



IAEA

International Atomic Energy Agency

Advisory Mission on Regulatory Infrastructure for Radiation Safety Guidelines

Vienna, April 2019

IAEA Services Series 38

IAEA SAFETY STANDARDS AND RELATED PUBLICATIONS

IAEA SAFETY STANDARDS

Under the terms of Article III of its Statute, the IAEA is authorized to establish or adopt standards of safety for protection of health and minimization of danger to life and property, and to provide for the application of these standards.

The publications by means of which the IAEA establishes standards are issued in the **IAEA Safety Standards Series**. This series covers nuclear safety, radiation safety, transport safety and waste safety. The publication categories in the series are **Safety Fundamentals**, **Safety Requirements** and **Safety Guides**.

Information on the IAEA's safety standards programme is available on the IAEA Internet site

<http://www-ns.iaea.org/standards/>

The site provides the texts in English of published and draft safety standards. The texts of safety standards issued in Arabic, Chinese, French, Russian and Spanish, the IAEA Safety Glossary and a status report for safety standards under development are also available. For further information, please contact the IAEA at: Vienna International Centre, PO Box 100, 1400 Vienna, Austria.

All users of IAEA safety standards are invited to inform the IAEA of experience in their use (e.g. as a basis for national regulations, for safety reviews and for training courses) for the purpose of ensuring that they continue to meet users' needs. Information may be provided via the IAEA Internet site or by post, as above, or by email to Official.Mail@iaea.org.

RELATED PUBLICATIONS

The IAEA provides for the application of the standards and, under the terms of Articles III and VIII.C of its Statute, makes available and fosters the exchange of information relating to peaceful nuclear activities and serves as an intermediary among its Member States for this purpose.

Reports on safety in nuclear activities are issued as **Safety Reports**, which provide practical examples and detailed methods that can be used in support of the safety standards.

Other safety related IAEA publications are issued as **Emergency Preparedness and Response** publications, **Radiological Assessment Reports**, the International Nuclear Safety Group's **INSAG Reports**, **Technical Reports** and **TECDOCs**. The IAEA also issues reports on radiological accidents, training manuals and practical manuals, and other special safety related publications.

Security related publications are issued in the **IAEA Nuclear Security Series**.

The **IAEA Nuclear Energy Series** comprises informational publications to encourage and assist research on, and the development and practical application of, nuclear energy for peaceful purposes. It includes reports and guides on the status of and advances in technology, and on experience, good practices and practical examples in the areas of nuclear power, the nuclear fuel cycle, radioactive waste management and decommissioning.

ADVISORY MISSION ON REGULATORY
INFRASTRUCTURE FOR RADIATION
SAFETY GUIDELINES

The following States are Members of the International Atomic Energy Agency:

AFGHANISTAN	GERMANY	PAKISTAN
ALBANIA	GHANA	PALAU
ALGERIA	GREECE	PANAMA
ANGOLA	GRENADA	PAPUA NEW GUINEA
ANTIGUA AND BARBUDA	GUATEMALA	PARAGUAY
ARGENTINA	GUYANA	PERU
ARMENIA	HAITI	PHILIPPINES
AUSTRALIA	HOLY SEE	POLAND
AUSTRIA	HONDURAS	PORTUGAL
AZERBAIJAN	HUNGARY	QATAR
BAHAMAS	ICELAND	REPUBLIC OF MOLDOVA
BAHRAIN	INDIA	ROMANIA
BANGLADESH	INDONESIA	RUSSIAN FEDERATION
BARBADOS	IRAN, ISLAMIC REPUBLIC OF	RWANDA
BELARUS	IRAQ	SAINT LUCIA
BELGIUM	IRELAND	SAINT VINCENT AND THE GRENADINES
BELIZE	ISRAEL	SAN MARINO
BENIN	ITALY	SAUDI ARABIA
BOLIVIA, PLURINATIONAL STATE OF	JAMAICA	SENEGAL
BOSNIA AND HERZEGOVINA	JAPAN	SERBIA
BOTSWANA	JORDAN	SEYCHELLES
BRAZIL	KAZAKHSTAN	SIERRA LEONE
BRUNEI DARUSSALAM	KENYA	SINGAPORE
BULGARIA	KOREA, REPUBLIC OF	SLOVAKIA
BURKINA FASO	KUWAIT	SLOVENIA
BURUNDI	KYRGYZSTAN	SOUTH AFRICA
CAMBODIA	LAO PEOPLE'S DEMOCRATIC REPUBLIC	SPAIN
CAMEROON	LATVIA	SRI LANKA
CANADA	LEBANON	SUDAN
CENTRAL AFRICAN REPUBLIC	LESOTHO	SWEDEN
CHAD	LIBERIA	SWITZERLAND
CHILE	LIBYA	SYRIAN ARAB REPUBLIC
CHINA	LIECHTENSTEIN	TAJIKISTAN
COLOMBIA	LITHUANIA	THAILAND
CONGO	LUXEMBOURG	TOGO
COSTA RICA	MADAGASCAR	TRINIDAD AND TOBAGO
CÔTE D'IVOIRE	MALAWI	TUNISIA
CROATIA	MALAYSIA	TURKEY
CUBA	MALI	TURKMENISTAN
CYPRUS	MALTA	UGANDA
CZECH REPUBLIC	MARSHALL ISLANDS	UKRAINE
DEMOCRATIC REPUBLIC OF THE CONGO	MAURITANIA	UNITED ARAB EMIRATES
DENMARK	MAURITIUS	UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND
DJIBOUTI	MEXICO	UNITED REPUBLIC OF TANZANIA
DOMINICA	MONACO	UNITED STATES OF AMERICA
DOMINICAN REPUBLIC	MONGOLIA	URUGUAY
ECUADOR	MONTENEGRO	UZBEKISTAN
EGYPT	MOROCCO	VANUATU
EL SALVADOR	MOZAMBIQUE	VENEZUELA, BOLIVARIAN REPUBLIC OF
ERITREA	MYANMAR	VIET NAM
ESTONIA	NAMIBIA	YEMEN
ESWATINI	NEPAL	ZAMBIA
ETHIOPIA	NETHERLANDS	ZIMBABWE
FIJI	NEW ZEALAND	
FINLAND	NICARAGUA	
FRANCE	NIGER	
GABON	NIGERIA	
GEORGIA	NORTH MACEDONIA	
	NORWAY	
	OMAN	

The Agency's Statute was approved on 23 October 1956 by the Conference on the Statute of the IAEA held at United Nations Headquarters, New York; it entered into force on 29 July 1957. The Headquarters of the Agency are situated in Vienna. Its principal objective is "to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world".

IAEA SERVICES SERIES No. 38

ADVISORY MISSION ON REGULATORY
INFRASTRUCTURE FOR RADIATION
SAFETY GUIDELINES

INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA, 2019

COPYRIGHT NOTICE

All IAEA scientific and technical publications are protected by the terms of the Universal Copyright Convention as adopted in 1952 (Berne) and as revised in 1972 (Paris). The copyright has since been extended by the World Intellectual Property Organization (Geneva) to include electronic and virtual intellectual property. Permission to use whole or parts of texts contained in IAEA publications in printed or electronic form must be obtained and is usually subject to royalty agreements. Proposals for non-commercial reproductions and translations are welcomed and considered on a case-by-case basis. Enquiries should be addressed to the IAEA Publishing Section at:

Marketing and Sales Unit, Publishing Section
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 Vienna, Austria
fax: +43 1 26007 22529
tel.: +43 1 2600 22417
email: sales.publications@iaea.org
www.iaea.org/books

For further information on this publication, please contact:

Regulatory Infrastructure and Transport Safety Section
International Atomic Energy Agency
Vienna International Centre
PO Box 100
1400 Vienna, Austria
Email: Official.Mail@iaea.org

ADVISORY MISSION ON REGULATORY INFRASTRUCTURE FOR RADIATION SAFETY GUIDELINES

IAEA, VIENNA, 2019
IAEA-SVS-38
ISSN 1816-9309

© IAEA, 2019

Printed by the IAEA in Austria
April 2019

FOREWORD

In 2015, the IAEA established the Advisory Mission on Regulatory Infrastructure for Radiation Safety (AMRAS) service. An AMRAS provides advice to the host country on actions to be taken to establish or strengthen its national regulatory infrastructure for radiation safety while recognizing the ultimate responsibility of the State in this area. Advice that is provided is based on the IAEA safety standards, the Code of Conduct on the Safety and Security of Radioactive Sources and associated guidance.

Each advisory mission is customized according to the host country's needs and takes account of the status of its regulatory infrastructure for radiation safety. Depending on the needs of the host country, in addition to the provision of advice, other elements may be included in a mission, such as meetings with the country's decision makers and presentations on the development of regulatory infrastructure.

AMRAS are usually conducted to countries where significant actions are necessary for the country's regulatory infrastructure to meet the provisions of the IAEA safety standards, the Code of Conduct on the Safety and Security of Radioactive Sources and associated guidance. An AMRAS may be conducted to States with essentially no regulatory infrastructure for radiation safety. Advisory missions conducted in accordance with these guidelines address the national regulatory infrastructure for the safety of radiation sources and, therefore, the regulatory infrastructure for nuclear and fuel cycle facilities is outside its scope.

The guidance provided in this publication is intended to encourage consistency and comprehensiveness in the preparation, conduct and follow-up of an AMRAS by both the advisory mission team and the host country.

