;
- 8) the notifying State sends further information to the IAEA, which the IAEA forwards to States and 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

²⁶ As a backup to the IAEA report of the advisory message and to alert National Meteorological Services (NMSs).

²⁷ The IAEA also provides received INES/NEWS reports to INES national officers and/or NEWS users.

²⁸ As a backup to the IAEA report of the notification and in order to speedily activate meteorological support.

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, and posts them on ENAC; 12) the RSMCs disseminate²⁹ the information to ICAO meteorological watch offices (MWOs) and world area forecast centres (WAFCs);

13) the IAEA may request information under predefined criteria 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 posts key data and summaries of the data on ENAC;

14) competent authorities may submit requests for information to the IAEA, who compiles them, forwards them to the relevant State, collates replies and posts them on ENAC, and informs the requesting competent authority; 15) if there is a need to counter rumours, the IAEA sends an advisory message to States; 16) the IAEA issues press release(s) and posts them to IAEA.ORG, to the extent possible in co-ordination with the notifying and affected States²⁷.

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

Emergencies not specific to nuclear installations

3.7.3. Missing dangerous source

Description: Lost or stolen dangerous³⁰ 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 report of a missing dangerous source that is of actual, potential or perceived radiological significance for States other than the reporting State³¹, 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 reporting State; 1b) the IAEA activates partially; 1c) the IAEA promptly informs relevant States of the report received; 1d) offers its good offices to the relevant States; 1e) The reporting State may send additional information to the IAEA; 1f) respecting any confidentiality constraints, the IAEA forwards the additional information to relevant competent authorities and posts the report and additional information on ENAC.

²⁹ In practice, this information is disseminated to MWOs through NMCs.

³⁰ **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.

³¹ According to para. 4.15 of the Safety Requirements: Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2 (2002).

Otherwise 2) the IAEA offers its good offices to the reporting State.

3) If the event involves criminal activities, the IAEA will establish liaison with INTERPOL, EUROPOL, WCO or other relevant organizations; 4) if other competent authorities request information, the IAEA compiles the requests, forwards them to the notifying State, and receives replies, which, respecting any confidentiality constraints, it posts on 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.

3.7.4. 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;
- 3) the IAEA offers its good offices to the launching State, forthwith informs all States, WMO, FAO, WHO, OCHA, EC, IMO and PAHO of the notification received, which it also posts on 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 impact of the satellite or space object, or component parts thereof, the launching State (and where appropriate, affected States) informs 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 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.

3.7.5. Elevated radiation levels of unknown origin

Description: Unusually high³² 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 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) the IAEA promptly informs other relevant competent authorities (and FAO if the high levels are in food) of the notification received, which it also posts on ENAC, and offers its good offices to them; 4) it establishes primary communication channels with the reporting 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 rumours, the IAEA, in co-ordination with relevant States (and FAO if appropriate), 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. Other radiological emergency

Description: Any other radiological emergency not specifically addressed above³³, which is of actual, potential or perceived radiological significance for more than one State³⁴ – or for which the reporting State wants: to pre-empt legitimate requests for information to protect health, property or the environment under the Assistance Convention³⁵; to obtain the IAEA's good offices³⁶, to provide advanced warning to the IAEA in order that it can prepare to meet its obligations³⁷ effectively; or to provide information to other competent authorities that they may initiate an

³² For example, radiation levels at least ten times above normal.

³³ 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 of patients; a transport accident; or other threat

³⁴ 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 State, 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.

³⁵ Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 2.

³⁶ Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 5.

³⁷ Convention on Early Notification of a Nuclear Accident (1986) – Article 4.

administrative response and/or provide advice to their governments, public or media regarding protection issues³⁸.

Concept of operations:

- 1) The IAEA immediately offers its good offices to the reporting State.
- 2) If the IAEA receives report that the event is of actual, potential or perceived radiological significance for States other than the reporting State³⁴, a) the IAEA activates partially; respecting any confidentiality constraints, promptly informs relevant States, WMO, FAO, WHO, OCHA, IMO, EC, UNSCEAR and PAHO as appropriate of the report; establishes primary communications channels with the reporting State; offers its good offices to relevant States and international organizations; and respecting any confidentiality constraints, posts the report on 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 reporting State sends additional information to the IAEA, which the IAEA, respecting any confidentiality constraints, forwards to States as appropriate and posts the information on ENAC;
- 4) If the emergency involves a dangerous³⁰ source that is damaged, stuck, involved in fire, found or detected (including those being used for criminal or terrorist purposes), or has lost its shielding, 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 will establish liaison with INTERPOL, EUROPOL, WCO or other relevant organizations, as appropriate.
- 6) If a release in the atmosphere is involved, the IAEA will inform the WMO and request meteorological transport model predictions from the lead WMO RSMCs. The RSMCs disseminate³⁹ the information to ICAO MWOs and WAFCs.
- 7) If the event occurs on a vessel at sea or in port, the IAEA establishes liaison with IMO and may solicit technical expertise and guidance from IMO on maritime issues, as required.
- 8) 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 (and 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.

³⁸ For example, a transport accident or report of a non-specific terrorist threat.

³⁹ In practice, this information is disseminated to MWOs through NMCs.

9) 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.

10) 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 IAEA co-ordinates the radiological component of the response.

11) 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 on ENAC and reports to the requesting competent authorities.

12) If the event involves significant numbers of serious overexposures or widespread contamination of water, surface, people or commodities or is of significant concern to the UN General Assembly or to the public, the IAEA establishes liaison with the UNSCEAR secretariat with a view to coordinating a review of levels and effects of the exposures for the UN General Assembly, the international scientific community and the public.

13) If there are a sufficient number of requests for information or a need to counter 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 release²⁷.

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

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 generic and non-personal.

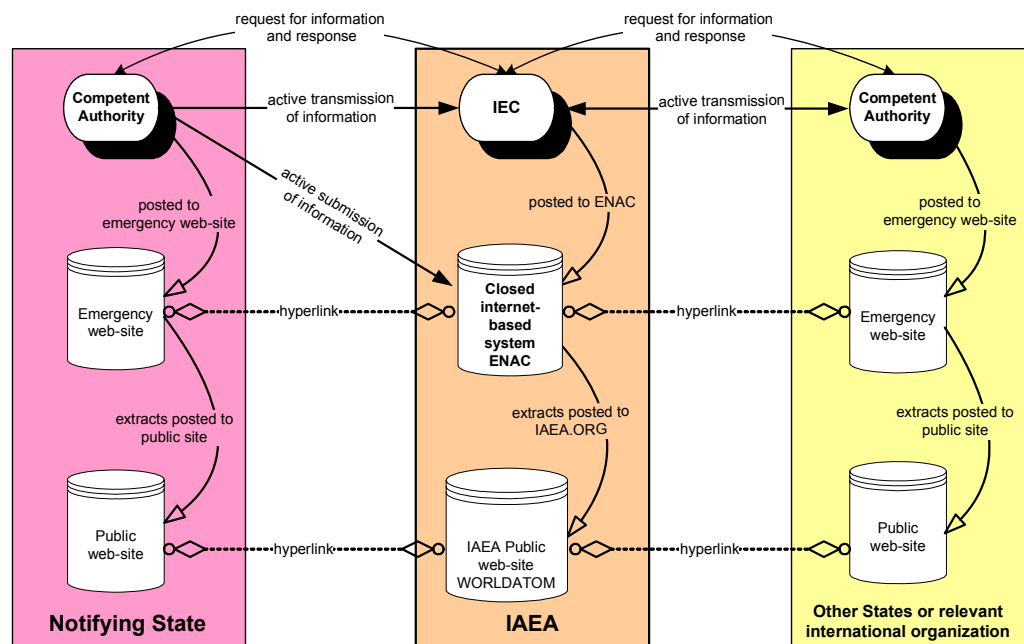


Figure 4. Concept of operations for emergency information exchange.

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's Incident and Emergency Centre (IEC), 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.

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, respecting confidentiality constraints. 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 it on the IAEA.ORG 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, for example, information on patients and the exact location of found dangerous sources shall normally only be provided on a strict need-to-know basis.

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 in the context of existing agreements;
- To 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);
- To 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;
- To promote the efficient provision of assistance to Member States, since several organizations may be approached with the same request;
- To 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's IEC, when activated, maintains a dedicated telephone line for communication with other international organizations.

If a nuclear or radiological emergency is of such a magnitude that the response of the IAEA and other organizations will continue for several days and considerable technical coordination will be required, each relevant international organization will consider sending knowledgeable staff 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.

3.10. 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)*. Assessment of risks shall to the extent reasonable be based on the published findings of the UNSCEAR. 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 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.

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

- 1) The IAEA’s IEC, 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 IEC evaluates the situation and, in co-ordination with relevant international organizations, provides initial advice to competent authorities.
- 3) The IEC may send an initial field response team consisting of technical staff member(s) or qualified expert(s) according to the scope of the mission agreed with the requesting State. The scope prescribes the objectives of the initial assistance mission (to include evaluation of the situation and advice on additional actions needed including resources from States Parties to the Assistance Convention or those of other relevant international organizations), team leadership, communication protocols, media arrangements etc.
- 4) If additional actions are needed, the IEC develops, in co-ordination with assisting States and other international organizations, an action plan of assistance including all technical, financial, legal, diplomatic, organizational and logistic aspects, mission objectives, team leadership, communication protocols, media arrangements, etc. Upon acceptance of the assistance action

plan by the requesting State, the provision of assistance will be implemented. If needed, additional resources may be placed on standby.

The requesting State is responsible for the overall direction, support, and supervision of any assistance within its territory.

3.11. Public information

Any media releases will be factual and based on the role and responsibilities of 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 will 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

3.12. Emergency deactivation

When the emergency is under control and has been stabilized, the IEC will inform those contact points that have been activated that the IEC is deactivating, and will post the status of the IEC on ENAC.

3.13. Post-emergency follow-up

At the request of one of the Committee members, the Secretariat of the Inter-Agency Committee on the Response to Nuclear Accidents (IACRNA) consults with other members with a view to convening a special meeting of the Committee. The objectives of such a meeting include the following:

- a) to share technical and administrative information about the emergency, its consequences and actions taken or planned;
- b) to coordinate the long-term follow-up strategy and activities of the relevant international organizations to avoid critical gaps, duplication, inconsistencies and inefficiencies, consistent with the mandates of the various organizations;
- c) to analyse lessons identified from the emergency and its response, and to plan and implement actions to systematically address these lessons in the context of the Joint Plan.

The IACRNA will, to the extent possible, encourage relevant organizations to take coordinated 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.

Any organization that has a significant role with respect to preparedness or response for nuclear or radiological emergencies is eligible for membership of the Committee. The Committee corresponds as necessary with other relevant organizations, may invite such organizations to send representatives to attend its meetings as observers, or may co-opt representatives to the Committee for specific purposes.

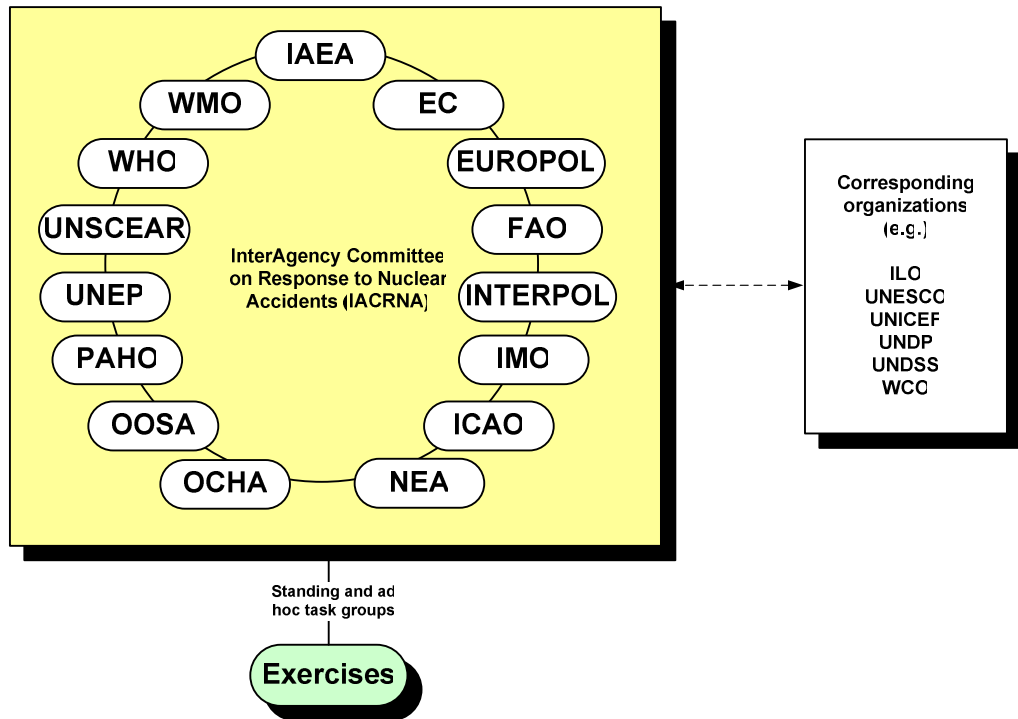


Figure 5 Structure for developing and maintaining preparedness.

