EPR-ENATOM
2007

EMERGENCY PREPAREDNESS AND RESPONSE

Emergency Notification and Assistance

Technical Operations Manual

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IAEA
International Atomic Energy Agency

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EPR–ENATOM (2007)

Emergency Preparedness
and Response

Emergency Notification and Assistance
Technical Operations Manual

IAEA
International Atomic Energy Agency

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EMERGENCY NOTIFICATION AND ASSISTANCE TECHNICAL OPERATIONS MANUAL
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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 or radiological emergency, with the aim of minimizing the consequences. The International Atomic Energy Agency has specific functions assigned to it under these Conventions, to which, in addition to a large number of States, the World Health Organization (WHO), the World Meteorological Organization (WMO) and the Food and Agriculture Organization of the United Nations (FAO) are full parties. The arrangements provided between the IAEA, States that are IAEA Member States and/or Parties to one or both Conventions, all other relevant international intergovernmental organizations, and other States for facilitating the implementation of these Conventions — specifically concerning those articles that are operational in nature — are documented in the Emergency Notification and Assistance Technical Operations Manual (ENATOM).

ENATOM was first issued on 18 January 1989. Member States, Parties to the Early Notification and Assistance Conventions, relevant international organizations and other States have since then regularly received updates to the manual. In 2000, a complete revision of ENATOM was reissued as EPR-ENATOM (2000) to reflect technological developments, changes in operational concepts, views on standards in the area of emergency preparedness and response, and Member States' expectations. Since then ENATOM has been reviewed and reissued biennially in line with the review cycle of the Joint Radiation Emergency Management Plan of the International Organizations (the 'Joint Plan'). Since the last edition of ENATOM in 2004, several factors have warranted some modifications to the existing ENATOM arrangements: changes in the scope of functions of the Incident and Emergency Centre within the IAEA Secretariat; changes due to revision of the Joint Plan, in particular those arising from incorporating additional co-sponsoring international organizations; lessons identified from experience in responding to requests for information and assistance during radiological emergencies in the past two years; changes to better reflect that emergency situations can arise from both accidents and deliberate acts; and recent resolutions of the IAEA General Conference.

The IAEA Secretariat is making arrangements to meet the changes reflected in this edition of ENATOM by 1 December 2006. A new edition of ENATOM will be reissued in two years time. Any important amendments before completion of the new edition will be communicated through information bulletins. The current version of ENATOM is not restricted.

The General Conference of the IAEA in resolution GC(44)/RES/16 encouraged Member States "to implement instruments for improving their response…to nuclear and radiological emergencies" and "to participate actively in the process of strengthening international, national and regional capabilities for responding to nuclear and radiological emergencies, and to make those capabilities more consistent and coherent". ENATOM states the Secretariat's expectations rather than prescribing arrangements. Nevertheless, the IAEA General Conference in resolutions GC(46)/RES/9 and GC(48)/RES/10 encouraged Member States "to implement…the updated procedures of the Emergency Notification and Assistance Technical Operations Manual and, in particular, adopt the lower threshold for early notification and information exchange". It is manifestly desirable that all States adopt the arrangements described in ENATOM.

All States, irrespective of whether they are party to one or other of the two Conventions, are invited to use the arrangements described here when providing relevant information about nuclear or radiological emergencies, in order to minimize the transnational consequences and to facilitate the prompt provision of information and assistance.

NOTES FOR THE USER

This manual describes arrangements operative from 1 February 2007 and supersedes the previous edition, EPR-ENATOM (2004). Responsible personnel should immediately begin planning to make any necessary changes to their operational systems. By 1 February 2007, all copies of the previous edition should be removed from operational response systems and either archived or destroyed.

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

- Changed organizational structure of the Incident and Emergency Centre within the IAEA Secretariat
- Scope of response arrangements widened to deal with incidents and emergencies
- Reviewed emergency trials, drills and exercises

The IAEA's Incident and Emergency Centre is ready to provide any clarification on the implementation of the arrangements described here, and may be reached at the contact details provided in Section 3.4 of this manual.

EDITORIAL NOTE

The views expressed do not necessarily reflect those of the governments of States that are IAEA Member States and/or Parties to either or both 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, or of other relevant international intergovernmental organizations, or of the governments of other States.

Although great care has been taken to maintain the accuracy of information contained in this manual, neither the IAEA nor its Member States assume any responsibility for consequences that may arise from its use.

Contents

Section 1

1. INTRODUCTION

1.1. Background

At the meeting of the IAEA's Board of Governors on 16 September 1987, the Secretariat informed the Board about its intention to develop an Emergency Notification and Assistance Technical Operations Manual (ENATOM). ENATOM conceptually links the IAEA, the IAEA's Member States, Parties to the Convention on Early Notification of a Nuclear Accident (the 'Early Notification Convention') and to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (the 'Assistance Convention') [1], relevant international intergovernmental organizations ('international organizations') and other States. ENATOM was designed to facilitate the practical implementation of those Articles of the Early Notification and Assistance Conventions (the 'Emergency Conventions') that are operational in nature. In addition, it was designed to contain, in one manual, practical information relating to when and how to invoke either or both Conventions.

This manual was first issued on 18 January 1989. Member States, Parties to the Early Notification and Assistance Conventions, relevant international organizations and other States have since then regularly received updates to the manual. Since December 2000, the IAEA has reissued ENATOM regularly to take account of many factors relating to technological developments, operational concepts, the revision of standards in the area of emergency preparedness and response, and Member States' expectations. The manual is reviewed and reissued biennially.

Safety Requirements on Preparedness and Response for a Nuclear or Radiological Emergency

In March 2002, the IAEA's Board of Governors approved a Safety Requirements publication to be issued according to the IAEA's statutory function "to establish … standards of safety for protection of health and minimization of danger to life and property". This Safety Requirements publication, Preparedness and Response for a Nuclear or Radiological Emergency [2], which is jointly sponsored by seven international organizations, establishes the requirements for an adequate level of preparedness and response for a nuclear or radiological emergency in any State. The implementation of the requirements in Ref. [2] is intended to minimize the consequences for people, property and the environment of any nuclear or radiological

emergency. The fulfilment of these requirements will also contribute to the harmonization of arrangements in the event of a transnational emergency. National authorities are expected to apply these requirements by means of adopting legislation, establishing regulations and assigning responsibilities. Of particular relevance to ENATOM are certain requirements that necessitate an operational interface between States and the IAEA (paras 4.14, 4.15, 4.29, 4.30 and 4.84 of Ref. [2]).

Joint Radiation Management Plan of the International Organizations

It had also been recognized that there was a need for clarification of interactions between various international organizations during a developing emergency. In this context, a joint radiation emergency management plan of the international organizations was conceived and first issued in December 2000 and since new version were published. The latest edition of the 'Joint Plan', co-sponsored now by thirteen international organizations and in cooperation with two international organizations, is being issued, updated to take account of: the functions, roles and operations of the new co-sponsoring organizations; experience gained in response to real events and exercises; and recommendations of the Inter-Agency Committee on the Response to Nuclear Accidents (IACRNA). The new Joint Plan is a companion publication to ENATOM, and is published and made available separately [3].

Response Assistance Network

ENATOM addresses the issue of requesting and providing assistance in the event of a nuclear or radiological emergency. For the provision of assistance, the IAEA is facilitating a global response assistance network (RANET) of national response capabilities able to respond rapidly to nuclear or radiological emergencies. The IAEA's General Conference in its resolution GC(50)/RES/10 encouraged Member States to put in place arrangements for effectively responding to requests made under the Assistance Convention and to make resources available for responding to such requests, and to consider joining RANET. The details of the operations of RANET are described in a companion publication to ENATOM, and are published separately [4].

Other factors

Lessons have also been identified from the ConvEx-1 and ConvEx-2 exercises conducted in 2004/2005, from the ConvEx-3 international exercise conducted in 2005 and from actual responses by the IAEA and States providing timely assistance to events with suspected or potential radiological consequences. There has been considerable increased awareness in the possibility of the deliberate radiation exposure of people or threat thereof by the malicious use of radioactive materials, detonation of an improvised nuclear device or attacks on nuclear installations. In this regard, a review of the arrangements has also been carried out to respond to events with apparent, suspected or potential radiological consequences that necessitate short-term actions independent of their cause.

1.2. Objective

The objective of ENATOM is to provide guidelines for the IAEA's Member States, Parties to the Emergency Conventions, relevant international organizations and other States in order that they may develop suitable mechanisms to interface with the IAEA within the framework of these Conventions and to meet the operational requirements in Ref. [2]. In addition, it is also designed to contain, in one manual, practical information relating to when and how to invoke these arrangements.

1.3. Scope

ENATOM describes in a practical manner the IAEA's expectations regarding the exchange of official information and the timely provision of assistance among the IAEA's Member States, Parties to the Emergency Conventions, relevant international organizations and other States in events with apparent, suspected or potential radiological consequences that necessitate short-term response actions and the development of preparedness for such events.

The arrangements described here are in the context of 1) the Early Notification and Assistance Conventions [1] and 2) the Safety Requirements on Preparedness and Response for a Nuclear or Radiological Emergency [2]. They should not be confused with other IAEA event reporting systems such as the International Nuclear Event Scale (INES), the Nuclear Events Web-based System (NEWS), arrangements for reporting illicit trafficking, etc. It is also important to note that the IAEA's processes for recording events for the purposes of analysis and identifying lessons to be learnt, including the Incident Reporting System (IRS) are currently outside the scope of ENATOM.

1.4. Structure

ENATOM consists of four sections. Section 1 provides the background, objective, scope and structure of the manual, together with definitions of terms and abbreviations. Section 2 provides basic information on the IAEA's Incident and Emergency System. This information is provided to enable the reader to understand the response objectives, planning basis, services and concept of operations of the IAEA's Incident and Emergency Centre (IEC). Section 3 describes actions that need to be taken by Member States and Parties to the Emergency Conventions in order to develop and maintain preparedness to respond, including the management of contact details, and how the IAEA will both organize and participate in trials, drills and exercises. Section 4 provides an overview on the response actions expected of States Parties, Member States, relevant international organizations and the IAEA for different scenarios.

ENATOM also has two attachments, which are issued separately: Emergency Communications with the IAEA's Incident and Emergency Centre — Contact details, checklists and forms (Attachment 1, restricted distribution) and Warning Points, Competent Authorities and Relevant International Organizations for the Early Notification and Assistance Conventions (Attachment 2, restricted distribution).