The IAEA officer responsible for this publication was V. Kamenopoulou of the Division of Radiation, Transport and Waste Safety.

EDITORIAL NOTE

This publication has been prepared from the original material as submitted by the contributors and has not been edited by the editorial staff of the IAEA. The views expressed remain the responsibility of the contributors and do not necessarily represent the views of the IAEA or its Member States.

Neither the IAEA nor its Member States assume any responsibility for consequences which may arise from the use of this publication. This publication does not address questions of responsibility, legal or otherwise, for acts or omissions on the part of any person.

The use of particular designations of countries or territories does not imply any judgement by the publisher, the IAEA, as to the legal status of such countries or territories, of their authorities and institutions or of the delimitation of their boundaries.

The mention of names of specific companies or products (whether or not indicated as registered) does not imply any intention to infringe proprietary rights, nor should it be construed as an endorsement or recommendation on the part of the IAEA.

The IAEA has no responsibility for the persistence or accuracy of URLs for external or third party Internet web sites referred to in this publication and does not guarantee that any content on such web sites is, or will remain, accurate or appropriate.

CONTENTS

1.	INTRODUCTION	1
2.	OBJECTIVES OF AN AMRAS.....	2
3.	STRUCTURE OF AN AMRAS.....	3
3.1.	AMRAS STRUCTURE AND ACTIVITIES	3
3.2.	CUSTOMISING AN AMRAS.....	3
3.3.	ASSESSMENT TOPICS OF AN AMRAS.....	5
4.	AMRAS PROCESS.....	5
4.1.	GENERAL.....	5
4.2.	INITIATING AN AMRAS	5
4.3.	PREPARATION FOR THE AMRAS.....	6
4.4.	AMRAS DURATION AND TEAM COMPOSITION.....	6
4.5.	RECRUITMENT OF AMRAS TEAM MEMBERS.....	7
4.6.	AMRAS LOGISTICS.....	7
4.7.	AMRAS AGENDA	8
4.8.	RESPONSIBILITIES OF THE HOST COUNTRY	8
4.9.	AMRAS SOFTWARE TOOL (RASAMT)	9
5.	CONDUCT OF AN AMRAS.....	9
5.1.	INITIAL TEAM COMMUNICATION	9
5.2.	INITIAL TEAM MEETING	9
5.3.	ENTRANCE MEETING.....	10
5.4.	REVIEW PROCESS FOR REGULATORY TECHNICAL AREAS.....	10
5.5.	EXIT MEETING	11
6.	DOCUMENTATION AND REPORTING	12
6.1.	PRELIMINARY REPORT.....	12
6.2.	ACTION PLAN.....	12
6.3.	FINAL REPORT	12
6.4.	GENERAL INSTRUCTIONS FOR WRITING THE REPORT	13
7.	AMRAS PROCESS REVIEW	14
8.	FOLLOW-UP AMRAS	14
8.1.	OBJECTIVES AND CRITERIA FOR A FOLLOW-UP MISSION	14
8.2.	REQUESTING A FOLLOW-UP MISSION.....	14
8.3.	PREPARATORY PHASE OF A FOLLOW-UP MISSION	14
8.4.	FOLLOW-UP MISSION DURATION AND TEAM COMPOSITION	14
8.5.	CONDUCT OF A FOLLOW-UP MISSION	15
	APPENDIX I COMPARING CHARACTERISTICS OF AMRAS AND IRRS MISSION.....	17

APPENDIX II	AMRAS PREPARATION ACTIONS	19
APPENDIX III	RESPONSIBILITIES OF AMRAS PARTICIPANTS.....	22
APPENDIX IV	SAMPLE AGENDA FOR AMRAS.....	25
APPENDIX V	SAMPLE AGENDA FOR THE AMRAS INITIAL TEAM MEETING	28
APPENDIX VI	SAMPLE AGENDA FOR THE AMRAS ENTRANCE MEETING ...	29
REFERENCES.....		31

1. INTRODUCTION

Each State is ultimately responsible for establishing a regulatory framework for ensuring the safety of facilities and activities involving radiation sources on its own territory. States throughout the world face significant challenges in establishing such a framework because of the complexity and diversity of facilities and activities involving radiation sources. Furthermore, States face other challenges concerning the establishment of a regulatory framework for safety such as a lack of resources, equipment, trained personnel or political commitment. Thus, there is a need to support and strengthen national regulatory bodies for establishing such a framework.

Accidents involving radiation sources are often the result of one or several factors, including the lack of an adequate regulatory infrastructure for radiation safety. An effective national regulatory infrastructure, established in accordance with the IAEA safety standards, can reduce the likelihood of accidents and mitigate their consequences should they occur. National regulatory framework is aiming to protect people and the environment from the harmful effects of ionizing radiation.

The IAEA's Division of Radiation, Transport & Waste Safety (NSRW) has established the Advisory Mission on Regulatory Infrastructure for Radiation Safety (AMRAS) Service to advise and where appropriate, provide support to States in their efforts to establish or improve national regulatory infrastructure for radiation safety. AMRAS are usually conducted in Member States where significant actions are necessary for the country's regulatory infrastructure to meet the provisions of the IAEA Safety Standards, the Code of Conduct on the Safety and Security of Radioactive Sources, and associated guidance. An AMRAS may be conducted in States with essentially no regulatory infrastructure for radiation safety.

The scope of each advisory mission is adjusted according to the specific needs and interests of the requesting State and to support the establishment and improvement of its national regulatory infrastructure for radiation safety.

An AMRAS is carried out with a strong emphasis on helping a Member State meet the IAEA safety standards considered within the scope of the mission. It provides advice for supporting the establishment or improvement of a regulatory infrastructure for radiation safety by:

- Evaluating the status of the national regulatory infrastructure for radiation safety against IAEA safety standards and other relevant IAEA publications;
- Providing advice on any identified needs for improvement;
- Preparing a report that includes findings, conclusions, recommendations and an action plan for strengthening the national regulatory infrastructure for radiation safety in line with IAEA safety standards. The action plan describes those activities considered fundamental for strengthening the regulatory infrastructure for radiation safety in the host country.

Technical discussions and subsequent advice and recommendations offered during AMRAS take into account issues identified from a pre-mission self-assessment questionnaire, team's findings, and other information available to the IAEA (such as RASIMS profiles and earlier mission reports).

The AMRAS process provides the opportunity for discussion of regulatory technical issues within the agreed scope, together with advice on improvement, regardless of the level of the national infrastructure for radiation safety.

AMRAS are not appraisals or peer reviews. They are separate from, but could be complementary to the IAEA's Integrated Regulatory Review Service (IRRS), which is a peer review of the regulatory framework for nuclear and radiation safety. A table comparing characteristics between the two kinds of missions is provided in Appendix I.

States may request an AMRAS where they identify a need for advice, assistance and support in one or more areas of regulatory infrastructure.

In order to prepare and conduct the AMRAS efficiently and effectively and in a consistent and comprehensive manner, always based on IAEA safety standards, this publication provides:

- Guidance to host countries, AMRAS team members and IAEA staff on the preparation, conduct, report writing and follow-up of AMRAS;
- A specific approach to:
 - conducting the AMRAS;
 - identifying areas where national regulatory infrastructure for radiation safety need to be better aligned with IAEA safety standards;
 - providing advice and recommendations related to identified areas for improvement;
 - offering support and assistance with the development of an action plan that considers the availability of IAEA support and/or resources where appropriate.

2. OBJECTIVES OF AN AMRAS

The objective of an AMRAS is to provide advice for supporting the establishment or improvement of a regulatory infrastructure for safety by:

- Evaluating the status of the national regulatory infrastructure for radiation safety against the IAEA safety standards and other relevant IAEA publications and in particular the relevant requirements and recommendations in:
 - GSR Part 1 (Rev. 1) “Governmental, Legal and Regulatory Framework for Safety” [1];
 - GSR Part 2 “Leadership and Management for Safety” [2];
 - GSR Part 3 “Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards” and in particular, Section 2 “General requirements for protection and safety”. Other requirements in Section 3 on occupational or medical exposures that are addressed to the Regulatory Body might also be considered [3];
 - GSG-12 “Organization, Management and Staffing of the Regulatory Body for Safety” [4];
 - GSG-13 “Functions and Processes of the Regulatory Body for Safety” [5];
 - SSG-44 “Establishing the Infrastructure for Radiation Safety” [6];
 - The Code of Conduct on the Safety and Security of Radioactive Sources [7] and associated guidance [8,9].

The publications listed in the “References” provide the fundamental bases for these Guidelines and for conducting an AMRAS.

- Providing advice on any identified needs for improvement;
- Preparing a report that includes findings, conclusions, recommendations and an action plan for strengthening the national regulatory infrastructure for radiation safety in line with IAEA safety standards. The action plan describes those activities considered fundamental for strengthening the regulatory infrastructure for radiation safety in the host country.

Since the establishment and development of a national regulatory infrastructure for radiation safety requires a long-term commitment of national resources and an exercise of government control over previously unregulated activities, awareness and support from the highest levels of government are desirable (for example, the Prime Minister, Ministers and Parliament or equivalent). The AMRAS team can assist the host country by raising the profile of the activity through meetings with high-level government officials, explaining the importance of compliance with international standards and the connection of those standards to the safety in important activities in medicine, industry, research and agriculture.