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 emergency⁴⁰, using the guiding principles expressed in Section 2.8 above. Specific capabilities to meet the responsibilities are described in Appendix C. It is recognized that special capabilities or responsibilities ought not to be duplicated or inconsistent.

It is the responsibility of the Secretariat of the Committee to co-ordinate the maintenance and updating of this Joint Plan. All participating organizations support this effort. The Secretariat of the Committee serves as the office of record for the Plan and supporting materials, and maintains files related to the planning effort. The Secretariat and participating organizations maintain lists of any controlled copies of the Joint Plan and Joint Plan holders to ensure appropriate changes are received by all relevant parties.

Implementation and maintenance

⁴⁰ In particular, the 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).

4

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 Committee establishes, based on an identified need, standing and/or ad hoc working groups. The main functions of these working groups are:

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

These working groups are composed of persons designated by the organizations as their representatives and will report to the Committee. The individuals assigned to any of the working groups need to have authority to commit the necessary resources to implement the major agreed operational procedures within the organizations they are representing. They need to 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 Committee through the Joint Plan. Each organization meets the costs for the participation of their representatives in any working groups. The working groups submit the results of their assigned tasks to the Committee for approval.

4.4. Inter-agency procedures and arrangements

Detailed inter-agency procedures, communication channels and response arrangements, including those for providing media information, documented separately from this Plan, are formalized by a simple exchange of letters between the parties, and may be independently updated from time to time⁴¹. 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. 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.

The IACRNA Secretariat maintains a system for sharing among participating organizations lists of Member States, parties to the Conventions, and contact point information.

4.5. Financing

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

⁴¹ A list of current inter-agency procedures is given in Appendix A.

4.6. Feedback from actual responses

Following response to an actual emergency and if appropriate, the IACR/NA Secretariat compiles a short critique of deficiencies in the Joint Plan and inter-agency arrangements, and initiates any appropriate follow-up corrective actions.

4.7. Training and exercises

Each organization participating in this Plan, in conjunction with relevant States, periodically exercises their arrangements under this Plan. Each organization coordinates its exercises with the Committee to avoid duplication and invites participation by other organizations.

In particular, the IAEA prepares and conducts communication drills and exercises entitled ConvEx at three levels. These exercises, each with fixed objectives, take place according to a predetermined schedule and are described in ENATOM. The Committee organizes table-top exercises from time to time for the Secretariats of the participating organizations aimed at testing speed and effectiveness of coordination mechanisms. All organizations participating in the Joint Plan may take part in any of these exercises, but in particular they take part in the so-called ConvEx-3 exercise.

ConvEx-3

Large scale joint international command-post exercises (ConvEx-3 exercises), covering the early phase, are organized by the IAEA once every three to five years. They are based on a national emergency exercise that meets the following conditions:

1. The host State 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 facility licensee must be participants in the exercise.
3. The host State must be prepared to simulate an emergency involving a serious release to 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 State must guarantee their intention to establish and maintain communication links and information exchange with the IAEA's IEC throughout the exercise.
6. The host State must designate at least one person to work over an 18-month period with the IACR/NA to prepare the international part of the exercise, especially the drafting of exercise manuals, and preparing and conducting the exercise evaluation.

The Committee invites countries to host such exercises and expects to receive offers at least two years in advance. The IAEA liaises with the countries offering to host the exercise and with the Committee in order to decide which State will host the exercise. This decision takes into account available resources and the expressed objectives of international organizations intending to participate. Detailed preparation begins no later than eighteen months before the scheduled date of the exercise. Preparation,

conduct and evaluation is co-ordinated through arrangements made by the Committee, as appropriate, where — after agreement by the participating organizations — States are officially invited, in a co-ordinated fashion, to participate in the agreed ConvEx-3 exercise. An *Exercise Manual*, a *Guide for Evaluators*, a *Guide for Players* and an *Evaluator Report* template are distributed to national controllers designated for such an exercise. Evaluation of the emergency exercises aim at identifying deficiencies in the Plan and inter-agency arrangements. The Committee initiates appropriate follow-up actions.

Training

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

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

The Joint Plan and inter-agency procedures of the participating organizations are reviewed and updated at such times as may be necessary, but in no case less than biennially. This update is preceded by a thorough review of the Plan's contents.

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

4.9. Change process

This Joint Plan and the attendant inter-agency procedures are 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 6, is co-ordinated and implemented by the Committee.

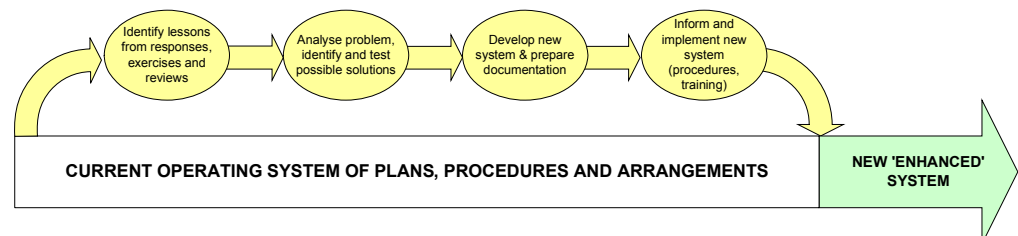


Figure 6. Concept of process for managing major changes.

4.10. Research

As part of the change process, regular reviews and feedback from exercises and real responses lead to lessons being identified. The Committee recommends and prioritizes 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 are co-ordinated to the extent possible by the Committee.

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 Committee, 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 encourage their counterparts at the national level to strengthen their co-operation as appropriate and ensure that arrangements are co-ordinated nationally in a manner that they are compatible with the interagency arrangements described in the Joint Plan.

Distribution

Controlled distribution of this Plan and any amendments is as follows:

By	To
EC	National contact points, competent authorities and national correspondents of the ECURIE system
EUROPOL	Europol National Units – ENUS (EU law enforcement national contact points) Liaison Bureaux of EU Member States and third states represented at Europol
FAO	Permanent Missions of Member States to the FAO; Regional, Subregional 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 CTBTO, EC, EUROPOL, FAO, ICAO, ILO, IMO, INTERPOL, NATO, OAS, OCHA, OECD/NEA, OOSA, PAHO, UNECE, UNEP, UNESCO, UNICEF, UNSCEAR, WCO, WHO, WMO
	UN Resident Representative (UNDP) in each State
ICAO	Contracting States of ICAO
IMO	Member States of the IMO
INTERPOL	National Central Bureaus
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 and of OAS
UNEP	Committee of Permanent Representatives (Designated National Focal Points)
UNSCEAR	Representatives of States on UNSCEAR, Director UNEP/DEWA
WHO	Member institutes of the WHO/REMPAN system, regional offices of WHO Permanent Missions of Member States to the WHO
WMO	Permanent Representatives with WMO of 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: 13, 14, 15, 16.

The following resolution of the UN General Assembly defines specific and primary responsibilities for planning for and response to humanitarian emergencies in general: 23.

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

The following Memorandum of Understanding apportions specific responsibilities for planning and response to nuclear or radiological emergencies: 28.

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.** The Constitution and General Regulations of the ICPO-Interpol and amendments .

9. Treaty on European Union (1990).
10. Convention Based on Article K.3 of the Treaty on European Union, on the Establishment of a European Police Office (Europol Convention, 1998).
11. EURATOM treaty (EU Member States 1957).
12. Statute of the OECD Nuclear Energy Agency (amended July 1995).

Relevant conventions and treaties

13. Convention on Early Notification of a Nuclear Accident (1986)¹.
14. Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986)².
15. Treaty on Principles covering the Activities of States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies (1967).
16. Convention on Registration of Objects launched into Outer Space (1975).
17. Convention on International Civil Aviation: Annex 3 – Meteorological Service for International Air Navigation, Part I, paragraphs 3.2.1e), 3.4.2g) and Part II, Appendix 1, Model SN and Appendix 9, paragraphs 1.3e) and 3.1b)3).
18. Convention on International Civil Aviation Annex 4 – Aeronautical Charts, Appendix 2, Item 72.
19. Convention on International Civil Aviation Annex 11 – Air Traffic Services, paragraphs 4.2.1.c), 6.2.2.2.1f) and 7.6.
20. Convention on International Civil Aviation Annex 15 – Aeronautical Information Services, paragraph 5.1.1.1v), Appendix 1, ENR 5.3.2.
21. International Convention for the Safety of Life at Sea (SOLAS), 1974.
22. Protocol on Preparedness, Response and Co-operation to Pollution incidents by Hazardous and Noxious Substances, 2000.

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).

United Nations General Assembly Resolutions

23. General Assembly Resolution No. 46/182, Strengthening of the co-ordination of humanitarian emergency assistance of the United Nations (1992).
24. General Assembly Resolution 47/68, The Principles Relevant to the Use of Nuclear Power Sources in Outer Space adopted on 14 December 1992.
25. General Assembly Resolution No. 2997 – Institutional and financial arrangements for international environmental cooperation, 1972.
26. General Assembly resolution No. 913(X) – Effects of atomic radiation, adopted 3 December 1955.
27. General Assembly resolution No. 60/98 – Effects of atomic radiation, adopted 8 December 2005.

Inter-Agency agreements

28. Memorandum of Understanding between the Director General of the International Atomic Energy Agency and the United Nations Disaster Relief Co-ordinator, 1977.
29. Relationship Agreement: Agreement between the International Atomic Energy Agency and the World Health Organization, entered into force May 28, 1959. INFCIRC 20, Part III.
30. Agreement between the Directors General of the IAEA and WHO to improve co-ordination in the planning and implementation of programmes, 1988.
31. Agreement between the International Atomic Energy Agency and the World Meteorological Organization, entered into force 12 August 1959.
32. Strategic Agreement on Co-operation between the European Commission and the European Police Office (EUROPOL), February 2003.
33. Operational Agreement on Co-operation between the European Police Office (EUROPOL) and the International Criminal Police Organisation (INTERPOL), November 2001.
34. Memorandum of Understanding related to Assessment, Prevention, Control and Establishment of Marine Pollution and Related Research and Monitoring between the International Atomic Energy Agency, the United Nations Environment Programme and the Intergovernmental Oceanographic Commission of UNESCO.

35. Notification and Information Exchange in a Nuclear or Radiological Emergency - Co-operative Arrangements between EC (DG TREN H.4) and IAEA (IEC), 2005.

Other agreements

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

Working arrangements between agencies

37. Working Arrangements between the International Civil Aviation Organization and the World Meteorological Organization (ICAO Doc 7475).
38. Meteorological assessment support in a nuclear emergency – co-operative arrangements between WMO and IAEA, March 2003.
39. Information exchange and technical support in relation to food and agriculture in the case of a nuclear or radiological emergency – cooperative arrangements between FAO and IAEA, April 2003.
40. Concept of Operations for response to a nuclear or radiological emergency – cooperative arrangements between WHO and IAEA Secretariats, February 2003.

Regulations, Directives and Decisions

41. EU 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).
42. EU Council Regulation of 22 December 1987 laying down maximum permitted levels of radioactive contamination in foodstuffs and animal feedingstuffs following a nuclear accident or any other case of radiological emergency (87/3954/Euratom).
43. EU 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).
44. 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.

- 45.** IAEA Board of Governors: GOV/2004/40 (Corrected): Measures to strengthen international cooperation in Nuclear, Radiation and Transport Safety and Waste Management: International action plans for strengthening the international preparedness and response system for nuclear and radiological emergencies, and on the decommissioning of nuclear facilities.
- 46.** UNEP GC Decision 22/8 of 7 February 2003 – Further improvement of environmental emergency prevention, preparedness, assessment, response and mitigation.
- 47.** UNEP GC Decision 21/17 of 9 February 2001 – Further improvement of environmental emergency prevention, preparedness, assessment, response and mitigation.
- 48.** UNEP GC Decision 20/8 of 5 February 1999 – Further improvement of the international response to environmental emergencies.
- 49.** UNEP GC Decision 19/9 of 7 February 1997 – Improvement of the international response to environmental emergencies.
- 50.** UNEP GC Decision 18/19 of February 1995 – Improvement of the international response to environmental emergencies.
- 51.** UNEP GC Decision 16/37 of May 1991 – Early warning and forecasting of environmental emergencies.
- 52.** UNEP GC Decision 17/5 of May 1993 – Application of environmental norms by military establishments.
- 53.** UNEP GC Decision 15/39 of May 1989 – Industrial accidents.
- 54.** WHO World Health Assembly Resolution WHA55.16 of 18 May 2002: Global public health response to natural occurrence, accidental release or deliberate use of biological and chemical agents or radio-nuclear material that affect health.
- 55.** WHO World Health Assembly Resolution WHA59.22 of 27 May 2006: Emergency preparedness and response.