In addition to ENATOM, the following two publications constitute an integral part of the emergency response system:

1. Joint Radiation Emergency Management Plan of the International Organizations, EPR–JPLAN [3].

2. The IAEA Response Assistance Network, EPR–RANET [4].

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1.5. Definitions

Advisory An official report to a national or international authority by an authorized competent authority providing details of a nuclear or radiological incident or 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 Parties to the Assistance Convention for 'assistance' in obtaining information[7]; 2) to trigger the IAEA to offer its good offices[8]; 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 worsen[9]; 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 response staff.

Authentication The process of confirming that a message received comes from a valid source.

Competent authority A contact point that is authorized to issue a notification, advisory, request for assistance or other incident or emergency information as appropriate, and to reply to requests for information or assistance.

Contact point A generic term for an organization, designated by a State or an international organization that has a role to play in international exchange of information in response to a nuclear or radiological incident or emergency.

Dangerous source A source that could, if not under control, give rise to exposure sufficient to cause a severe deterministic health effect (one for which generally a threshold level of dose exists above which the severity of the effect is greater for a higher dose, and that is fatal or life threatening or results in a permanent injury that decreases the quality of life).

EMERCON A descriptor referring to the official system for issuing and receiving notifications, information exchange and assistance provision through the IAEA's Incident and Emergency Centre in the event of a nuclear or radiological incident or emergency.

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

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

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

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 and 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.

Incident Any unintended event, including operating errors, equipment failures, initiating events, accident precursors, near misses or other mishaps, or unauthorized act, malicious or non-malicious, the consequences or potential consequences of which are not negligible from the point of view of protection or safety.

Notification An 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 a potential emergency; for example, as required by the Convention on Early Notification of a Nuclear Accident[10], or under the provisions of outer space treaties or international safety standards [2] (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 Early Notification Convention, or 2) the State that initially detects, or discovers evidence of, a transnational emergency, for example by: detecting significant increases in atmospheric radiation levels of unknown origin; detecting contamination in transboundary shipments; discovering a dangerous source that may have originated in another State; or diagnosing medical symptoms that may have resulted from exposure outside the State.

Nuclear installation A nuclear fuel fabrication plant, research reactor (including subcritical and critical assemblies), nuclear power plant, spent fuel storage facility, enrichment plant, reprocessing facility or nuclear powered vessel.

Relevant international organization An international intergovernmental organization that, according to the information available to the IAEA, has a significant legal or statutory role and/or capability to provide advice or assistance in the event of a nuclear or radiological emergency.

Significant transboundary release A release of radioactive material to the environment that may result in doses or levels of contamination beyond national borders from the release which exceed international intervention levels or action levels for protective actions, including food restrictions and restrictions on commerce.

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[10] Note that this is different from the definition provided in the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources [5].

[12] In the Early Notification and Assistance Conventions, the term 'point of contact' is used. However, the term was found to be confusing and was often misused by Parties to mean competent authorities. The term 'warning point' is used here to make it clear that this is the contact point that should be available 24 hours a day for receipt of a notification, advisory message or request for information or assistance.

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 transported across 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 in 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.

Verification

The process of confirming that the information in a message is properly understood (cf. authentication).

Warning point[12]

A contact point that is staffed or able to be alerted at all times for promptly responding to, or initiating a response to, an incoming notification, advisory message, request for assistance or request for verification of a message as appropriate, from the IAEA.

1.6. Abbreviations

CONVEX	Convention Exercise
EMERCON	Emergency Convention
ENAC	Emergency Notification and Assistance Convention (web site)
ENATOM	Emergency Notification and Assistance Technical Operations Manual
ERF	Event Rating Form (for the INES reporting system of the IAEA)
FAO	Food and Agriculture Organization of the United Nations
GENF	EMERCON General Emergency at Nuclear Facility Form
GMT	Greenwich Mean Time (=UTC)
IACRNA	Inter-Agency Committee on Response to Nuclear Accidents
IEC	Incident and Emergency Centre (of the IAEA)
INES	International Nuclear Event Scale
INTERPOL	International Criminal Police Organization
IRS	Incident Reporting System
JPLAN	Joint Radiation Emergency Management Plan of the International Organizations
MPA	EMERCON Radiation Measurements and Protective Actions Form
MTPI	Division of Public Information (of the IAEA)
NCA	National Competent Authority
NCA(A)	National Competent Authority for an Emergency Abroad
NCA(D)	National Competent Authority for a Domestic Emergency
NEWS	Nuclear Events Web-based System (related to INES reporting)
NPP	Nuclear Power Plant
NWP	National Warning Point
OCHA	United Nations Office for the Co-ordination of Humanitarian Affairs
OOSA	United Nations Office for Outer Space Affairs
PAHO	Pan American Health Organization

RANET	Response Assistance Network of the IAEA
RSMC	Regional Specialized Meteorological Centre (of the WMO)
SCC	Security Control Centre – United Nations Security and Safety Services
SGIT	Division of Safeguards Information Technology, IAEA
SRF	EMERCON Standard Reporting Form
URL	Universal Resource Locator (address on the World Wide Web)
UTC	Universal Time Coordinated (= GMT)
WCO	World Customs Organization
WHO	World Health Organization
WMO	World Meteorological Organization

1.7. Member States and Parties

Status as at 20 November 2006. The latest status can be found on the IAEA web site.

1 Party to the Early Notification Convention **2 Party to the Assistance Convention**
3 Not a Member State of the IAEA **4 International Organization**
5 Membership approved by General Conference but only in effect once necessary legal instruments are deposited

1

AFGHANISTAN	CYPRUS [1,2]	JAMAICA	NEW ZEALAND [1,2]	SWITZERLAND [1,2]
ALBANIA [1,2]	CZECH REPUBLIC[1,2]	JAPAN [1,2]	NICARAGUA [1,2]	SYRIAN ARAB REPUBLIC
ALGERIA [1,2]	DEMOCRATIC REPUBLIC OF THE CONGO	JORDAN [1,2]	NIGER	TAJIKISTAN
ANGOLA [1]	DENMARK [1]	KAZAKHSTAN	NIGERIA [1,2]	THAILAND [1,2]
ARGENTINA [1,2]	DOMINICAN REPUBLIC	KENYA	NORWAY [1,2]	THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA [1,2]
ARMENIA [1,2]	ECUADOR	KOREA, REPUBLIC OF [1,2]	PAKISTAN [1,2]	TOGO [5]
AUSTRALIA [1,2]	EGYPT [1,2]	KUWAIT [1,2]	PALAU [5]	TUNISIA [1,2]
AUSTRIA [1,2]	EL SALVADOR [1,2]	KYRGYZSTAN	PANAMA [1,2]	TURKEY [1,2]
AZERBAIJAN	ERITREA	LATVIA [1,2]	PARAGUAY	UGANDA
BANGLADESH [1,2]	ESTONIA [1,2]	LEBANON [1,2]	PERU [1,2]	UKRAINE [1,2]
BELARUS [1,2]	ETHIOPIA	LIBERIA	PHILIPPINES [1,2]	UNITED ARAB EMIRATES [1,2]
BELGIUM [1,2]	FINLAND [1,2]	LIBYAN ARAB JAMAHIRIYA [2]	POLAND [1,2]	UNITED KINGDOM [1,2]
BELIZE	FRANCE [1,2]	LIECHTENSTEIN.[1,2]	PORTUGAL [1,2]	UNITED REPUBLIC OF TANZANIA [1,2]
BENIN	GABON	LITHUANIA [1,2]	QATAR [1,2]	UNITED STATES OF AMERICA [1,2]
BOLIVIA [1,2]	GEORGIA	LUXEMBOURG [1,2]	REP. OF MOLDOVA [1,2]	URUGUAY [1,2]
BOSNIA AND HERZEGOVINA [1,2]	GERMANY [1,2]	MADAGASCAR	ROMANIA [1,2]	UZBEKISTAN
BOTSWANA	GHANA	MALAWI	RUSSIA [1,2]	VENEZUELA
BRAZIL [1,2]	GREECE [1,2]	MALAYSIA [1,2]	SAINT VINCENT & THE GRENADINES [1,2,3]	VIET NAM [1,2]
BULGARIA [1,2]	GUATEMALA [1,2]	MALI	SAUDIA ARABIA [1,2]	YEMEN
BURKINA FASO	HAITI	MALTA	SENEGAL	ZAMBIA
CAMEROON [1,2]	HOLY SEE	MARSHALL ISLANDS	SERBIA [1,2]	ZIMBABWE
CANADA [1,2]	HONDURAS	MAURITANIA	SEYCHELLES	FAO [1,2,4]
CENTRAL AFRICAN REPUBLIC	HUNGARY [1,2]	MAURITIUS [1,2]	SIERRA LEONE	WHO [1,2,4]
CHAD	ICELAND [1,2]	MEXICO [1,2]	SINGAPORE [1,2]	WMO [1,2,4]
CHILE [1,2]	INDIA [1,2]	MONACO [1,2]	SLOVAKIA [1,2]	
CHINA [1,2]	INDONESIA[1,2]	MONGOLIA [1,2]	SLOVENIA [1,2]	
COLOMBIA [1,2]	IRAN, ISLAMIC REPUBLIC OF [1,2]	MONTENEGRO	SOUTH AFRICA [1,2]	
COSTA RICA [1,2]	IRAQ [1,2]	MOROCCO[1,2]	SPAIN [1,2]	
COTE D'IVOIRE	IRELAND [1,2]	MOZAMBIQUE	SRI LANKA [1,2]	
CROATIA [1,2]	ISRAEL [1,2]	MYANMAR [1]	SUDAN	
CUBA [1,2]	ITALY [1,2]	NAMIBIA	SWEDEN [1,2]	
		NETHERLANDS [1,2]		

Section 2

2. THE IAEA INCIDENT AND EMERGENCY SYSTEM

2.1. Framework

In order to meet its legal responsibilities the IAEA Secretariat needs to be prepared to respond appropriately and efficiently to any incident or emergency situation that may have actual or potential radiological consequences to health, property or the environment and which would require urgent IAEA involvement. In addition, it should also be in the position to respond to requests for emergency assistance. To address these issues, a 24-hour warning point and operational focal point in the Secretariat has been established: the IAEA's Incident and Emergency Centre[13] (IEC), which: a) maintains a 24/7 alert and coordination structure for emergency requests for assistance; and b) using arrangements established through liaison within the Secretariat and with competent authorities, facilitates the management of a rapid coordinated response by the IAEA to situations that may give rise to radiological consequences irrespective of their cause. The functions of the IEC also extend to coordinating prompt assistance to requesting States in the case of a nuclear security incident. States and relevant international organizations can promptly direct notification/advisory messages and requests for assistance/information to the IEC. Media/public requests for information sent to the IEC will be re-routed to the IAEA's Division of Public Information (MTPI).