3. STRUCTURE OF AN AMRAS

3.1. AMRAS STRUCTURE AND ACTIVITIES

The structure of an AMRAS is quite flexible and the activities performed by team members can be quite diverse. Based on discussions held between the host country and the IAEA, various activities that may contribute to the objective of establishing or strengthening its national regulatory infrastructure for radiation safety may be included.

The activities during an AMRAS include meetings and interviews with high-level government officials concerned with safety, the assessment of the status of the regulatory infrastructure and the provision of advice for improvements to be made. However, based on the needs of the host country, other activities such as presentations on the IAEA safety standards and meetings with decision makers concerned with radiation safety may be included. The advice and information provided during an AMRAS should be formulated to make a realistic and significant contribution to the development of the national regulatory infrastructure for radiation safety.

AMRAS team members usually perform a review of the status of the regulatory infrastructure for safety and provide recommendations, based on the requirements in safety standards, resulting in an action plan for improvement. In reviewing the regulatory infrastructure for safety, team members will usually perform various tasks such as reviewing the pre-mission self-assessment questionnaire, interviewing staff members of the regulatory body or other governmental agencies, observing regulatory activities, and conducting site visits. Recommendations will be developed by the team and an action plan will be developed in consultation with the host country. Accordingly, completion of the pre-mission self-assessment questionnaire, translations and provision of any relevant documents into English needs to be completed by the host country before the mission.

Based on the scope of the mission and the needs of the host country, other activities may take place such as:

- Presentations by team members on IAEA safety standards, the Code of Conduct on the Safety and Security of Radioactive Sources and other relevant IAEA publications (see References);
- Seminar on the use of radiation sources in medical, industrial, research and educational applications, hazards associated with the use and a lack of control over such sources, and the need to establish a national regulatory infrastructure for radiation safety;
- Discussions on technical matters identified by the host country;
- Meetings and interviews with decision makers of the host country such as regulators and high-level officials of governmental organizations during which AMRAS team members provide information about the benefits of establishing and/or improving the regulatory infrastructure for radiation safety.

3.2. CUSTOMISING AN AMRAS

The conduct of each AMRAS takes account of the governmental structure, the regulatory processes which vary from country to country depending on the national legal and administrative system, the range of facilities and activities to be regulated, financial resources available to the regulatory body, etc. The agenda for each AMRAS is developed through discussions held in advance of the mission with the host country to address the agreed scope and needs.

Countries may request an AMRAS where they identify a need for advice, assistance and support in one or more areas of regulatory infrastructure. An AMRAS may be requested by any IAEA Member State, although they are primarily aimed to assist states that need to strengthen and develop their national regulatory infrastructure for radiation safety, hence the broad thrust of an AMRAS will be different dependent upon the maturity of regulatory activities within the host country. For host countries at the very early stages of developing a national regulatory infrastructure for radiation safety, an AMRAS is

mainly focussed on creating awareness at the political and technical level about the need to establish such an infrastructure. Consequently, under such circumstances, an AMRAS will usually include:

- Meeting(s) and interviews with high level government officials and counterparts of the host country to review and discuss the objectives, scope and expected outcomes of the mission based on the IAEA safety requirements;
- Seminar on the use of radiation sources in medical, industrial, research and educational applications and the need for and process of establishing a national regulatory infrastructure for radiation safety;
- Identification of the existing legislation that may address various issues that are relevant to radiation safety (e.g. health, environmental, energy, labour, emergency preparedness and response, dangerous goods, etc.);
- Meeting(s) and interviews with the relevant authorities involved in the implementation of the above legislation to discuss the development of a national regulatory infrastructure for radiation safety;
- Development, with the host country counterparts, of an action plan for improving the regulatory infrastructure for radiation safety, based on the findings of the mission; and
- Presentation of the main findings, conclusion and recommendations to high-level officials and the Government.

Visits to some facilities may be included, but are not central to the objective of advising on the host country's need for establishing the national radiation safety infrastructure.

For host countries with a partially established national regulatory infrastructure for radiation safety, an AMRAS is mainly focussed on looking to further strengthen the control of radiation sources. Consequently, under such circumstances, an AMRAS will usually include:

- Meeting(s) and interviews with high level government officials and counterparts of the host country, including the head and staff of the regulatory body (all regulatory authorities if there are more than one), to review and discuss the objectives, scope and expected outcomes of the mission based on the IAEA Safety Standards and existing legal framework;
- Review and discussions on Areas I, II and III (see section 3.3 below) of the AMRAS, including site visits;
- Development, with the host country counterparts, of an action plan for improving the regulatory infrastructure for radiation safety, based on the findings of the mission;
- Presentation of the main findings, conclusion and recommendations to high-level government officials and the head of the regulatory body.

For host countries with an established national regulatory infrastructure for radiation safety an AMRAS is mainly focussed on improving the performance of their regulatory functions. Consequently, under such circumstances, an AMRAS will usually include:

- Meeting(s) and interviews with high-level government officials and counterparts of the host country, including the head and staff of the regulatory body (all regulatory authorities if there are more than one), to review and discuss the objectives, scope and expected outcomes of the mission based on the IAEA safety standards, existing legal framework and activities of the regulatory body;
- Review and discussions on Area III and on Area I (if needed), including site visits;
- Development, with the counterparts, of an action plan for enhancing the regulatory activities, based on the findings of the mission;
- Presentation of the main findings, conclusion and recommendations to high-level government officials and the head of the regulatory body.

All AMRAS provide a written report to the host country with recommendations and an action plan. (see section 6).

Once a host country has received the report and had reasonable time to implement the recommendations from the mission, the host country may wish to further assess its development towards an established regulatory framework in accordance with the IAEA safety requirements via requesting a follow-up mission (see section 8).

3.3. ASSESSMENT TOPICS OF AN AMRAS

An AMRAS will usually include a review of the national regulatory infrastructure for safety within the scope of the mission.

It should be noted that where specific matters of law arise before or during the mission, they will be referred to IAEA's Office of Legal Affairs (OLA).

The three areas, consistent with GSR Part 1 (Rev. 1) [1], and their elements, are:

Area I. Responsibilities and functions of the Government

- I.1 National policy and strategy
- I.2 Legal framework
- I.3 Governmental framework

Area II. Global safety regime

- II.1 International instruments
- II.2 Sharing of regulatory experience

Area III. Responsibilities and functions of the regulatory body

- III.1 Organization and management system of the regulatory body
- III.2 Effective independence in the performance of the regulatory functions
- III.3 Staffing and competence of the regulatory body
- III.4 National inventory of radiation sources
- III.5 Authorization and Review and Assessment
- III.6 Inspection
- III.7 Enforcement
- III.8 Regulations and Guidance.

4. AMRAS PROCESS

4.1. GENERAL

An AMRAS is always initiated by a formal request from a Member State to the IAEA. An AMRAS may be an agreed task within an IAEA project. In some cases, the IAEA may recommend that a country requests such a mission.

An AMRAS is performed by an international team that includes IAEA staff and senior regulatory experts with knowledge and extensive experience in the areas to be addressed during the mission.

Appendix II presents a summary of the AMRAS preparation actions.

4.2. INITIATING AN AMRAS

Informal discussions concerning AMRAS may take place between Member States and the IAEA in advance of a formal request for such a mission. Following a request from a country for an AMRAS, the

IAEA begins a dialogue with the country regarding the nature and extent of the topics (see section 3.3) to be addressed during the mission. The IAEA should provide to the host country these guidelines and information about RASAMT (see section 4.9).

Upon receipt of a request for an AMRAS, the IAEA will designate an IAEA staff member as AMRAS team leader. The team leader will contact the host country's representatives, in order to identify the host country's liaison officer (see section 4.8) and arrange the necessary correspondence and meetings to determine the host country's needs and thereafter, the scope and expectations of the mission. If a regulatory body has been established in the host country, the liaison officer will usually be a senior member of its staff. The AMRAS team leader will oversee all administrative arrangements for the mission, agree the scope of the mission and be responsible for the recruitment of the team members.

The scope of the mission would be adapted to the different stages of development of the regulatory infrastructure of the host country (see section 2.2). The team leader ensures the scope of the mission is consistent with these guidelines.

4.3. PREPARATION FOR THE AMRAS

Preparation for the mission includes:

- Identification of the host country's needs with regards to the maturity of the national regulatory infrastructure for radiation safety (see section 2.2);
- Confirmation of the mission scope, i.e. AMRAS areas to be covered (see section 2.3);
- Creation of the AMRAS in RASAMT and attribution of the different roles and associated rights as appropriate, to the team leader, the team members the liaison officer and the host counterparts designated by the liaison officer;
- Provision of reports related to previous advisory missions already performed in the host country;
- Host country completion of the IAEA pre-mission self-assessment questionnaire in RASAMT and collection of the appropriate reference material translated into English (relevant laws and regulations and other documents if available in the host country) to be delivered to the IAEA one month prior to the mission. If the host country is unable to use RASAMT because of technical complications, the pre-mission self-assessment questionnaire could be completed in Microsoft Word and this document forwarded to the AMRAS team leader with the reference material. The AMRAS team leader will ensure the content and reference material is entered into RASAMT;
- Identification of the AMRAS team and host counterparts, including where appropriate, counterparts from other organizations within the agreed scope of the mission;
- Assignment of the tasks to the AMRAS team members during the mission.