Standards

- 56.** 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).
- 57.** FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (2002).

- 58.** International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code).
- 59.** Code of Safety for Nuclear Merchant Ships, 1982.
- 60.** Joint FAO/WHO Food Standards Programme (2006), Revised Codex Guideline Levels for Radionuclides in Foods Contaminated Following a Nuclear or Radiological Emergency for Use in International Trade; CAC/GL 5-2006.





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 Energy and Transport H.4 Radiation Protection Euroforum Building L-2920 LUXEMBOURG http://www.europa.eu.int/comm/energy/nuclear/radioprotection/index_en.htm



Responsibilities and authorities

The European Commission, which acts as the Secretariat for the European Union, has obligations to the EU Member States, and 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 Agreements with Switzerland for exchange of information in the case of a nuclear accident, whereby Switzerland have all rights and duties as defined in the Council Decision 87/600/EURATOM. Similar agreements are being negotiated with EU Candidate Countries (Croatia, 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 Energy and Transport Unit H.4, Radiation Protection. This office maintains a 24 hour standby duty for nuclear and radiological emergencies within the EU Member States, Bulgaria and Switzerland. Unit H.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, Bulgaria and Switzerland.

For radiological emergency situations the European Commission has set up arrangements for automatic exchange of environmental radiation measurement data in emergency mode through the EURDEP system⁷. Additionally a web-based system ENSEMBLE⁸ is available for compiling atmospheric dispersion modelling data from several national organizations in charge of dispersion modelling.

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) and civil protection mechanism.

EUROPEAN POLICE OFFICE (EUROPOL)

Address

Official address

Raamweg 47
P. O. Box 90850
2509 LW The Hague
The Netherlands
<http://www.europol.europa/><http://www.europol.europa.eu>

Unit responsible for nuclear and radiation issues

Serious Crime Department – SC 5
Tel: +31 (0)70 353 1163
Fax: +31 (0)70 318 0843
Email: Counterproliferation@europol.europa.eu

Responsibilities and authorities

Established as a result of the Maastricht Treaty on European Union in 1992, the European Police Office, EUROPOL, is a police organization handling criminal intelligence. EUROPOL supports law enforcement agencies in EU Member States in their investigations into serious forms of international crime.

Its aim is to improve the effectiveness and cooperation between the competent authorities of the Member States in preventing and combating all forms of serious international organised crime with an emphasis on targeting criminal organisations when their structure affects two or more member States.

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.

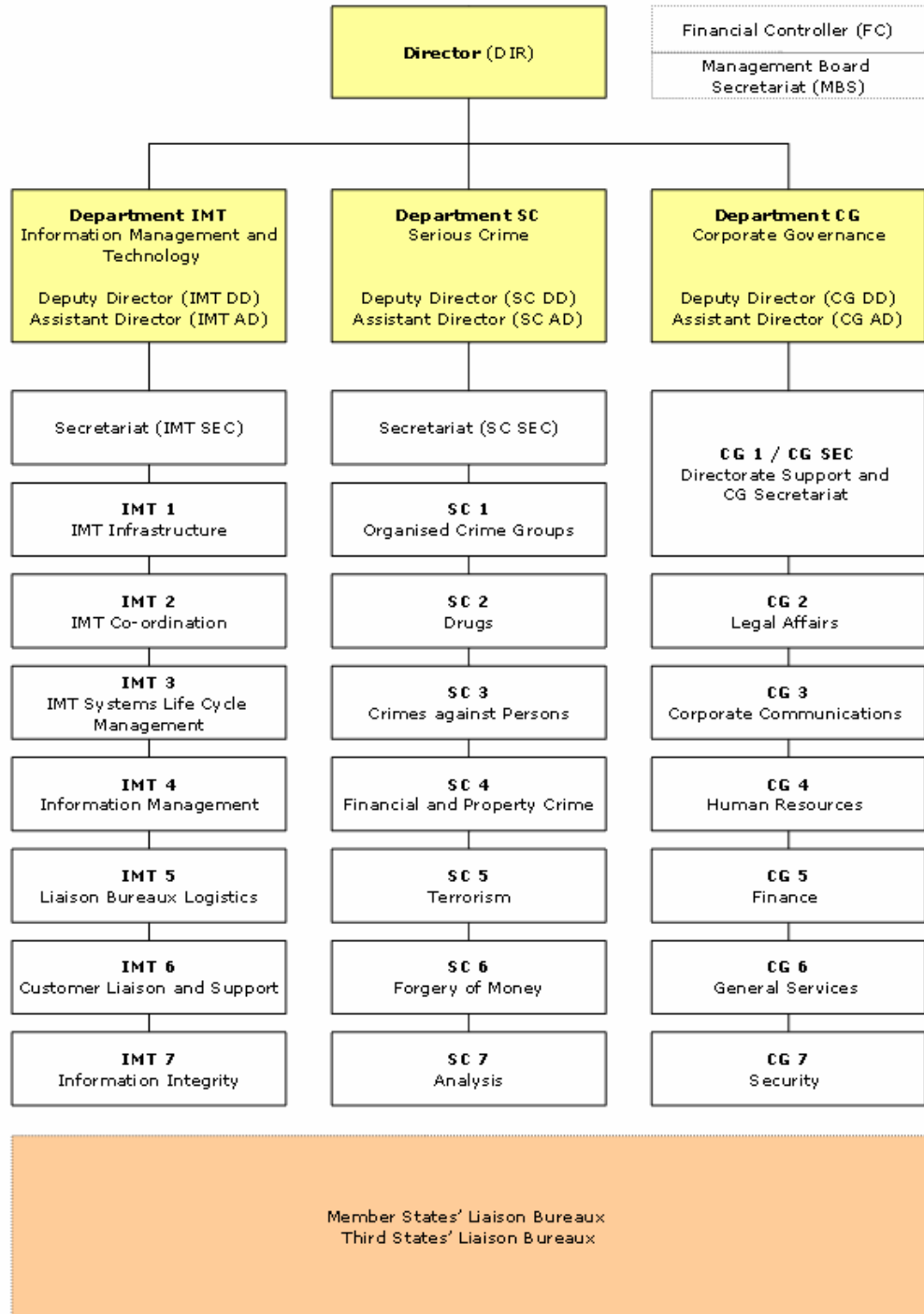
⁷ European Radiation Data Exchange Platform (<http://eurdeppub.jrc.ccc.eu.int/>)

⁸ <http://ensemble.ei.jrc.it/>

EUROPOL can offer support by facilitating the exchange of information, by providing operational analysis to Member State operations, by generating strategic reports and crime analyses, and by providing expertise and technical support for investigations and operations carried out within the EU.

EUROPOL is also active in promoting crime analysis and harmonisation of investigative techniques within Member States.

Organizational structure



Capabilities

EUROPOL is the European Police Agency that develops EU-wide criminal intelligence, which allows the preparation of appropriate decisions and the finding of accurate measures in the fight against serious organised crime.

Its added values are:

- Multi agency approach (law enforcement, security services, customs, etc)
- Multi language institution
- Quick information exchange
- European crime overview
- Investigation support (operational, technical, analytical)
- Expertise, training and European projects
- Research and development
- Legal platform for the management of EU-wide law enforcement databases
- Joint Investigative Teams

EUROPOL has arrangements for the following:

- 24/7 emergency system which involves liaison officers from all the EU member states and third states based presently at Europol as well as each unit within the Europol Serious Crimes Department
- Standard Operational Procedure for the activation of a Terrorism Crisis Centre
- Arrangements for the co-ordination of a Counter Terrorism Task Force at EU level.

B

**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

**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 Organization⁹ 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 :

⁹ Constitution of the Food and Agriculture Organization of the United Nations.

- 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 Constitution⁹;
- 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 ...

The FAO is a full party to the Early Notification and Assistance Conventions¹⁰, 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



¹⁰ Convention on Early Notification of a Nuclear Accident, Instrument of Accession, 16 Oct. 1990.

- 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.

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) to whom the Nuclear Emergencies Crisis Network of Technical Experts (ECN) reports. Under the co-operative arrangements between FAO and IAEA for information exchange and technical support in relation to food and agriculture in the case of a nuclear or radiological emergency the FAO/IAEA Joint Division (NAFA/AGE) is FAO's focal point and is expected to man the FAO desk in the IAEA Incident and Emergency Centre. The Special Emergency Programmes Service (TCES) is FAO's operational focal point responsible for responding to nuclear emergencies related to food safety and security. The essential aspects may be accessed on the Division's web site.¹¹ FAO's responsibilities include:

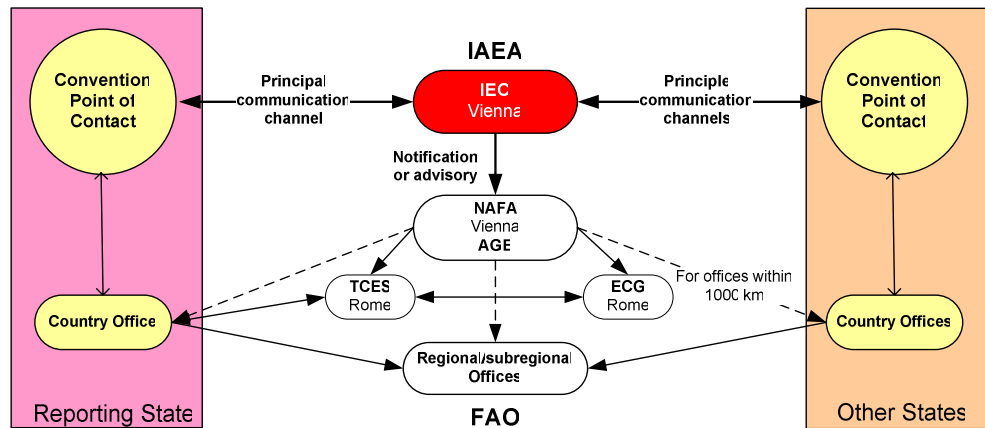
- providing relevant technical information in response to requests from FAO Member States or Parties to the Assistance Convention;
- ensuring that the FAO Regional, Subregional and National Offices are kept informed of any emergency of relevance to them;
- providing information on countermeasures and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

Organization

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

¹¹ <http://www-naweb.iaea.org/nafa/emergency/index.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>

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 requirements¹² 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 verification¹³ 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;

¹² FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (2002).

¹³ The process of confirming that the information in a message is properly understood and accurate.



- 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;
- 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:

- 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 OCHA¹⁴, 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 cooperate; 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 coordinator of all aspects of disaster relief assistance, and that the IAEA has operational responsibilities for coordinating 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.

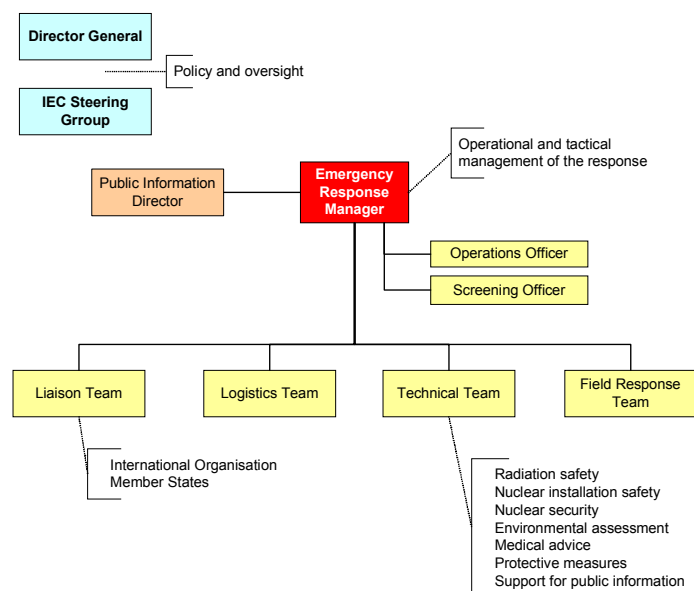
Capabilities

To fulfil its roles and responsibilities the IAEA has among others, qualified and trained human resources as well as a considerable logistic infrastructure, in particular it:

- maintains a 24/7 alert and coordination structure for radiation/nuclear safety/security related requests necessitating short-term action;
- facilitates the management of a rapid coordinated response across the Secretariat to situations that may give rise to radiological consequences irrespective of their cause;
- may engage teams of technical experts and appropriate logistics support including emergency funds, reliable telecommunications system with high degree of redundancy, full and secure Internet capabilities, databases, arrangements for rapid field deployment with appropriate monitoring equipment for round the clock operation if needed.