NOTE

The IAEA cannot ensure immediate response if a message is sent to any contact address in the IAEA other than that of the IEC.

The IAEA also cannot ensure that an initial notification message can be routed from a notifying State through the IEC to a nearby State in

[13] The Security Control Centre (SCC), which is located in the Vienna International Centre, serves as an integrated 24-hour warning point and telecommunications backup for the IAEA's IEC. Any incoming message, if correctly addressed, arrives simultaneously at the SCC and at the IEC.

time for implementation of effective urgent protective measures for some postulated emergencies at some types of facility. Consequently, the IAEA urges relevant States to put in place bilateral arrangements so that a notifying State may notify directly potentially affected States of an emergency that warrants the immediate application of urgent protective measures.

2.2. Objectives

The prime objectives of the IAEA's Incident and Emergency System are to facilitate the minimisation of consequences through:

- Exchange of official information among States/relevant international organizations;
- Provision of assistance to States/relevant international organizations upon request; and
- Provision of useful, timely, truthful, consistent and appropriate public information.

2.3. Concept of operations

The IEC may operate in three modes: *Normal/Ready*[14] mode, *Basic response*[15] mode and *Full response*[16] mode. Response actions and urgency of the response will vary according to the magnitude and seriousness of the event.

Coordination with relevant international organizations is described in the Joint Radiation Emergency Management Plan of the International Organizations [3].

An overview of the response structure of the IEC is shown in Figure 1.

2.3.1. Exchange of official information

The IEC expects to receive initial information from a national competent authority (NCA) informing it about nuclear or radiological emergency and/or request for assistance in obtaining official information. The information received in this regard will be authenticated and the message content verified with the NCA of the State that

[14] In *Normal/Ready mode*, the IEC is a focal point for incoming messages. It is not staffed continuously. On-call officers are available to immediately respond. This mode includes all day-to-day activities designed to ensure readiness and is the default condition in which the IEC is maintained. The IEC will remain in this mode through initial discussions of any incoming message regarding a situation with apparent, suspected or potential radiological consequences, particularly before it is confirmed.

[15] In *Basic response mode*, although the IEC is not staffed continuously, the IEC becomes a focal point for coordination of a rapid response. On-call officers remain available to immediately respond to incoming messages. If appropriate, some staff may be activated and additional staff may be placed on standby and preparations may be implemented to move rapidly to full response mode. Extra assessments are made during office hours from staff offices according to a centralized direction. Assistance missions may be deployed in response to a request for assistance.

[16] In *Full response mode* the IEC is staffed continuously (24 hours a day with shift changes) and manages the IAEA's operational response actions.

issued it. If the information is confirmed, the IEC will be activated accordingly. Information received through the Nuclear Events Web-based System (NEWS) will be followed up, with the INES National Officer if needed or even with the National Competent Authority if the event reported warrants response, to minimize its consequences and to protect life, property and the environment.

Follow-up information provided by the notifying State are planned to be rapidly screened and, depending on its urgency: (1) sent to NCA(A)s and Permanent Missions of other relevant States, and relevant international organizations, as appropriate, and/or (2) posted on ENAC.

Information provided under the auspices of the Early Notification Convention is distributed accordingly. Messages with confidentiality marking, personal medical information or information whose distribution might pose a security risk will not be provided to contact points.

If there are media reports or other unconfirmed reports of a transnational emergency or an incident of international concern, the IEC may contact the 24-hour national warning point (NWP) of the relevant State for verification. If the information is verified, the IEC requests the relevant NCA(D) to send an initial notification or an advisory message, as appropriate, to the IEC. However, if the information proves to be false, the IEC will report this to the requesting contact point, as appropriate.

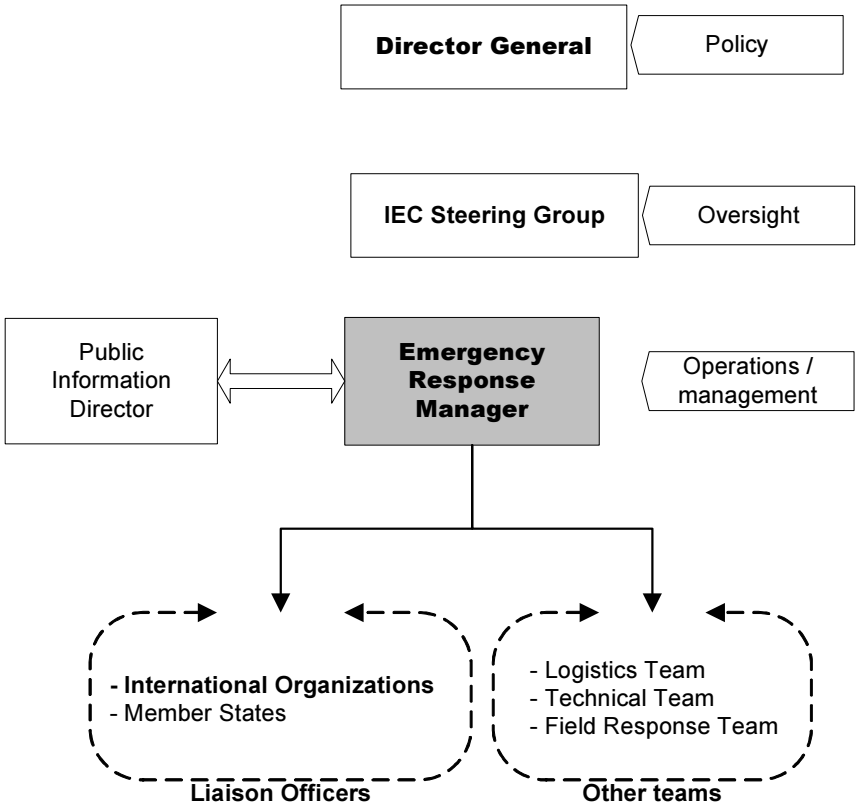

Figure 1 An overview of the response structure of the IEC.

2.3.2. Provision of assistance

The relevant national competent authority may request assistance or other services such as event investigation from the IAEA's IEC. The IEC may provide assistance in making an initial assessment with resources allocated for this purpose (this may include an assistance mission), and/or may coordinate/facilitate any international Joint Assistance Team to be established.

The relevant national competent authority or a country's Permanent Mission to the IAEA may request information to the IEC about an ongoing situation in another State. The IEC, after authenticating the request, will forward it to the relevant State that is expected to respond promptly to the IEC. The IEC, when appropriate, rapidly screens the reply for consistency, plausibility, legibility and comprehension and then dispatches the response to the requesting national competent authority.

2.3.3. Provision of public information

The IAEA will make all reasonable efforts to coordinate the release of factual information with a notifying State, other relevant States and international organizations, with due regard to their respective areas of responsibility. The IAEA may monitor the international news media to identify inconsistencies and rumours, and request clarification as appropriate from the relevant NCA. Only authenticated, verified and unclassified information will be published on the IAEA's public web site and/or reported to the news media (if appropriate). The IAEA may extract and summarize any unrestricted and authenticated information received from contact points about the reported situation and post it on the IAEA's public web site.

2.3.4. Termination and follow up actions

When the situation is contained and stable and does not present any further short term risk to persons and the environment or when the IAEA does not anticipate any urgent requests for advice, assistance or its good offices, the IEC will announce that it is standing down and returning to *Normal/Ready* mode.

If there is a need for follow-up actions an implementation plan may be prepared for providing and/or facilitating follow-up assistance in an efficient and coordinated way.

Section 3

3. COMPETENT AUTHORITIES AND POINTS OF CONTACT

3.1. Designation and contact details

3.1.1. Obligations and expectations

Parties to the Conventions

Each State and international organization party to the Early Notification and Assistance Conventions **must** designate and make known to the IAEA its national warning point[17] and competent authorities.

States not Party

Any other Member State, in order to meet the requirements in Ref. [2][18], should designate its national warning point and competent authorities for these purposes and make them known to the IAEA. The IAEA Secretariat strongly encourages also all non-Member States of the IAEA to designate their national warning points and competent authorities for these purposes and to make them known to the IAEA.

International organizations

International organizations wishing to be considered 'relevant' for the purposes of either Convention should send a letter to the IAEA making such a request and attaching as appropriate, information that would allow the IAEA to recognize them as having a significant legal or statutory role and/or capability to provide advice or assistance in the event of a nuclear or radiological emergency.

3.1.2. Designation of contact points

Each State, through either its **Ministry of Foreign Affairs or Permanent Mission to the IAEA**, or each relevant international organization makes known in a written communication to the IAEA its designations for its national warning point and competent authorities. Changes to these designations must also be communicated in advance through these same official channels.

3.1.3. Contact details

Contact details (fax numbers, (satellite) telephone numbers, email addresses and numbers for video conferencing) and changes thereto may be communicated in

[17] Article 7 of Early Notification Convention and Article 4 of the Assistance Convention. Note that the Conventions use the term 'point of contact' for national warning point as used in ENATOM.

[18] See para. 4.29 of Ref. [2].

writing, in advance of the date of change, **directly from these designated contact points to the IEC (using the contact details below)** and copied to the Permanent Mission to the IAEA, or from the Mission itself. These details and any changes should also be communicated to any other relevant body in the State, especially other national contact points. The IAEA's IEC will test the changed communication details for the contact points (see below).

3.2. Expected functions

According to the national emergency systems in place in States, the functions of the national competent authorities under the terms of either or both Conventions may be combined and performed by one or more authorities or organizations. Unless otherwise informed, the IAEA assumes that the competent authorities nominated under the Early Notification and Assistance Conventions have the same authority for issuing notifications and providing information concerning transnational emergencies as specified in Ref. [2].

3.2.1. National warning point — NWP

The NWP is that **single** institution in a State, which has been designated by its Government to receive at any time an initial notification/advisory/follow up message and/or request for assistance or verification and **immediately** to act upon it. The NWP's functions are independent of those of the NCA. Nevertheless, an NCA could also have the functions of an NWP.