4.4. AMRAS DURATION AND TEAM COMPOSITION

An AMRAS team may, as appropriate, comprise:

- AMRAS team leader, who is an IAEA staff member;
- AMRAS team members, recruited from Member States and/or IAEA staff.

AMRAS are typically four to five days in duration and the team is usually comprised of between two to five international experts. The composition of the team and the duration of the mission will be commensurate with the host country's regulatory infrastructure for radiation safety and may be further adjusted according to many factors including:

- The agreed scope of the mission;
- Whether one or several organizations have regulatory roles and responsibilities;
- The geographical spread of organizations to be visited;

- The documentation to be reviewed.

The duration of the mission should allow for the preparation of the preliminary report prior to the exit meeting.

4.5. RECRUITMENT OF AMRAS TEAM MEMBERS

AMRAS team members are usually current or former senior staff members from regulatory bodies of Member States, IAEA staff, and other internationally recruited experts. Team members are experts in specific topics within the scope of the mission and should be experienced regulators or technical experts.

AMRAS team members may be assigned one or several tasks in the course of the mission and are expected to familiarize themselves, in advance of the mission, with the AMRAS Guidelines, the pre-mission self-assessment questionnaire, other documents provided by the host country and relevant IAEA publications.

AMRAS team members are expected to have:

- Good communication skills;
- Excellent command of spoken and written English; in some cases, other language skills are desirable;
- Good knowledge and understanding of IAEA safety standards and guidance;
- Technical knowledge and experience in their particular fields;
- Report-writing skills;
- An understanding of their contribution to the success of the mission as a whole;
- Recognition of their role as a team member;
- Full understanding of the AMRAS Guidelines.

The following general attributes are also relevant:

- No one from the host country may be included in the AMRAS team;
- At least one AMRAS team member should be recruited from the IAEA region of the host country;
- Team members should adopt an open attitude towards systems and approaches that vary from those with which they are familiar, keeping in mind that the reference is the IAEA safety requirements;
- Team members should have the ability to work in a multicultural environment with sensitivity and respect for diversity.

A detailed list of responsibilities of AMRAS team members and counterparts is provided in Appendix III.

Once the scope of the mission has been agreed, the team leader, following consultation with the host country, contacts potential team members with appropriate qualifications regarding their availability. Team members will be recruited and cleared for the mission in accordance with IAEA administrative procedures. This process should start at least two months before the mission.

4.6. AMRAS LOGISTICS

During the preparatory phase the AMRAS team leader will:

- Identify the source of funding for the mission;
- Confirm dates for the mission with the host country liaison officer, taking due account of any holidays, national vacation periods, week structure and working hours;

- Confirm that appropriate travel arrangements have been made by team members, ensuring they will arrive in the host country in sufficient time to attend a team briefing prior to meetings with host country representatives.

Each AMRAS team member will:

- Obtain a visa, if required;
- Receive any required immunizations and medical precautions in good time;
- Undergo, the IAEA training for Security in the Field-, as appropriate to the country being visited;
- Bring a laptop computer with the appropriate electrical adapter, word processing, presentation and other software, as required;
- Provide information to the host country liaison officer and team leader regarding travel details.

4.7. AMRAS AGENDA

The team leader will establish the agenda for the mission in coordination with the host country liaison officer. In setting the AMRAS schedule, great care should be exercised to ensure sufficient time is available for each part of the mission described in Section 5, particularly making allowance for travel time.

The mission agenda will be adapted to the scope and the duration of the mission and may be further adjusted according to many factors. For example, a site visit could be useful in evaluating the regulatory infrastructure for safety but not necessary if regulatory functions are not being reviewed.

A daily meeting between the team leader and the liaison officer of the host country may help to adjust the agenda during the mission.

An example of a typical mission agenda is provided in Appendix IV.

4.8. RESPONSIBILITIES OF THE HOST COUNTRY

The host country liaison officer should be knowledgeable in the areas to be addressed during the mission and have a good overview of the national infrastructure. The liaison officer acts as the host country's mission administrator and logistics officer. The liaison officer needs access to resources, must have credibility with staff, be able to obtain clarifications from many sources and have a good understanding of what the host country has provided and must do with respect to the scope of the mission.

The host country liaison officer will:

- Cooperate with the team leader for the administrative arrangement and other preparations for the mission;
- Acquire and administer all local resources for the mission, including funding;
- Be responsible for the availability and preparedness of all host counterparts (including those of stakeholder and partner organizations where appropriate);
- Coordinate and assure the provision of the host country's information to RASAMT;
- Make reservations for hotels and arrangements for in-country travel including local transportation;
- Make arrangements for adequate working space and resources for the team including printers, paper, computer projector and free access to internet;
- Make arrangements for communication between the team members and their base organizations (especially the IAEA), and between team members in the host country;
- Arrange required security clearances for team members to enter facilities, as needed.

4.9. AMRAS SOFTWARE TOOL (RASAMT)

The Radiation Safety Advisory Mission Tool (RASAMT) is an IAEA's web-based system designed to facilitate the planning, preparation, conduct and follow up of advisory missions. RASAMT may be used during several phases of the AMRAS process including: completion of the pre-mission self-assessment questionnaire by the host country, review by AMRAS team members of the information provided, and drafting of the mission report and action plan.

RASAMT uses a role based accounting system that handles different types of access rights. Depending on their roles the users have different views and can perform different actions. The main system roles are:

- Administrator: The administrator has a full access to the system and has a complete view of the information. The administrator is an IAEA staff member from NSRW and can create and manage AMRAS, including the creation of mission teams.
- IAEA staff: Staff members from NSRW may access all AMRAS and view the information related to these. In addition, they can contribute and add new or modify existing information in the AMRAS report.
- AMRAS team members: Non-IAEA staff team members may access only the AMRAS information that is assigned to them by the administrator; as such, they can view all information related to the associated missions and add information that will be used for producing the mission report.
- Host country counterparts: The host country liaison officer has access to RASAMT. Any other host country counterpart might get access to RASAMT once requested by the liaison officer. Host country liaison officer and counterparts may only view the information related to the AMRAS to their country. The counterparts may answer questions from the pre-mission self-assessment questionnaire and upload documentation supporting their responses and other requested information.

5. CONDUCT OF AN AMRAS

5.1. INITIAL TEAM COMMUNICATION

Prior to the conduct of the mission, the team leader makes early contact with team members and maintains a regular dialogue to ensure every team member is thoroughly aware of the history of missions to the host country, the scope of the current mission, their roles and the issues to be addressed.

5.2. INITIAL TEAM MEETING

When all team members have arrived in the host country, an initial team meeting will be conducted to discuss the specifics of the mission. A typical agenda for the initial team meeting is given in Appendix V. The team leader will brief the team on issues, sensitive areas, priorities, schedule, approach and expectations regarding the format and content of the deliverables by the team members. Team members will give their initial impression of their review of the pre-mission self-assessment questionnaire and any other relevant documents, including any issues that warrant further review and that may be the subject of recommendations. The team leader will also remind the team of the need to finalise and agree on a preliminary report before the end of the mission. The host country liaison officer should be invited to attend the initial team meeting, to meet the team and discuss local arrangements, the agenda and

important host country expectations. There should be a close review of the agenda to ensure that all important meetings and activities are included.

5.3. ENTRANCE MEETING

In accordance with the circumstances of the host country and agreed scope of the mission, an entrance meeting will usually be conducted with high-level government officials, the head of the regulatory body, if one exists, the liaison officer and the host country counterparts for the mission. The meeting should be opened by one high-level government official, and that official should be encouraged to participate in the discussion during the entrance meeting, especially in cases where a regulatory body has not been established. During the mission planning and development of the entrance meeting agenda, the involvement of all appropriate regulatory authorities and their relevant staff should be strongly encouraged.

An entrance meeting is essential to exchange knowledge and ideas on common issues and to discuss the benefits of an effective regulatory infrastructure in accordance with IAEA safety standards and to consider the risks of inadequate regulatory control of sources (Appendix VI is a sample agenda for the entrance meeting).

The team leader will present the plan, approach, scope, objectives, and expectations for the mission, emphasising that it will be conducted in support of the host country's organizations, with the expectation of providing advice, recommendations and an action plan for the establishment and/or improvement of the host country's regulatory infrastructure. The host country should be encouraged to present its expectations of the mission and to ensure a common understanding of the characteristics of the mission.

5.4. REVIEW PROCESS FOR REGULATORY TECHNICAL AREAS

AMRAS team members use three main methods to develop an understanding of the status of the regulatory framework and to assess specific regulatory technical issues within the agreed scope of the mission:

- Evaluation of the pre-mission self-assessment questionnaire and documents provided by the host country before and during the mission;
- Discussions and interviews with host country counterparts and other personnel;
- Direct observation of practices and activities, when advantageous to the mission.

5.4.1. Evaluation of written material

The evaluation of written material has two stages:

- The first stage occurs prior to the start of the mission: AMRAS team members will review all written material provided by the host country together with any additional material provided by the team leader. This information may be stored in RASAMT (see section 4.9)
- The second stage occurs during the mission: Additional written material in the form of government and regulatory body documents, presentations and examples of local work might be provided and reviewed and taken into consideration in analysing the status of the regulatory framework and formulating conclusions and recommendations. The written material provided by the host country facilitates the preparation of the mission report, minimizes risk of misunderstanding and helps the team to respond to the areas important to the host country.