Organizational structure of IAEA during activation



¹⁴ Memorandum of Understanding between the Director General of the International Atomic Energy Agency and the United Nations Disaster Relief Co-ordinator, 1977.

The organizational response 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 Organizations 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 **Public Information Director (MTPI)** is the focal point for co-ordination of any media and/or public information issues.

The **IEC Steering Group** oversees the emergency response operations recommending actions in particular those of strategic nature.

See also ENATOM : Emergency Notification and Assistance Technical Operations Manual.

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:

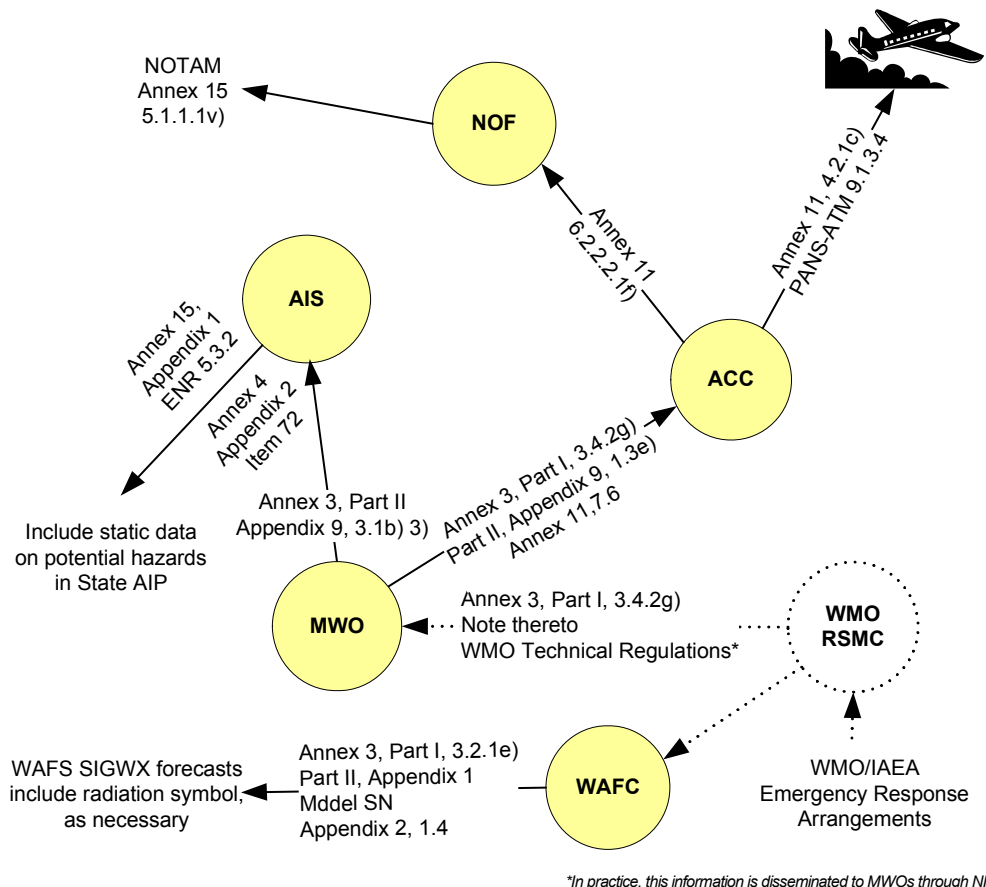
- for world area forecast centres (WAFCs) to receive information concerning the accidental release of radioactive material into the atmosphere, originating from its associated WMO regional specialized meteorological centre (RSMC)

- 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 (ATS) 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.



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).

INTERNATIONAL CRIMINAL POLICE ORGANIZATION (INTERPOL)

Address:

Headquarters

Interpol General Secretariat
200, Quai Charles de Gaulle,
69006 Lyon
FRANCE
<http://www.interpol.int>

Command and Coordination Center

IP LYON GS
Tel: +33 4 72 44 76 76.
Fax: +33 4 72 44 71 63
os-ccc@interpol.int

**Responsibilities
and Authorities**

Interpol is the world’s largest international police organization, with 186 member states. It facilitates cross-border police co-operation, and supports and assists all organizations, authorities and services whose mission is to prevent or combat international crime.

The General Secretariat- located in Lyon, France operates 24 hours a day, 365 days a year and is run by the Secretary General. Officials from more than 80 countries work side-by-side in any of the organization’s four official languages: Arabic, English, French and Spanish. The Secretariat has five regional offices; in Argentina, Côte d’Ivoire, El Salvador, Kenya, and Zimbabwe, and two liaison offices in Thailand at the United Nations in New York.

Each Interpol member country maintains a National Central Bureau staffed by national law enforcement officers. The NCB is the designated contact point for the General Secretariat, regional offices and other member countries requiring assistance with overseas investigations and the location and apprehension of fugitives.

The organization’s I-24/7 global police communications system connects law enforcement officials in all 186 member states and provides them with the means to share crucial information on criminals and criminal activities.

As criminals and criminal organizations are typically involved in multiple activities, I-24/7 can fundamentally change the way law enforcement authorities around the world work together. Pieces of seemingly unrelated information can help create a picture and solve a trans-national criminal investigation.

Using I-24/7, National Central Bureaus (NCBs) can search and cross-check data in a matter of seconds, with direct access to databases containing information on suspected terrorists, wanted persons, fingerprints, DNA profiles, lost or stolen travel



documents, stolen motor vehicles, stolen works of art, etc. These multiple resources provide police with instant access to potentially important information, thereby facilitating criminal investigations.

Interpol's databases and services ensure that police worldwide have access to the information and services they need to prevent and investigate crimes. Interpol manages several databases, accessible to the Interpol bureaus in all member countries through its I-24/7 communications system, which contain critical information on criminals and criminality. These include:

- Suspected terrorists
- Nominal data on criminals (names, photos)
- Fingerprints
- DNA profiles
- Lost or stolen travel documents
- Child sexual abuse images
- Stolen works of art
- Stolen motor vehicles

Interpol supports law enforcement officials in the field with emergency support and operational activities, especially in its priority crime areas of fugitives, public safety and terrorism, drugs and organized crime, trafficking in human beings and financial and high-tech crime.

Another component of this core function is the Interpol notice system, which serves to alert police of fugitives, suspected terrorists, dangerous criminals, missing persons or weapons threats. There are currently six colour-coded notices – Red, Blue, Green, Yellow, Black and Orange – and the Interpol-United Nations Special Notice issued for groups or individuals who are the targets of UN sanctions against Al Qaeda and the Taliban.

The Criminal Analysis Unit contributes to investigations by assisting officers working at the General Secretariat and in member countries with research and analysis on crime trends. The unit also provides training courses in criminal analysis techniques for member countries.

The Command and Co-ordination Centre (CCC) operates round the clock in all of Interpol's four official languages namely English, French, Spanish and Arabic (Operations Room) and serves as the first point of contact for any member country faced with a crisis situation (Crisis and Major Events Room).

If a terrorist attack or natural disaster does occur, the CCC mobilizes to offer and co-ordinate the organization's response.

In addition, Incident Response Teams, with Disaster Victim Identification experts, composed of officers from the General Secretariat and member countries can be dispatched to the scene within hours of an event. The CCC can also assume a co-ordination role if an attack or disaster involves several member countries or if a member country's own ability to do so has been compromised.

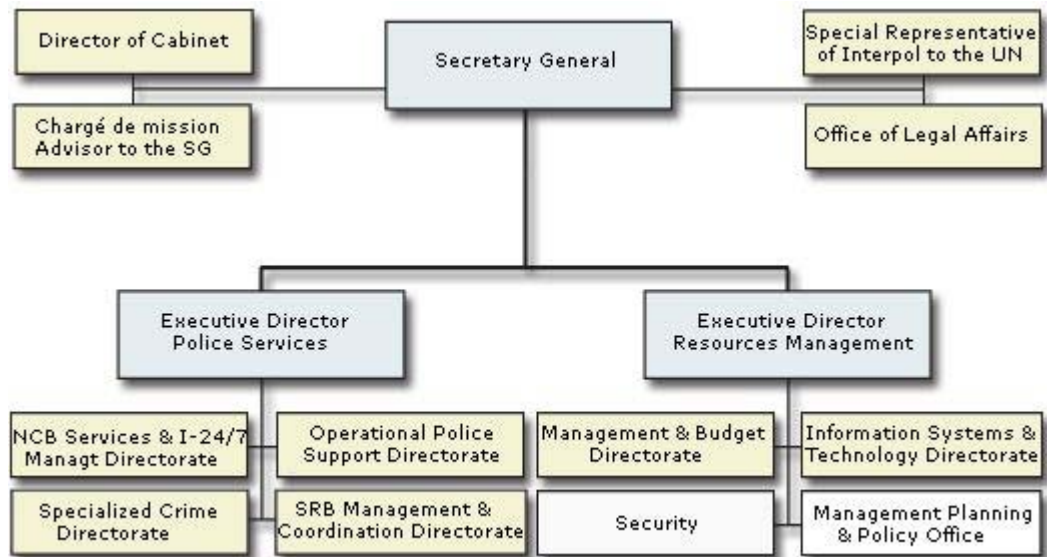


There are various other services the CCC provides, including the deployment of an Interpol Major Event Support Team, the publishing of Orange Notices, which are used to warn police, public institutions and other international organizations about potential threats posed by fugitive terrorists, disguised weapons, parcel bombs and other dangerous objects or materials.

Capabilities

Interpol maintains a range of capabilities that could be called upon and engaged to respond to a radiological or nuclear incident.

Organization



INTERNATIONAL MARITIME ORGANIZATION (IMO)

Address

Marine Environment Division
International Maritime Organization
4 Albert Embankment
London SE1 7SR
UNITED KINGDOM

Tel: + 44 20 7735 7611
Fax: + 44 20 7587 3210
Email: info@imo.org
Web: <http://www.imo.org>

**Responsibilities
and Authorities**

The International Maritime Organization is the specialized UN agency responsible for measures to improve the safety and security of international shipping and to prevent marine pollution from ships. It is also involved in legal matters, including liability and compensation issues and the facilitation of international maritime traffic. The IMO is the Secretariat to a wide array of international conventions governing all aspects of shipping, several of which are related to the transportation of nuclear substances by ship and to prevention, preparedness and response to pollution incidents from ships.

The International Maritime Organization has general responsibilities relevant to emergency response in accordance with the OPRC Convention 1990¹⁵ and its HNS Protocol¹⁶. The HNS Protocol, in particular, although not explicitly stating so, would, by its definition of hazardous and noxious substances, also normally extend to marine pollution incidents involving nuclear and radioactive substances occurring at sea or in port. The HNS Protocol is expected to enter into force in 2007.

Under the provisions of the HNS Protocol 2000:

- *Pollution incident by hazardous and noxious substances* (hereinafter referred to as "pollution incident") means any occurrence or series of occurrences having the same origin, including fire or explosion, which results or may result in a discharge, release or emission of hazardous and noxious substances and which poses or may pose a threat to the marine environment, or to the coastline or related interests of one or more States, and which requires emergency action or immediate response; and
- *Hazardous and noxious substances* means any substance other than oil which, if introduced into the marine environment is likely to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea.

IMO's responsibilities under the provisions of the HNS Protocol 2000 during an emergency are to perform the following functions and activities, resources permitting, when requested by a Party to do so:

- to receive, collate and disseminate on request the information provided by Parties and relevant information provided by other sources;
- to analyse the information provided by Parties and relevant information provided by other sources and provide advice or information to States;
- to facilitate the provision of technical assistance and advice, upon the request of States faced with major pollution incidents; and
- to provide assistance in identifying sources of provisional financing of the costs of assistance for the provision of advisory services, technical support and equipment for the purpose of responding to a pollution incident, when the severity of the incident so justifies.



As provided for under the 1973 Intervention Protocol¹⁷, the IMO also maintains and up-to-date list of recognized regional centres of expertise with specialised oil and/or HNS preparedness and response, as a source of potential experts for rapid deployment, if required.