The NWP is expected to be part of a national emergency response system and should possess both the authority and the means to activate it. The service is obligated, under the terms of the Early Notification and Assistance Conventions and the requirements of Ref. [2], to be available continuously, i.e. staffed and/or able to be alerted 24 hours per day, seven days per week[19]. If requested to consider providing assistance, it should be able to rapidly forward to the relevant NCA any request so received. The NWP must have persons on duty or have speedy access to persons who can understand and speak English.

3.2.2. National competent authority — NCA(D) — for a domestic emergency

The NCA(D) is an institution within a State authorized by its Government to issue an initial notification/advisory/follow-up message, as appropriate, or reply to a request for verification/information regarding a nuclear or radiological emergency. It is also competent to verify any relevant information provided during a nuclear or radiological emergency in that State. The NCA(D) should be authorized by its Government that, in the event of a nuclear or radiological emergency, it may direct a request for assistance to the IAEA. The NCA(D) should coordinate the request for assistance with all other national competent authorities.

A State could designate more then one NCA(D). However, they all should be in an appropriate position within the State's national emergency response system to send or provide relevant information during a nuclear or radiological emergency originating at a facility or location on its territory. The NCA(D) does not normally need to be

[19] For example, in the event of an urgent request for verification of an unconfirmed report of an emergency in a State, the IAEA may contact the NWP of that State, which should have the capability to rapidly obtain verification of such a report from the relevant NCA.

continuously staffed, but in the event of a nuclear or radiological emergency originating on territory or under jurisdiction of the State, the relevant NCA(D) is expected to be activated and to coordinate with the NWP as well as other relevant organizations. It should have a capability available at all times to receive fax messages and also to be able to establish direct telephone communications with the IAEA's IEC. It is highly desirable that the NCA(D) has internet capability, to be able to send and receive electronic mail and access the ENAC web site.

3.2.3. National competent authority — NCA(A) — for an emergency abroad

This is the **single** institution within a State that is expected to verify or arrange for the verification of any relevant information provided during a nuclear or radiological emergency originating in another State, as well as being in a position to receive notifications, advisory messages, follow up information and requests for assistance. In the event of a nuclear or radiological emergency, the NCA(A) should be authorized by its Government to direct requests for assistance to the IAEA. The NCA(A) should coordinate the request for assistance with all other national competent authorities.

This institution should be in an appropriate position within its own national emergency response system for receiving, sending or providing information during a nuclear or radiological emergency originating in another State. The contact point for the NCA(A) need not normally be continuously staffed but, in the event of a nuclear or radiological emergency in another State, the NCA(A) must have arrangements to rapidly activate following a notification of a transnational emergency being received by the NWP. It should have a capability at all times to receive fax messages and should also be able to establish direct telephone communications with the IEC. It is highly desirable that the NCA(A) has internet capability, to be able to send and receive electronic mail and access the ENAC web site.

NOTE

In addition, the IAEA deems the NCA(A) the responsible body for ensuring that updated copies of ENATOM and its associated annexes, amendments, and user name and password for 'read-access' to the ENAC web site are distributed to relevant bodies in their State as part of maintaining preparedness.

3.2.4. Permanent missions to the IAEA

The permanent mission to the IAEA will receive copies of relevant communications sent out from the IEC to its State's contact points while the IEC is activated, and have 'read-access' to the ENAC web site. It is highly desirable that the permanent mission has internet capability, to be able to send and receive electronic mail and access the ENAC web site. The mission will also be requested to assist in the event of communication problems between the IAEA's IEC and the State concerned, and where the State has not yet nominated warning points or competent authorities. The mission of a State requesting assistance may itself be requested to assist with matters such as obtaining visas for personnel entering their State and with customs clearance for equipment being brought into the State as part of providing assistance.

3.2.5. Relevant international organizations

The IEC also maintains communications arrangements with relevant international organizations in order to coordinate any international response to a nuclear or radiological emergency. A number of international organizations are Parties to the two Emergency Conventions and have established warning points, and others have agreements with the IAEA for the purpose of response coordination. More details are provided in the Joint Radiation Emergency Management Plan of the International Organizations [3].

3.3. Preparedness tasks

Procedures in the local language should be prepared for staff manning contact points. These procedures should be based on the response procedures given in Section 4 and Attachment 1 (issued separately), and coordinated with the other contact points in the State. Staff manning contact points should be regularly trained and drilled in their procedures, ideally understanding and speaking English, and be able to recognize an incoming EMERCON message and take immediate appropriate action. Suitable equipment and communication capabilities should be provided (including an accurate clock showing UTC). Relevant EMERCON forms should be completed in advance of need, where possible (for example, with geographical coordinates of nuclear facilities) and matched with national arrangements for issuing notifications and exchanging information[20]. More information on developing emergency preparedness can be found in Ref. [6].

3.4. Communication with the IEC

3.4.1. Validity of contact details

Promptly after receiving the name and contact details or changes thereto of the designated competent authorities and warning point, as described above in Designation and contact details (Section 3.1), the IAEA's IEC will:

a) ensure that the correct channels described there have been used for communicating with the IAEA; if not, the IEC will submit the information received to the States' Permanent Mission to the IAEA for their appraisal and confirmation;

b) check that the contact details for the national warning points/competent authorities are correct by performing a simple communications test on or shortly after the date of change;

c) include the information received in its contact point database;

d) maintain an up-to-date list of contact points, and make this available on ENAC;

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[20] Training should be provided on submitting information to the IAEA using the ENAC interface over the internet, but appropriate paper EMERCON forms or templates should still be maintained as a contingency arrangement.

[22] Submitted by contact points; and for contact points to confirm to the IEC that they have taken note of a particular message.

e) provide, twice a year in April and October, to the IAEA's Member States, to the Parties of the two Conventions and to relevant international organizations the information referred to in item (d) above.

3.4.2. Details for routine communications with the IEC

National competent authorities, national warning points, Permanent Missions to the IAEA, international organizations and others may wish to consult the IEC on matters concerning the two Emergency Conventions [1], the Safety Requirements in Ref. [2], ENATOM and emergency arrangements in general.

The IAEA's IEC is ready to receive any **routine non-urgent** written (for example, changes to contact details) or verbal communication from the Permanent Missions to the IAEA or relevant contact points, as appropriate, through:

fax number: +43 1 2600 7 29309; or

telephone numbers: +43 1 2600 22028 (or 22025 as backup)

email address: eru3@iaea.org

Communication in the event of a nuclear or radiological emergency should be through the arrangements described in Attachment 1.

3.4.3. Practical emergency communication channels

The IEC does not recognize information sent in any coded form as a valid communication. All communication should be in an uncoded form and preferably in English.

The following modes of emergency communication with the IAEA are currently available.

Facsimile

Fax may be used for initial notification, advisory messages and changes of emergency class/type from and to contact points, as well as for providing follow-up information, and for requesting information and assistance. Fax is the primary mechanism for the IAEA to inform contact points of any notification received. Fax is also the primary backup channel in the case of malfunction of the ENAC and/or Internet.

Emergency web site

The IEC offers a secure exchange of emergency information through an official protected web site (Early Notification and Assistance Conventions web site — ENAC): for submission of initial notification, advisory messages and changes of emergency class/type by relevant contact points to the IEC, together with attached electronic documents; for accessing messages and downloading relevant documents[22]. ENAC is not used to inform contact points of any notifications received by the IAEA, although copies of such messages are published on ENAC, respecting any confidentiality issues. ENAC can be accessed with a log-on ID and password using any of the following browser programs: Netscape®, Internet Explorer® or Opera® in version 4.0 or later, and information is primarily made available in the English language. The IEC sends under separate cover IDs and passwords to the relevant contact points. It is expected that the NCA(A) will maintain a controlled list of bodies to which passwords for read-only access have been given and be responsible for informing such bodies about changes to the passwords and testing them.

Telephone

The telephone may be used by competent authorities for requesting information, verification of receipt or authentication[23]. The IEC uses the telephone to authenticate and to verify notification and/or advisory messages arriving at the IEC as well as to establish a direct communication link with any national warning points and/or national competent authorities. All telephone conversations made by the IEC are recorded. Note that the preferred language is English, and States are requested to use English for telephone communications with the IEC whenever possible.

Electronic mail

Email with attachments may be used for providing follow-up information, and for requesting information if the IEC is in *Full response* mode. **Do NOT use email for initial notification or advisory messages, or for reporting a change of emergency class.** Attach any graphics files as .jpeg or .gif format files.

3.4.4. Amendments and bulletins

The IAEA's IEC envisages publishing the next edition of ENATOM in summer 2008 to enter into effect in December 2008. It will issue amendments to the current edition if it becomes necessary and will distribute bulletins from time to time with relevant information to all warning points and competent authorities. Critical information will require confirmation of receipt from States.

The IAEA's IEC will additionally endeavour[24] to collect and disseminate to States Parties and Member States information concerning:

a) experts, equipment and materials which could be made available in the event of nuclear accidents or radiological emergencies, by publishing information about RANET capabilities both in print [4] and on the internet;

b) methodologies, techniques and available results of research relating to response to nuclear accidents or radiological emergencies, by publishing relevant material both in print and on the internet.

3.5. Emergency trials, drills and exercises (ConvEx)

Standard drills and exercises will be prepared, performed and evaluated to test key response objectives within the scheme described below. The results and appropriate evaluations will be published on ENAC.

Other trials outside of this scheme for the purposes of examining possible new arrangements will be performed from time to time. Invitations to participate on a voluntary basis will be made appropriately.

The IEC can participate in national or regional exercise on request of the country conducting the exercise. For this purpose the IEC would appreciate receiving a request to participate at least 3 months before the planned date of the exercise. The

[23] The telephone may also be used as a contingency in the case of failure of other modes of communication for submitting initial notifications, advisory and follow-up messages.

[24] Article 5 of the Assistance Convention.

[26] See also Ref. [3].

IEC will nominate a staff member as the IEC exercise controller for the exercise and will request access to critical information for the IEC exercise controller. The IEC will keep information restricted on a need to know basis as requested by the country conducting the exercise.

All trials, drill and exercise messages in this framework **must** be clearly marked with the words 'EXERCISE' in English.

ConvEx-1 **Objective 1: to test that NWPs are continuously available, whether fax contacts are accurate and that contact points can access ENAC properly .**

ConvEx-1a: The IEC will send a drill message by fax to all NWPs and NCA(A)s once per year with a copy to Permanent Missions. It is expected that:

- NWPs send an acknowledgement of receipt by fax or email within 30 minutes to the IAEA's IEC; and
- NCA(A)s, no later than their next working day, access ENAC and send to the IAEA's IEC a simple acknowledgement of receipt of test message and a confirmation of their ability to access ENAC.