5.4.2. Discussions and interviews

During the mission, discussions and interviews will be conducted with host counterparts and additionally, as the scope or local situation requires, with representatives of government departments performing regulatory functions or having responsibility for regulatory activities, with technical support organizations, research institutes and users of radiation sources (regulated or otherwise). The prime

objective of the discussions is to gather information and where necessary, to seek clarification of the written information provided.

Discussions and interviews represent an important component of an AMRAS since they provide an opportunity for the staff of the host country's participating organisations to share their practices and professional opinions with the team. Team members will encourage the description or demonstration of real examples of the work carried out or present opportunities for improvement to illustrate specific points.

5.4.3. Direct observation and site visits

Various regulatory work activities such as performing inspections, making radiation surveys, holding public meetings, training inspectors may be observed, if advantageous to the mission. Direct observation of regulatory work activities provides opportunities for personal contact between regulators and team members, which fosters the exchange of professional knowledge and understanding and provides for team members to gain further information about specific regulatory technical issues.

If advantageous to the mission and within time constraints, regulatory work activities may be observed during site visits. Regulatory work activities may be observed and discussions might be held with the operators of the facility (and its staff), and its operation observed.

The site visit should start with an opening statement to the visit host, which includes a summary of the scope and objectives of the AMRAS and questions to be answered.

Through site visits, the types of information to be gathered may include:

- Perceived and actual roles and responsibilities of the regulator at the organization being visited;
- Resources available to fulfil those responsibilities, including facilities, equipment and staffing;
- Effectiveness of the discharge of responsibilities;
- The host country's capacity to perform inspections and take enforcement actions when necessary;
- Effectiveness of regulatory procedures; and
- Relations between the regulatory body and interested parties.

Team members should be accompanied by a host country counterpart to facilitate the logistics of any visits. The team members should meet with the relevant manager at the visited facility, briefly explain the purpose of the mission and request a discussion on the regulatory framework as seen by the facility; this may not require the presence of the regulatory staff, in order to facilitate open and frank discussions.

5.5. EXIT MEETING

The AMRAS concludes with an exit meeting. The format and formality of the exit meeting may vary widely, but should include a description of the mission's activities and progress, the areas reviewed, the activities conducted, the main findings, the conclusions and recommendations, the action plan, and any other area the team feels to be highlighted to the host country. As appropriate, team members may provide a brief verbal report of results in their own subject review areas. The team leader should explain to the host country that the report at this stage is a '*preliminary report*' which will require further review before the final mission report is issued. However, the main findings, conclusions and recommendations should remain as agreed before the end of the mission.

The exit meeting will normally be attended by:

- The AMRAS team;
- The host country's liaison officer;
- High-level government officials and the head of the regulatory body (if established);
- Other host country counterparts;

- Representatives from other organizations involved in the mission.

6. DOCUMENTATION AND REPORTING

6.1. PRELIMINARY REPORT

A preliminary report of the mission objectives, scope, activities, findings, conclusions, recommendations, bases for recommendations, and an action plan will be developed throughout the mission. The preliminary report is provided to counterparts of the host country before the exit meeting to allow them sufficient time to review and provide comments on its content.

The team leader is responsible for the overall management of the development of the report. This report is based on a template that is generated by RASAMT and that will be provided to the team members in advance of the mission. As a result of discussions among the team, team members will be assigned prime responsibility for the development of the text for various sections of the report, which includes the development of the text for the findings, conclusions, recommendations and their bases.

The content of the various sections of the report, including any recommendations, will be developed through a multi-step, collaborative process that begins with the review of the pre-mission self-assessment questionnaire and any other documents provided prior to the mission. Based on their review of this material, team members should identify issues to be reviewed further during the mission.

Team members may be assigned to review specific areas in advance of the mission and should concentrate on the written material pertaining to those areas. Each team member's general impression of the written material and potential recommendations should be shared with the team during the initial team meeting. Further information will be gathered on specific topics by team members throughout the mission. Team members should discuss potential recommendations with counterparts as soon as possible during discussions and observations so that a common understanding of the relevant facts may be developed as early as possible to avoid potential misunderstandings.

AMRAS team members should meet daily, usually at the end of each day, to discuss their findings, their potential recommendations and reach consensus. Cross-cutting issues should be identified as early as possible during the mission so that such issues can be addressed in a consistent and coordinated manner, both through the conduct of the mission and in the writing of the report.

Recommendations should be specific, realistic and designed to result in tangible improvements to regulatory effectiveness. Recommendations must be based on a specific reference to the IAEA safety requirements. Recommendations should be formulated succinctly and be self-explanatory.

6.2. ACTION PLAN

An action plan will form an integral part of the mission report. The action plan will identify the persons or organisation(s) to be responsible for the implementation of the recommendations addressed, the estimated timeframe for their completion and any IAEA input or support to the improvement programme.

The action plan is developed during the mission, using a template within RASAMT. Drafting of the action plan is jointly undertaken by the mission team and the host country counterparts. The action plan may be of great benefit in determining and monitoring the most effective ongoing and future technical assistance for the State, based mainly on the recommendations listed in the mission report.

6.3. FINAL REPORT

Based on the preliminary report, the team leader will develop the draft final report after the mission. The draft final report will include modifications to the preliminary report to reflect relevant input from the exit meeting, any subsequent discussion with the host country and any necessary editorial changes.

It is advisable not to change the main findings and the recommendations addressed as agreed by the end of the mission. The draft final report will be reviewed by all team members, whose subsequent comments will, to the extent possible, be incorporated into this report by the team leader. The draft final report will then be sent to the host country for comment. The goal is to finalise the report within one month following the exit meeting.

The host country liaison officer will collect all comments from participating organizations within the host country and submit a complete set of comments to the IAEA. The comments from the host country should be limited to the factual correctness of the report. The host country should undertake to return final comments to the IAEA team leader within two weeks of receiving the draft final report.

Upon receipt of any comments from the host country, the team leader, in appropriate coordination with the other team members, will assess the comments and produce the final AMRAS report. The goal is to issue the final report within one month after receipt of comments from the host country. The IAEA following the official channels distributes the final report to the AMRAS liaison officer, the authorities concerned, the contributors to the report and relevant IAEA staff.

The content of the final mission report should be entered into the RASAMT and the pdf file should be uploaded to RASAMT. The final AMRAS report may be used by the IAEA to update the host country's profile in the IAEA's Radiation Safety Information Management System (RASIMS) and other databases. The results of the AMRAS may be used for planning future IAEA activities, such as Technical Cooperation support programme, extra-budgetary programme and identifying regulatory trends and issues.

6.4. GENERAL INSTRUCTIONS FOR WRITING THE REPORT

Each section of the body of the report will be divided into the following four subsections: findings, conclusions, basis, and recommendations.

The report, according to the AMRAS report template, will include a short description of the situation in the host country based on the answers of the pre-mission self-assessment questionnaire, interviews and meetings, recommendations for improving the situation and an action plan.

Findings

The description of the situation should be brief. Those issues, which are in line with the IAEA safety standards, should be described only very briefly. Issues not meeting the relevant IAEA safety standards should be addressed in some detail. The description must be sufficient for understanding the reasons for the conclusions and recommendations that follow.

Conclusions

Conclusions should be written succinctly, have their justification in established facts, and relate to a provision(s) of the IAEA safety standards. For example, a finding might be that legislation contains a provision addressing a particular topic. The conclusion would state whether this provision is consistent with the IAEA safety standards and if not, how it is deficient.

Basis

For each recommendation, reference should be made to the corresponding IAEA safety standards requirement and the Code of Conduct on the Safety and Security of Radioactive Sources Ref.[7], and associated guidance Ref. [8,9].

Recommendations

Recommendations are proposed when conformance with one or more of the IAEA safety requirements is missing, incomplete, or inadequately implemented. Recommendations should be specific, realistic and designed to result in tangible improvements to regulatory effectiveness. Recommendations should be succinct and self-explanatory. The responsible party should be identified and "should" language should be used (for example, "the regulatory body should do...").

7. AMRAS PROCESS REVIEW

Following each AMRAS, the team leader should correspond or meet with the IAEA staff and the international experts involved in the mission to elicit feedback from the team members and discuss lessons learned from the mission including feedback on RASAMT. Areas for improvement and good practices in the preparation and conduct of the AMRAS identified during these discussions or correspondence should be documented. In addition, the team leader should solicit feedback from the host country through the liaison officer regarding the host country experience. Such information should be analysed by the IAEA to be taken into consideration for improving the AMRAS process.

8. FOLLOW-UP AMRAS

8.1. OBJECTIVES AND CRITERIA FOR A FOLLOW-UP MISSION

The purpose of a follow-up mission is to continue the work of improving regulatory effectiveness by reviewing the host country's progress in response to the initial AMRAS recommendations and agreed action plan.

Where a host country has completed its action plan and sees benefits to further advice and review its infrastructure for radiation safety, it may request a follow-up mission.

Where a host country has not achieved timely progress with the implementation of the recommendations of the original AMRAS in accordance with the agreed action plan (for example an inability to progress the making of radiation protection laws and regulations) the IAEA will make further contact with the host country and seek advice as to whether a follow-up mission will provide additional incentive to inform and/or assist government to progress the items in the action plan.

Follow-up AMRAS are conducted in accordance with the other sections and appendixes of these guidelines except as where noted in this section 8.