¹⁵ International Convention on Oil Pollution Preparedness, Response and Co-operation, 1990

¹⁶ Protocol on Preparedness, Response and Co-operation to Pollution incidents by Hazardous and Noxious Substances, 2000

¹⁷ International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969

While these are the specific responsibilities of the Organization as identified in the Protocol, the IMO is more generally available to:

- co-operate with other agencies and organizations to facilitate the delivery of assistance in the event of a nuclear accident or radiological emergency involving a vessel at sea or in port;
- serve as a liaison and channel for communications with the maritime community, in the event of a nuclear emergencies or radioactive incidents at sea or in port; and
- facilitate access to specific technical information and expertise with national maritime focal points and the maritime community at large.

Organization and capabilities

The International Maritime Organization, through its Marine Environment Division, has the responsibility for the Organization's role and activities related to emergency preparedness and response to marine pollution incidents.

The professional staff of the Organization consists of technical, scientific and legal staff with particular knowledge on issues related and protection of the marine environment (prevention of pollution from ships, ballast water management, preparedness and response, etc.) and to maritime safety (ship design and construction, safety of navigation, carriage of cargo, etc.).

The Organization maintains direct contact and continuous liaison with the competent authorities of Member States, national maritime authorities and regional maritime organizations, all of which can be accessed and called upon in the event of an emergency.



PAN AMERICAN HEALTH ORGANIZATION (PAHO)

Address

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

Tel: +1 (202) 974-3605 (Radiological Health Program)
Tel: +1 (202) 974-3434 (Emergency Preparedness & Disaster Relief Area)
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 centres, all working primarily with the countries of Latin America and the Caribbean in dealing with priority health issues.

According to PAHO constitution, the Governing Bodies set the organization's mandates. For emergency preparedness and response and to formulate plans of action for various types of disasters, and in regards to 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 member countries’ 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.”

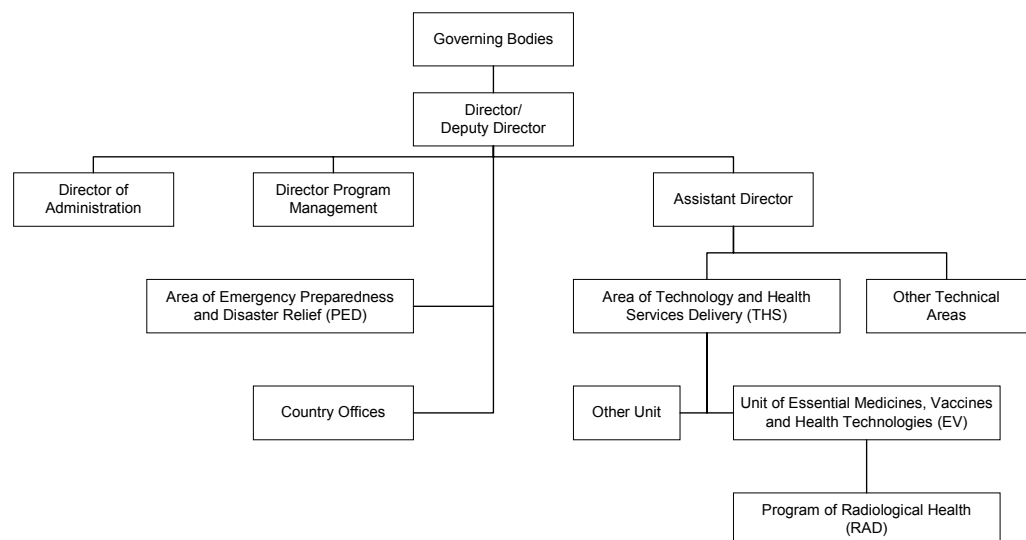
1994: “To endorse the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources.

“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 cooperating with the Member States in the development and implementation of national plans on radiation safety.”



Organizational Structure



Capabilities

In the area of radiological emergencies, two programmes are collaborating closely: Radiological Health (RAD), within the Unit of Essential Medicines, Vaccines and Health Technologies (THS/EV) and the Area 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 defence/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 Centres, especially REAC/TS in the USA, relying heavily on WHO/REMPAN for medical assistance, and on the international collaboration of specialized agencies such as the IAEA and co-ordination agencies such as the United Nations Office for the Co-ordination of Humanitarian Affairs (OCHA).

PAHO has response capacity in:

- emergency co-ordination and evaluation of needs;
- 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 ENVIRONMENT PROGRAMME (UNEP)

Address**Official address**

United Nations Environment
Programme (UNEP)
United Nations Avenue, Gigiri
P.O. Box 30552
Nairobi, Kenya
<http://www.unep.org>

**Office responsible for
emergency response**

Joint UNEP/OCHA Environment Unit
Palais de Nations, Room 228
1211 Geneva 10
Switzerland
Tel: +41 (22) 917 1142
Tel: +41 (22) 917 2010 (Emergency ONLY)
Fax: +41 (22) 917 0257
Email: OCHAGVA@UN.ORG

Responsibilities and authorities

The Joint UNEP/OCHA Environment Unit is a partnership between the United Nations Environment Programme (UNEP) and the UN Office for the Coordination of Humanitarian Affairs (OCHA) that serves as the integrated United Nations emergency response mechanism to activate and provide international assistance to countries facing environmental emergencies.

The role of the Joint Unit is to rapidly mobilize and coordinate emergency assistance and response resources to countries facing environmental emergencies and natural disasters with significant environmental impacts.

In addition, UNEP makes arrangements for the Vienna-based secretariat of the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR).

Capabilities

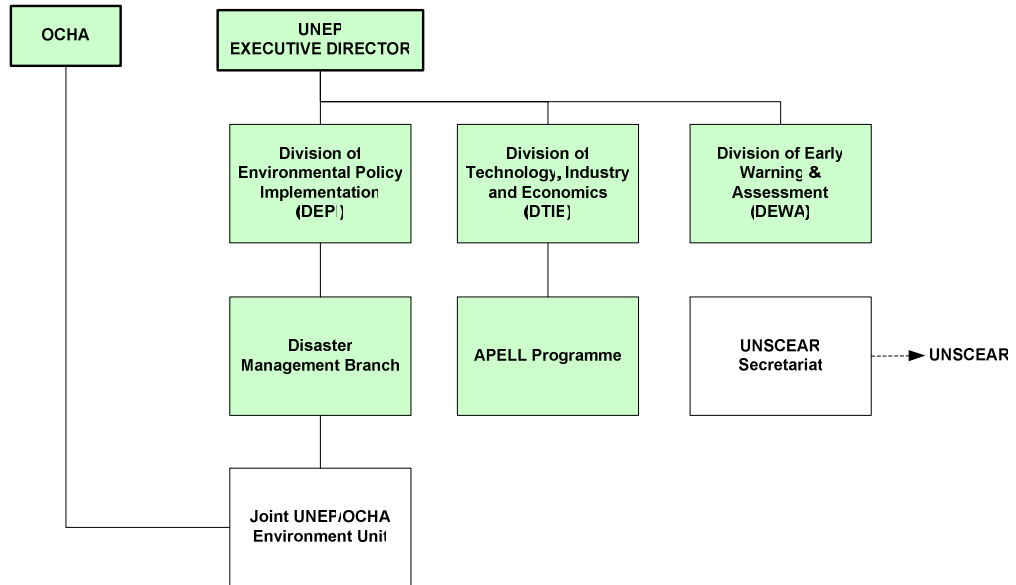
The Unit has a number of key functions that it undertakes to ensure timely and coordinated response to emergencies.

- | |
|--|
| <ul style="list-style-type: none"> • Monitor - Continuous monitoring and ongoing communication with an international network of contacts and permanent monitoring of news services and web sites, for early notification of environmental occurrences. • Notification - when disaster strikes, the Unit promptly alerts the international community and issues Information and Situation Reports to a comprehensive list of worldwide contacts. • Brokerage - the Unit can quickly bring the affected country in direct contact with donor governments around the world who are ready and willing to assist and provide needed response resources. • Information Clearing House - the Unit serves as an effective focal point to ensure available information on chemicals, maps and satellite images from donor sources and institutions is channelled directly to the relevant authority in the affected country. • Mobilisation of Assistance - the Unit is able to mobilise multilateral assistance from the international donor community when requested by countries affected by environmental emergencies or natural disasters with significant environmental implications. • Assessment - the Unit can arrange for the urgent dispatch of international experts to assess the impacts of an emergency and to make impartial and independent recommendations about response, clean-up, remediation and rehabilitation. • Financial Assistance - the Unit can, in certain circumstances, release OCHA Emergency Cash Grants to meet immediate emergency response needs. |
|--|

The Unit is available 24 hours a day, 7 days a week, year-round to mobilize assistance for facing emergencies. To facilitate the process, the Unit has developed the “Environmental Emergency Notification/request for International Assistance” form. The form is available in English, French, Spanish, Russian, Chinese and Arabic through the Unit and on the Unit’s web site at <http://ochaonline.un.org/webpage.asp?Page=640>.



Organization



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 1234
Tel: +41 (22) 917 2010 (Emergency ONLY)
Fax: +41 (22) 917 0023
Email: OCHAGVA@UN.ORG
<http://www.ochaonline.un.org>

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 responsibilities¹⁸:

- processing requests from affected Member States for emergency assistance requiring a coordinated 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;

¹⁸ General Assembly Resolution A/RES/46/182, 1992 on Strengthening of the co-ordination of humanitarian emergency assistance of the United Nations.

- 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 IAEA¹⁹, 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 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.

B**Capabilities**

When a major emergency or disaster occurs, OCHA consults with the UN Country Team through the Office of the United Nations Resident Coordinator/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.

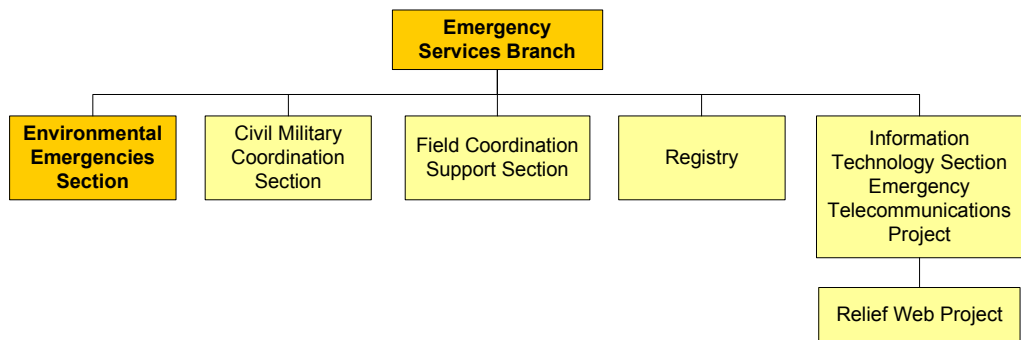
¹⁹ Memorandum of Understanding between the Director General of the International Atomic Energy Agency and the United Nations Disaster Relief Co-ordinator, 1977.

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/Coordinator 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 Coordinator/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 coordinating 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 coordinating 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 coordinating a specialized environmental emergency assistance;
- can assist in establishing and coordinating 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 and use 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);
- manages and 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@unvienna.org

URL: <http://www.unoosa.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.

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 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.