ConvEx-1b: Any contact point may send a test message by fax to the IEC not more frequently than once per quarter without prior arrangement, and the IAEA will return a simple acknowledgement of receipt on or before the next working day. No other States will be involved.

ConvEx-2 **Objective 2: to test whether response times to a notification or request for verification are adequate, to drill the appropriate ENATOM procedures.**

ConvEx-2a: Once a year the IAEA's IEC will send a drill message to all NWPs and NCA(A)s by fax, and publish the message on ENAC and request by email NCA(A)s to confirm through ENAC that it has been read. It is expected that:

1. NWPs send an acknowledgement of receipt by fax or email within 30 minutes to the IAEA's IEC;
2. NWPs promptly alert the relevant NCA(A)s; and
3. as soon as possible, the relevant NCA(A)s access ENAC, read the message and confirm through ENAC that they have read it. The target time is within 2 hours of receipt of the drill message.

These exercises will be conducted in the month according to the agreed schedule, while the exact time and date will not be announced.

ConvEx-2b: In advance of the drill, the IEC will invite NCA(A)s to participate and to coordinate the participation of NCA(D)s in this exercise that will take place on an announced date. The drill will be conducted once a year and will last no more than 4 hours (elapsed time).

The drill will involve the IAEA's IEC sending to participating NCAs a series of messages describing developing conditions in a scenario. It is expected that the

participating NCAs will complete and submit forms on ENAC within 1 hour of receipt of each message.

ConvEx-2c: In advance of this exercise, the IEC will invite NCA(A)s to participate and to coordinate the participation of NWPs in this exercise that will take place on a specific announced date. The exercise will be conducted once every two years, and will last no more than 8 hours (elapsed time). This exercise will be conducted jointly with the WMO and is expected to involve national meteorological services. This exercise will not be conducted in the same year as a ConvEx-3 exercise.

The Secretariat of the IAEA will invite the NCA(A) of an IAEA Member State – 'the Accident State'- to coordinate the communication of messages for a hypothetical emergency in their State. The Secretariat will provide input messages in advance. The scope of the exercise will not include testing bilateral or other multilateral arrangements.

The IEC will forward messages from the Accident State to participating contact points, and will publish the submitted information on ENAC. It is expected that other participating NCAs access information on ENAC and confirm they have read and understood messages, and respond appropriately to any requests for advice or information.

ConvEx-2d: In advance of this exercise, the Secretariat will invite NCA(A)s to participate and to coordinate the participation of relevant national capabilities in this exercise that will take place on a specific announced date. The exercise will be conducted once every two years, and will last no more than 8 hours (total time) extended over three days. This exercise will be conducted jointly with relevant international organizations. This exercise will not be conducted in the same year as a ConvEx-3 exercise.

The Secretariat will invite the NCA(A) of an IAEA Member State – 'the Accident State'- to coordinate the communication of information and requests for advice and assistance for a hypothetical situation in their State. The Secretariat will provide input messages in advance. The scope of the exercise will be the immediate post-emergency phase.

The IEC will forward messages from the Accident State to participating contact points, and will publish the submitted information on ENAC. It is expected that other participating NCAs access information on ENAC and confirm they have read and understood messages. The IEC and participating NCA(A)s will use appropriate communication means to simulate the provision and coordination of international assistance to the requesting State.

ConvEx-3 **Objective 3: to test the full operation of the information exchange mechanisms**

A large-scale exercise (**ConvEx-3**) will be conducted once every three to five years. Details will be announced to States in advance. All States Parties to the Early Notification Convention are strongly encouraged to participate. Such an exercise will usually be based on a national exercise being conducted in a State, and will be coordinated with exercise plans of other international organizations through the IACRNA[26].

3.6. Other arrangements with the IEC

The IAEA's IEC will additionally endeavour[27] to assist a State Party or Member State, upon request, in:

a) preparing emergency plans for nuclear and radiological emergencies and the appropriate legislation;

b) developing appropriate training programmes for personnel to deal with nuclear or radiological emergencies;

c) conducting investigations into the feasibility of establishing appropriate radiation monitoring systems.

[27] Article 5 of the Assistance Convention.

3

Section 4

4. RESPONSE ARRANGEMENTS

4.1. Background

This section together with Attachment 1 provides the key material for a State to prepare its own detailed interfacing arrangements, including procedures, checklists and training. ENATOM in itself does not establish any obligations on Member States, although an IAEA General Conference resolution GC(46)/RES/9 encourages Member States to implement them. It remains the responsibility of the State to ensure that it meets all its relevant obligations.

4.2. Event categorization

A nuclear or radiological incident or emergency requires rapid and coordinated response. This can be accomplished through the adoption of a categorization system composed of sets of conditions that trigger a certain level/mode of response. The categorization system adopted for the purpose of ENATOM addresses incidents and emergencies 1) specific to nuclear installations and 2) not specific to nuclear installations (Figure 2).

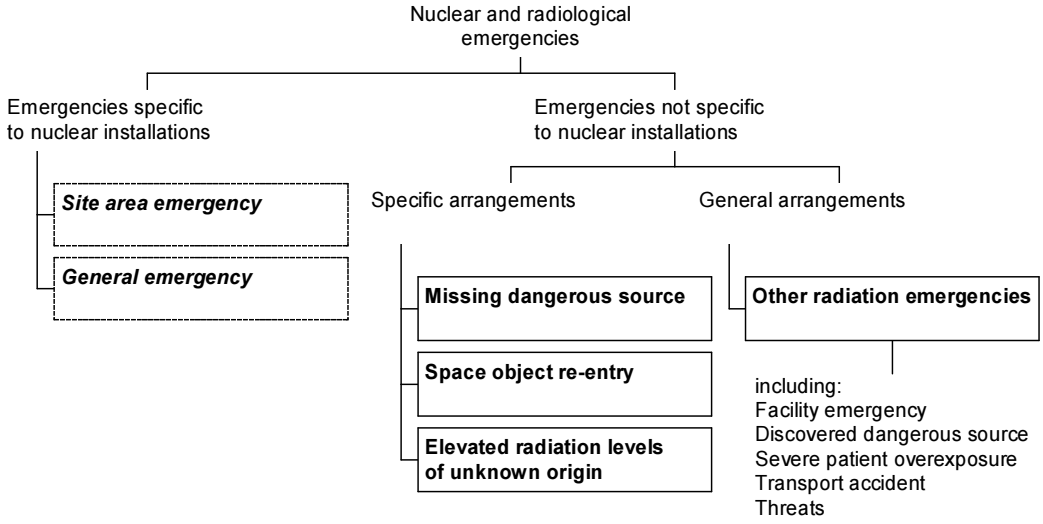

Figure 2 Six sets of emergency conditions, grouped into two classes and four types, used to describe situations that warrant immediate response actions by the IEC under ENATOM.

4.2.1. Emergencies specific to nuclear installations[29][30]

For emergencies specific to nuclear installations, two classes[31] are used in Section 4 to initiate different levels of response by the IEC, namely '**site area emergency**' and '**general emergency**'. The emergency type, '**other radiation emergency or threat**', may also be used for reporting other conditions, but that type is not specific to nuclear installations.

4.2.2. Emergencies not specific to nuclear installations

In addition to the two classes that are specific to nuclear installations, there are three types of incident or emergency for which specific response arrangements have been formulated, namely '**missing dangerous source**'; '**space object re-entry**' and '**elevated radiation levels of unknown origin**'.

[29] This relates to threat categories I and II as defined in Ref. [2], namely:

> I -Facilities, such as nuclear power plants, for which on-site events (including very low probability events) are postulated that could give rise to severe deterministic health effects off the site, or for which such events have occurred in similar facilities
>
> II - Facilities, such as some types of research reactors, for which on-site events are postulated that could give rise to doses to people off the site which warrant urgent protective action in accordance with international standards, or for which such events have occurred in similar facilities. Category II (as opposed to Category I) does not include facilities for which on-site events (including very low probability events) are postulated that could give rise to severe deterministic health effects off the site, or for which such events have occurred in similar facilities

[30] Note that a nuclear powered vessel is also a nuclear installation.

[31] These two classes ('site area emergency' and 'general emergency' are consistent with those specified in para. 4.19 of Ref. [2]. It is recognized that at the national level, a State/operator may use other classes, including the 'alert' class specified in Ref. [2], but these are not considered specifically in this manual.

[34] This emergency type can also include nuclear emergencies in nuclear installations, i.e. 'facility emergencies' or other types of 'uncontrolled source emergencies' as specified in Ref. [2].

Finally for the emergency type '**other radiation emergency or threat**'[34], a set of generic response actions and criteria has been formulated.

These emergency types are used by the IEC to rapidly take appropriate response actions upon receiving an initial notification or an advisory message.

If any of these classes or types could give rise to a 'transnational emergency', Member States provide[35] an **initial notification** to the IAEA's IEC and other States (note that a 'general emergency' and a 'space object re-entry' are always transnational emergencies). For incidents and emergencies of local concern, Member states may optionally provide an **advisory message**.

The detailed definitions of these emergency classes and types, and the corresponding immediate response actions to be taken in the context of ENATOM arrangements, are described below.

4.3. Response services provided by the IEC

Authenticated and verified messages

Initial notification or advisory messages in English about a nuclear or radiological emergency will be sent by the IAEA's IEC to contact points. The information contained in these will have been both authenticated and verified by IAEA staff.

Authenticated and screened follow-up information

The information provided in subsequent follow-up messages in English, which may include facility data, meteorological information, monitoring data, and information on protective actions, received by the IEC from the notifying State or affected States, will have been authenticated and rapidly scanned for consistency, plausibility, legibility and comprehension by the IAEA staff before it is passed on to other contact points.

Meteorological products

For a release from a nuclear installation, the IAEA has arrangements with the WMO for the production of a standard set of meteorological products for initial response, on the basis of accident site coordinates and, if available, source term and release duration information, as follows:

- three-dimensional trajectories in time of hypothetical packets of material, plotted separately for packets released at 500, 1500 and 3000 metres above the ground; also marked are the locations of each packet at 6 hourly intervals at the main synoptic hours (6h, 12h, 18h, 24h UTC) up to the end of the dispersion model forecast;

- time integrated airborne concentrations within the layer 500 m above the ground in Bq·h/m^3 for each of three forecast periods[36];

- total deposition (wet and dry) in Bq/m^2 from the release time to the end of the dispersion model forecast[36][36].