8.2. REQUESTING A FOLLOW-UP MISSION

A follow-up AMRAS should be requested formally by the host country. In some circumstances, the IAEA may suggest to the host country to consider a follow-up mission. Typically, a follow-up mission takes place two to three years following the initial mission.

8.3. PREPARATORY PHASE OF A FOLLOW-UP MISSION

Upon receipt of a request for an AMRAS follow-up mission, the IAEA team leader is appointed to arrange the preparation of the mission including tasks similarly to the initial mission (see section 4.3).

A new file will be created in RASAMT for the follow-up mission with an access and the associated rights attributed to the interested parties (see section 4.9).

8.4. FOLLOW-UP MISSION DURATION AND TEAM COMPOSITION

The follow-up AMRAS team will comprise an IAEA team leader, together with the appropriate number of reviewers. For reasons of continuity it is preferable that the follow-up mission team includes the team leader and reviewers who participated in the initial mission. The skill set of the team will be adjusted to account for the scope of the mission including any new review areas. As with the initial mission, recruitment of team members should be undertaken in accordance with section 4.5 provisions.

8.5. CONDUCT OF A FOLLOW-UP MISSION

The review of responses to the recommendations made during the initial mission will be carried out following these AMRAS Guidelines. In the same way as for the initial mission, information needed to reach a judgement will be gathered by a combination of the review of written material, interviews with personnel and direct observation of organizations, practices and activities.

Additional areas could be added in the scope of the follow-up mission. Additional advice may be provided addressing new recommendations.

On completion of the review, a follow-up mission preliminary report will be prepared summarizing the team's main observations, conclusions and recommendations. Before the text is finalized, the regulatory body will be given the opportunity to comment regarding the accuracy and clarity of the report's contents. The follow-up mission's review of progress made by the host country in implementing actions in response to an AMRAS recommendation will be expressed as conclusions.

The following categories will be used for expressing these conclusions:

- Recommendation remains open (proper justification should be provided);
- Recommendation is closed.

In exceptional circumstances, a recommendation raised during the initial advisory mission may no longer be relevant to the follow-up mission. This may for instance, be due to changes that have occurred in regulatory organization, regulatory framework or processes in the intervening period. Where such an instance occurs, the initial recommendation may be closed concurrent with the opening of a new, related recommendation.

A follow-up AMRAS must be of sufficient duration to thoroughly review the actions taken in response to previously identified recommendations. The duration should allow for the preparation of the preliminary report prior to the exit meeting.

APPENDIX I COMPARING CHARACTERISTICS OF AMRAS AND IRRS MISSION

Characteristic	AMRAS	IRRS Mission
Purpose	To advise Member States on actions to be taken for the establishment or improvement of a regulatory infrastructure for radiation safety whilst recognizing the ultimate responsibility of each State to ensure safety in these areas.	To assess the effectiveness of national regulatory frameworks for nuclear, radiation, radioactive waste and transport safety with regards to IAEA safety standards, whilst recognizing the ultimate responsibility of each State to ensure safety in these areas.
Scope	Regulatory infrastructure for radiation safety.	Regulatory infrastructure for nuclear safety, radiation safety, radioactive waste and transport safety.
Nature	Advisory mission	Peer review mission
Activities conducted during mission	As agreed with the host country. May include a review of the regulatory infrastructure for radiation safety, the delivery of lectures, and the organization of meetings with decision makers concerned with the establishment or strengthening of the regulatory infrastructure for radiation safety.	International peer review of, at a minimum, responsibilities and functions of the government, global nuclear safety regime, responsibilities and functions of the regulatory body, management system of the regulatory body, core regulatory processes, and emergency preparedness and response.
Status of regulatory infrastructure	Not mature; it could range from not existing regulatory infrastructure to that being in a developmental phase.	A regulatory infrastructure has been established that is in general agreement with the IAEA safety standards.
Team leader	IAEA staff member	Senior regulator from an IAEA Member State
Team members	2 – 5 international experts	5 – 20 international experts
Duration	4 – 5 days	5 – 15 days
Final report	Report is not made public.	The host country is encouraged to make the report public. The IAEA will make the report publicly available unless the host country specifically requests that it remains restricted.
Basis for recommendations	IAEA Safety Standards regarding regulatory	IAEA Safety Standards, Code of Conduct on the Safety and

	infrastructure requirements, Code of Conduct on the Safety and Security of Radioactive Sources, and associated guidance.	Security of Radioactive Sources, and associated guidance.
Findings	Recommendations	Recommendations, Suggestions and Good Practices.
Action Plan	Developed during the mission jointly undertaken by the mission team and the host country counterparts.	Proposed before the mission by the host country.

APPENDIX II AMRAS PREPARATION ACTIONS

Preparation Event		Responsibility	Timing¹
Request from the Host Country/ Member State			
1	Informal discussions between a Member State and the IAEA	Member State and IAEA	Prior to the submittal of a formal request for an AMRAS
2	Formal request from a Member State to the IAEA for an AMRAS	Host country	Six months prior to AMRAS
3	After the request is received, briefing for host country on AMRAS process	IAEA	As soon as possible after receipt of formal request for an AMRAS
Preparatory Phase			
4	Designation of AMRAS team leader	IAEA	As soon as possible after receipt of formal request for an AMRAS
5	Appoint host country's liaison officer and potential counterparts	Host country	As soon as possible, and at the latest, in the weeks after a formal request for an AMRAS has been submitted
6	Request the completion of the pre-mission self-assessment questionnaire	Team leader	As soon as possible after receipt of formal request for an AMRAS
7	Discussions and exchange of communication to define the scope, objectives, provisional agenda and schedule of the AMRAS considering the needs of the host country	Team leader and host country	May start before formal request for mission has been submitted; major points should be agreed five months before AMRAS, but discussions on fine points may continue until the time of the mission
8	Resource planning (size, duration of the mission)	Team leader and host country	Prior to the AMRAS
9	Identify and recruit AMRAS team members considering the agreed scope of mission	Team leader	At least four months prior to AMRAS

¹ Stated times are general guidelines that may be adjusted depending on the circumstances of a specific mission.

10	Create the AMRAS in RASAMT and provide access to RASAMT	IAEA	As soon as the liaison officer and the team members are appointed
11	Assemble background information including previous IAEA missions and projects, and host country profile	Team leader and TC officers (as appropriate)	At least one month prior to AMRAS
12	Completion of the pre-mission self-assessment questionnaire, submittal of questionnaire and related relevant documents available in the host country (laws, regulations, regulatory procedures...) in RASAMT	Host country liaison officer	One month prior to AMRAS
13	Notification of presence of completed pre-mission self-assessment questionnaire and related documents in RASAMT to AMRAS team members	Team leader	As soon as possible upon receipt of material from host country
14	Team members review the pre-mission self-assessment questionnaire and relevant documents (laws, regulations, regulatory procedures...) and develop initial impression	Team members	Prior to the mission
Mission Commences			
15	Initial AMRAS team meeting	Team leader	Usually, the evening before the start of the AMRAS
16	AMRAS activities planned within the agenda/schedule	Team and host country liaison officer	One week in length
17	Visits coordination	Team leader, team members and host liaison officer	Before and during the AMRAS
18	Preliminary report provided and discussed with host country at exit meeting	Team leader	Before team departs
Post-Mission			
19	Draft final report submitted to host country	IAEA, team members	Within one month following mission
20	Comments from host country on draft Final Report provided to IAEA	Host country liaison officer	Within two weeks after receiving draft final report

21	Final Report provided to host country	IAEA	Within one month after receiving comments from host country on draft final report
----	---------------------------------------	------	---

APPENDIX III RESPONSIBILITIES OF AMRAS PARTICIPANTS

Team Leader

The AMRAS team leader is responsible for:

- Official IAEA liaison with the assigned host country organization(s) prior to, during and after the mission;
- Identification and recruitment of appropriate team members;
- Determining the scope and objectives for the mission, after consulting with appropriate IAEA technical officers, paying due regard to previous and planned IAEA activities for the host country;
- Ensuring the scope of the mission is consistent with these Guidelines;
- Developing the detailed work plan for the mission in accordance with these Guidelines;
- Making copies of the reports of previous missions to the host country available to team members;
- Communicating with team members on a regular basis prior to and during the mission, to ensure team members are adequately prepared and informed;
- Requesting assignment of a host country liaison officer;
- Providing a copy of these Guidelines to the host country liaison officer;
- Requesting completion of a pre-mission self-assessment questionnaire by appropriate organizations in the host country through the host country liaison officer;
- Requesting that the host country liaison officer arranges for a presentation on the regulatory infrastructure by and appropriate official at the entrance meeting.
- Providing internet links for relevant IAEA safety standards and other useful publications, as well as any additional material useful for the mission;
- Providing access to RASAMT for the host country liaison officer and the team members;
- Managing resources, such as financial arrangements for the team, coordinating travel for the team members, and ensuring the provision of special equipment and logistics, as required;
- Assigning tasks and responsibilities and ensuring all team members fully understand the objectives and scope of the mission;
- Preparing a briefing for the host country on the mission process and its objectives;
- Leading the mission including supervising the review of documents and activities, ensuring schedules are met and providing leadership in the resolution of issues arising;
- Ensuring the team works in a consistent and cohesive manner;
- Ensuring the objectives of the AMRAS are met;
- Providing guidelines for the conduct of daily meetings;
- Leading the initial team meeting, entrance and exit meetings;
- Collating the preliminary report of the AMRAS based on the contributions of team members;
- Submitting the preliminary report to the host country for comments prior to departure;
- Preparing the draft final report based on the preliminary report and comments received from the host country and team members, ensuring the advice and action plan within it are consistent with the agreed scope of the mission and with these Guidelines;
- Concurring on appropriate changes to the draft report in consultation with team members, based on comments received from the host; finalizing the report based on comments received from the host country;
- Issuing the final report to the host country;

- Expressing appreciation to the host country for their cooperation during the mission;
- Obtaining, summarizing and communicating feedback from team members following completion of the mission;
- Obtaining, summarizing and communicating feedback from the host country following completion of the mission.