UNITED NATIONS SCIENTIFIC COMMITTEE ON THE EFFECTS OF ATOMIC RADIATION (UNSCEAR)

Address

Secretary, United Nations Scientific Committee on the Effects of Atomic Radiation
Vienna International Centre
P. O. Box 500
A-1400 Vienna, AUSTRIA
<http://www.unscear.org>

B

Responsibilities and authorities

The United Nations Scientific Committee on the Effects of Atomic Radiation was established by the General Assembly of the United Nations in 1955. Its mandate in the United Nations system is to assess and report levels and effects of exposure to ionizing radiation. Specifically, the General Assembly has mandated^{20,21} the Committee:

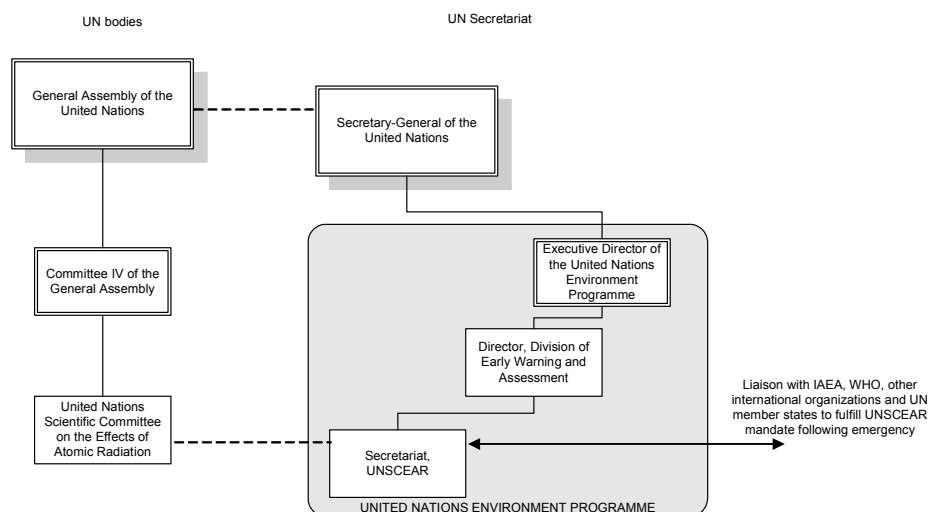
- To receive and assemble in an appropriate and useful form the following radiological information furnished by States Members of the United Nations or members of the specialized agencies:
 - (i) reports on observed levels of ionizing radiation and radioactivity in the environment;
 - (ii) reports on scientific observations relevant to the effects of ionizing radiation upon man and his environment by national scientific bodies or by authorities of national Governments;
- To compile and assemble in an integrated manner the various reports on observed radiological levels;
- To review important problems in the field of ionizing radiation and to report thereon to the General Assembly;
- To review and collate national reports evaluating each report to determine its usefulness for the purposes of the Committee;
- To make summaries of the reports received on radiation levels and radiation effects on man and his environment and indications of research projects which might require further study;
- To transmit, as it deems appropriate, its evaluations to the Secretary-General for publication and dissemination to States Members of the United Nations or members of the specialized agencies;



The Committee does not address protection related matters, these being within the mandate of other international bodies. This helps to distinguish the Committee's responsibility for scientific matters from policy development.

Organization

The following diagram illustrates the organization of UNSCEAR for reporting on levels and effects of ionizing radiation:



²⁰ UN General Assembly resolution 913(X), Effects of atomic radiation, 3 December 1955.

²¹ UN General Assembly resolution 60/98, Effects of atomic radiation, 8 December 2005, etc.

The United Nations Environment Programme provides support for the effective conduct of the work of the Scientific Committee and for the dissemination of its findings to the General Assembly, the scientific community and the public. In particular, it provides the Secretariat of UNSCEAR.

Capabilities

The representatives of 21 Member States that have been designated members of UNSCEAR, together with their numerous advisers of various disciplines, represent an asset for international scientific scrutiny of reported levels and effects.

The UNSCEAR Secretariat can engage consultants to help prepare material for scrutiny by the Committee; it also maintains networks of expertise on matters related to levels and effects of radiation; it operates a web-site with information on levels and effects of ionizing radiation; and, if necessary, it can convene an extraordinary session of UNSCEAR.

If an event occurs that involves significant numbers of serious overexposures or widespread contamination of water, surface, people or commodities or is of significant concern to the UN General Assembly or the public, the Secretariat of UNSCEAR will, as appropriate: establish liaison with the IAEA, WHO and/or UNEP to coordinate a review of the levels and effects of the exposures for the UN General Assembly, the international scientific community and/or the public; liaise with the Scientific Committee and its Executive Officers; prepare material for public release on the levels and risks of ionizing radiation; liaise with the Secretariat of the United Nations with a view to preparing a report for the General Assembly.



WORLD HEALTH ORGANIZATION (WHO)

Address

World Health Organization
20, Avenue Appia
CH-1211 Geneva
SWITZERLAND
http://www.who.int/ionizing_radiation

Responsibilities and authorities

The World Health Organization (WHO) has the statutory general responsibilities relevant to emergency response²²:

- 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;
- 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;

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

- 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 Conventions²³ 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:

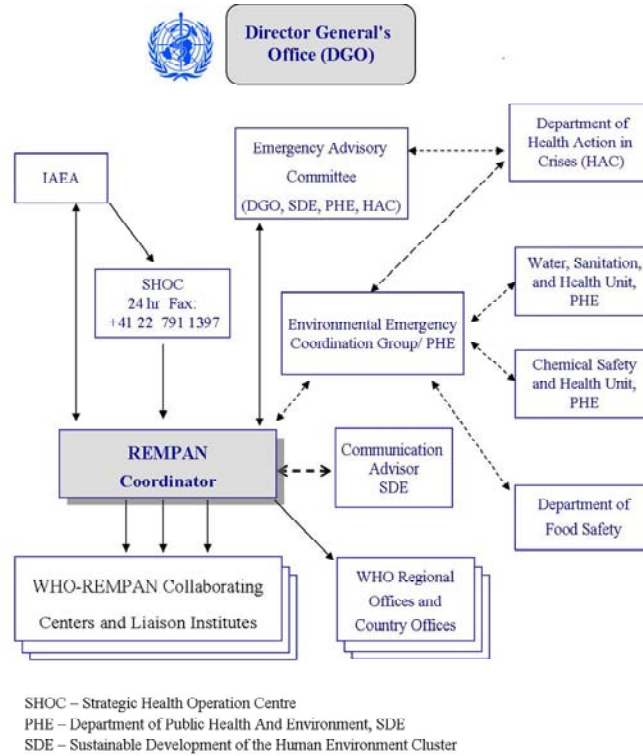
- co-operates...to facilitate prompt assistance in the event of a nuclear accident or radiological emergency to minimize its consequences and to protect life... from the effects of radioactive releases;
- may agree on bilateral or multilateral arrangements or, where appropriate, a combination of these, 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;
- 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;

²³ 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 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.

Organization

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



Response capabilities

The resources in the World Health Organization are as follows:

- The Radiation and Environmental Health Programme (RAD) of the Department of Protection of the Human Environment (PHE) is a key Unit in the area of radio-nuclear emergency response of the WHO. RAD works closely with the IAEA ERC in maintaining and mobilizing its international response system
- Coordinated by RAD, the Radiation Emergency Medical Preparedness and Assistance Network (WHO/REMPAN) provides access to a large number of specialized facilities and equipment of the WHO collaborating institutions in Member States for consultation, diagnostics and treatment of radiation injuries and delayed health consequences of radio-nuclear accidents
- WHO/REMPAN maintains its operability and preparedness through participation in coordinated international and WHO exercises, test and drills on radio-nuclear emergency, continuous information exchange, and professional training in radiation medicine
- The WHO system of emergency response is activated in accordance with WHO Plan for Medical Response to Radiation Emergencies/Operational Guidance for WHO and WHO/REMPAN

- WHO/REMPAN resources provide access to experts in radiation medicine, radiobiology, radiation epidemiology, dosimetry, and radiation protection world-wide. WHO/REMPAN experts may be employed when compiling IAEA's emergency response teams for work in the field, subject to the availability of funding
- Limited funds and medical supplies allocated for general emergency and humanitarian actions through WHO Global Alert Response Network may be used to facilitate initial response of the WHO to an emergency
- Internet, computing and communication facilities

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 Conventions²⁴ 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;
- 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

²⁴ Convention on Early Notification of a Nuclear Accident, Instrument of Accession, 16 Oct. 1990.

- 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 and Forecasting System (GDPFS), 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 Exeter 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 atmospheric transport, dispersion and deposition of pollutants. 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 GDPFS (WMO No. 485)²⁵ and essential aspects may be accessed on the WMO web site under: WWW, Programmes, Emergency Response Activities, Transport model products:

(<http://www.wmo.int/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.int/index-en.html>)

²⁵ WMO-No. 485 Manual on the Global Data-processing and Forecasting 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.



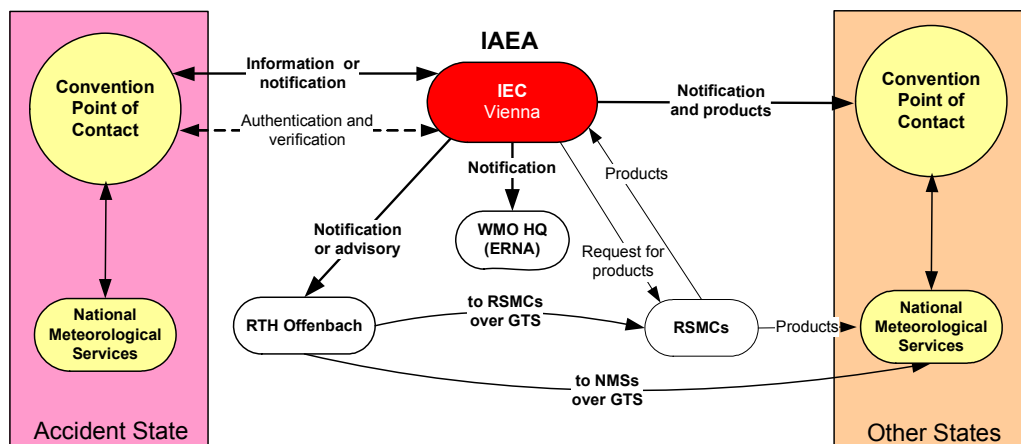
Besides the responsibility for coordinating the overall participation and contribution of WMO in the emergency response system, the WMO Secretariat operates an office for the Emergency Response to Nuclear Accidents (ERNA). The office has a dedicated fax line/receiver set. Staff members regularly monitor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

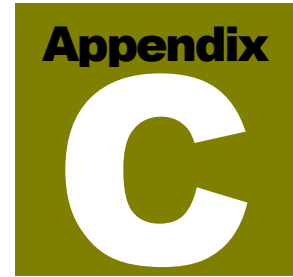
The responsibilities of WMO ERNA are to:

- provide relevant information to WMO Members' national meteorological and hydrological services (NMHSs), i.e. to their NMCs, if so requested;
- act 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 GDPFS;
- participate in exercises and telecommunication drills; and
- maintain, update and disseminate 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.





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 States²⁶ 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 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

²⁶ European Union Member States, Bulgaria and Switzerland.

in the environmental compartments and the consequent potential exposure and health risk to the general public.

- The ENSEMBLE programme provides a platform for compiling long-range atmospheric dispersion modelling data from participating national organizations in charge of dispersion modelling.
- The OSEP (off-site emergency preparedness) programme is a European Commission initiative to provide a coordinated 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 Organization²⁷ 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 accident²⁸, and in 2006, the Joint FAO/WHO Codex Alimentarius Commission established revised Codex Guideline Levels for Radionuclides in Foods Contaminated Following a

²⁷ Constitution of the Food and Agriculture Organization of the United Nations.

²⁸ “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)) and updated countermeasures under <http://www-naweb.iaea.org/nafa/emergency/countermeasures.html>

Nuclear or Radiological Emergency for Use in International Trade²⁹. 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.

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.

²⁹ CAC/GL 5-2006 (http://www.codexalimentarius.net/web/standard_list.do?lang=en)

In support of its statutory obligations the IAEA:

Capabilities

- 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.

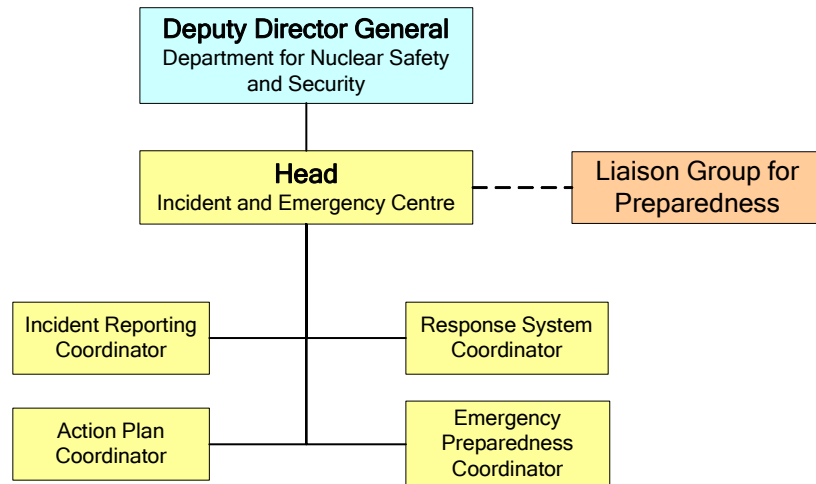
The Secretariat convenes biennial meetings of representatives of competent authorities identified under the Early Notification and Assistance Conventions. Further to an expression of support by the IAEA General Conference, the Secretariat in collaboration with a regionally balanced group of competent authorities, has developed a plan of action for enhancing the international emergency response system. This plan was approved at the June 2004 session of the IAEA Board of Governors³⁰ and is to be implemented over the coming years. Some of the actions in the plan involve collaboration with other relevant organizations, such as WMO and WHO.