[35] Either by virtue of the obligation of the Early Notification Convention to notify a significant transboundary release, or to meet the requirements of para. 4.15 of Ref. [2] (encouraged by the IAEA General Conference in GC(45)/RES/9).

[36] The IEC will **only** provide these products if a quantitative source term becomes available.

Contact points are requested to setup links to their national meteorological service, who can provide interpretation of these products from WMO. A list of national meteorological can be found on the WMO webpages at:
http://www.wmo.int/web/www/DPFSERA/ContactLists.html

Emergency assistance

If requested, the IAEA is ready to assist in an initial assessment of the situation (to provide recommendations and/or appraisal of actions taken and being planned), including, if appropriate, sending qualified personnel and experts rapidly to a requesting State to perform radiation surveillance. Appropriate resources allocated for conducting such an initial assessment will be made available by the IAEA.

The IAEA will, when requested, both facilitate and assist with the coordination of any international assistance required.

4.4. Response procedures

Six sets of incident or emergency conditions (two classes of emergency specific to nuclear installations and four types of emergency not specific to nuclear installations) are used in ENATOM (Section 4.2) to describe various situations that warrant immediate response actions.

This section describes the procedures for **information exchange** for each of the two emergency classes and for each of the four types of incident or emergency. For each class and type of emergency, the procedure lists the actions expected by the relevant contact point and by the IAEA's IEC. Detailed arrangements for information exchange are listed in Attachment 1.

Following this, Section 4.5 provides a procedure for requesting, facilitating and/or coordinating the provision of **emergency assistance** to a State.

References in the text are made to various EMERCON forms for submitting reports to the IAEA's IEC, namely SRF, GENF and MPA. These forms and instructions for their completion are provided in Attachment 1.

Emergency Class: SITE AREA EMERGENCY

Events resulting in a major decrease in the level of protection for those on the site and near the facility, but not sufficient to meet criteria for 'general emergency'.

Purpose: To bring the IEC's and other States' response systems to an enhanced state of readiness in anticipation of the possibility that the situation worsens and rapid distribution of authenticated information becomes necessary.

Obligations: There is **no obligation** on States Parties by virtue of the Early Notification Convention to notify the IAEA or other States of conditions representing a site area emergency.

A State may **voluntarily** send an advisory message to the IEC regarding a 'site area emergency' in order: 1) to pre-empt legitimate requests from other States Parties to the Assistance Convention for 'assistance' in obtaining information[37]; 2) to trigger the IAEA to offer its good offices[38]; 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 worsen; 4) for the IAEA, other relevant international organizations, or other States to initiate an administrative response and/or to provide advice to their governments, public or media on a developing situation of actual, potential or perceived radiological significance; 5) to otherwise alert IAEA response staff.

The IAEA Secretariat **strongly encourages** States to inform the IEC of a site area emergency in order that it can be ready to carry out its functions under the Convention on Early Notification of a Nuclear Accident (1986) – Article 4.

SITE AREA EMERGENCY	
ACTIONS BY CONTACT POINTS	**ACTIONS BY THE IEC**
Initial advisory message of site area emergency by reporting State	
NCA(D) sends by fax EMERCON form SRF, possibly with attachments and/or URL for its own web site, to the IAEA or submits the message to ENAC	
NCA(D) ensures receipt of advisory message by telephone call to the IAEA	Authenticates and verifies the content of the advisory message by telephone call to the designated NCA(D) of the reporting State. Offer's the IAEA's good offices to the reporting State

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

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

	SITE AREA EMERGENCY	
	ACTIONS BY CONTACT POINTS	**ACTIONS BY THE IEC**
		Unless otherwise instructed by the reporting State, sends by fax advisory message to NWPs of all States and relevant international organizations, and copy of the advisory message to NCA(A)s and Permanent Missions of all States Publishes advisory message on ENAC, including any attachments and/or links to the reporting State's web site. [Sends email to NCA(A)s of States within 1000 km (NPP) or 50 km (research reactor) requesting them to access ENAC and confirm receipt of advisory message] Informs NWPs of States within 1000 km (NPP) or 50 km (research reactor) that have not confirmed receipt of advisory message on ENAC by telephone call, and establishes dedicated phone contact with NCA(A)s
Further emergency information from reporting State	NCA(D) sends to IEC on EMERCON form SRF by fax or email, or submits to ENAC further relevant information, possibly with attachments and/or URL for its own emergency web site	May distribute further information by fax to NCA(A) and Permanent Missions of all Member States, and to relevant international organizations. Publishes follow-up information on ENAC, including any attachments and/or links to reporting State's own web site
Requests from other States for information	State requesting information NCA(A) or Permanent Mission may request information by fax, telephone or email to IEC Notifying State NCA(D) sends replies to IEC by fax, email or telephone	Compiles requests, forward them to the NCA(D) of relevant State Distributes answers by fax, email or telephone to requesting contact points and publishes on ENAC. If there is a sufficient number of requests for information or a need to counter false rumours, the IEC sends by fax an advisory message to NCA(A)s of all States
Public information	NCA(D) sends/submits copies of any press releases to IEC/ENAC or sends/submits URL of public web site INES national officer Sends ERF to the INES/NEWS system	Publishes press release/URL to ENAC IAEA INES Coordinator Ensures dissemination of information to INES national officers

Emergency Class: GENERAL EMERGENCY

Events resulting in an actual or substantial risk of a release or radiation exposure warranting taking urgent protective actions off the site.

Purpose: to notify and provide relevant information with the aim of minimizing consequences of a **transnational emergency**; and, as appropriate, in order to minimize the transboundary radiological consequences of any release.

Obligations: States, in order to meet the requirements in Ref. [2], are **expected to notify**, provide relevant information and respond to requests for information concerning a transnational emergency, which includes 'general emergency'.

Additionally, if a release of radioactive material occurs or is likely to occur and results or may result in an international transboundary release, States Parties to the **Early Notification Convention are obliged to notify** potentially affected States and the IAEA, **provide relevant information** and **respond to requests for information** from affected States.

GENERAL EMERGENCY		
	ACTIONS BY CONTACT POINTS	**ACTIONS BY THE IEC**
Initial notification of general emergency by notifying State	NCA(D) must send by fax EMERCON form GENF, possibly with attachments and/or URL for its own web site, to the IAEA, or submits the message to ENAC Ensures receipt[39] of notification by telephone call to the IAEA	Authenticates and verifies the content of the initial notification message[39] by telephone call to the designated NCA(D) of the notifying State Must offer the IAEA's good offices to the reporting State **IEC establishes 24/7 response mode** (including dedicated phone, fax and email with notifying State) Must forthwith inform NWPs of Member States; and other States that may be physically affected and relevant international organizations of the notification received

[39] If dedicated communications lines have already been established these will be used.

[41] **Examples of 'dangerous sources'** as defined here would be the following: industrial radiography and teletherapy sources; irradiators; radiothermal generators; fixed industrial gauges involving high activity sources; high dose rate and low dose rate brachytherapy sources; well logging sources and similar sources.

	GENERAL EMERGENCY	
	ACTIONS BY CONTACT POINTS	**ACTIONS BY THE IEC**
		Sends copy of the notification message by fax to NWPs, NCA(A)s and Permanent Missions of all States. Must offer its good offices to States Parties to the Assistance Convention and Member States Publishes notification message on ENAC, including any attachments and/or links to the notifying State's web site. Sends email to NCA(A)s of States within 1000 km (NPP) or 50 km (research reactor) requesting them to access ENAC and confirm receipt of notification Informs NWPs of States within 1000 km (NPP) or 50km (research reactor) that have not confirmed receipt of notification on ENAC by telephone call, and establishes dedicated phone contact with relevant NCA(A)s Establishes separate phone liaison with other States, Permanent Missions and relevant international organizations
Further emergency information from notifying State	NCA(D) must send by fax or email to IEC on EMERCON forms GENF or MPA, or submit to ENAC further relevant information possibly with attachments and/or URL for its own emergency web site	Distributes further information by fax to NCA(A) and Permanent Missions of all Member States, and to relevant international organizations Publishes follow-up information on ENAC, including any attachments and/or links to notifying State's own web site
Meteorological products	NCA(D) may generate national meteorological product or request from WMO RSMC; NCA(D) sends result by fax or email to IEC, or submits to ENAC	Requests and receives meteorological products from relevant WMO RSMCs Distributes meteorological products by fax to NCA(A)s and Permanent Missions of all Member States; publishes products to ENAC

GENERAL EMERGENCY

	ACTIONS BY CONTACT POINTS	ACTIONS BY THE IEC
Information from potentially affected States	State requested for information NCA(A) sends – on EMERCON form MPA – by fax or email to IEC or submits to ENAC, relevant information or the URL of national emergency web site providing the relevant information	May request NCA(A) of other States within 1000 km (NPP) or 50 km (research reactor) to provide – on EMERCON form MPA – information on monitoring and protective actions Compiles information, sends summary by fax to NCA(A) of all Member States and publishes on ENAC Establish hyperlinks in ENAC to other States' emergency web sites providing relevant information
Requests from other States for information	State requesting information NCA(A) or Permanent Mission may request by fax, telephone or email to IEC States requested NCA(D) of notifying State or NCA(A) of other relevant State sends replies to IEC by fax, email or telephone	Compiles requests and forwards them to the NCA(D) of notifying State or NCA(A) of other relevant State Distributes answers by fax, email or telephone to requesting contact points and publishes on ENAC. If there is a sufficient number of requests for information or a need to counter false rumours, IEC sends by fax an advisory message to NCA(A)s of all States
Public information	NCA(D) sends/submits copies of any press releases to IEC/ENAC or sends/submits URL of public web site INES national officer Sends ERF to the INES/NEWS system	Publishes press release/URL to ENAC MTPI Establishes liaison to coordinate release of information to media with official media focal point in notifying State and relevant international organizations as appropriate. Issues Press Release(s) and posts on the IAEA'S public web site detailing initial notification and actions taken by and role of IAEA IAEA INES Coordinator Ensures dissemination of information to INES national officers

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Emergency Type: MISSING DANGEROUS SOURCE

A lost or stolen dangerous[41] source, i.e. one that, if not brought under control, could give rise to exposure sufficient to cause severe deterministic effects.