Host Country Liaison Officer

The host country should appoint a liaison officer who should be an experienced, senior official of the regulatory body (if established). The liaison officer has a key role in the effective coordination of the mission and is responsible for:

- Being the main contact and focal point with the team leader in the preparatory phase and during the mission;
- Acquiring and administering all local resources for the mission, including funding;
- Arranging mission logistics, administration, and scheduling within the host country;
- Ensuring that all necessary information for the review of the regulatory infrastructure is provided to the team and/or uploaded in RASAMT;
- Request access to RASAMT for other host country counterparts;
- Making reservations for hotels and arrangements for in-country travel including local transportation;
- Making arrangements for adequate working space and resources for the team including printers, paper, computer projector and internet connection;
- Making arrangements for communication between the team members and their base organizations (especially the IAEA), and between team members during their stay in the host country;
- Arranging required security clearances for team members to enter facilities, as needed;
- Assisting host organization(s) and other government organizations in understanding what is needed for a successful mission;
- Being responsible for the availability and preparedness of all host counterparts (including those of stakeholder and partner organizations where requested by the team leader or host organization(s));
- Being the communications conduit between the AMRAS team and the host country counterparts and the host organization(s) and other government organizations;
- Attending team meetings throughout the mission;
- Being available throughout the mission.

AMRAS Team Members

AMRAS team members are responsible for:

- Making necessary preparations for the mission as directed by the team leader;
- Preparing for the mission by review of these Guidelines, appropriate IAEA standards and guides, and the host country responses to the pre-mission self-assessment questionnaire and other reference material;
- Conducting AMRAS activities as directed by the team leader;
- Participating in the initial team, entrance and exit meetings;
- Leading discussions with their review area counterparts;

- Reviewing the assigned regulatory areas against IAEA safety standards and the Code of Conduct on the Safety and Security of Radioactive Sources Ref. [7] and associated guidance Ref. [8,9];
- Evaluating findings, drawing conclusions and proposing recommendations;
- Reviewing with the team all findings, conclusions, recommendations and contributions to the action plan;
- Providing daily input to the preliminary report, as directed by the team leader;
- Reviewing the preliminary report;
- Providing feedback to the IAEA after completion of the mission.

APPENDIX IV SAMPLE AGENDA FOR AMRAS

Day 1

Time	Activity	Target Audience
8:30 – 12:30	Entrance Meeting	
8:30 – 9:30	<p>Official opening of the mission:</p> <ul style="list-style-type: none"> - Welcome remarks (host country liaison officer); - Introductory remarks and objectives of the mission (Team leader); - Introduction of the participants. 	<p>All Interested Parties. For instance, authorities concerned in areas such as:</p> <p>(1) Safety of workers and the public; (2) Protection of the environment; (3) Applications of radiation in medicine, industry and research; (4) Emergency preparedness and response; (5) Management of radioactive waste (including government policy making and the strategy for the implementation of policy); (6) Safety in relation to water use and the consumption of food; (7) Land use, planning and construction; (8) Safety in the transport of dangerous goods, including nuclear material and radioactive material;</p>
09:30 - 10:15	<p><i>Host country's</i> presentation of the regulatory infrastructure for radiation safety.</p> <p>- Briefing to the team on:</p> <ul style="list-style-type: none"> - Current use of ionizing radiation in <i>the host country</i>, incl. estimation of inventory of sources - Current measures taken for controlling these sources and practices - Organizations involved - Developments since the past missions (if applicable) <p>- Discussion</p>	
10:15 – 10:45	<i>Coffee break</i>	
10:45 – 12:30	<p>IAEA presentation (optional): Radiation applications and the need for a regulatory infrastructure for safety:</p> <ul style="list-style-type: none"> - Uses of ionizing radiation; - Need for regulatory programme; - International safety standards related to regulatory programme; - IAEA assistance to establish and maintain a regulatory programme. 	All Interested Parties (see above):
12:30 - 14:00	<i>Lunch</i>	
14:00 – 16:00	<p>Discussion between the IAEA's and <i>the host country's</i> technical experts on the essential elements of the regulatory infrastructure for safety of radiation sources:</p>	Host country advisory mission liaison officer and relevant technical experts from all interested parties

	<p>1. Responsibilities and functions of the Government</p> <ul style="list-style-type: none"> - National policy and strategy; - Legal framework; - Governmental framework. <p>2. Global safety regime</p> <ul style="list-style-type: none"> - International instruments; - Sharing of regulatory experience. <p>3. Responsibilities and functions of the regulatory body</p> <ul style="list-style-type: none"> - Organization and management system of the regulatory body; - Effective independence in the performance of regulatory functions; - Staffing and competence of the regulatory body; - National inventory of radiation sources; - Authorization and review and assessment; - Inspection; - Enforcement; - Regulations and guidance. 	
16:00 – 16:30	Summary of the day and Information on the next day's programme.	Host country liaison officer and Team leader
16:30 –	Preparation of the report	Team

Day 2

8:30 – 11:00	Technical evaluation of the <i>host country</i> regulatory infrastructure for safety of radiation sources (continue)	Advisory mission liaison officer and relevant technical experts from all interested parties
10:00 - 10:30	<i>Coffee break during discussions</i>	
11:00 – 12:30	Meeting with the relevant Minister or other officials as may be suggested by the host country liaison officer	Relevant Minister and other representatives
12:30 - 14:00	<i>Lunch break</i>	
14:00 - 16:00	Technical evaluation of the <i>host country</i> regulatory infrastructure for safety of radiation sources (continue)	Advisory mission liaison officer and relevant technical experts from all interested parties
16:00 – 16:30	Summary of the day and Information on the next day's programme.	Host country liaison officer and Team leader
16:30 –	Preparation of the report	Team

Day 3

09:30 – 16:30	<p>Meeting with high level officials as may be suggested by the host country liaison officer or discussion going on between the IAEA's and the <i>host country's</i> technical experts on the essential elements of the regulatory infrastructure for safety of radiation sources</p> <p>Consider whether a facility visit will be useful in evaluating the regulatory infrastructure for safety. A facility visit could be a distraction if regulatory infrastructure is not being reviewed.</p>	Relevant personnel
16:30 –	Preparation of the report	Team
16:30 –	Finalizing the draft mission report, including action plan	Team

Day 4

09:00 – 11:00	<ul style="list-style-type: none">• Introducing the draft report to the host country liaison officer• Summary of the conclusions• Presentation of the plan for further actions• Official closure of the mission	Host country liaison officer and relevant interested parties
---------------	--	--

APPENDIX V SAMPLE AGENDA FOR THE AMRAS INITIAL TEAM MEETING

Each AMRAS is unique and the initial meeting agenda will be adjusted accordingly, but an example of the topics to be covered are given below. The initial team meeting attended by the AMRA team leader and the team members.

Activity		Responsibility
1.	Opening remarks. Introduce liaison officer	Team leader
2.	Self-introductions: Each team member to give a brief statement of their careers and current responsibilities	Team members
3.	Remarks on country background	Team leader
4.	Presentation on the AMRAS process	Team leader
5.	Guidance for reporting/documenting	Team leader
6.	Review of schedule	Team leader
7.	Team discussion on the scope of the mission, pre-mission self-assessment questionnaire and relevant documents available in the host country, and strategic points to be discussed during the mission.	AMRAS Team
8.	Closing remarks	Team leader

APPENDIX VI SAMPLE AGENDA FOR THE AMRAS ENTRANCE MEETING

Each AMRAS is unique and the entrance meeting agenda will be adjusted accordingly, but an example of the topics to be covered are given below:

	Activity	Responsibility
1.	Welcome and introduction of attendees	Host country regulatory body senior officer, high-level government official and AMRAS team leader
2.	Short opening remarks (include as a minimum): <ul style="list-style-type: none"> - thank the host regulatory body for the arrangements; - thank the regulatory body staff making themselves available for the duration of the mission; - other related IAEA work, e.g. assistance programme; 	AMRAS team leader
3.	Introduction of the team members each in turn and explain their background.	All team members
4.	General presentation on nuclear and radiation applications	AMRAS team leader
5.	Briefing for AMRAS team: <ul style="list-style-type: none"> - specific needs and interests of the host country; - roles and responsibility of regulatory body; - structure of the regulatory body; - relationship of regulatory body to end-users (where applicable); - regulatory technical and policy issues; - why the team is there; - what the regulatory body hopes to gain from the mission; - any current issues that could impact the mission; - how the regulatory body will use the results of the mission. <p>Introductions and working arrangements:</p> <ul style="list-style-type: none"> - introduce counterparts; - discuss current regulatory body status; - restrictions, problems or activities that might impact the mission; - any near-term activities that team should be aware of. 	Host country regulatory body senior officer(s), or high-level government official
6.	Closing remarks	AMRAS team leader