**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 Deputy Director General, Department of Nuclear Safety and Security, International Atomic Energy Agency, Vienna. Head, Incident and Emergency Centre carries specific responsibility for the Secretariat's response preparedness.

³⁰ Document GOV/2004/40 (Corrected) of the IAEA Board of Governors





Coordination of preparedness arrangements with other organizational divisions are made through the Liaison Group for Preparedness.

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.

INTERNATIONAL MARITIME ORGANIZATION (IMO)

The mission of the International Maritime Organization (IMO) is safety and security of international shipping and protection of the marine environment from pollution from shipping. The Organization has no specifically defined role with respect to preparedness and response to nuclear incidents, but has developed safety codes, standards and guidelines for nuclear cargoes and nuclear-powered ships for the prevention of such incidents, which in certain cases, also covers elements of preparedness. These include:

1. International Convention for the Safety of Life at Sea (SOLAS), 1974
 - Chapter VII - Carriage of dangerous goods, Part D, which includes special requirements for the carriage of packaged irradiated nuclear fuel, plutonium and high-level radioactive wastes on board ships and requires ships carrying such products to comply with the International Code for the Safe Carriage of Packaged Irradiated Nuclear Fuel, Plutonium and High-Level Radioactive Wastes on Board Ships (INF Code); and
 - Chapter VIII, which gives basic requirements for nuclear-powered ships and is particularly concerned with radiation hazards. It refers to the detailed and comprehensive Code of Safety for Nuclear Merchant Ships.
2. Convention relating to Civil Liability in the Field of Maritime Carriage of Nuclear Material (NUCLEAR), 1971, provides that a person otherwise liable for damage



caused in a nuclear incident shall be exonerated for liability if the operator of the nuclear installation is also liable for such damage by virtue of the Paris Convention of 29 July 1960 on Third Party Liability in the Field of Nuclear Energy; or the Vienna Convention of 21 May 1963 on Civil Liability for Nuclear Damage; or national law which is similar in the scope of protection given to the persons who suffer damage.

3. Code of Safety for Nuclear Merchant Ships, 1982. This Code (resolution A.491(XII)) was developed as a guide for Administrations on internationally accepted safety standards for the design, construction, operation, maintenance, inspection, salvage and disposal of nuclear merchant ships.
4. Safety Recommendations on the Use of Ports by Nuclear Merchant Ships, 1980. This publication provides guidance to host government authorities and host port authorities on the recommended precautionary measures to be considered when assessing the suitability of a port to receive nuclear merchant ships fitted with pressurized water reactors.

The Organization also has some basic internal capacity in terms of preparedness for and response to pollution incidents from ships and manages this role through its Marine Environment Division. Emergency functions include tracking of incidents, information gathering, reporting, and, on occasion, mobilization of resources and technical assistance upon request by Member States. IMO does not have 24/7 capability.

Furthermore, through its OPRC-HNS Technical Group, a subsidiary body of one of IMO's main Committees composed of technical experts from Member States and observing organizations, IMO develops tools, resources, manuals and guidance documents to help countries ratify and implement the OPRC Convention and its HNS Protocol and to improve preparedness and response to oil and HNS incidents at the national and international level. One example of the types of manuals produced by this group is the Manual on Chemical Pollution – Section 2, Search and recovery of packaged goods lost at sea, which also covers the loss of packaged radioactive materials.

In addition, IMO promotes and assists Member States' preparedness efforts through its Integrated Technical Cooperation Programme (ITCP), created for the sole purpose of assisting countries in building up their human and institutional capacities for compliance with IMO's regulatory framework, including the OPRC Convention 1990 and its OPRC-HNS Protocol 2000, which collectively address preparedness, response and co-operation to oil spills and releases of HNS into the marine environment.



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

Address	OECD Nuclear Energy Agency Le Seine St-Germain 12, boulevard des Iles 92130 Issy-les-Moulineaux France www.nea.fr
Responsibilities and authorities	<p>The fundamental mission of the Nuclear Energy Agency (NEA) of the Organisation for Economic Co-operation and Development (OECD) is to assist its Member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for the safe, environmentally friendly and economical use of nuclear energy for peaceful purposes. To achieve this, the NEA works as: a forum for sharing information and experience and promoting international co-operation; a centre of excellence which helps Member countries to pool and maintain their technical expertise; a vehicle for facilitating policy analyses and developing consensus based on its technical work.</p> <p>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 at the international level.</p>
Capabilities	<p>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 mission of the working party is to improve nuclear emergency management systems (planning, preparedness, response, recovery) within member states and to share its knowledge and experience widely. Within this framework, the NEA offers:</p> <div style="border: 1px solid black; padding: 10px;"><ul style="list-style-type: none">• to provide a forum for experts in emergency response to share information and experience in all aspects of emergency management systems, identify emerging issues, and develop and test innovative ideas, approaches and concepts to facilitate international and national emergency management, outside the context of the legal requirements of international notification and assistance conventions;• to address issues across the entire spectrum of nuclear and radiological emergency and recovery management, identify gaps and provide recommended strategies to improve nuclear emergency management worldwide• to develop follow-up strategies, through workshops and expert group meetings, to address identified issues and to formulate new approaches for international testing;• to participate, as appropriate, in the development, planning, preparation and organization of international nuclear emergency exercises, jointly sponsored</div>



- by the IAEA, the EC, WHO, WMO and any other interested international organization;
- to participate in the overall assessment and analysis of lessons identified from such exercises.

The working party develops its programme of work based on identifying and analysing areas for improvement in emergency management systems, in co-ordination with member states and other related organisations. With the mandate from the representatives of NEA Member countries on CRPPH, the NEA will:

- develop, organise, evaluate and analyse the International Nuclear Emergency Exercise (INEX) series exercises to address best practices and identify areas for improvement in nuclear/radiological emergency management systems;
- provide a framework for validation of relevant products aimed at improving emergency management systems, developed under other coordinated activities;
- identify and investigate as appropriate further advancements in all aspects of emergency planning, preparedness, response and recovery for nuclear accidents and radiological emergencies;
- provide input as appropriate for the development of international standards and recommendations on emergency management;
- develop, co-ordinate and evaluate NEA objectives for inclusion in international exercises such as those organised under the auspices of the Inter-Agency Committee on the Response to Nuclear Accidents (IACRNA);
- issue scientific reports, strategy documents, workshop proceedings and other products to broadly share information on advancements in emergency planning, preparedness and response.

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.

Finally, the NEA, through its Nuclear Law Committee, works on the interpretation, implementation, improvement and modernisation of the international nuclear liability regime, primarily through a consideration of the:

- Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960³¹ (*Paris Convention*),
- Convention of 31 January 1963 Supplementary to the Paris Convention of 29 July 1960³¹ (*Brussels Convention Supplementary to the Paris Convention*), and
- Joint Protocol of 21 September 1988 relating to the Application of the Vienna Convention and the Paris Convention

³¹ As amended by the Additional Protocol of 28 January 1964, by the Protocol of 16 November 1982, and by the Protocol of 12 February 2004

INTERNATIONAL CRIMINAL POLICE ORGANIZATION (INTERPOL)

**Responsibilities
and authorities**

Interpol has general and specific programmes that contribute to the prevention of and preparedness for nuclear or radiological emergencies. The existing system of communications and investigations in co-ordination with Interpol member state's National Central Bureau's (NCBs) is intended to assist in the search and arrest of international criminals. These criminals include terrorists, traffickers in radioactive or nuclear material, and others who might be criminally involved in nuclear or radiological events.

Capabilities

Interpol conducts a range of activities and develops capabilities that contribute to the prevention and preparedness of nuclear and radiological emergencies. These include:

- Criminal intelligence assessments of terrorists and their search for, possession of, and potential use of weapons of mass destruction including nuclear and radiological devices.
- Issuance of international search and arrest warrants for terrorists and other criminals who might be involved in the trafficking or use of radiological or nuclear devices.
- Receipt and forwarding of messages from national police forces through the NCBs of stolen or recovered radioactive material, primarily when there is an international crime aspect to the incident.
- Publication and distribution of good practice and training in anti-corruption techniques for law enforcement personnel which could include authorities who would be involved in the handling, monitoring, and/or enforcement of radioactive or nuclear materials.
- Issuance of Orange Notices to member states and selected international organizations with information about possible thefts, trafficking, or missing radioactive or nuclear materials.
- Facilitating face-to-face meetings, communication, and teamwork among law enforcement personnel worldwide to build formal and informal networks that can be utilized to respond to radiological or nuclear emergencies.



PAN AMERICAN HEALTH ORGANIZATION (PAHO)

**Responsibilities
and Authorities**

According to PAHO constitution, the Governing Bodies set the organization's mandates. In regard to emergency preparedness and response to support member countries to strengthen their national capacity and formulate 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:

- elaboration, 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 represent potential 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 and/or organization of radiological/nuclear simulation exercises

The lessons identified 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 Regional Disaster Information Centre based in San Jose, Costa Rica.

The compilation of formal and informal literature regarding emergencies and radiological/nuclear accidents may be made available on the web site <http://www.crid.or.cr/crid/index.htm>. Additional information may be found in PAHO's Internet web page: <http://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 ENVIRONMENT PROGRAMME (UNEP)

Responsibilities

The United Nations Environment Programme (UNEP) is the leading global authority and promotes the coherent implementation of the environmental dimension of sustainable development within the UN. The Programme is based in Nairobi, Kenya and counts on regional and thematic offices around the world. The Governing Council of UNEP identified the increasing environmental emergencies as one of the environmental threats that needed to be addressed and emphasized the important role the Programme played globally in the areas of emergency prevention, preparedness, assessment, mitigation and response. UNEP has developed a strategic framework on emergency prevention, preparedness, assessment, mitigation and response including an agenda for action which serves as a basis for the development and the

implementation of programmes on disaster reduction at the global, regional and sub-regional and national levels.

The focus of UNEP's work in environmental emergencies is therefore to influence and assist countries through assessments, technical assistance, advisory services, production of tools and products, networking, pilot projects for better prevention, preparedness for, and response to environmental emergencies and/or disasters with impacts on the environment to ensure that the environmental aspects of emergencies are clearly understood and addressed as an integral part of overall disaster management imperatives, including prevention, preparedness, response and mitigation, and that these are fully recognized as critical to human and environmental security.

Institutional arrangements

UNEP contributes its environmental expertise to the efforts of the international community in the field of environmental emergencies. A number of institutional structures exist within UNEP for this endeavour.

UNEP activities on prevention, preparedness for and response to environmental emergencies are coordinated by the Division of Environmental Policy Implementation (DEPI) specifically through the Disaster Management Branch (DMB). The main tasks of the Branch are to:

- co-ordinate UNEP's Strategic Framework on Emergency Prevention, Preparedness, Assessment, Mitigation and Response;
- implement UNEP's strategic framework in areas of prevention and preparedness;
- act as a focal point for other UN agencies, international organizations and NGOs in disaster reduction, preparedness and mitigation; and,
- Guide and support the work of the Joint UNEP/OCHA Environment Unit.

The Division of Early Warning and Assessment (DEWA) plays a role in environmental emergencies since through its assessments it generates data and information which can be used to support the contingency planning processes and in the development of preparedness strategies. The Division also acts as the principal counterpart for the Secretariat of UNSCEAR.

The Awareness and Preparedness for Emergencies at Local Level programme (APELL) within the Division of Technology, Industry and Environment (DTIE) is a tool for raising awareness and improving the preparedness of communities exposed to environmental emergencies. The programme addresses all environmental emergencies related to industrial activities with potential for fire, explosion or toxic release but is also relevant to natural disaster preparedness. Such environmental emergencies can result from human activity or as consequences of natural disasters such as earthquakes and flooding. APELL consists of two parts: providing information to the community to allow it to understand local risks; and putting together an overall co-ordinated response plan to protect people, property, and the environment. It has been successfully used to improve coordination of emergency response services locally, and in cross-border hazard situations. APELL has already been introduced in more than 30 countries and its successful implementation through country seminars/workshops and national APELL centres results in a better level of preparedness by local

emergency services and an understanding by local people of how to react to an emergency in their neighbourhood.

Within the context of the Regional Seas Programme, Regional Activity Centres (RACs) are also responsible for backstopping administratively and technically, the Protocols dealing with co-operation in cases of emergency from maritime-related activities when these Protocols exist.

The Division of Regional Co-operation (DRC) and more specifically its six regional offices play a role in environmental emergencies through the implementation at regional/sub-regional levels of UNEP's global programme and in so doing support the work on environmental emergencies.

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 charged³² 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 Understanding³³ 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.