Purpose: to notify and provide relevant information with the aim of minimizing consequences of a **transnational emergency**; to activate other States' emergency response systems to be ready to respond to a dangerous source possibly entering their State, including (1) to respond to issues of international trade (particularly in scrap metal) with the relevant State; or (2) to respond to issues that are perceived to be radiologically significant by the media or public in another State.

Obligations: States, in order to meet the requirements in Ref. [2], are **expected to notify, provide relevant information and respond to requests for information** concerning a transnational emergency, which includes a 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**.

A State may **voluntarily** send an advisory message to the IEC regarding a 'missing dangerous source' that does not represent a transnational emergency in order: 1) to pre-empt legitimate requests from other States Parties to the Assistance Convention for 'assistance' in obtaining information[42]; 2) to trigger the IAEA to offer its good offices[43]; 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 if the situation worsens; 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 response staff.

MISSING DANGEROUS SOURCE	
ACTIONS BY THE CONTACT POINTS	**ACTIONS BY THE IEC**
Initial notification or advisory message by the notifying State If suspected or actual movement across a national border, NCA(D) sends by fax EMERCON form SRF, possibly with attachments and/or URL for its own web site, to the IEC, or submits the message to ENAC (Otherwise, NCA(D) sends by fax EMERCON form SRF, possibly with attachments and/or URL for its own web site, to the IEC)	

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

[43] Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 5

MISSING DANGEROUS SOURCE	
ACTIONS BY THE CONTACT POINTS	**ACTIONS BY THE IEC**
Ensures receipt of initial notification or advisory message by telephone call to the IEC	Authenticates and verifies the content of the initial notification or advisory message by telephone call to the designated NCA(D) of the reporting State Offers the IAEA's good offices to the reporting State **If suspected or actual movement across a border**, promptly informs by fax NWPs, NCA(A)s and Permanent Missions of relevant States in accordance with instructions of notifying State and as appropriate, of notification message received. **Otherwise,** informs within 24 hours by fax to NWPs, NCA(A)s and Permanent Missions of relevant States in accordance with instructions of notifying State and as appropriate, of advisory message received Offers the IAEA's good offices to relevant States Publishes notification/advisory message on ENAC, including any attachments and/or links to the reporting State's web site. Sends email to relevant States requesting them to access ENAC and confirm receipt of any notification message Informs NWPs of relevant States that have not confirmed on ENAC receipt of any notification by telephone call If the event involves criminal activities, the IAEA may establish liaison with INTERPOL, WCO and/or other relevant international organizations
4 Further information from reporting State NCA(D) sends to IEC on EMERCON form SRF by fax or email, or submits to ENAC further relevant information, possibly with attachments and/or URL for its own emergency web site	Respecting confidentiality constraints, publishes follow-up information on ENAC, including any attachments and/or links to notifying State's own web site

MISSING DANGEROUS SOURCE

	ACTIONS BY THE CONTACT POINTS	ACTIONS BY THE IEC
Information from potentially affected States	State(s) requested for information NCA(A) sends – on EMERCON form SRF – by fax or email to IEC or submits to ENAC, relevant information or the URL of web site providing the relevant information	May request NCA(A) of other relevant States to provide information on EMERCON form SRF Respecting confidentiality constraints, compiles information, sends a summary by fax to NCA(A) of relevant States and publishes on ENAC Establishes hyperlinks on ENAC to other States' emergency web sites providing relevant information
Requests from other States for information	State requesting information NCA(A) or Permanent Mission may request information by fax, telephone or email to IEC State requested for information NCA(D) of notifying State or NCA(A) of other relevant State sends replies to IEC by fax, email or telephone	Compiles requests, forwards them to the NCA(D) of reporting State or NCA(A) of other relevant State Respecting confidentiality constraints, distributes answers by fax, email or telephone to requesting contact points and may post them on ENAC. If there is a sufficient number of requests for information or a need to counter false rumours, IEC sends by fax an advisory message to NCA(A)s of all States
Public information	NCA(D) sends/submits copies of any press releases to IEC/ENAC or send/submit URL of public web site	Publishes press release/URL on ENAC MTPI May set hyperlink in the IAEA's public web site if agreed by NCA(D) of reporting State

4

Emergency Type: SPACE OBJECT RE-ENTRY

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.

Purpose: to notify and provide relevant information with the aim of minimizing consequences of a **transnational emergency**; and, as appropriate, in order to minimize the transboundary radiological consequences of any release. This implies the need to activate States' emergency response systems (1) to be ready to respond to a nuclear powered satellite or satellite with radioactive material possibly making landfall or having made landfall in their States; (2) to respond to issues of international trade and travel in the potentially affected States; (3) to respond to issues regarding protective actions or advice for foreign nationals or embassies within the notifying State and potentially affected States; or (4) to respond to issues that are perceived to be radiologically significant by the media or public in another State.

Obligations: States, in order to meet the requirements in Ref. [2], are **expected to notify, provide relevant information and respond to requests for information** concerning a transnational emergency, which includes re-entry of a space object with nuclear power source(s) or dangerous radioactive sources on board.

Moreover, if a release of radioactive material occurs or is likely to occur and results or may result in an international transboundary release, States Parties to the **Early Notification Convention are obliged to notify** potentially affected States and the IAEA, **provide relevant information** and **respond to requests for information** from affected States.

A launching State has other obligations referred to in the Joint Plan [3] with regard to notifying the United Nations and other States.

A State may **voluntarily** send an advisory message to the IEC regarding a 'space object re-entry' in order: 1) to pre-empt legitimate requests from other States Parties to the Assistance Convention for 'assistance' in obtaining information[44]; 2) to trigger the IAEA to offer its good offices[45]; 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 worsen; 4) for the IAEA, other relevant international organizations, or other States to initiate an administrative response and/or to provide advice to their governments, public or media on a developing situation of actual, potential or perceived radiological significance; 5) to otherwise alert IAEA response staff.

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

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

SPACE OBJECT RE-ENTRY

	ACTIONS BY THE CONTACT POINTS	ACTIONS BY THE IEC
Initial notification or advisory message from the launching State	Launching State NCA(D) sends by fax on EMERCON form SRF or submits to ENAC, possibly with attachments and/or URL for its own web site, to the IAEA Once landfall is clear, NCA(D) must notify, using fax on EMERCON form SRF or submit to ENAC, possibly with attachments and/or URL for its own web site, the IAEA Ensures receipt of initially notification or advisory message by telephone call to the IAEA	Authenticates and verifies the content of the initial notification or advisory message by telephone call to the designated NCA(D) of the launching State Must offer the IAEA's good offices to the launching State Must forthwith inform of the notification received by fax NWPs of Member States; and other States that may be physically affected and relevant international organizations, and sends copy of the notification message by fax to NCA(A)s and Permanent Missions of all States Must offer the IAEA's good offices to States Parties to the Assistance Convention and Member States Establishes liaison with OOSA Publishes notification/advisory message on ENAC, including any attachments and/or links to the launching State's web site. Sends email requesting NCA(A)s of potentially affected States to access ENAC and confirm receipt of notification Telephones NWPs of relevant States that have not confirmed receipt of notification on ENAC

SPACE OBJECT RE-ENTRY

	ACTIONS BY THE CONTACT POINTS	ACTIONS BY THE IEC
Further emergency information from Launching State	Launching State If satellite makes landfall in known location, NCA(D) should send to the IEC by fax on EMERCON form SRF or submit to ENAC, further relevant information, possibly with attachments and/or URL for its own web site Ensures receipt by telephone call to the IAEA	Promptly informs by fax NCA(A)s and Permanent Missions of Member States; and other States that may be physically affected and relevant international organizations of the further information received Must offer the IAEA's good offices to potentially affected States
Information from other States	Affected State If satellite material is detected in State territory, NCA(A) sends relevant information by fax to IEC using EMERCON form MPA, or submits to ENAC, possibly with attachments and/or URL of web site providing relevant information	Compiles information, sends summary by fax to NCA(A) of all Member States and publishes to ENAC Establishes hyperlinks on ENAC to other States' emergency web sites providing relevant information
Requests from other States for information	State requesting information NCA(A) or Permanent Mission may request information by fax, telephone or email to IEC State requested for information NCA(D) of launching or NCA(A) of other relevant State sends replies to IEC by fax, telephone or email	Must compile requests and forwards them to the NCA(D) of launching State or NCA(A) of other relevant State or liaises and obtains information from OOSA Must distribute answers by fax, telephone or email to requesting contact points and may publish on ENAC. If there is a sufficient number of requests for information or a need to counter false rumours, IEC sends by fax an advisory message to NCA(A)s of all States

SPACE OBJECT RE-ENTRY		
	ACTIONS BY THE CONTACT POINTS	**ACTIONS BY THE IEC**
Public information	Launching or affected State NCA(D) or NCA(A) sends/submits copies of any press releases on IEC/ENAC or send/submit URL of public web site	Publishes press release/URL on ENAC MTPI May issue Press Release(s) and post to the IAEA'S public web site detailing request for assistance, actions taken by and role of IAEA

Emergency Type: ELEVATED RADIATION LEVELS OF UNKNOWN ORIGIN

Unusually high[46] but confirmed levels of ambient radiation or radioactive contamination in air, food or commodities believed to come from an unknown origin in another State, raising suspicion of an emergency situation of actual, potential or perceived radiological significance for other States.

Purpose: to activate the IAEA's IEC (1) to investigate the source of elevated radiation levels that might indicate a release of radioactive material of transnational concern; and to warn States' emergency response systems (2) to increase the frequency of routine monitoring and report any unusual levels to the IAEA; (3) to be ready to respond to issues that are potential or perceived to be radiological significant by the media or public.

Obligations: States, in order to meet the requirements in Ref. [2], are expected to notify, provide relevant information and respond to requests for information concerning an event of actual, potential or perceived radiological significance for other States, which includes initial detection or discovery of evidence of a transnational emergency, for example by: detecting significant increases in atmospheric radiation levels of unknown origin; or detecting significant increases in contamination in imported commodities.

ELEVATED RADIATION LEVELS OF UNKNOWN ORIGIN

	ACTIONS BY THE CONTACT POINTS	ACTIONS BY THE IEC
Advisory message	Notifying State(s) NCA(D) sends by fax EMERCON form SRF to the IEC or submit on ENAC, possibly with attachments and/or URL for its own web site	
	Ensures receipt of initial message by telephone call to the IAEA	Authenticates and verifies the content of the initial message by telephone call to the designated NCA(D) of the notifying State Must offer the IAEA's good offices to the reporting State
		Publishes initial message on ENAC, including any attachments and/or links to the notifying State's web site.