REFERENCES

for this Guidelines and for conducting an AMRAS

- [1] INTERNATIONAL ATOMIC ENERGY AGENCY, Governmental, Legal and Regulatory Framework for Safety, General Safety Requirements, IAEA Safety Standards Series No. GSR Part 1 (Rev.1), IAEA, Vienna (2016).
- [2] [3] INTERNATIONAL ATOMIC ENERGY AGENCY, Leadership and Management for Safety, IAEA Safety Standards Series No. GSR Part 2, IAEA, Vienna (2016).
- [3] INTERNATIONAL ATOMIC ENERGY AGENCY, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards, IAEA Safety Standards Series No. GSR Part 3, IAEA, Vienna (2014).
- [4] INTERNATIONAL ATOMIC ENERGY AGENCY, Organization, Management and Staffing of a Regulatory Body for Safety, IAEA Safety Standards Series No. GSG-12, IAEA, Vienna (2018).
- [5] INTERNATIONAL ATOMIC ENERGY AGENCY, Functions and Processes of the Regulatory Body for Safety, IAEA Safety Standards Series No. GSG-13, IAEA, Vienna (2018).
- [6] INTERNATIONAL ATOMIC ENERGY AGENCY, Establishing the Infrastructure for Radiation Safety, IAEA Safety Standards Series No SSG-44, IAEA, Vienna (2018).
- [7] INTERNATIONAL ATOMIC ENERGY AGENCY, Code of Conduct on the Safety and Security of Radioactive Sources, IAEA, Vienna (2004).
- [8] INTERNATIONAL ATOMIC ENERGY AGENCY, Guidance on the Import and Export of Radioactive Sources, IAEA, Vienna (2012).
- [9] INTERNATIONAL ATOMIC ENERGY AGENCY, Guidance on the Management of Disused Radioactive Sources, IAEA, Vienna (2018).
- [10] INTERNATIONAL ATOMIC ENERGY AGENCY, Regulations for the Safe Transport of Radioactive Material, IAEA Safety Standards Series No. SSR-6 (Rev.1), IAEA, Vienna (2018).
- [11] INTERNATIONAL ATOMIC ENERGY AGENCY, Categorization of Radioactive Sources, IAEA Safety Standards Series No. RS-G-1.9, IAEA, Vienna (2005).
- [12] INTERNATIONAL ATOMIC ENERGY AGENCY, Communication and Consultation with Interested Parties by the Regulatory Body, IAEA Safety Standards Series No GSG-6, IAEA, Vienna (2017).
- [13] INTERNATIONAL ATOMIC ENERGY AGENCY, Radiation Safety of Gamma, Electron and X Ray Irradiation Facilities, IAEA Safety Standards Series No. SSG-8, IAEA, Vienna (2010).
- [14] INTERNATIONAL ATOMIC ENERGY AGENCY, Radiation Safety in Industrial Radiography, IAEA Safety Standards Series No. SSG-11, IAEA, Vienna (2011).
- [15] INTERNATIONAL ATOMIC ENERGY AGENCY, Control of Orphan Sources and Other Radioactive Material in the Metal Recycling and Production Industries, IAEA Safety Standards Series No. SSG-17, IAEA, Vienna (2012).
- [16] INTERNATIONAL ATOMIC ENERGY AGENCY, National Strategy for Regaining Control over Orphan Sources and Improving Control over Vulnerable Sources, IAEA Safety Standards Series No. SSG-19, IAEA, Vienna (2011).
- [17] INTERNATIONAL ATOMIC ENERGY AGENCY, Safety Assessment Plans for Authorization and Inspection of Radiation Sources, TECDOC-1113, IAEA, Vienna (1999).
- [18] INTERNATIONAL ATOMIC ENERGY AGENCY, Notification and Authorization for the Use of Radiation Sources, TECDOC-1525 (Supplement to IAEA Safety Standards Series No. GS-G-1.5), IAEA, Vienna (2007).

- [19] INTERNATIONAL ATOMIC ENERGY AGENCY, Inspection of Radiation Sources and Regulatory Enforcement, TECDOC-1526 (Supplement to IAEA Safety Standards Series No. GS-G-1.5), IAEA, Vienna (2007).
- [20] INTERNATIONAL ATOMIC ENERGY AGENCY, Model Regulations for the Use of Radiation Sources and for the Management of the Associated Radioactive Waste, TECDOC-1732 (Supplement to IAEA Safety Standards Series No. GS-G-1.5), IAEA, Vienna (2013).
- [21] INTERNATIONAL ATOMIC ENERGY AGENCY, Handbook on Nuclear Law, IAEA, Vienna (2003).
- [22] INTERNATIONAL ATOMIC ENERGY AGENCY, Handbook on Nuclear Law: Implementing Legislation, IAEA, Vienna (2010).
- [23] INTERNATIONAL ATOMIC ENERGY AGENCY, Sealed Radioactive Sources. Information, Resources, and Advice for Key Groups about Preventing the Loss of Control over Sealed Radioactive Sources, IAEA, Vienna (2013).



IAEA

International Atomic Energy Agency

No. 25

ORDERING LOCALLY

In the following countries, IAEA priced publications may be purchased from the sources listed below or from major local booksellers.

Orders for unpriced publications should be made directly to the IAEA. The contact details are given at the end of this list.

CANADA

Renouf Publishing Co. Ltd

22-1010 Polytek Street, Ottawa, ON K1J 9J1, CANADA

Telephone: +1 613 745 2665 • Fax: +1 643 745 7660

Email: order@renoufbooks.com • Web site: www.renoufbooks.com

Bernan / Rowman & Littlefield

15200 NBN Way, Blue Ridge Summit, PA 17214, USA

Tel: +1 800 462 6420 • Fax: +1 800 338 4550

Email: orders@rowman.com Web site: www.rowman.com/bernan

CZECH REPUBLIC

Suweco CZ, s.r.o.

Sestupná 153/11, 162 00 Prague 6, CZECH REPUBLIC

Telephone: +420 242 459 205 • Fax: +420 284 821 646

Email: nakup@suweco.cz • Web site: www.suweco.cz

FRANCE

Form-Edit

5 rue Janssen, PO Box 25, 75921 Paris CEDEX, FRANCE

Telephone: +33 1 42 01 49 49 • Fax: +33 1 42 01 90 90

Email: formedit@formedit.fr • Web site: www.form-edit.com

GERMANY

Goethe Buchhandlung Teubig GmbH

Schweitzer Fachinformationen

Willstätterstrasse 15, 40549 Düsseldorf, GERMANY

Telephone: +49 (0) 211 49 874 015 • Fax: +49 (0) 211 49 874 28

Email: kundenbetreuung.goethe@schweitzer-online.de • Web site: www.goethebuch.de

INDIA

Allied Publishers

1st Floor, Dubash House, 15, J.N. Heredi Marg, Ballard Estate, Mumbai 400001, INDIA

Telephone: +91 22 4212 6930/31/69 • Fax: +91 22 2261 7928

Email: alliedpl@vsnl.com • Web site: www.alliedpublishers.com

Bookwell

3/79 Nirankari, Delhi 110009, INDIA

Telephone: +91 11 2760 1283/4536

Email: bkwell@nde.vsnl.net.in • Web site: www.bookwellindia.com

ITALY

Libreria Scientifica "AEIOU"

Via Vincenzo Maria Coronelli 6, 20146 Milan, ITALY
Telephone: +39 02 48 95 45 52 • Fax: +39 02 48 95 45 48
Email: info@libreriaaeiou.eu • Web site: www.libreriaaeiou.eu

JAPAN

Maruzen-Yushodo Co., Ltd

10-10 Yotsuyasakamachi, Shinjuku-ku, Tokyo 160-0002, JAPAN
Telephone: +81 3 4335 9312 • Fax: +81 3 4335 9364
Email: bookimport@maruzen.co.jp • Web site: www.maruzen.co.jp

RUSSIAN FEDERATION

Scientific and Engineering Centre for Nuclear and Radiation Safety

107140, Moscow, Malaya Krasnoselskaya st. 2/8, bld. 5, RUSSIAN FEDERATION
Telephone: +7 499 264 00 03 • Fax: +7 499 264 28 59
Email: secnrs@secnrs.ru • Web site: www.secnrs.ru

UNITED STATES OF AMERICA

Bernan / Rowman & Littlefield

15200 NBN Way, Blue Ridge Summit, PA 17214, USA
Tel: +1 800 462 6420 • Fax: +1 800 338 4550
Email: orders@rowman.com • Web site: www.rowman.com/bernan

Renouf Publishing Co. Ltd

812 Proctor Avenue, Ogdensburg, NY 13669-2205, USA
Telephone: +1 888 551 7470 • Fax: +1 888 551 7471
Email: orders@renoufbooks.com • Web site: www.renoufbooks.com

Orders for both priced and unpriced publications may be addressed directly to:

Marketing and Sales Unit
International Atomic Energy Agency
Vienna International Centre, PO Box 100, 1400 Vienna, Austria
Telephone: +43 1 2600 22529 or 22530 • Fax: +43 1 2600 29302 or +43 1 26007 22529
Email: sales.publications@iaea.org • Web site: www.iaea.org/books

INTERNATIONAL ATOMIC ENERGY AGENCY
VIENNA
ISSN 1816-9309