³² General Assembly Resolution A/RES/46/182, 1992 on Strengthening of the co-ordination of humanitarian emergency assistance of the United Nations.

³³ Memorandum of Understanding between the Director General of the International Atomic Energy Agency and the United Nations Disaster Relief Co-ordinator, 1977.

UNITED NATIONS SCIENTIFIC COMMITTEE ON THE EFFECTS OF ATOMIC RADIATION (UNSCEAR)

Responsibilities and authorities

The United Nations Scientific Committee on the Effects of Atomic Radiation was established by the General Assembly of the United Nations in 1955. Its mandate in the United Nations system is to assess and report levels and effects of exposure to ionizing radiation. Specifically, the General Assembly has mandated^{34,35} the Committee:

- To receive and assemble in an appropriate and useful form the following radiological information furnished by States Members of the United Nations or members of the specialized agencies:
 - (i) reports on observed levels of ionizing radiation and radioactivity in the environment;
 - (ii) reports on scientific observations and experiments relevant to the effects of ionizing radiation upon man and his environment already underway or later undertaken by national scientific bodies or by authorities of national Governments;
- To recommend uniform standards with respect to procedures for sample collection and instrumentation, and radiation counting procedures to be used in analyses of samples;
- To compile and assemble in an integrated manner the various reports on observed radiological levels;
- To increase knowledge of the levels, effects and risks of ionizing radiation from all sources;
- To review important problems in the field of ionizing radiation and to report thereon to the General Assembly;
- To review and collate national reports evaluating each report to determine its usefulness for the purposes of the Committee;
- To make summaries of the reports received on radiation levels and radiation effects on man and his environment and indications of research projects which might require further study;
- To transmit, as it deems appropriate, its evaluations to the Secretary-General for publication and dissemination to States Members of the United Nations or members of the specialized agencies;

The Committee does not address protection related matters, these being within the mandate of other international bodies. This helps to distinguish the Committee's responsibility for scientific matters from policy development.

Capabilities

The Committee produces the UNSCEAR reports, which are detailed reports to the General Assembly. The scientific community regards them as authoritative and balanced reviews of the levels and effects of exposure of humans and the environment to ionizing radiation. The reports review exposures from natural radiation sources, from nuclear power production and nuclear tests, exposures from medical diagnosis and treatment, and from occupational exposure to radiation. They include detailed studies on cancer induced by radiation, on the mechanisms of the development of

³⁴ UN General Assembly resolution 913(X), Effects of atomic radiation, 3 December 1955.

³⁵ UN General Assembly resolution 60/98, Effects of atomic radiation, 8 December 2005, etc.



cancer and the body's repair systems against it, further on the hereditary risks induced by exposure to radiation, and on the combined effects of radiation and other (for instance chemical) agents.

Though the work of the Scientific Committee is performed by 21 of the UN Member States, its work is conducted on behalf of all States Members of the United Nations and the international scientific community.

The UNSCEAR assessments provide the basis within the UN system for assessment of the risks of exposure to ionizing radiation, and for the development of radiation protection standards. The information in the UNSCEAR reports, which are publicly available on the UNSCEAR web-site, can be used by communicators to help provide perspective on levels and effects of specific exposures.

WORLD HEALTH ORGANIZATION (WHO)

Responsibilities and authorities

World Health Organization has the statutory responsibilities with regard to preparedness and response to radionuclear emergency as listed in Annex B. Recently, World Health Assembly adopted resolution WHA55.16 of 18 May 2002 "Global public health response to natural occurrence, accidental release or deliberate use of biological and chemical agents or radio-nuclear material that affect health". The WHA55.16 recognized that one of the most effective methods of preparing for deliberately caused disease is to strengthen public health surveillance and response activities for naturally or accidentally occurring diseases. The 2002 World Health Assembly³⁶:

- URGED Member States
 - (1) to have in place national disease-surveillance plans which are complementary to regional and global disease-surveillance mechanisms, and to collaborate in the rapid analysis and sharing of surveillance data of international humanitarian concern;
 - (2) to collaborate and provide mutual support in order to enhance national capacity in field epidemiology, laboratory diagnoses, toxicology and case management;
 - (3) to treat any deliberate use of ...chemical agents and radionuclear attack ...as a global public health threat, and to respond to such a threat in other countries by sharing expertise, supplies and resources in order rapidly to contain the event and mitigate its effects;
- REQUESTED the Director General
 - (1) to continue, in consultation with relevant intergovernmental agencies and other international organizations, to strengthen global surveillance... and related activities such as revision of the International Health Regulations and development of WHO's food safety strategy, by coordinating information gathering on potential health risks and disease outbreaks, data verification, analysis and dissemination, by providing

³⁶ WHA55.16 of 18 May 2002: Global public health response to natural occurrence, accidental release or deliberate use of biological and chemical agents or radio-nuclear material that affect health



support to laboratory networks, and by making a strong contribution to any international humanitarian response, as required;

(2) to provide tools and support for Member States, particularly developing countries, in strengthening their national health systems, notably with regard to emergency preparedness and response plans, including disease surveillance, risk communication, and psychosocial consequences of emergencies;

(3) to continue to issue international guidance and technical information on recommended public health measures to deal with the deliberate use of harmful agents, and to make this information available on WHO's web site;

(4) to examine the possible development of new tools, within the mandate of WHO, including modelling of possible scenarios of ...accidental release or deliberate use of ...radionuclear material and collective mechanisms concerning the global public health response.

Additionally to that, The World Health Assembly of 2006, adopted WHA59.22 on May 27, 2006 the Resolution on "Emergency Preparedness and Response", in which WHA:

- REQUESTS Member States to further strengthen national emergency mitigation, preparedness, response, and recovery programmes through, as appropriate, legislative, planning, technical, financial and logistical measures, with a special focus on building health systems and community resilience;
- URGES Member States to provide support to affected countries, and to WHO so that it may address immediately, within its mandate, humanitarian health crises;
- REQUESTS the Director-General, to take the necessary steps:
 - (1) to provide the necessary technical guidance and support to Member States for building their health-sector emergency preparedness and response programmes at national and local levels, including a focus on strengthening community preparedness and resilience;
 - (2) to work to ensure that WHO, within its mandate, is able to respond effectively to emergencies and crises and, in doing so, continues to work closely with other organizations of the United Nations system;
- REQUESTS the Director-General in particular:
 - (1) to explore and implement measures to enhance WHO participation in the overall humanitarian response through existing mechanisms such as the Central Emergency Response Fund, International Search and Rescue Advisory Group, or the United Nations Disaster Assessment and Coordination team;
 - (2) to compile a global database of authoritative technical health references in order to facilitate health-sector response to emergencies and crises;
 - (3) to establish and maintain, in collaboration with relevant organizations of the United Nations system and other partners, a tracking service that will monitor and assess mortality rates in humanitarian emergencies.



(4) to take part in United Nations system-wide mechanisms for logistics and supply management which would assure immediate mobilization of vital supplies in emergencies and crises.

Capabilities

In accordance with its statutory responsibilities the WHO works with its regional offices, specialized medical and research centres comprising REMPAN, and other international agencies and organizations on strengthening preparedness and building capacity of national public health systems of the Member States through the following activities:

- WHO coordinates and maintains activities of the global network of collaborating centres and liaison institutions – REMPAN
- REMPAN experts provide technical support in interventions related to medical and public health management of radionuclear emergencies, treatment and follow-up of victims
- WHO organizes regular meetings of REMPAN representatives with the purpose of sharing knowledge, exchanging experience and lessons learned from treatment of victims of accidental over-exposure to ionizing radiation, reporting on accomplished and planned activities, and improvement of coordination and communication within the network
- WHO conducts regular communication tests and emergency drills within WHO and REMPAN
- REMPAN collaborating centres provide assistance to national health authorities through developing guidance, manuals, policies for medical and public health preparedness for nuclear or radiological emergencies and through national and regional training programmes for health workers
- WHO participates in development, planning, organization and conduction of international exercises on nuclear emergency and in the assessment and analysis of the results and lessons learned
- WHO prepares, publishes and disseminates education and training materials for physicians on diagnostics and management of radiation injuries, public health preparedness and response, and delayed effects of accidental over-exposure to ionizing radiation.

WHO 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" issues by the IAEA.

WHO worked with the Joint FAO/WHO Codex Alimentarius Commission in the establishment of revised Codex Guideline Levels for Radionuclides in Foods Contaminated Following a Nuclear or Radiological Emergency for Use in International Trade³⁷.

³⁷ CAC/GL 5-2006 (http://www.codexalimentarius.net/web/standard_list.do?lang=en)

**Organization for
Emergency
Preparedness**

Overall responsibility for WHO preparedness for radionuclear emergency, update of the WHO Plan for Medical Response to Radiation Emergencies, REMPAN coordination and maintenance lays with the Department of Public Health and Environment, Sustainable Development of the Human Environment Cluster, World Health Organization, Geneva.

Specific responsibility for preparedness of the REMPAN for radionuclear emergency, day-to-day operations coordination, and routine work is a responsibility of the REMPAN coordinator – a professional WHO staff member, Department of Public Health and Environment, Sustainable Development of the Human Environment Cluster, World Health Organization Headquarters, Geneva.

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

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 diagnostic or therapeutic exposure 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.
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 which requires an international response that goes beyond the mandate or capacity of any single agency and/or the ongoing UN country programme ³⁸ .
Dangerous source	A source that could, if not under control, give rise to exposure sufficient to cause a severe deterministic health effects.
Disaster	A serious disruption of the functioning of a society, causing widespread human, material or environmental losses, which exceed the ability of the affected society to cope using its own resources ³⁸ .



³⁸ These are general definitions used by the international humanitarian assistance community that are not specific to nuclear accidents or radiological emergencies.

Emergency	A non-routine situation or event that necessitates prompt action, primarily to mitigate a hazard or adverse consequences for human health and safety, quality of life, property or the environment. This includes nuclear or radiological emergencies and conventional emergencies such as fires, release of hazardous chemicals, storms or earthquakes. It includes situations for which prompt action is warranted to mitigate the effects of a perceived hazard.
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 to mitigate the consequences of an emergency for human health and safety, quality of life, property and the environment. It may also provide a basis for the resumption of normal social and economic activity.
Notification	A 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 possible 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 standards ³⁹ (cf. Advisory).
Notifying State	The State that is responsible for notifying potentially affected States and the IAEA of an event or situation 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 Convention on Early Notification of a Nuclear Accident; 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, research reactor (including subcritical and critical assemblies), 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

³⁹ FAO/IAEA/ILO/OECD(NEA)/OCHA/PAHO/WHO, Preparedness and Response for a Nuclear or Radiological Emergency, GS-R-2, IAEA, Vienna (2002)

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 of radioactive material (however, a **transnational emergency** does not necessarily imply a **significant transboundary release** of radioactive material); 2) a general emergency at a facility or other event that could result in a significant transboundary release (atmospheric or aquatic) of radioactive material; 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 and/or 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.

ABBREVIATIONS

ACC	Area Control Centre (of ICAO)
AGE	Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture
ConvEx	Convention Exercises (organized by the IAEA)
EC	European Commission
ECG	FAO Emergency Co-ordination Group
ECHO	European Commission Humanitarian Office
ECN	FAO Nuclear Emergencies Crisis Network of Technical Experts
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
EURDEP	EUropean Radiological Data Exchange Platform
EUROPOL	European Police Office
FAO	Food and Agriculture Organization of the United Nations
FIC	Flight Information Centre (of ICAO)
GDPFS	Global Data Processing and Forecasting System (of the WMO)
GTS	Global Telecommunications Network (of the WMO)
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
NATO	North Atlantic Treaty Organization
NEA	Nuclear Energy Agency of the OECD
NMHS	National Meteorological and Hydrological Service
NMS	National Meteorological Service
OAS	Organization of American States

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
RAP	Response Assistance Plan (of the IAEA)
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)
TCES	FAO Special Emergency Programmes Service
UNDAC	United Nations Disaster Assessment and Co-ordination Team (of OCHA)
UNDP	United Nations Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environment Programme
(UN)ERC	Emergency Relief Co-ordinator (of OCHA)
UNICEF	United Nations Children's Fund
UNSCEAR	United Nations Scientific Committee on the Effects of Atomic Radiation
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

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INTERNATIONAL ATOMIC ENERGY AGENCY, Planning and Preparing for Emergency Response to Transport Accidents Involving Radioactive Material, IAEA Safety Standards Series 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)

SCK/CEN Report R-3594, A European Manual for 'Off-site Emergency Planning and Response to Nuclear Accidents', prepared for the European Commission Directorate-General Environment, December 2002

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

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