[46] For example, radiation levels at least ten times above normal.

ELEVATED RADIATION LEVELS OF UNKNOWN ORIGIN

	ACTIONS BY THE CONTACT POINTS	ACTIONS BY THE IEC
Information from other States	*State requested for information* NCA(A)s send – on EMERCON form MPA – by fax or email to IEC or submit to ENAC, relevant information on any unusual radiation levels detected, possibly including attachments or the URL of national emergency web site	Contacts NWPs/NCA(A)s of other relevant States to identify origin; may request WMO expertise to calculate back trajectories Compiles information, sends summary by fax to NWPs/NCA(A)s of all Member States and posts it on ENAC When origin located, requests report from NCA(D) (through NWP) of relevant State according to other emergency classes and types
Requests from other States for information	State requesting information NCA(A) or Permanent Mission may request information by fax, telephone or email to IEC	Must offer the IAEA's good offices to requesting State and endeavours to seek and provide information as available If there is a sufficient number of requests for information or a need to counter false rumours, IEC sends by fax an advisory message to NCA(A)s of all States
Public information		MTPI May issue press release(s) and post it/them on the IAEA'S public web site, detailing actions taken by and role of IAEA, and information to counter rumours

Emergency Type: OTHER RADIATION EMERGENCY OR THREAT

Any other radiological emergency not specifically addressed above[47]

Purpose: to notify and provide relevant information with the aim of minimizing consequences of a **transnational emergency** not addressed above[48]; and, as appropriate, in order to minimize the transboundary radiological consequences of any release, or for which the reporting State wants: to pre-empt legitimate requests for information to protect health, property or the environment under the Assistance Convention[49]; to obtain the IAEA's good offices[50]; to provide advanced warning to the IAEA in order that it can prepare to meet its obligations[51]; or to provide information to other competent authorities that they may initiate an administrative response and/or provide advice to their governments, public or media regarding protection issues[52].

Obligations: States, in order to meet the requirements in Ref. [2], are expected to notify, provide relevant information and respond to requests for information concerning an event of actual, potential or perceived radiological significance for other States (**transnational emergency)**.

Additionally, if a release of radioactive material occurs or is likely to occur and results or may result in an international transboundary release, States Parties to the **Early Notification Convention are obliged to notify** potentially affected States and the IAEA, **provide relevant information** and **respond to requests for information** from affected States.

A State may **voluntarily** send an advisory message to the IEC in order: 1) to pre-empt legitimate requests from other States Parties to the Assistance Convention for 'assistance' in obtaining information[53]; 2) to trigger the IAEA to offer its good

[47] For example, a 'facility emergency' as specified in Ref. [2]; a discovered dangerous ('orphan') source, an accidental medical exposure giving rise to severe overexposure (but not underexposure) of patients; a transport accident; or other threat

[48] This includes: 1) any other 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); 2) discovery of a dangerous source that has been transported across or is suspected of having been transported across a national border; 3) any other event resulting in significant disruption to international trade or travel; 4) any other event warranting the implementation of protective actions for foreign nationals or embassies in the State in which it occurs; 6) any other 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) any other event resulting or potentially resulting in significant psychological effects among the population of a State or States other than the State in which it occurs owing to the actual or perceived radiological hazard (e.g. detonation of a so-called 'dirty bomb').

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

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

[51] Convention on Early Notification of a Nuclear Accident (1986) – Article 4.

[52] For example, a transportation accident or report of a non-specific terrorist threat.

[53] Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 2

offices[54]; 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 worsen; 4) for the IAEA, other relevant international organizations, or other States to initiate an administrative response and/or to provide advice to their governments, public or media on a developing situation of actual, potential or perceived radiological significance; 5) to otherwise alert IAEA emergency staff.

OTHER RADIATION EMERGENCY OR THREAT

	ACTIONS BY THE CONTACT POINTS	ACTIONS BY THE IEC
Initial notification or advisory message from reporting State	**If transnational,** NCA(D) sends by fax to the IEC EMERCON form SRF or submits the message to ENAC, possibly with attachments and/or URL for its own web site, to the IAEA.	
	Ensures receipt of initial message by telephone call to the IAEA	Authenticates and verifies the content of the initial message received by telephone call to the designated NCA(D) of the reporting State Must offer the IAEA's good offices to the reporting State Promptly informs NWPs and Permanent Missions of potentially affected States (as determined by notifying State) and relevant international organizations as appropriate of any notification received Respecting any confidentiality constraints or instructions from the reporting State, sends copy of the notification/advisory message by fax to NCA(A)s and Permanent Missions of all States. Must offer the IAEA's good offices to States Parties to the Assistance Convention and Member States Respecting any confidentiality constraints or instructions from the reporting State, publishes initial message on ENAC, including any attachments and/or links to the notifying State's web site

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[54] Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency (1986) – Article 5

OTHER RADIATION EMERGENCY OR THREAT	
ACTIONS BY THE CONTACT POINTS	**ACTIONS BY THE IEC**
	If a dangerous[41] source that is damaged, stuck, involved in fire or has lost its shielding, is found or detected (including one or several being used for criminal or terrorist purposes), information about the exact location of the source(s) is withheld until the source(s) has (have) been made safe and secure If the event involves criminal activities of an international nature, may establish liaison with INTERPOL, WCO or other relevant organization, as needed and inform SGIT If a release to the atmosphere is involved, informs WMO and requests meteorological transport model predictions from the lead WMO RSMCs. 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, informs and establishes liaison with WHO (PAHO if in the Americas), and FAO as appropriate) If the event involves serious overexposures or requires medical treatment, establishes liaison with WHO (and PAHO if in the Americas), and takes steps to protect patient confidentiality) If the event is a complex emergency or disaster with a radiological component, establishes liaison with OCHA
Further information from reporting State NCA(D) sends to IEC on EMERCON form SRF by fax or email, or submits to ENAC further relevant information, possibly with attachments and/or URL for its own emergency web site	According to instructions of reporting State, respecting confidentiality constraints and as appropriate, distributes further information by fax to NCA(A) and Permanent Missions of all Member States, and to relevant international organizations

OTHER RADIATION EMERGENCY OR THREAT

	ACTIONS BY THE CONTACT POINTS	ACTIONS BY THE IEC
		Respecting confidentiality constraints and as appropriate, publishes follow-up information on ENAC, including any attachments and/or links to notifying State's own web site
Information from potentially affected States	State(s) from whom information has been requested NCA(A) sends – on EMERCON form MPA – by fax or email to IEC or submits to ENAC, relevant information or the URL of national emergency web site providing the relevant information	If transnational, may request NCA(A) of other States to provide information on monitoring and protective actions using EMERCON form MPA Compiles information, sends summary by fax to NCA(A) of all Member States and publishes to ENAC Establish hyperlinks on ENAC to other States' emergency web sites providing relevant information
Requests from other States for information	State requesting information NCA(A) or Permanent Mission may request information by fax, telephone or email to IEC State from whom information has been requested NCA(D) of notifying State or NCA(A) of other relevant State should send replies to IEC by fax, telephone or email	Must compile requests and forward them to the NCA(D) of notifying State or NCA(A) of other relevant State Must distribute answers by fax, telephone or email to requesting contact points and may publish on ENAC. If there is a sufficient number of requests for information or a need to counter false rumours, IEC sends by fax an advisory message to NCA(A)s of all States
Public information	NCA(D) sends/submits copies of any press releases to IEC/ENAC or sends/submits URL of public web site INES national officer Sends ERF to the INES/NEWS system	Publishes press release/URL to ENAC IAEA INES Coordinator Ensures disseminates of information to INES national officers

4.5. Requesting IAEA emergency assistance

If a State needs assistance in the event of a nuclear or radiological emergency, whether or not such an event originates on its territory or is under its jurisdiction or control, it may, in accordance with the Assistance Convention, request assistance from or through the IAEA.

The requesting State is responsible for overall direction, support and supervision of any assistance within its territory. The Permanent Mission, or the relevant national competent authority, is the Government representative that is expected to request IAEA emergency assistance under the terms of the Assistance Convention.

To facilitate the prompt provision of assistance, it is expected that a State requesting assistance will specify, to the IAEA's IEC, the scope and type of assistance required as follows:

a) **Information about the emergency:** nature of the event, location, time of its occurrence (UTC and local time), name and full address of organization in charge of response actions, and name and contact details of person assigned to liaise with the IAEA.

b) **Type(s) of emergency assistance required:**[55] aerial survey, radiation monitoring, environmental measurements, source search and recovery, assessment and advice, medical support, bioassay, public health protection, biodosimetry, internal dose assessment, histopathology, dose reconstruction, and other(s), should be specified.

In addition, it is also expected that the requesting State will:

- Approve, in writing, the terms of reference (assistance action plan) for the requested assistance proposed by the IAEA's IEC, and promptly transmit such approval to the IAEA's IEC.
- Provide, to the extent of its capabilities, local facilities and services for the proper and effective administration of the assistance.
- Ensure the protection and security of personnel, equipment and materials brought into its territory by or on behalf of the assistance for such purposes.
- Afford the necessary privileges, immunities and facilities for the performance of the assistance functions.
- Facilitate the entry into, stay in and departure from its national territory of personnel, equipment and property involved in the assistance.

[55] More details on the assistance that can be provided through the IAEA Response Assistance Network can be found in Ref. [4].

- Facilitate the transit through its territory of duly notified personnel, equipment and property involved in the assistance.

IAEA's IEC actions Immediately after receiving a request for emergency assistance, the IEC will:

- Communicate with the requesting contact point, via telephone, to authenticate and to verify the request received.
- Evaluate technically the request received.
- Provide initial advice to the requesting State, as appropriate.
- Alert the appropriate RANET national competent authorities (through NWPs if necessary).
- Assess the IAEA's own capability to provide the emergency assistance requested and request any appropriate RANET capabilities to place on standby their available resources.
- Develop the terms of reference (assistance action plan) for implementing the emergency assistance requested, if necessary in coordination with relevant international organizations.
- Propose the terms of reference (assistance action plan) to the requesting State.
- Obtain deployment authorization from the relevant NCA(A)s upon acceptance of the action plan by the State requesting emergency assistance.
- Facilitate the emergency assistance as described in the IAEA's RANET publication.

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2 THE IAEA INCIDENT AND EMERGENCY SYSTEM

3 COMPETENT AUTHORITIES AND POINTS OF CONTACT

4 RESPONSE ARRANGEMENTS

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